

[CO]HABITATION TACTICS

Imagining future spaces in architecture, city and landscape

CONFERENCE PROCEEDINGS



TAW2018 International Scientific Conference

from 20th to 23rd September 2018 / POLIS University

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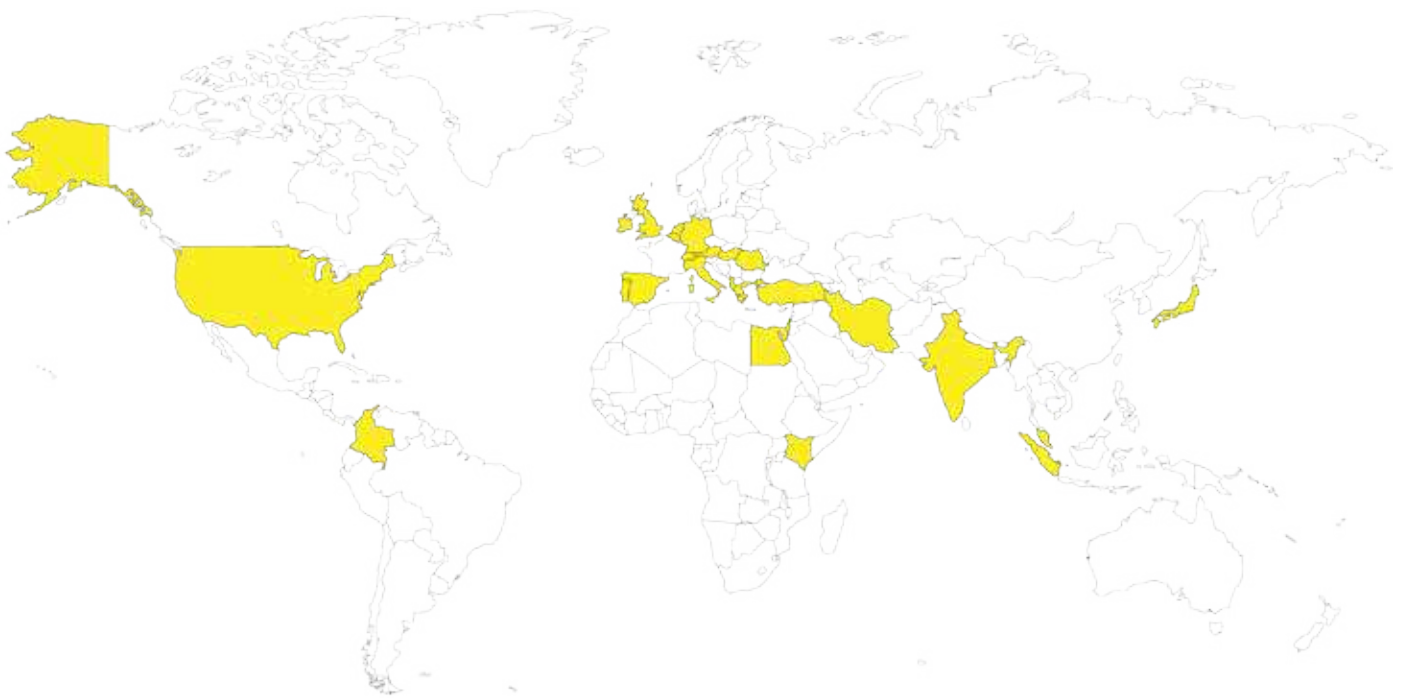


Dear participant of Tirana Architecture Week,

Thank you for joining us in TAW 2018. I strongly believe that all together we are making an historic step directly or indirectly related to Tirana's and Albanian's architecture, city and landscape. In addition, this is also a contribution for the region and wider on. At present time Europe is struggling with the instability of one of the worst recessions of its own history. Europeans are tired of the lack of flexibility and rigidity of overregulated societies where nothing happens. But here in Balkans and specifically in Albania, despite similar symptoms, things are still evolving, not because of delayed projections but because people here are very active, entrepreneurial spirit survives, and the creativity of society is in a never-ending process. In Tirana, Albania or anywhere – as they say – in Western Balkans, we are still doing fine, so we might have to learn but also to offer something to the rest of the continent, despite our endless effort to join EU. This is a land of creativity where all architects and city experts feel just great: amazed, shocked, revolted, confused, enthusiastic, inspired, etc. This is due to the fact that there are layers of a real self-generative city.

Let's not forget that Tirana is an example of creativity. So, let's use such energy in a positive way and let's open a debate that might be useful for everyone. TAW is an academic event which gives you the opportunity to come and share your professional passion or nightmare. Enjoy time with us. There is not a clear recipe but there is always a solution out there to be discovered with passion and commitment. Join POLIS University, Co-PLAN Institute and our network of creative partners. I believe we all have something in common that can help to educate the new generation of architects who can re-appropriate the city and its needs, including those of real dignitary architecture. This is the point where the architect rediscovers its own place, space and meaning within society.

Enjoy TAW 2018! Enjoy U_POLIS and Tirana!



The papers submitted to the conference are coming from the following countries: Albania, Italy, Spain, Greece, Turkey, USA, Hungary, Belgium, Egypt, Iran, Lebanon, India, Colombia, Romania, Switzerland, Portugal, Austria, United Kingdom, Germany and Japan.

The turn of the 21st century has been marked by dramatic changes in the political, social and environmental panorama, which are deeply affecting the way we live today: terrorism, migration and global warming are certainly the most pressing issues, and they are putting at risk our very life on this planet. So far we have come to acknowledge that we must simply coexist with such problems and learn to live with their consequences in our everyday life. But while coexistence refers to the mere - and often imposed - action of living together without any productive interaction, co-habitation implies living together peacefully, while promoting some form of exchange. This is why we believe that in the future architecture, city, and landscape should approach such emergencies fostering interaction and productive exchanges between different disciplines and cultures.

Co-habitation can be achieved through tactics, which offer the possibility to generate new creative spaces within the fields of architecture, city and landscape. Tactics - a term, which evokes the ancient Greek expression art of arrangement - are actions undertaken by, or addressed towards, the actual consumers/users. Such actions are flexible, they can be continuously modified, reshaped and adapted to cope with external interferences.

The International Scientific Conference - organized in the framework of Tirana Architecture Week 2018 - aims at exploring contemporary research activities and design tactics that deal with the topic of co-habitation from different perspectives and within different fields of interest, directly or indirectly related to architecture, city, and landscape. Through the observation of different tactics adopted by researchers and professionals, the hope is to identify new research and design trajectories.

Within this broader framework, three contexts (architecture, city, and landscape) and eight topics related to the concept of co-habitation (climate change, ecosystem, energy transitions, memory, migration, mobility, technology, and tourism) have been identified. Contributions from the fields of sociology, architecture, urbanism, planning, leisure and cultural studies, geography, anthropology are welcome, as much as other sciences not mentioned above.



Laura Pedata is an Architect and researcher, her main interest lies in observation, analysis and representation of urban landscape conditions and environmental regeneration strategies. Her most recent design research initiatives are focused on residual landscapes in transitioning cities and on the reassessment of their role within the urban context, considering them as a potential ground for future urban development. Currently Laura is lecturer in Landscape Architecture and Sustainable Design at POLIS University, where she received her Doctoral degree in Architecture, University of Ferrara – POLIS University. She also works as bioclimatic and landscape design consultant and takes part in EU funded research projects. Laura holds a Master in Architecture from “La Sapienza” University, Rome and a Masters of Architecture II degree (M.Arch.II) from UCLA. She was awarded a Fulbright Scholarship in 2007. Laura is a Licensed Architect since 2007 and was co-principal of the architecture office ‘ungroup’ until 2011. From 2009 to 2011 she was an Adjunct Professor in Landscape Architecture and Architecture at University of Rome “La Sapienza”, and from 2012 to 2013 she was employed by SOM in San Francisco.



Enrico Porfido is a licensed architect graduated at Ferrara University. His research activity started in 2012, joining ClusterTheory - a multidisciplinary research group focused on theoretical approach in contemporary architecture practices. In 2013 he studied at Oslo School of Architecture (AHO), where he continued his research activity working on Santo Domingo grid. His working experience at landscape office PROAP in Lisbon, introduced him in the landscape design panorama. In 2014 he cofounded “pais(vi)agem”, an independent research group that aims to develop an innovative touristic model, using it as tool for regenerating and protecting the landscape. Since 2015 he is a collaborator of the departmental research unit Sealine of Ferrara University. Now he is a researcher and lecturer at POLIS University, developing a research on tourism development in Balkan countries, with a specific focus on the Albanian coastal territory. Recently he has been invited as external expert in the Landscape Master of UPC (Polytechnic University of Catalonia) in Barcelona. He is also member of the research unit Institut Habitat Turisme i Territori, UPC Barcelona and University of Malaga.



Loris Rossi graduated in architecture in 2004 at “La Sapienza” University of Rome, Master degree in Architecture “Ludovico Quaroni”. He was awarded a PhD scholarship in Architectural Composition and Theory at “La Sapienza” and he developed part of his PhD dissertation research at the Department of Architecture and Urban Planning of UCLA, in Los Angeles. He was an adjunct professor at the Five Year Master course in Architecture EU of “La Sapienza”. From 2005–2011 he was co-founder of the ungroup Architecture office based in Rome. Since October 2011 he is a Full time Professor at the POLIS University in Tirana, from 2012 till 2013 he was Dean of faculty in Planning and Urban Design. In January 2015 he was Visiting Faculty Member at UCLA Department of Architecture & Urban Design, Los Angeles California. Currently he is Head of the Applied Research Department. His most recent research field is centered on observation, analysis and investigation in the context of Urban expressions, where the character of spontaneous processes is a manifestation of interrupted city images.

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Opening lecture



Stephan Trüby is Professor for Architecture and Cultural Theory at University of Stuttgart. After studying architecture at the AA School in London, he initially worked as an architect in firms in Zurich, Berlin, and Munich, before going on to teach architecture theory from 2001 to 2007 at the University of Stuttgart, where he was a research assistant at IGMA, and from 2007 to 2009 at the Karlsruhe University of Arts and Design (HfG) as a visiting professor. From 2009 to 2014 he ran the English-language postgraduate program MAS Scenography / Spatial Design at the Zurich University of the Arts (ZHdK) and from 2012 to 2014 he was also a lecturer in architecture theory at Harvard University's Graduate School of Design. He was head of research and development for the 2014 Venice Architecture Biennale. His best-known publications are *architektur_theorie.doc: Texte seit 1960* (edited with Gerd de Bruyn, Birkhäuser, 2003), *5 Codes: Architektur, Paranoia und Risiko in Zeiten des Terrors* (edited by Igmade, Birkhäuser, 2006), *Exit-Architecture: Design between War and Peace* (Springer, 2008), *The World of Madelon Vriesendorp* (with Shumon Basar, AA Publications, 2008), *Hertzianismus: Elektromagnetismus in Architektur, Design und Kunst* (Fink, 2009), and *Germania, Venezia: The German Entries to the Venice Architecture Biennale since 1991* (with Verena Hartbaum, Fink, 2016).

International Scientific Speakers



Sotir Dhamo is one of the founders of POLIS University, and currently is the Administrator of the Founding Board of this university. He is an architect and urban planner with a long experience in these fields. He participated in several research studies conducted by the Institute of Architecture and Urban Planning since the early '90s, and later he contributed in other public and non-governmental organizations such as the Ministry of Public Works, Co-Plan, etc. In addition, he has earned an Executive Master degree in public administration from the Syracuse University in US, as well as other post-graduate qualifications. He taught for some years in the Polytechnic University in Tirana as a guest professor, and currently he is teaching urban design and site planning analyses in POLIS University. Among other things, he is co-founder of Metro_POLIS, a studio acting in the field of Architecture; co-founder of Forum A+P, the scientific journal of POLIS University, the only Albanian professional periodic in the fields of architecture and urban planning, which is published only in Albanian version.



Camillo Boano is Professor of Urban Design and Critical Theory at The Bartlett Development Planning Unit (DPU). He is Co-Director of the UCL Urban Laboratory co-Director of the Building and Urban Design in Development MSc at the DPU. Camillo's research has centred on the complex encounters between critical theory, radical philosophy and urban design processes, specifically engaging with informal urbanisations, urban collective actions, as well as crisis-generated urbanisms. He is working on a series of interconnected research projects in Latin America, South East Asia and the Middle East on urban infrastructures, habitability and city-wide upgrade. Prior to joining UCL, Camillo worked in development and architectural practice for a number of years, became a research fellow at the Refugee Studies Centre in Oxford, joined the World Habitat Research Unit in Switzerland, and the Norwegian University of Science and Technology where he worked on a number of research and consultancy projects concerned with environmental forced migration, humanitarian urbanism, temporary shelters and post-disaster housing reconstruction. He is author *The Ethics of a Potential Urbanism: Critical Encounters Between Giorgio Agamben and Architecture* (2017), and two edited books *Urban Geopolitics. Rethinking Planning in Contested Cities* (2018) with Jonathan Rokem and *Neoliberalism and Urban Development in Latin America: The Case of Santiago* (2018) with Francisco Vergara-Perucich.



Maria Goula is an Associate Professor at Cornell University in the Department of Landscape Architecture. For over 20 years she taught and worked professionally in Barcelona, Spain. She develops research on coastal tourism, especially in regard to the interpretation and reinvention of leisure patterns regarding coastal dynamics. Being herself a designer, she is mainly interested in translating interdisciplinary knowledge on the coast into design protocols. The spectrum of her research covers the history of Mediterranean coastal tourism and Landscape.



Thomas Dillinger studied Spatial Planning at Vienna University of Technology and completed in 2003 his PhD thesis in the field of Endogenous Regional Development. From 1993 till 2005 he was lecturer at the Institute for Urban Design and Planning. Since 2005, he is head of the Centre of Regional Planning and Development at the Faculty of Architecture and Spatial Planning, Vienna University of Technology. He was visiting Professor in Gdansk, Sofia, Novi Sad, Pristina and Tirana. He organized several joint study projects in the field of urban and regional planning. Actually he is the national coordinator of the CEEPUS Urban innovations networks. He is also involved in a Smart City Project in the context of a new build regional mobility hub in Vienna. Recently he was involved in designing the Regional Framework Plan for the area north of Vienna. In the past he also was involved in designing the Regional Masterplan for the surrounding of Bratislava. Since 2013 Vice dean for Academic Affairs in Spatial Planning at Vienna University of Technology. He is the National Representative of Austria in AESOP.



William Veerbeek is one of the founders of the Flood Resilience Group at Unesco IHE-Delft, Institute for Water Education in Delft, The Netherlands. He has a wide experience in area of urban climate adaptation in The Netherlands as well as internationally. His work was instrumental in the refinement of national flood impact assessment tools, which were tested in Dutch paradigm shifting projects like UFM-Dordrecht and Rotterdam-based projects in the Dutch Knowledge for Climate programme. He worked extensively in megacities like Beijing, Dhaka and Mumbai where his work focussed on the development of long term urban growth projections and subsequent changes in disaster risk. Strengthening IHE's mission in capacity development, William has been training many cities in climate adaption, especially in Southeast Asia. Currently he is developing a city-to-city learning network on green-blue infrastructure in the North Sea region.



Michelangelo Russo is full Professor of Urban Planning and is the head of the Laboratory of Urbanism and Urban Design at the Department of Architecture, University of Naples Federico II, where he is since 2013 the Coordinator of the PhD Program in Architecture. He is a member of several national and international research groups. Since 2014 he is President of the SIU, Italian Society of Urbanists, the Academic and Scientific Society of Italian professors of Urbanism. He is carrying out financed researches of national and international interest. His research activities, design oriented, deal with themes, knowledge and the phenomena of contemporary urban design in relation to the contemporary cities changes, urbanized areas, landscapes, and the complex interaction between environment, space, ecology.

Closing lecture



Jason Hilgefert is an urbanist|architect who studied at the University of British Columbia, University of Cincinnati, and is currently a PHD candidate at RMIT. His work experience includes working with Peter Calthorpe, Rahul Mehrotra, MaxwanA+U, and ZUS. He founded Land+Civilization Compositions, a Rotterdam|Hong Kong based design studio. He was a subcurator in the Shenzhen/Hong Kong Urbanism/Architecture Biennale. He is the Academic Director the Aformal Academy for urbanism|landscape|public art in Shenzhen. He was also a regular writer, contributing to assorted publications over the years including Volume, uncube, SITE and more. He recently founded the Institute for Autonomous Urbanism.

Notes

All papers presented at this conference have undergone a process of **double blind review** by the members of the international scientific committee. The quotation system adopted is the **Harvard Referecing System**.

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conference proceedings

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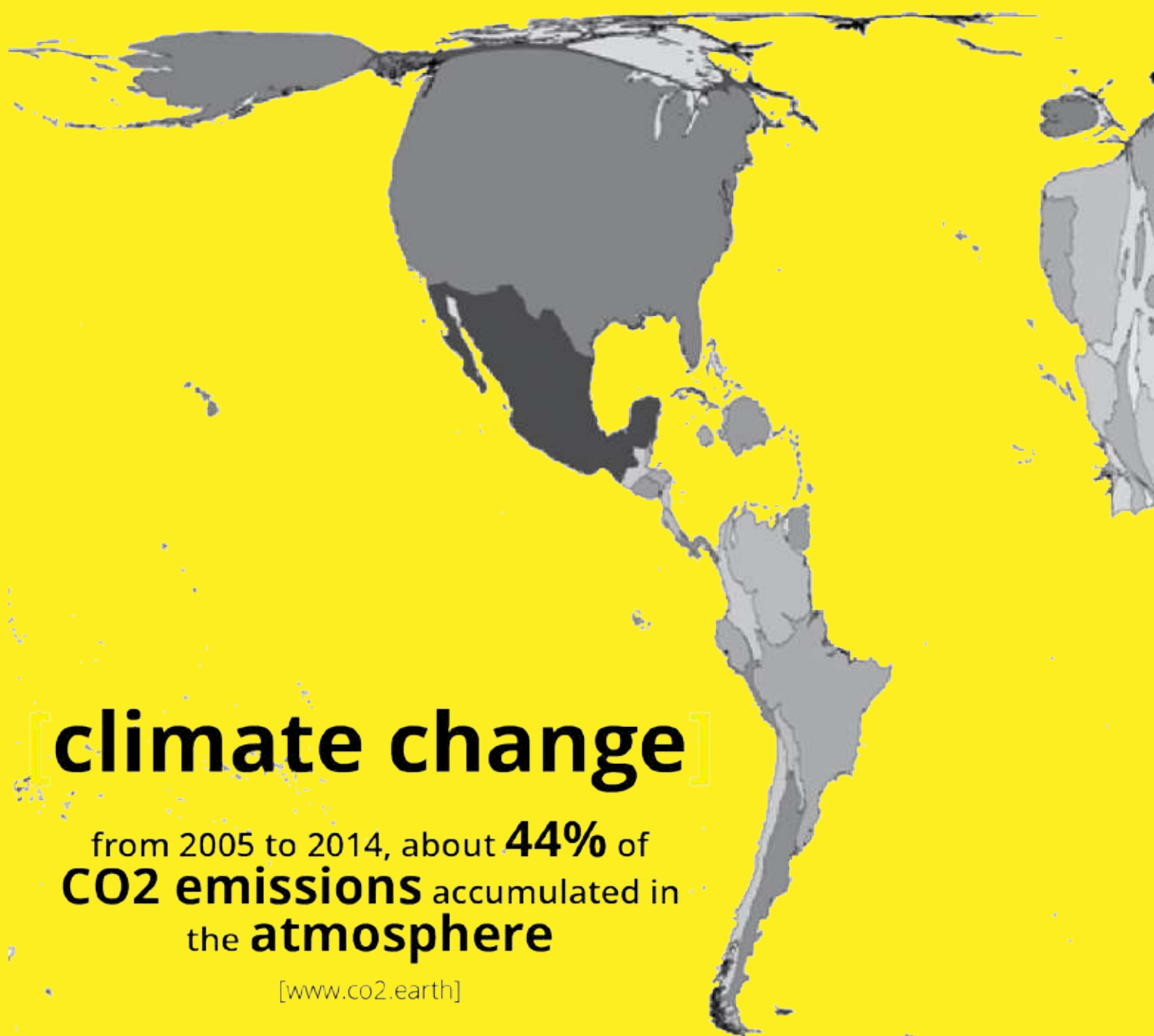
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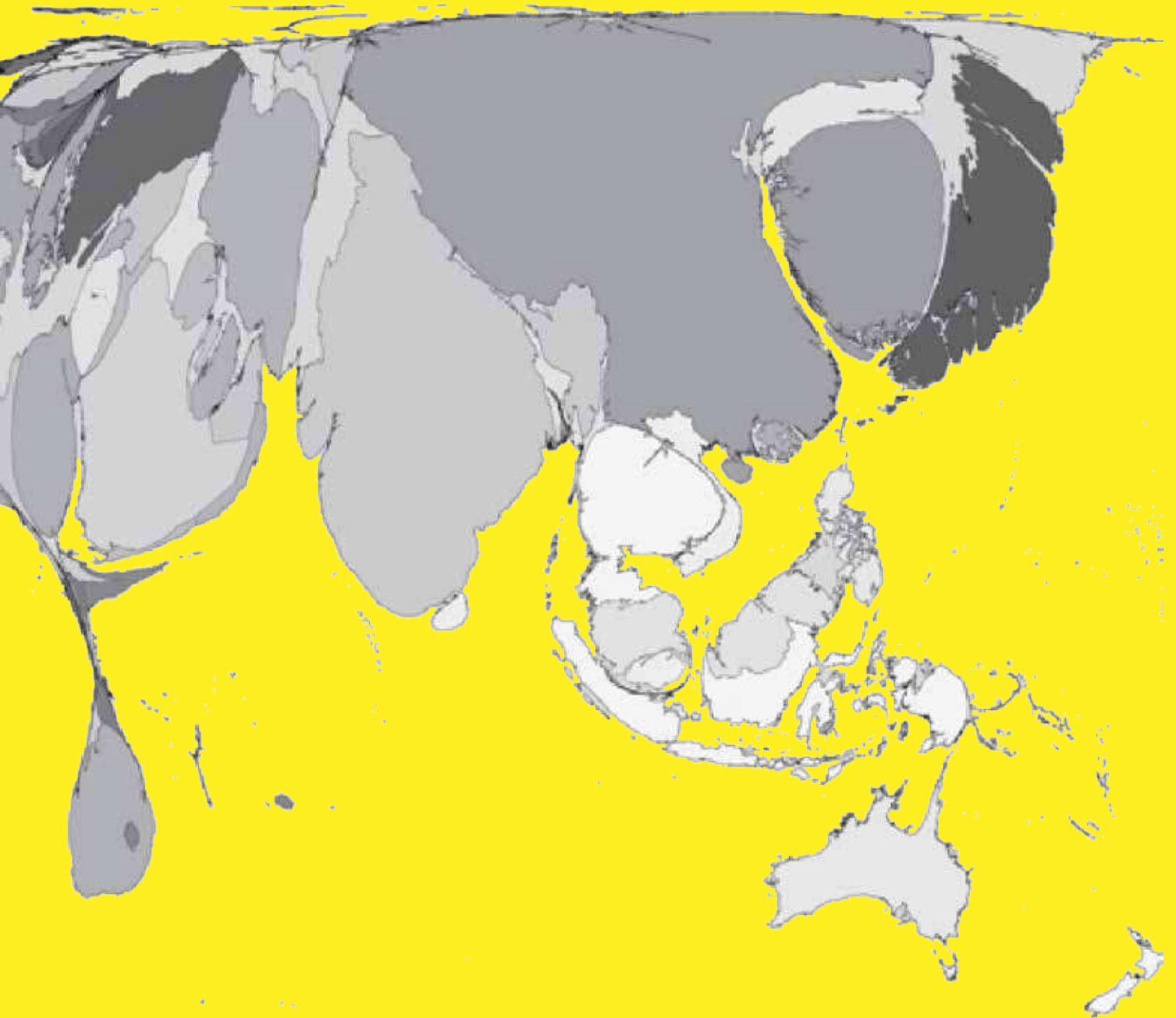
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[climate change]

from 2005 to 2014, about **44%** of
CO2 emissions accumulated in
the **atmosphere**

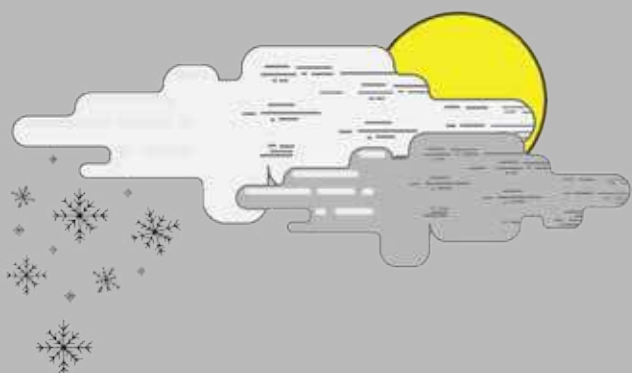
[www.co2.earth]



Map 297 'Carbon emissions increases' © worldmapper.org

Global warming, and the consequent desertification and water withdrawal, are leaving an indelible sign of men on the planet. Pollution, waste, morphological and biological alterations are activating a set of chain reactions, which are leading toward natural disasters like flooding and increasing biodiversity loss. In such a scenario, strategies of mitigation are not enough to reverse the trend. Researchers are invited to contribute to the session through relevant studies related to climate change, providing an in-depth understanding of the phenomenon and its consequences in a specific place or region - focusing on its impact on biological life, atmospheric conditions, landscape, and architecture - and proposing adaptation tactics aimed at the improvement of system's resiliency.

[CLI/01]



The Bengal Transect: Territorial Strategies for a Resilient Water-based System

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abstract

The Bengal Region, which extends from the Himalayan Mountains to the Bay of Bengal, is currently one of the most vulnerable areas in the world in the face of climate change. Melting glaciers in the world's highest mountain range, severe floods in the Ganges-Brahmaputra basin, and sea level rise in the Sundarbans are all exacerbated by deforestation, uncontrolled urbanization and one of the highest population concentrations in the world (1.300 pp/km²). Farmers here are forced to migrate to urban centers such as Dhaka and Kolkata, which are coastal global megacity experiencing the effects of climate change with millions of lives and livelihoods at risk from inundation, increased rainfall, groundwater contamination, water quality, and rising temperatures. In this fragile transect, the paper analyses the complex environmental and social challenges triggered by climate change in the Bengal region by looking at vegetation cycles, changing crop patterns and ecological changes in warming waters. In the second part of paper the researchers envision a territorial design strategy - water-based system - that can accommodate the dynamics of ecologies and farmers to tackle growing uncertainties in agriculture and aquaculture practices. The paper is centered in the idea of "free-flowing river" - water bodies unaffected by human-made changes to their flow and connectivity. This study aims at proposing an alternative interpretation of a land-centric approach, through a design vision made of water micro-infrastructure for Bengali migrant communities. By accommodating the river flow, fishes, birds, insects and human will benefit from the proposed adaptive resilient system as it embraces the natural uncertainty and complexity of the Bengali hydrology. This paper does not intend to show evidence-based results of the positive impact of "free-flowing river" system, but it aims at opening an interdisciplinary conversation around the vulnerability generated by highly engineered river basin specifically in context of high population density and climate change.

keywords Bengal, Ganges, migration, ecology, climate, India

Introduction / From the Himalayas to the Bay of Bengal: a socio-ecological transect at risk

As it stretches from the Himalayas to the Bay of Bengal, India's Bengal Region crosses distinctive geographies. The territorial varieties of the region have been bringing a wide range of indigenous biodiversities and productive landscapes to the people, but in today's changing climate, Bengal has become one of the most vulnerable area in the world. In the northern part of Himalayan range, glacier volume has been reduced by 30% over the course of 30 years¹. In the same time, the Himalayas are hosting several lakes filled with glacial meltwater: these high-altitude glacial lakes could easily generate floods in the neighboring valleys in case of avalanches and earthquakes. Villages have been destroyed and causing countless loss in lives and life sources. Frequent extreme weather phenomena and changing weather patterns triggered by climate change are dramatically challenging these fragile socio-ecological systems: plains and villages are either flooded or in drought during the uncertain cycle of seasons. In addition to climate related issues, the majority of farmers also do not own the land they cultivate, instead tilling the land as tenant farmers with no access to government loans or insurance plans that offer some protection.

Farming is climate-sensitive. Across the country, about 60 percent of India's population still depends on the land for its livelihood - a huge problem as climate change brings more weather extreme phenomena that make bringing in a harvest harder. In the coastal areas the amount of farmland available is shrinking as salty sea water - which kills most plants - has surged inland, tainting the soil. These changed weather patterns are not allowing farmers to ensure timing and quantity of harvest, therefore cities become the only spaces where to find job opportunities. This migration process is not only increasing the population density of the cities in which poor infrastructure

systems are not able to cope with the rapid increase of residents, but also the farmland is getting abandoned putting the urban areas in serious food security issues.

Megacities such as Kolkata and Dhaka have long become the main destinations for migrating farmers and fishermen, who have given up their farming skills in order to find different jobs in the urban context. This mass urbanization is clearly manifested through new slum areas appearing both in the core and in the outskirts of the cities. Here an established informality of social and structural dynamics clashes with the inadequate primary infrastructures, putting these residents at serious risk of acute shocks (e.g floods).

In the Sundarbans (a mangrove coastal archipelago on the Gange's delta), the coastline is retreated at about 200 meter each year (The Japan Times, 2018). and sea water could rise to 1 meter by this century. Every season, the people living in the Sundarbans build embankments to protect their crops from saltwater, but systematically monsoon rains and flash floods wash them away. Over the years, the Sundarban people keep moving from one island to another and battling with the rising water. In this challenging climate scenario, the local inhabitants of this amphibious ecosystems are also experiencing lack of basic rights such as belonging to a specific national jurisdictional system. Because of the continuous evolution of the landscape the border between India and Bangladesh keeps evolving and maintaining a unique porosity that make some of the Sundarban residents stateless.

The elements that are creating this unique geographical transect such as mountains (Himalayas), plains (Indo-Gangetic plain), megacities (Dhaka and Kolkata) and coastal islands (Sundarbans) are all linked to each other through a common component: water (Ganges). Therefore the design-oriented research presented in this paper outlines an adaptive remediation mechanism nested in the natural flow of water instead of engineered water bodies with dams, artificial channels and barrages. Utilizing river as an agent of design across the Bengal region, this paper explores ways in which communities could accommodate flexible habitation strategies living in a free-flowing river system.

1 / Objectives / Statement

1.1 / Free Flowing Water

Along the Bengal region, River Ganges branches into River Hooghly and became the main asset for agriculture, commerce and holy rituals. Since more than half a century ago, the river has been highly engineered to accommodate people's need. Most of hard infrastructures such as dams and canals have been built to irrigate the farmlands, distribute water sources to polders and to resist flooding from the highlands. However, as the climate is rapidly changing, the static infrastructures are unable to adapt, causing further damages such as flash flooding, river siltation and disrupting the biodiversity. The free-flowing water concept aims to switch from a land centric urbanism, which separates the land from the water, to a more flexible and adaptive water urbanism. Within the context of increasing flood risk, sea level rise and climate change, the separation of land and water have implicated the implementation of walls, levees, pumps and 'retreat' (Da Cunha, 2017). By understanding water and land as an inseparable component, we can begin to see the possibility of land-making within the water realm. Living within the water means building life around it, adapting to its movement and give it room to flow. Interventions, such as channel naturalization, could allow flood to pass and reduce saltwater intrusion in the delta.

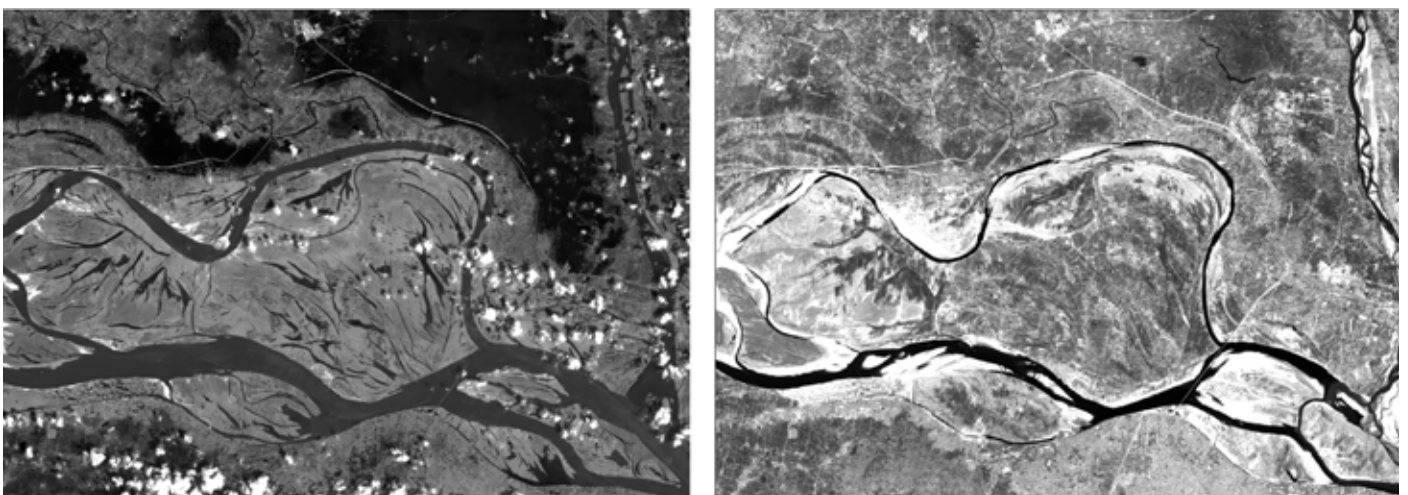


Figure 01. Ganges: land and water patterns in different seasons (dry-monsoon)

Following the river from the North to the South, we analyzed through remote sensing analysis tools (Landsat 8 and Normalized Difference Water Index) the areas subject to seasonal floods along the delta. After calculating the hectares of land affected by seasonal floods, we studied the landscape patterns by examining changes of crops in reaction to the water dynamics. (Figure 01)

Having accepted the temporality of the Bengali landscape, the design study is built upon four locations along the Gangetic plain from the Himalayas mountain to the Bay of Bengal: Teesta Dam with the high-altitude ecology of the tea terraces, Farraka Barrage surrounded by farms and fishermen villages on the border with Bangladesh, Howrah Bridge as the urban center of Kolkata and the levees in the Sundarban Bay. Each of the sites constructs a design prototype made of amphibious units (Figure 02), which will propagate and reform new landscape on and along the water. This self-perpetuating system will be connected through a free-flowing water approach: rivers will be slowly “de-engineered” and local communities will adapt in a new resilient landscape (Figure 03).

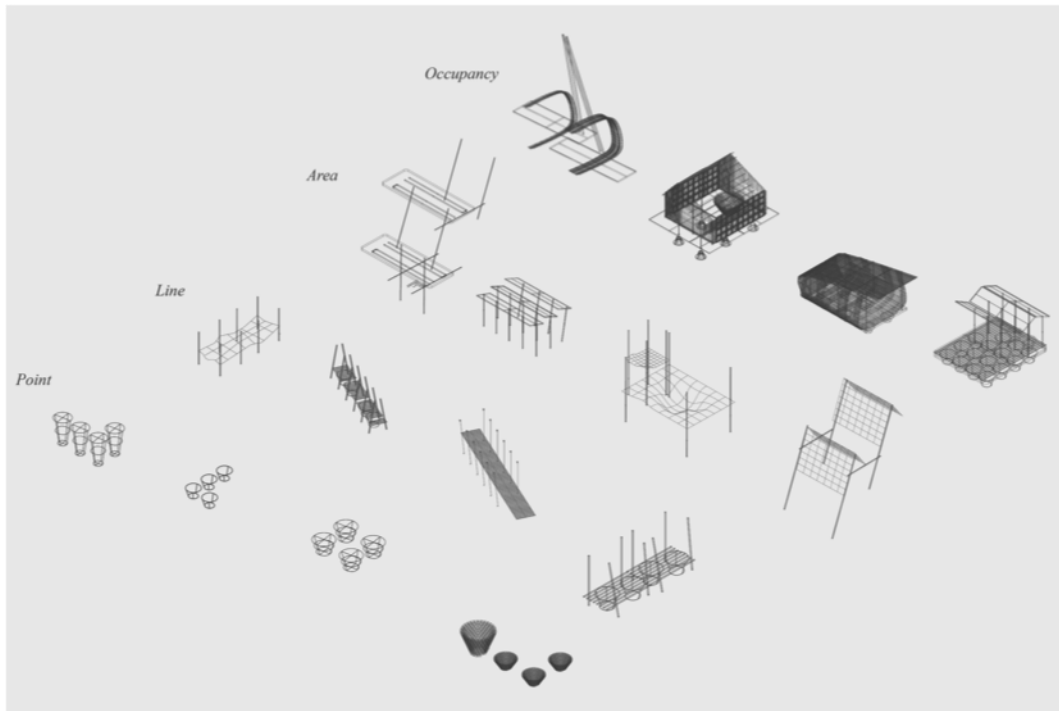


Figure 02. Series of design units, organized according to the construction process (from point to occupancy/volume)



Figure 03. Sundarban: local communities living on amphibious structures envisioned by the authors

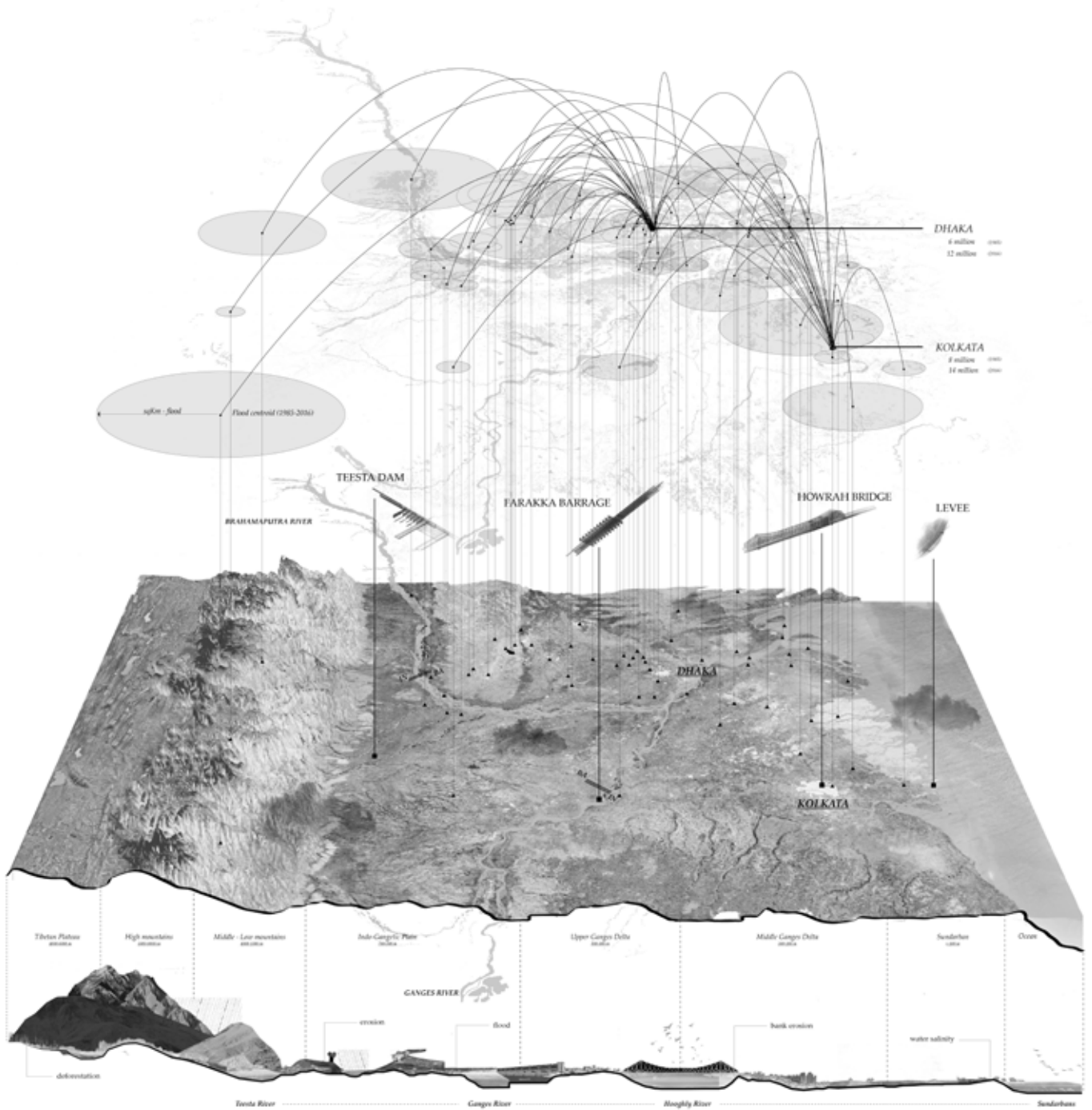


Figure 04. Territorial section of the Indo-Gangetic Plain: the drawing shows the size of the flood happened in the last 20 years (radius of the circle) and the flow of people displaced to the megacities of Kolkata and Dhaka

1.2 / Hacking the Hardscapes

The currently existing dams, barrages and levees were constructed to restrict the motion of water, sediments and ecologies. These fixities built into an atavistic flux have caused untold damage, introduced considerable uncertainty and created more environmental disruption and community's displacement. Infrastructure is the biggest culprit in interfering with the flow of a river. The wrong dam in the wrong place changes how a river flows and causes blockages. Animals that migrate to find food, reproduce, or seek new habitat as the seasons change - such Ganges river dolphins or Hilsa fishes - can no longer do so. This threatens important animal populations and people who depend on freshwater fish for survival.

What if the Bengal area was a potential ground to accommodate migrant communities in response to the dynamics of climate change? Would design be able to make a new form of landscape that is adaptive and flexible?

From the northern part to the southern one, Teesta Dam in the Himalayas area, Farraka Barrage in the farmland,

Howrah Bridge in the heart of Kolkata and Sundarban levees, are all parts of the hard infrastructures or as we previously defined as 'fixities' along the Gangetic plain (Figure 04).

The design questions we explored, tried to define how to challenge these infrastructures into anchoring points for new land making system to grow. In the concept of Megastructures (Maki, 2004), there might be promise that such big structures could be utilized as skeletons to guide and stimulate public structures around it, then further extend new three-dimensional concept of land use. Fixities as a skeleton - if designed to accommodate the flow of water - would be able to create new land form. In their research work Manhur and Cunha suggest the concept of "aqueous terrain" based on negotiation in between water and land. Their work explore potentials of embracing uncertainties versus fixed infrastructural elements in estuaries and water by looking at fluid occupancy in the Mumbai region (Manhur and Cunha, 2009). Hence, our work emphasizes this potential by trying to hack these fixities in the Bengal region and to offer an alternative resilient strategy based on the accommodation of climatic uncertainties and temporal crisis.

1.3 / Methodology

We seek to create a resilient strategy based on water urbanism. By promoting living with the water to the society, resiliency can be built and equity to obtain adequate water distribution can be achieved. Our approach finds numerous references in the existing literature - specifically from the Netherlands, Australia and China.

In the Netherland, living by the delta also means to understand the complex system of river basins along with its flood risk. After years of separating land and water by massive protection infrastructures, in 2006 the Dutch Kingdom started 'Room for The River' programme (Fokkens, 2006), which adopts multi-level governance to increase spatial quality by expanding river floodway and working with natural landscapes. Dykes were improved, dams and flood walls were removed, replaced by more water retentions ponds and water storages.

As in Bengal, a surge of population in China has increased multiple risks of surface water flow. The 'Sponge City' concept was then implemented by Chinese government to improve water management strategies through urban planning and design actions (Chan et al, 2018). Previously, the 'sponge' concept has long been promoted by the Australian government in 'Water Sensitive Urban Design'. As proposed by Wong and Brown (2009) on the Water Sensitive Cities', the three key pillars are not just about altering physical infrastructure such as 1) building diversity of centralized and decentralized water infrastructure, but also acknowledging the 2) provision of ecosystem services for built and natural environment, and understanding the human factor in 3) building socio-political capital for sustainability and water sensitive decision making and behaviors.

The Netherland, China and Australia might have different typologies of rivers, water issues, and government systems, but all of these Countries have at least three things in common:

1. The acknowledgment on working with natural environment as using natural landscaping in 'Room for the River';
2. The importance on integration between water infrastructure and spatial planning such in 'Sponge City';
3. The implication of good governance and commitment towards long-term plan, which might be challenging in Bengal as there has not been a high interest on cross-disciplinary governance processes.

Hosagrahar (2010), in his paper "Landscapes of Water: Negotiating Global norms and Local Cultures in Delhi" has explored Delhi`s water structure and accessibility through different era from early 17th century. Other than addressing vital issues such as water transportation utilization and access to clean water, he also pointed out the potential of collective culture in Bengal by making the water public:

"The implications for using a historical perspective on the cultural landscapes of water are numerous in modern Delhi. First, a comprehensive planning and integrated approach would be called for that would include understanding the terrain and the geological and hydrological landscape, including vegetation; local meteorology; the economics of supply, demand, and pricing; the technologies of filtering, treating, and transporting clean and waste water; and institutional and governance mechanisms. Second, water would be made a visible element of the landscape rather than hidden in underground pipes and consumed in private. Making water sources visible, aesthetic, and public is likely to encourage a sense of community, identity, and collective responsibility, and help in keeping water sources visibly clean. Third, the ideal of having running water in the home 24 hours a day may be called into question, since only a minority of homes now have that provision. For instance, using tankers with hygienic water, regular delivery to neighborhoods may make it easier for large numbers of households to have access to stored water, rather than allowing only a few households to have running water".

In regard to Hosagrahar`s views on collectivism, our proposal seeks to use rudimentary sources available in the entire Bengal region (bamboo and bricks) so then locals can be proactive through the process. Using these two

simple materials, the idea of scaling up to a regional impact could be gradually extended. Bamboo, other than highly available, affordable and easy to grow, has been proven suitable for the Bengali climate. Our design concept aims to utilize these two elementary materials into the hard infrastructures in order of diminishing blockages such in 'Room for the River', for the four selected sites: Teesta River in Kalijhora, Farrakka, Howrah Bridge area in Kolkata and the Sundarbans. We have then developed four design steps of implementation for each site: (1) edge, (2) infrastructure, (3) anchor and (4) rhizome. At the completion of the four steps, we aimed to construct the infrastructure into a system, which can eventually grow organically and create alternative habitation for migrant social and ecological communities.

1.3.1 / Bengal Flux: Edge - Infrastructure - Anchor - Rhizome

The first design step is to define the edge of the existing landscape. By extending the edge, there are several land-forming possibilities within the realm of water to further create habitation components. In Kalijhora, West Bengal, the Teesta River flows along the high elevation in between steep mountains and hills. The melting glacier, which often causes flash floods, and illegal logging, which triggers land erosion, have forced the locals to move elsewhere. In this specific site, we aimed to extend the edge from 'upland' to 'into-the-water'. Upland extension has the objective to support the hills and mountains from land-slopes and erosion. By utilizing bamboo, we propose to design farm terraces along the hills that would not only strengthen the land surface but also could double-function as a part of an agricultural development for the local people.

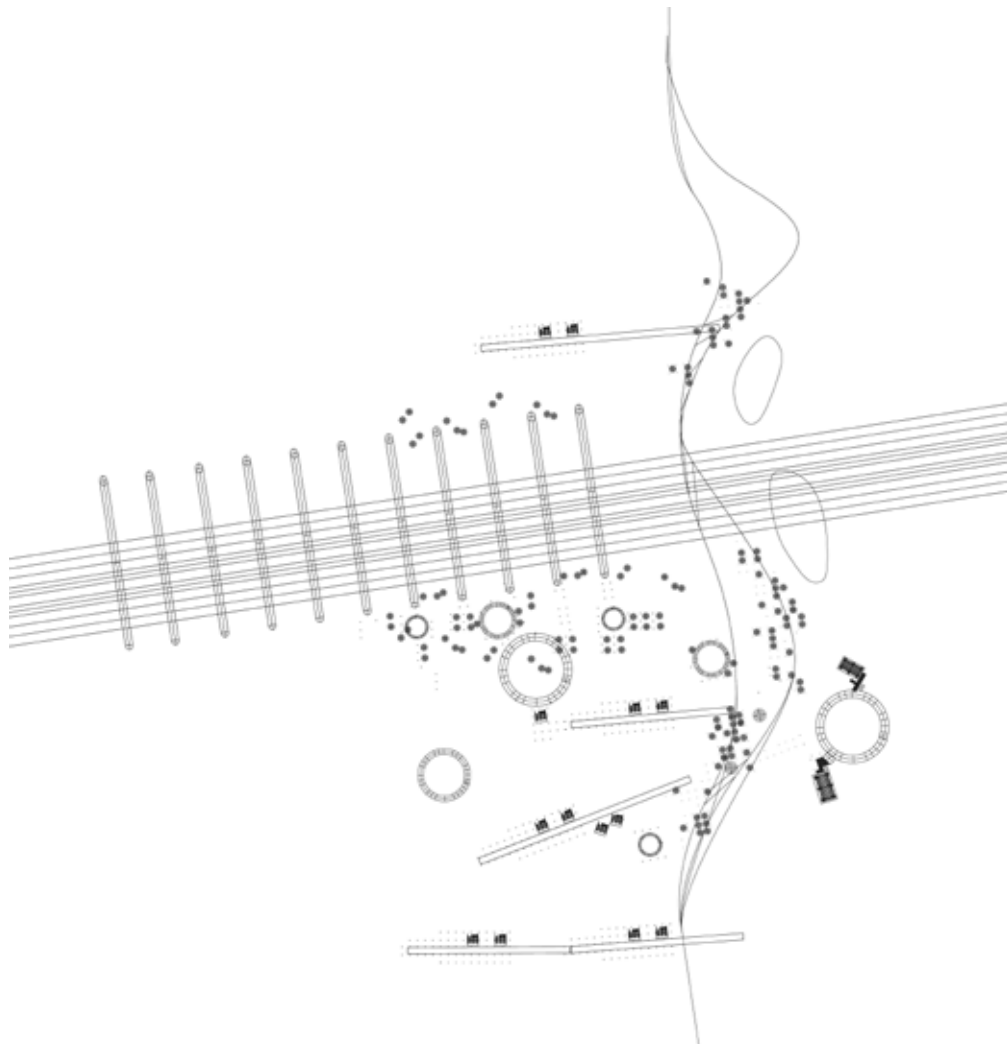


Figure 05. Design strategies developed on the side of Farakka Barrage

Hundreds of kilometers south from Kalijhora, Farraka town lays along the Ganges River, right before the Indo-Bangladeshi border (Figure 05). The town depicts the rural living of plain farmland with its water channel system for irrigation. The infrastructure is the local potential of transportation: logistic routes, railways, pathways etc. These components are able to further extend the role of edges, therefore logistic routes and pathways can extend over the water through simple bamboo elements attached to the underwater base of temporary river islands. These diffused system of bamboo structures will then be solidly attached to the hard infrastructure currently existing in the Bengali landscape: dams, barrages, bridges and bunds. These elements will then act as anchors.

These anchors rather than disruptive could be re-envisioned as such to accommodate new changes. As over the time, if allowed, space for landscape has emerged as a new urbanism and able to help complex natural environments (Waldheim, 2006). For instance, Howrah Bridge in Kolkata has long stand as a main infrastructure along the river. The bridge as anchor could be instilled added components such as vertical garden to distill the pollution around the area. It could also open the possibility for the bridge to act as a place for migratory birds to seek refuge in the city.

Rhizome is the ultimate stage of the imagined land independent resilient habitation strategy. This is based on cohabitation and collectivity. In this stage the soft infrastructure emerges and creates a dynamic relationship, through exchange mechanisms between different nodes along the river. As stated by Deleuze and Guattari, rhizome is a nomadic resistance structure, which fosters horizontal interaction and generates a non-fragile interconnectedness on the edge of water and land. Hence, this “rhizomatic-urbanism” creates the possibility of mobility and re-growth. The hard infrastructures (anchors) will provide interdependency for the rhizome to generate new form of urbanization in the water, creating an adaptive infrastructure over time and scale (Deleuze and Guattari, 2004).

The Bengal Flux vision is a resilient strategy based on local materials that communities will be able to utilize in four locations along the Bengal Region: Sundarbans delta, Kolkata Howrah bridge, Farakka barrage and Teesta dam. In the Sundarbans the main impact focuses on the creation of a stronger river-edge that can host mangrove forest to face erosion and sea-level rise; in Kolkata the design impact focuses on water purification between the railway-station and the flower market through a densification of the flower market activities on the Hooghly river. In Farakka the design impact focuses on the river bank erosion and on the hilsa fish migration, currently stopped by the existing barrage infrastructure; new fish ladders and wetlands around the dam can create a successful impact onto the ecology and new fishing opportunities for the surrounding villages. In Teesta, Himalayan region, a new anti-erosion infrastructure made of bamboo will work cohesively with a sustainable water absorption through the tea garden terraces.

2 / Results

As initially mentioned in the abstract of this paper, our research does not intend to show evidence-based results of “free-flowing river” system. It aims at opening an interdisciplinary conversation around the vulnerability generated by highly engineered river basin specifically in context of high population density and climate change.

In order to create a productive conversation on this topic, we studied how riverbank configuration generates different erosion phenomena because of the speed of the water flow. This, in fact, is linked to the shape of the river bank (Figure 06). The more fragmented is the river section (e.g. river islands), the slower the flow of water will be in these areas: this will have a positive impact on the diverse pockets of ecologies that the river can host.

FLUIDODYNAMIC

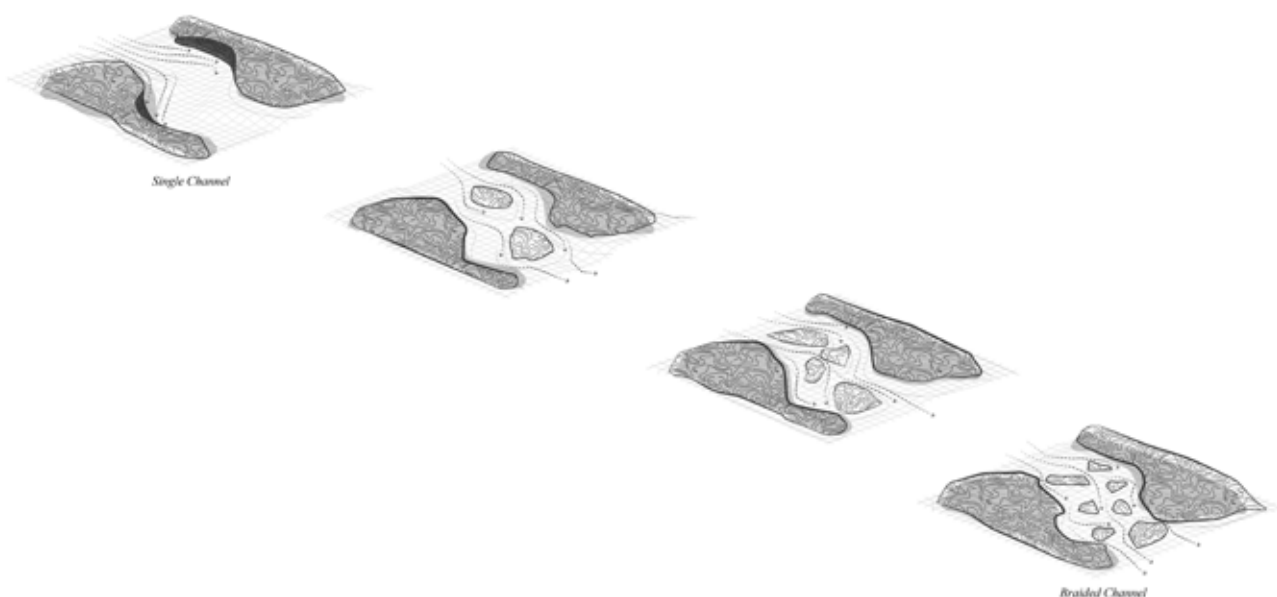


Figure 06. Conceptual diagram of fluid dynamic and river bank configuration

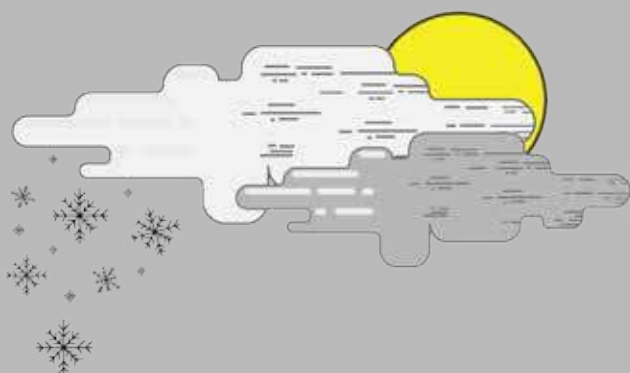
3 / Conclusion

Ganges Delta is facing social, environmental and geopolitical challenges for human and non-human livelihoods. Since over half of the century, the delta has been reformed through constructions of dams and canals, generating current challenges on flash-floods, erosion and groundwater contamination. Build upon this context, our vision wants to contribute to a contemporary design discussion that sees the potential of water as a driver of design by creating hackable infrastructures as anchors for land and waterscapes. The design concept is based on the free-flowing river theory, where resistance to flow turns into adaptation, and on a structured design steps (edge-infrastructure-anchor-rhizome). Local Bengali communities will get natural benefit from a harmonious system where fixities are hacked. "Bengal Flux" equips current fixities in the landscape including dams, barrages, bridges, and levees to accommodate the dynamics of local farmers. Its ultimate objective is to make a ground that embraces uncertainty and complexity.

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[CLI/02]



Climate resilience in Trento: understanding vulnerabilities and empowering adaptive resources

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abstract

The impacts of climate change are causing environmental, social and economic damages and are making the planet less liveable. In addition to temperature increases and precipitation changes, climate changes increase the frequency of extreme events such as floods, heat waves and water scarcity. It is evident that actions and decisions both at the global and local level need to be taken. Impacts in the urban environment are intensified by microclimatic phenomena (e.g. Urban Heat Islands) resulting from human lifestyles, morphology and materials used in cities. They are further exacerbated by population growth in urban areas.

The paper reports the first results of the study carried out in Trento, a town of 117'000 inhabitants located in the Adige Valley. It investigates the impacts of climate change in its urban environment and focuses on the possibilities of making the town more resilient, through a solid knowledge of the vulnerabilities and the capacity of developing further the opportunities already present in the territory.

In recent years, Trento joined European programs such as the "Covenant of Mayors" and launched projects to find solutions to the afore-mentioned challenges and traced scenarios for the future decades: a general decrease in total rainfall accompanied by an increase of precipitation maxima and a significant increase of temperatures are envisaged, leading to vulnerabilities to people and ecosystems, especially in the densest residential areas.

The aim of the paper is to show a series of design practices and tests, involving the Municipality and local Research Institutes, seeking to integrate the urban components with the elements of Green and Blue Infrastructure, in order to improve local microclimate and the valorization of spaces. The guidelines provided promote the creation of multifunctional spaces and aim to define replicable solutions that contribute both to mitigation and adaptation to climate changes.

keywords Urban Planning, Urban Heat Island, Green and Blue Infrastructure, Adaptation

Introduction

Climate change represents one of the biggest challenges that we need to address if we want to maintain our well-being and that of future generations. Its impacts are causing damages at the environmental level, but also at the social and economic ones (Carraro, 2015). Suffice it to consider the massive resources necessary after disasters to recover infrastructures, properties and human health or the increasing global migration flows with their possible consequences on human security and livelihood conflicts.

In particular, cities are increasingly feeling the effects of extreme events. On the one hand, cities are responsible for 75% of carbon dioxide emissions from energy use (IPCC,2014), on the other they are heavily vulnerable to the effects of extreme weather, in terms of damages to infrastructures and lives. In fact, according to IPCC7 (2014) and the European Reports, such as EEA (2012), the frequency and intensity of extreme weather events such as floods, heat waves and water scarcity are increasing. Moreover, approximately 50% of the world population currently resides in towns and cities and the percentage is expected to rise to 67% by 2050 (UN DESA, 2012). The impacts on human health are alarming: data confirm an overall estimated excess in mortality in the last years. For example, an excess of +11% was registered in 2015 in Italy. While the excess in winter (+13%) seems to be attributable to the peak of a flue epidemic rather than to low temperatures, the excess recorded during the summer (+10%) was attributed to the heat waves recorded in July and August 2015. Moreover, many Italian cities were struck by major flood disasters in 2015 with considerable economic damages (Michelozzi, 2016). Despite these considerations, many cities haven't addressed climate change yet. The reasons may include lack of relevant city policies and

action plans, existence of regulations on urban planning not yet adjusted, slow response to disasters, lack of public awareness. Among planners and decision-makers it is evident that a mitigation approach - referring to the global actions of reduction of emissions (e.g. burning of fossil fuels prevention) - is not sufficient, while it is necessary to promote local actions of adaptation that can make the towns more resilient. Adaptation strategies, in fact, consist of integration of climate issues into policy areas (e.g. ecosystems water management, agricultural development, etc.) and aim at limiting damages caused by extreme events. Cities need to provide adaptive and flexible approaches in decision making (Lu, 2013) and develop plans that include local actions to tackle the mentioned phenomena. Mitigation and adaptation require work in several areas: researchers and cities need to expand observations increasing the quantity and the types of data collection, in order to improve knowledge and awareness of the phenomena occurring in the cities for all the population. They also need to create new models in order to precisely define the risks for the urban areas and the way they will affect humans' well-being. Finally, it is necessary to promote actions, interventions and projects to make the town more resilient.

Thus, drawing on the review of policy documents and the re-elaboration of available data, this paper aims to understand the impacts of climate changes in the Trento's area. The paper is the result of the research carried out in the last 2 years. It began with the author's master dissertation "Trento City MicroClimate Changes" at University of Trento, supervised by Prof. Arch. M. Ricci and Prof. D. Zardi, developed between September 2015 and March 2017, focused on the mitigation of the Urban Heat Island in Trento. The research was further carried on in the second half of 2017 during the Climate KIC Urban Challenge in collaboration with University of Trento, Fondazione Edmund Mach and Hub Innovazione Trentino with the aim of finding innovative solutions for measuring, evaluating, monitoring and communicating values of marginal areas of Trento. The results of the collaboration consisted of the Bootcamp organization and the "Trento Smart Infrastructures: green and blue infrastructures for Trento: climate assessment report" publication¹.

The body of the paper is structured in three parts. The first section presents an introduction of the climatic conditions of the alpine town, based on the review of published materials from the main research centers of the territory. The second part provides an assessment of the planning strategies of the municipality related to climate change and the imagined future scenarios. The third part contains an interpretation of resilience in the environment of Trento based on the maintenance of the identity of the town.

Climate challenges of Trento

1. Context

Trento is located along the Adige Valley, which connects the Po Plain to the Brenner Pass. It has approx. 117000 inhabitants, but the inner city counts 56000 people. Since it is located in a valley, the development of the town is mainly mono-directional (N-S) and its growth in recent years has led it to incorporate all the surrounding suburbs. The town's geographical characteristics create a strong sense of identity and a feeling of territorial belonging. In fact, the mountain context shows pleasant natural views and wisely built landscapes, which is explicated in a diffuse urban system.

The sense of alpine identity and the attachment to its natural contexts have created in its inhabitants a sense of responsibility and sensitivity to wise soil consumption, the safety of hydro-geological and ecosystemic systems and the historical valorisation. Moreover, the configuration of the town and its territorial position contribute to cooperation enhancement towards efficient infrastructural and services systems at the local, regional and European level.

The geographical system consists of a slightly sloped valley, which becomes steeper in the western part of the town. The slopes on the eastern part of the town rise gently and allow for urbanisation. The main river Adige runs through the town and it is fed by a widespread and significant system of tributaries which flow into the main river in the area surrounding Trento.

The good climatic dataset boasted by the Province of Trento and its Municipality helped the Research Institutes of the territory and the Municipality itself to recognize and trace trends, resulting in a "Climatic Atlas"² and several reports on climate and its changes.

As an Alpine territory, the temperature regime is strictly connected to the terrain elevation: a negative gradient is evident and it is greater in the summer (Portoni, 2008). The available reports show an increasing trend of mean, maximum and minimum temperatures, which is particularly clear since the late 19th century. In fact, the most recently published climate change simulations predict a significant and continuous increase of temperatures, with a decrease of ice days and an increase of summer days (Di Piazza and Eccel, 2012).

Concerning precipitations, the annual mean value is 936 mm in the area of Trento. The trends consider the oscillations in its regime and report an increase between March and May, and values in the highest range until November with the maxima in October. The simulations show a general decrease in total rainfall and number of rainy days and an increase in mean and maxima precipitation depth, while a decrease of the number of consecutive wet days is expected (Di Piazza and Eccel, 2012).

2. Vulnerabilities and impacts

Understanding the vulnerabilities, their impacts and the risks of a territory is the first step to properly drive actions to mitigate or adapt to climate change. The collection of data and maps and the visualization of the phenomena is necessary to understand which actions are more suitable for each environment.

Trento, albeit a small Alpine town, presents some issues that if not properly treated can make the town less livable. The first vulnerability detected is the Urban Heat Island (UHI), a typical microclimatic phenomenon affecting our cities consisting of higher temperature values within urban area as compared to the surrounding rural areas and it is mainly caused by the morphological configuration of the town and human activities such as transportation and the use of heating and cooling devices. Despite the reduced dimensions of the town, the intensity of the phenomenon is typically around 3°C, with peaks of more than 6°C in particular conditions. Due to the alpine character of the town, UHI is mainly due to site morphology and topography and its values vary during the day, usually reaching higher levels during the night-time (Giovannini, 2011).

Compared to other cities, the UHI of Trento is not particularly high, but considering the synergy between this phenomenon and the predicted heat waves, it may lead to several cases of morbidity and mortality, especially for the most vulnerable categories of people (children and the elderly).

In addition to the impacts on health, a number of socio-economic and environmental impacts may result from higher temperatures and heat waves, such as problems related to higher demand for cooling causing possible energy supply deficits, water supply (especially for agriculture), failure of services.

One of the results obtained in the first steps of the research is the definition of the heat-related risk level, obtained from the combination of temperatures, population density and density of vulnerable people (Morabito, 2016). The results highlighted three priority areas that are particularly at risk due to high population density: the historical center, the areas along the river Fersina and the area of Cristo Re (Fig. 1).



Figure 1. Heat-related risk map, obtained by the combination of density, density of vulnerable people and air temperature. The red gradient represents the increasing level of heat-related risk: three main areas are at risk, the so-called "Cristo Re", "Historical Center" and "Santa Chiara and San Giuseppe" neighborhoods. Each main area contains sub-areas at higher risk, due to higher density levels.

1 / Codemo, A.; Eccel, E.; Favargiotti, S.; Gretter, A. (2018). Trento Smart Infrastructures: green and blue infrastructures for Trento: climate assessment report. [Technical report]. handle: <http://hdl.handle.net/10449/47108>

2 / Climatlas available on the web: <https://climatlas.fbk.eu/>

Trento is also vulnerable to floods, caused by the overflowing of the river Adige in cases of extreme long precipitation events (Portoni, 2008). Indeed, the water system of Trento may cause risks related in some cases to the nature of the basins, in other cases to the impervious surfaces, as they reduce the infiltration capacity of the soil. The main impacts related to hydrogeological risk could cause significant economic losses due to damages to infrastructure and properties. For this reason, the Province of Trento has adopted a General Water Usage Plan³ to better cope with flood risk and to define the instruments for guaranteeing safety.

On the other hand, because of its agricultural vocation, water scarcity may occur during the periods of high demand. Up until today the entire Province of Trento has experienced good water availability, but water-saving measures were necessary to promote better water use and to improve monitoring actions and environmental and ecosystemic prevention.

3. Microclimates and morphology

In addition to being the places where climate change impacts are expected to be greater, cities directly influence the climatic conditions of the urban environment and the local microclimate due to their activities and their urban design. In fact, several factors influence the microclimate creating different climatic conditions: urban structure (building/street dimensions), surface covering (permeability, albedo), fabrics (materials, albedo), metabolism (human activities, e.g. traffic and cooling and heating systems) modify the climate within an area (Stewart and Oke, 2012). Due to these parameters, some microclimatic phenomena, such as UHI, may occur.

To date, reaching a better integration between urban climate knowledge with city planning could be very helpful to understanding which parameters should be considered in planning projects, both at the local and urban scale. In fact, considering the typology and the intensity of some parameters directly affecting the microclimate, we should remember that they simultaneously affect the mesoscale, the urban canopy and the surfaces (Georgiadis, 2015). This paper contains the Classification of Local Climate Zones of Trento (Fig. 2), based on the afore-mentioned parameters which identify different “climatopes” within the city, as defined by Stewart and Oke (2012). The system is useful since it conveys the principles through spatial scales and design elements and it offers a “package of urban climate principles” for planners, ecologists, engineers, municipalities, which are easy to read and interpret.

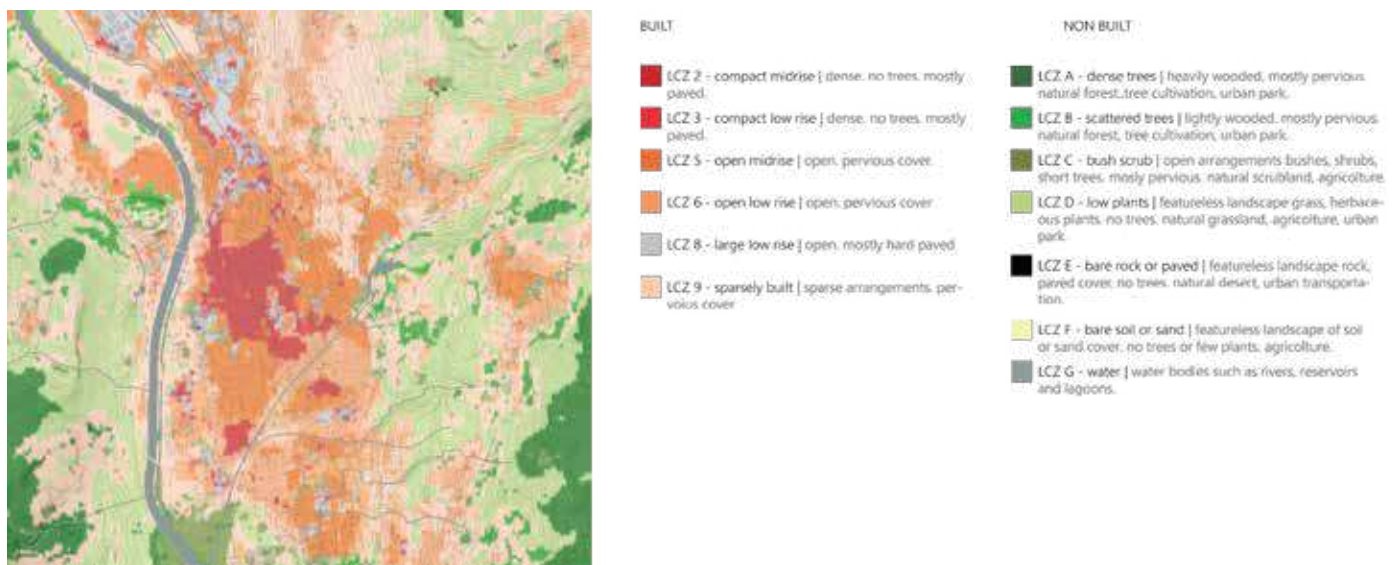


Figure 2. Local Climate Zones map resulted from mapping the classification of LCZs. The result consists on typological areas based on the combination of surface structure, cover and human activity. The map was obtained with the method described in Bechtel et al. (2015) and shows the 13 LCZs present in Trento.

The mapping system provided comprises 17 standard LCZs, divided by “built systems” and “land cover types” and it is relevant to understand which bi-dimensional and tri-dimensional properties are involved in energy exchanges. As is the case for the risk maps, it is important to get a visual distribution of the climatic characteristics in order to understand the priorities of the interventions and the territorial distribution of microclimates. The results are consistent with the areas obtained in the heat-related risk calculation and show where an intervention is most urgent.

Mitigation and Adaptation in Trento

The purpose to enhance climate resilience consists in reducing vulnerabilities and invest in adaptation. The Province of Trento and its Municipality have been dealing with mitigation of climate changes and the related energy and environmental issues for more than 15 years. In 2013, for example, the Province adopted the so-called “Provincial Energy and Environmental Plan” (PEAP) plan, to meet the EU requirements and reduce carbon emissions, especially those from the civil sector and to drive a possible roadmap with actions concerning the building sector aiming at reducing their energy consumption. Indeed, most of the emissions are caused by the civil sector.

On the other hand, Trento joined the Covenant of Mayors program in 2014 and shared the European Commission’s “20-20-20” Strategic Program in order to promote actions of adaptation. Such plans and actions contribute to making Trento an example for other Italian cities and encourage it to continue to work to build a plan to ensure the city’s adaptation to extreme events.

In addition to the afore-mentioned actions that have an impact at a regional and metropolitan level, the city is promoting programs and projects that are consistent with a wider vision that impact on a minor scale or on particular urban components within the city. They all are part of the strategy of Trento to become a smart city, involving concepts of social inclusion, adaptation to inhabitants’ needs, digital alphabetization⁴.

The strategies adopted by the Municipality are the promotion of the green periurban areas as part of a green network capable of making the town more resilient (e.g. Los_Dama⁵) and the increase of awareness and involvement of inhabitant’s through a digital optimization of services (e.g. Stardust)⁶. In fact, the Municipality is collaborating with Research Institutions of the territory to promote and implement projects to further develop and enhance the quality of the Green and Blue Infrastructure (BGI) of the town at the local level.

The main goal of the ongoing projects is to increase people’s awareness and enhance inhabitant’s health. The development of alpine peri-urban areas – an integral part of the BGI- is considered one of the main strategies to promote cooperation and achieve attractiveness and liveability, as well as new techniques and energy efficiency systems and the optimization of the Urban Mobility Plan through ICT tools.

In particular, Trento aims to re-connect the town and the big peri-urban areas through the axis created by the river Adige, where urban forests, urban agriculture and attractive riverbanks could regenerate the abandoned and marginal spaces.

Collaboration with inhabitants is considered fundamental to reach the goals of climate change and strengthen innovation and experimentation. The project “Smart city Lab in Vela”⁷ is an example of the ongoing activities and it is a good example of methods to locally test solutions and develop models for resilient and smart the urban environment.

To become more adaptive and adaptable to the expected changes Trento is developing knowledge, strengthening local identity and the centrality of sustainability.

The first step of the research consisted of the definition of tactics to enhance resilience, determined by the combination of the guidelines suggested by European Commission and the plans provided by the major European cities investing in adaptation with the parameters defined by the Municipality.

The tactics regard the implementation of the green and blue infrastructure, the promotion of slow mobility and the use of clean energy and they intend to be effective not only in the phase of urban design, but in the entire system thinking. In fact, besides actions of urban design (e.g. implementation of green corridors and the increase of permeable surfaces), actions that incentive sensitisation and awareness of inhabitants (e.g. informative and educational campaigns, workshops), maintenance of plans in long terms (e.g. maintenance of trees) and governance (e.g. innovative ways of financing programs) must be considered⁸.

3 / PGUAP. Further information available at: <http://pguap.provincia.tn.it/>

4 / Further information available on <http://www.comune.trento.it/Aree-tematiche/Smart-city> and White Papers from the IEEE Smart Cities Inaugural Workshop, December 2014 in Trento, available in <https://smartcities.ieee.org/articles-publications/trento-white-papers.html>

5 / See at: http://www.comune.trento.it/Aree-tematiche/Ambiente-e-territorio/Parchi-e-giardini/Iniziativa/LOS_DAMA and http://www.alpine-space.eu/projects/los_dama/en/home

6 / See at: <http://stardustproject.eu/cities/trento/>

7 / Further information available at: <http://www.comune.trento.it/Progetti/Smart-city-Lab-a-Vela>

8 / Detailed description of tactics, actions and implementation devices available at: Codemo, A. (n.d.). Trento City microClimate Changes. Graduate. University of Trento

New scenarios for the town

The implementation of the devices is combined with the creation of a clear vision and with the identification of scenarios. As mentioned above, the Municipality of Trento is currently updating its urban plan and drawing up the landscape plan, especially with the purpose of valorizing the public suburban green and the agricultural areas. In particular, these areas could reconnect the town with the Adige River and thus restore its central role at the urban scale, with the creation of multifunctional areas, combining recreation, water management, nature, culture, mobility (Fig. 3). Besides, they could also contribute at the regional scale, increasing the connection of the green and blue system, and thus improve the ecological and environmental network.

The use of Nature-based solutions is a key policy to tackle the challenges related to climate change, since it involves many ecosystem services to adapt their effects, but it also helps the town to attain sustainability. As a matter of fact, the provision of BGI is a tool that helps planners and policy-makers protect and restore ecosystems as well as maintain and enhance them, since they are low carbon solutions and they improve local microclimate.

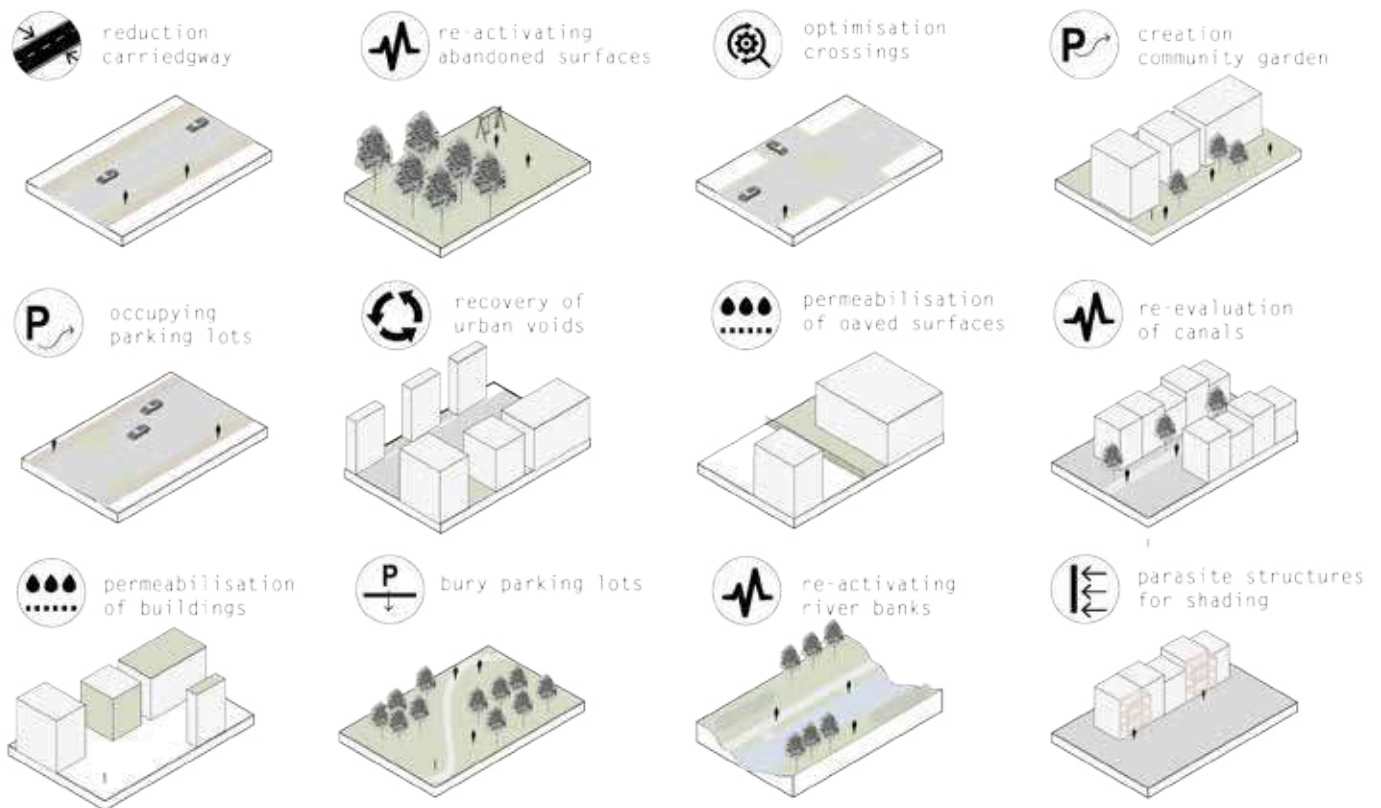


Figure 3. The image represents typologies of tactics to integrate green and blue elements within the urban fabric, considering actions of re-use, re-valorization and re-cycle of spaces.

To reach resilience, we should start to consider open spaces and other urban components of the cities, such as buildings and roads, as part of the system that contributes to face the issues related to climate change and to design them considering their contribution in the local climate.

One of the first results of the research was the definition of tactics through which to implement the four strategies of adaptation, considering both context and the guidelines provided by the Municipality. To this end a “toolkit” was provided, containing the typologies of green and blue elements that can be adopted and the type of actions (Fig.3) to be implemented for their integration in the urban environment. The proposed actions aim to rethink urban spaces in order to re-use, re-cycle and re-activate spaces and marginal areas.

The green and blue measures provide a selection of Ecosystem Services (ES) that specifically contribute to adaptation: water flow regulation and runoff mitigation (flood, drought), urban temperature regulation (heat stress) and moderation of environmental extremes (pluvial flooding, heat stress and drought). In particular, the ecosystem functions that regulate the above-mentioned services are infiltration, retention of soil, adsorption on kinetic energy, storage, evapotranspiration and rainfall interception (Voskamp, 2015).

Rethinking urban and peri-urban territories from this point of view and integrating the current facilities with elements of the Blue and Green Infrastructure could not only contribute to mitigation and adaptation of climate change and microclimate phenomena, but also enhance social and economic aspects. In fact, BGI elements are self-adaptive and produce significant co-benefits, contributing to the resilience of the city with their ecosystem services (Bozovic et al., 2017). Thus, the BGI approach produces optimized solutions and results them more efficient and cost-effective. In fact, besides contributing to the climate-related benefits, green and blue solutions

improve other environmental aspects (e.g. as air quality and noise pollution), ecological aspects (e.g. healthy watershed and land biodiversity), economic aspects (e.g. efficient energy use and land property values) and socio-cultural aspects (e.g. healthy inhabitants and community spirit)⁹.



Figure 4. Scenario visualization of green and blue elements development along the river and in the inner urban areas.

The built environment is continuously changing by maintenance, modification and renewal: these change dynamics can be considered opportunities for retrofitting blue-green measures in the urban structures, such as sewer rehabilitation or other maintenance activities. Marginal areas, abandoned places, inactive fragments, which are contiguous to urban, industrial and/or productive districts should also be considered as renovation opportunities and re-activation through BGI elements as well.

Considering the climate vulnerabilities and the priorities of the Municipality, creative and innovative solutions in the field of smart mobility and climate resilience can be experimented, focusing especially on finding new scenarios for waterways and integrative solutions of green areas in the urban components. Smart combinations of solutions, innovative ways of financing and sharing the space between public and private and creative ways to test the scenarios should be part of the future programs.

The interaction between green and blue solutions and urban components requires various spatial scales analysis, since the ecosystemic functions become efficient at different temporal and spatial scales. For this reason, it is necessary to design solutions from the urban scale, canopy scale and superficial one. Moreover, if we consider the system at different scales, it is easier to obtain also other ecosystemic functions. Finally, combining different devices helps to increase efficiency and optimize functions.

Cristo Re neighbourhood: a case study

Cities that are investing in climate adaptation plans for the urban environment, such as Rotterdam¹⁰ and Copenhagen¹¹, are implementing the strategies on the district scale as well. In fact, to add value to programs, coordinate solutions within communities and realize transformations, the use of urban laboratories to test measures and coordinate transitions is considered an important asset. Climate Proof ZoHo in Rotterdam¹² is an example of collaboration between the Municipality, urban offices, many stakeholders and inhabitants to implement local and resilient measures through collaboration between inhabitants and professionals. The goal is to integrate climate proofing into the physical structures of the city, with a process that moves from policy making through ideas and plans to physical realization.

9 / The ecosystem services are divided in 4 categories: environmental, social, economic and ecological. For a full description of the services produced by BGI measures see Gomez-Baggethun, E. and Barton, D.N. (2013). *Classifying and valuing ecosystem services for urban planning*, *Ecological Economics* 86, p. 235–245, <http://dx.doi.org/10.1016/j.ecolecon.2012.08.019>.

10 / "Rotterdam Climate Change Adaptation Strategy", <http://www.rotterdamclimateinitiative.nl/>

11 / "Copenhagen climate adaptation plan", <http://www.klimatilpasning.dk/>

12 / Further information available at: <http://www.urbanisten.nl/wp/?portfolio=climate-proof-zomerhofkwartier>

At this stage of the research in Trento, the results consist of a series of solutions for urban components considering the principles stated in the above paragraphs.

In particular, the neighborhood of Cristo Re was used as a test area where different solutions were experimented -in a design phase-, with the aim of combining different devices and functions. In this way, it becomes part of a multiscale process, where the zoom drives a better awareness of the instruments defined at the urban scale and gets higher value since considered part of an adaptation plan.

The first step consisted in a deeper understanding of local meteorological and physical conditions and it was followed by the definition of typological actions of climate proofing.

Cristo Re neighborhood presents the following so-called “opportunity areas” to be rethought in a perspective of microclimate’s mitigation: over dimensioned and car-driven minor streets, riverbanks, private courtyards and public impervious open spaces.

Re-designing the streets in new ways makes possible to liberate the area of a high percentage of asphalt, exchange it with more pervious surfaces and in some cases transform it into urban space for pedestrians and cyclists (Fig. 5). Re-thinking the mobility of the entire area may liberate the street along the river from cars and use it as a new ecological and social infrastructure. Front gardens and green courtyards are also a simple solution to improve the sense of community and increase the natural ventilation of the neighborhood. Finally, the optimization of the space could be an opportunity to turn urban voids and pervious surfaces such as public open spaces into rain gardens and pocket parks.

The proposed solutions were useful to trace a guideline of typological solutions applicable also in other contexts.

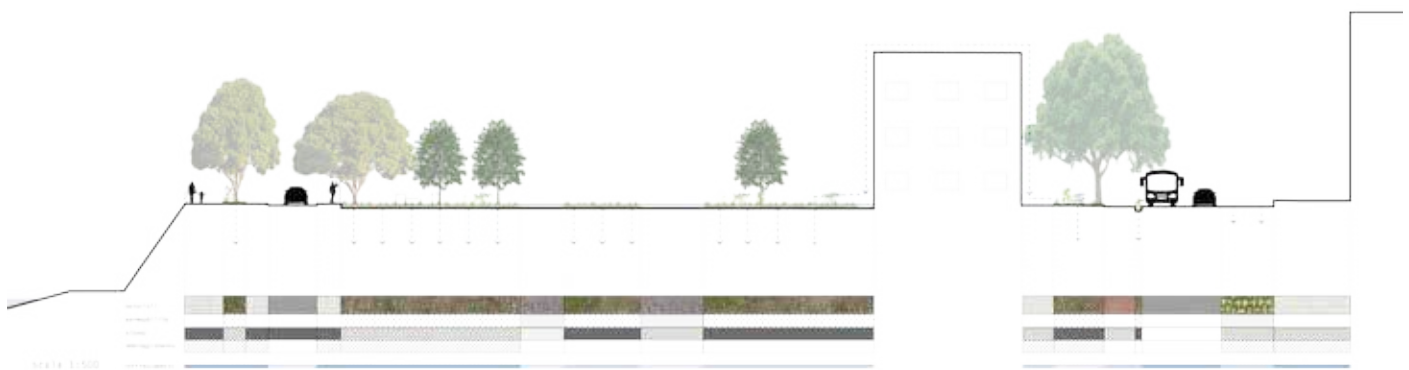


Figure 5. The section of the test area represents a scenario of integration between urban components and green elements: the roads are redesigned in order to integrate space for slow mobility and to increase permeability, albedo and tree shadow in the parking spots and in the walking path. Green carpet, trees and an educational agriculture field are integrated in the schoolyard, characterized by a paved surface, in order to improve the indoor and outdoor microclimate.

Besides the above-mentioned practices, to enhance inhabitant’s wellbeing and livable spaces, collaboration between researchers, Municipality, stakeholders and third parties is required, in order to tackle the same challenges and integrate results in the urban agenda. Moreover, participation and collaboration should be part of the entire process to reach resilience, from the analysis of the context to the practices of monitoring. In fact, a clear knowledge of the current situation, trends and future threats, the involvement of inhabitants, greater awareness and expanding knowledge, capacity to monitor and maintain actions are also necessary are fundamental to reach the adaptation goals as well as designing solutions. (Lu, 2013).

Conclusion

Investing in a greater comprehension and knowledge of the phenomena occurring in our cities, as is the case for Trento, enables us to offer a contribution both to the adaptation and the mitigation of climate change. The knowledge of the place also allows long-term actions and plans to be promoted and thus set down a clear vision and scenario for the city.

However it is local actions, including community actions and collaborative projects between institutions, which contribute to making a city active, resilient and ready to tackle climate change.

The challenge of Trento, as all the cities, is to promote practices and actions of implementation to test and experiment new and creative solutions. The already planned development of multifunctional green and blue spaces and the involvement of inhabitants will pay a fundamental role in resilience. Yet, future activities should also develop actions and strategic plans to implement solutions, exploring creative collaboration models between partners, enhancing inhabitants’ awareness and setting down monitoring and maintenance plans.

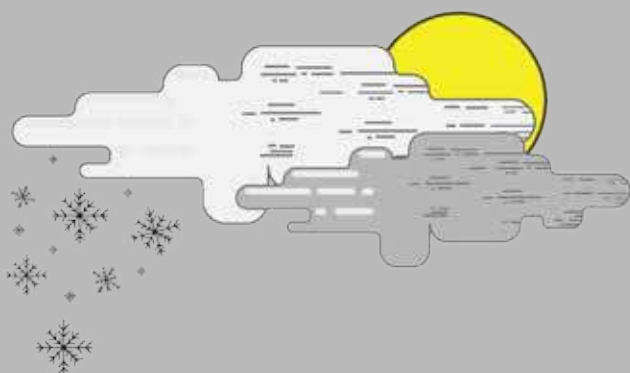
Researchers, policymakers, practitioners and other city stakeholders should continue to strengthen partnerships and produce knowledge together, support data platforms and actions, while sharing knowledge globally. In line

with the European goals, supporting transformation and providing devices of adaptation will contribute to the creation of a more livable and attractive as well as a more resilient town.

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[CLI/03]



The Strategic Role Of Universities For Sustainable Urban Ecosystems: Mitigate Climate Change

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abstract

It is no longer possible postpone the challenges of Climate Change and the sustainable of cities. This is evident both in the Sustainable Development Goals of the United Nations and in the international summit COP21 Paris, outcome of 2015. To respond at these challenges, Planning for Resilience, starting from University (structures and communities), can be considered a strategic goal, as a way to ensure new models of sustainable development of socio-ecological systems. Indeed, Global universities are among the main innovation areas. They internally develop and consolidate knowledge-based economies. The major International Institutions have a key role in the tertiary education, scientific research and technology transfer, and they are considered more and more as urban institutions and as a driving force for human communities development.

The Italian Universities, by participating at the RUS (Italian Network of Universities for Sustainable Development) network, represent a good example. In addition, this network among Italian Universities, moved by new experimentation objectives and sustainability processes, initiated a collaboration with another excellent Italian scientific institution, The New Study Center for Urban Policies, Urban@it, which unites 11 Italian universities, that with a multidisciplinary approach, looks at the construction of an Urban Italian Agenda with a focus on the University-City topic. The University can allow the construction and dissemination of best practices in sustainability and urban resilience, supported by an unprecedented smart community. Furthermore, the university network may contribute to the knowledge and models transfer for policies and practices implementation of the local contexts and it is facilitated by paths educational-training support to change. Thanks to these assumptions, this research highlights the strategic role of Universities for the sustainable regional and urban planning and how the Universities have activated strategies in this direction, through a survey that highlights how universities perceive themselves as engines of the sustainability of cities and a focus on the Polimi (Polytechnic of Milan) and Unimi (University of Milan) best practices.

keywords University and City, Network, Sustainability, Education

Introduction

The theme of urban sustainable development is at the heart of Sustainable Development Goals that drive the politic Agenda of all Countries of the World and that have been approved by the United Nations in September 2015. In fact, almost all targets present a strong urban dimension. In 2008 (Seto et al., 2010; Crossette, 2010), the world's urban population has exceeded that rural and, according to UN estimates, in 2030 the 60% of the eight billion inhabitants of the planet will live in cities.

This is even more so in Europe, where almost 70% of the total population live in urban spaces (DESA, 2009). For this reason, the cities are called to face a number of challenges related to the ability to: combat urban poverty; manage the flows of migrants, favoring integration processes; encourage a growth able to be environmentally sustainable and not adversely affect the quality of water, air and soil; improve the quality of life and services.

Much of the challenges to achieve Sustainable Development Goals (SDGs) of the United Nations is played in the city. This is shown in Amsterdam Pact for an Urban Agenda of the European Union, signed 30th may 2016. In a Europe that remains the second continent by level of urbanization after Latin America, 24.4% of the population of big cities is at risk of poverty and social exclusion and, always among the inhabitants of urban centers, only 70% have a job.

The Amsterdam Pact institutionalizes closer cooperation between the various levels of Government, from European to local level, and establishes the Urban Agenda of the European Union, that defining the terms and timing to adopt until the end of 2017. Thematic priorities put at the center of European Urban Agenda are currently twelve: inclusion of migrants and refugees; air quality; urban poverty; accommodation at affordable price; circular economy; adaptation to climate change; energy transition; urban mobility; digital transition; public procurement; jobs and skills in the local economy; sustainable land use and ecological solutions. Around these thematic priorities will be developed as many partnerships.

In order to reach SDGs, the role of the city was further emphasized during the United Nations Conference on Human Settlements and Sustainable Urban Development. From this Conference is born Habitat III, the new Global Urban Agenda that complements the Agenda 2030, and proposes a re-thinking of urban structures so that they can become more secure places, more inclusive, more green and sustainable. The achievement of these purposes is conditioned by implementation of a localization process so that local authorities interpret the overall aims.

The Italy ranks 35th position of 149 in the ranking of Countries by distance from 2030 Agenda, but only at the 30th place on 34 OECD Countries. These data bring into prominence the need to engage the Government and citizenship in order to improve the situation in Italy compared with SDGs and to create sustainable cities increasingly resilient, inclusive and safe. These challenges nurture and strengthen the bond between the University and the city, consolidated over centuries and that now more than ever it is essential enhance.

In this sense, the building of links and networks becomes strategic to respond to the need to make cities and communities sustainable. This unified and coordinated vision is essential and has led to the emergence of RUS, who also wants to promote the sharing and dissemination of best practices in urban sustainability theme.

Thanks to these assumptions, this research highlights the strategic role of Universities for the sustainable regional and urban planning and how the Universities have activated strategies in this direction, through a survey that highlights how universities perceive themselves as engines of the sustainability of cities and a focus on the Polimi and Unimi best practice. In detail, the study is divided into n° 5 Sections. Sect. 2 presents the role of the universities for sustainable cities. Sect. 3 introduces the research settings for the survey and results of the commitment of Italian universities for sustainable cities and territories, Sect. 4 presents the case study of the Polytechnic and University of Milan as a best practice, and Sect. 5 explains the role of the higher education for sustainability. Finally Sect. 6 concludes the work with a discussion on the challenges identified and on future developments.

Universities For Sustainable And Resilient Cities: Building Partnerships, Promoting New Lifestyles

The Climate Changes challenge can strengthen the ancient bond between universities and cities (CRUI Pavia, 9-10-11 2015), consolidated over the centuries. This is the argument put forward in this research, contextualizing it in contemporaneity for the impact of globalization on the structure of our territories (Martinelli and Savino 2015).

On the other hand the inclusion of the Climate Changes fight between the Sustainable Development Goals of the United Nations and the recent story of the International Summit, arrived at the COP21 Paris 2015, show that "Global goals require local attention" looking at sustainability and resilience issues (Lombardi, 2015), through a necessary change of scale that go beyond the individual building or part of the city, but leading to a holistic view on the metropolitan territories within which integrate policies for environmental and social sustainability.

In Italy, for example, this requirement is evidenced by the Protocol signed in 2015 in Pavia between the CRUI (Conferenza dei Rettori delle Università Italiane) and the ANCI (Associazione dei Comuni Italiani). It is not a coincidence that one of the greatest Italian Academic Institutions (CRUI) and the largest organization of institutional representation (ANCI), which is embraced by thousands of Italian municipalities, signed a partnership to address issues of common Urban Agendas, where even the Sustainability plays a central role.

For universities no longer enough assess in a static manner and occasionally the environmental effects on Climate Changes, but it is now necessary to implement strategies and self-control systems (Orecchini 2007), to make everyone aware of the social responsibilities arising from living in an urban community.

The research institutions are called to respond at the current framework of European Program for Research and Innovation, Horizon 2020. In detail, a section is dedicated to "Climate Action, Environment, Resource Efficiency and Reflective Societies", in order to increase the community European competitiveness and efficiency, and to achieve the objectives of environmental sustainability and resilience of cities and their communities.

Given that ecosystem resilience is the ability to react to changes by restoring new features through adaptation (Holling 2002), the latter declined at urban level involves the development of design strategies capable of passing through the territorial scales taking into account many variables: spatial, social, ecological and economic.

Indeed, "a resilient city is a city that has developed the capacity to absorb future shocks of social, economic, technological and infrastructural systems, through processes of evolution / adaptation, maintaining recognizable its functions, structures and identity" (Resilient City .org).

The innovation environments are those that develop and consolidate themselves within the knowledge-based economies. In this sense the Global Universities, as large international institutions for tertiary education, scientific

research and technology transfer, are innovative environments, increasingly considered as urban institutions (Wiewel & Perry in 2008, Martinelli 2012). There are already wide international network experiences that develop partnerships between universities interested in the sustainability topic like: Global Compact, PRME - Principles for Responsible Management Education, ISCN - International Sustainable Campus Network, GUPES - The Global Universities Partnership on Environment for Sustainability, for mention only the main ones. This latter was been the model for the creation in Italy in 2016 of a very large network, the RUS, that intends to pursue the dissemination of best practices regarding urban resilience, supported by a new vision of a smart community that contributes to the transfer of knowledge and models for the activation of policies and practices of sustainability in local contexts of belonging. Interventions for the sustainability, in progress or activated by several Italian universities participating in the network RUS, may allow the dissemination of best practices regarding urban resilience, supported by an innovative smart community that contributes to the knowledge transfer and models for the activation of policies and practices of sustainability in urban and regional contexts of belonging in many areas of energy, water, right to education, mobility, ICT.

For all these aspect, it is becoming increasingly urgent to acquire an interdisciplinary and inter-scalar approach. It is not enough to act on energy efficiency technologies of the university complex, but it is must also act on the behaviors and lifestyles of the university community, exploring new design territories, and intercepting strategies that, starting from the Sustainable Universities, catalyze smart relevant actions for the entire urban community. These innovative contexts can be represented by the universities and the student community, starting from redevelopment and innovation of university spaces and their better integration with the surrounding city. The challenge, assumed by this proposal, that was born within the CRUI¹, enhances also the human resource: students and members of the university community should, in fact, engage in training courses and participation in different research groups issues and then should follow the implementation policies from the university institutions and their organizational structures. In July 14, 2015, CRUI has formally proposed to all its members to enter the process of developing a network of Italian University for sustainability that, by engaging in a common and shared policy of environmental sustainability and social responsibility, will be burden of promoting the dissemination of relevant culture and practice of sustainability at the country level, through the provision of specific skills, experiences and projects of members. An applied research activity, therefore, that must generate and promote change and that is offered as a driving force, of possible scientific and participatory solutions for the Climate Changes, as called for by RRI Toolkit program of the European Community. This scenario convinced the authors to be created, within the Italian Studies Center for Urban Policies, Urban@it, a working group, that involving other Italian researchers, that has the focus on “the universities role for the creation of a sustainable city”, taking into account that some of the writers are simultaneously part of the executive bodies of the RUS network.



Figure 1. 17 GOALS of Sustainable Development GOALS.

Source: www.shus.unimi.it

¹ / In July 14, 2015, CRUI has formally proposed to all its members to enter in the process of developing a network of Italian University for sustainability that, by engaging in a common and shared policy of environmental sustainability and social responsibility, it will be burden of promoting the dissemination of relevant culture and practice of sustainability at the country level, through the provision of specific skills, experiences and projects of members. In addition, it opens the way for innovative solutions to develop new urban services aimed at providing social sustainability practices, working in particular on the issue of rewarding of citizens' actions, namely claims of sustainability.

Do The Universities Of Rus Perceive Themselves Committed To The Construction Of Sustainable Cities? Survey And Results

The research presented below has wanted to highlight how universities perceive themselves as engines of the sustainability of cities. This research is quantitative and, therefore, it is based on the array of data. It pursues exploratory and nomothetic purposes: the theoretical framework has just guided the researcher through the process of collecting and interpretation of empirical data (Trincherio, 2002, p. 89).

In particular, data were collected through a survey, conducted using a self-completed questionnaire, and analyzed through SPSS software using univariate techniques, since the primary objective is to describe the evolution of the factors within the sample considered.

Structured specifically for this research, the questionnaire (online and supported by Google Drive) was sent via email to the contact persons of the Network RUS of each of the forty-six Universities that in July 2016 (launch of the questionnaire) had presented an official request to join the Network.

Twenty-five universities have responded to the questionnaire. They constitute a sample equivalent to 54.3% of the total population. The statistical representativeness was maintained even in the geographic distribution of universities, because the percentage of universities spread across Northern, Central and southern Italy was always greater than or equal to 50% (table 1).

Geographical Area	Number of Universities participating in RUS	Number of Universities participating in research	Percentage
North of Italy	20	12	60%
Middle of Italy	14	7	50%
South of Italy	12	6	50%

Table 1. Geographical distribution of Universities

The questionnaire consists of structured or open questions. In addition to personal data, the tool for data collection has also collected information on:

- The perception of a possible role that each University has for sustainability of cities of membership;
- The ways in which universities contribute to making their cities more sustainable.

The data obtained by encoding the responses were distributed in two interpretive categories: perception and experience.

The data collected showed that the majority of the sample (88%) believes that universities have a key role in the sustainability of own cities. This idea translates into concrete commitment for 72% of the universities that responded to the survey, which declare their commitment to the sustainability of their cities 'very' to the extent of 20%, and 'enough' to the extent of 52%.

In contrast 24% of the sample reported that the processes implemented contribute 'little' and 4% of the sample says that they do not contribute in any measure the sustainability of the city in which you placed the home university.

The commitment to the sustainability of cities in which is located the home university is particularly reflected in the implementation of specific projects "involving cities and citizens" and they are related to: "Sustainable mobility, waste, renewable energy, improving the welfare of the people", but also relating to the "international cooperation" and "re-use of historic buildings" or, more generally, the "pursuit of Sustainable Development Goals". Very important is also the implementation of good practices, some of which "are carried out in collaboration with social organizations of the territory" and other "involve students, in this way is possible to make it clear to students what is sustainability and how to build it".

A less percentage (12%) highlight the strategic role of education, explaining some teaching and research choices or some university policies (for example through the "Plan for Environmental Sustainability of University") or the collaboration with other authorities, "even government, especially for the environmental crisis zones" (table 2).

Table 2. Operation implemented for urban sustainability

		Frequency	Percentage	Valid percentage	Accumulate percentage
Valid	Best Practices	4	16,0	20,0	20,0
	Projects	8	32,0	40,0	60,0
	Teaching and research choices	3	12,0	15,0	75,0
	University Policy	2	8,0	10,0	85,0
	Collaboration with other Authorities	2	8,0	10,0	95,0
	Awareness activities	1	4,0	5,0	100,0
	Total	20	80,0	100,0	
Missing	Missing	5	20,0		
Total		25	100,0		

The “Città Studi Campus Sostenibile” Project: Best Practices Of The Universities Of Milan

Initiatives, taken by the various international and national universities in the direction of environmental sustainability and good practices sharing, are by now numerous. For all, the goal is to make the university and its academic community an example of virtuous actions toward the whole city and its citizens.

Surely, at the national level, a good practice is represented by the project of “Città Studi Campus Sostenibile” promoted by the Polytechnic and the University of Milan, involving the entire university area and extends, in some respects, toward the entire city.

The project started in 2011, and it is now considered as a model of environmental sustainability for the entire city, by involving not only the university population. The main project phases were threefold: in the first phase, situations of non-sustainability were mapped and contacts with potential lenders were collected. In the second phase, thematic groups and major collaborations have been initiated and the web platform has been designed and developed. In addition, some physical changes were initiated in some areas of the campus. The third phase, which started with the launch of the platform, was characterized by a more structured process of collecting proposals, and by start of new research. The key principles of the project are the “liveability”, “sustainability” and “identity” and they are declined in the will of renew physically the campus in a sustainable manner, by experiencing technological and process innovations, often produced by the university itself, and by rethinking at life styles. Create a new, participatory and inclusive concept of campus.

This project is part of a vision and of a nationally and internationally network, useful to exchange information, ideas and best practices for the implementation of the sustainable campus projects and for integrate sustainability in research and teaching. Indeed, at international level, the project is part of the ISCN association (International Sustainable Campus Network) since 2011 and collaborates with World University Cities Network WC2. At the national level, it is an active player of the RUS, as described above.

The six themes of the project are: People, Energy, Environment and Accessibility, Food & Health and City and are strongly interrelated with each other. Within the platform, accessible to the link <http://www.campus-sostenibile.polimi.it/i-tavoli1>, these issues become “virtual work tables”, which access is reserved, generally, to the academic community except for the City theme, where the excess is open to everyone.



Figure 2. Logo "Città Studi Campus Sostenibile" Project.
Source: <http://www.campus-sostenibile.polimi.it/>

These thematic groups are therefore always in full and strong comparison with the neighborhood, but also with the entire city. The initiatives have been directed to physically connect the two campuses to each other and the two campus with the city, by facilitating walking and cycling routes and increasing the safety of pedestrians, increasing green areas, spaces for outdoor sports, using and the testing of innovative technologies and materials, aimed at reducing the urban heat island. In detail, within the People theme are framed all actions (physical and technological) that point to the involvement of the campus users to identity consolidation of physical space. The People theme is closely connected to all the other initiatives, as all actions aimed at the redevelopment / reconversion of the university in a sustainable manner, with a direct impact on strengthening of the identity, but also on increasing the livability, and indirectly through education at sustainable behaviors. For the Energy theme, the initiatives are aimed at energy saving actions. In detail, the objective is declined on different aspects: the monitoring of consumption for the empowerment of users, the development of management techniques to encourage energy saving. Another fundamental objective of the Energy theme is the coverage of the energy requirements with the architectural integration of renewable sources.

For the Environment theme the focus is on the quality of the environment in a large sense, including management initiatives and efficiency of the processes, for example, related to waste or water, but also with the increase of public spaces. With regard to the accessibility issue, focused on transport and sustainable mobility, the initiatives are aimed at mending the campus with the neighborhood and the city, ensuring the permeability, safety and quality, encouraging virtuous behavior related to the use of public transport and sustainable mobility. The Food & Health objectives are characterized by an increase in awareness and knowledge of the supply chain of food consumption in order to privilege the quality, sustainability and energy saving. Finally, the City theme widens the sustainable campus vision at the entire city, collecting from it the inputs and ideas, and realizing integrated actions between the university and the rest of the urban space district. Among the projects launched and ongoing cases, are mentioned a few: the "white certificates" in the energy plan; the "building and continuous commissioning" continuous process of analysis of the energy performance of the building which allows to solve operating problems, improve comfort conditions inside the building; "A car pooling system for the Polytechnic and the University of Milan" and many more like consultable by the site.



Figure 3. "Città Studi Campus Sostenibile" Project.
Source: <http://www.campus-sostenibile.polimi.it/>



Figure 4. "Città Studi Campus Sostenibile" Project.
Source: <http://www.campus-sostenibile.polimi.it/>

Universities Committed To The Sustainability Of Cities Are Universities That Focus On Education

Higher education institutions have an important role in transforming the society for sustainable development (Bart, Rieckmann, 2012). This is why many universities have made sustainable development an integral part of their institutional framework, initiating pathways of collaboration with other universities and implementing initiatives to make "green" their campus.

However, experiences of sustainable development of universities are poor of diffusivity, if training paths do not support them: «Sustainable development cannot be achieved by technological solutions, political regulation or financial instruments alone. Achieving sustainable development requires a change in the way we think and act [...] Only education and learning at all levels and in all social contexts can bring about this critical change» (UNESCO, 2012, p.13).

What can we do? Some research has shown that, focusing at first on the training of university staff, it is possible to accelerate the process of change and transformation, improving not only the skills, but also, more generally, the organizational development of the University. Education and learning are the key to achieving truly sustainable development (Vare, Scott, 2007). Proceed to a re-orientation of all the educational mission of the University, directing it towards sustainable development, it is a brave choice.

Educate for sustainable development (as the "learning process based on the ideals and principles of sustainability, which refers to all educational levels" (Wals, 2009, p.26)) is, in fact, much more than teach what is sustainable development because it implies make experience of it. It is practice and theory together; it is integrating its principles in the daily life of the University.

Therefore, sustainable development not only as a new theme for the university courses but above all as a change both of the traditional way to understand the disciplines (going beyond the separateness of these), and in the way of understanding the teaching, which now requires participatory approaches and competence oriented.

If it is true that a significant number of initiatives and projects have been implemented in universities around the world, it is equally true that the documentation of such practices took place primarily in a narrative way. This did not favor the possibility that changes were well documented and better theorized.

This is probably one of the reasons that make sustainable development (recognizing and emphasizing that it is an ongoing process and not a reality given once and for all) still a distant goal to “achieve” fully.

Conclusions

Since the Talloires Conference the role and commitment of the university to sustainability are increasingly defined and increased. In Italy this commitment has seen some universities develop virtuous solutions capable of generating impacts on the entire university community, like the best practice of the “Città Studi Campus Sostenibile” Project of the Polytechnic and University of Milan. Conversely, however, the results achieved not always have found an urban and territorial community careful and able to grasp the prospects for change that could have been generated. This resulted in reduced opportunities for dialogue between universities, local and stakeholder dialogue that instead it is a “conditio sine qua non” for the transition toward a sustainable communities and cities, as this research tries to prove.

In the dual lens of sustainable universities and university urban sustainability it will have to be defined some specific objectives in RUS: identification of a new management model of the space by virtue of the connection with the surrounding city, the definition of public engagement University and finally the responsibility for building a new urban society. In addition, it opens the way for innovative solutions to develop new urban services aimed at providing social sustainability practices, working in particular on the issue of rewarding of citizens’ actions, namely claims of sustainability. Design and Test new solutions, starting from university, represents a special case that allows working with young and innovative people and can promote the scaling-up of the projects due to the widespread area of typical users of the university campus. The replicability of smart lifestyles, hired by the university community, on the local community, sees universities as promoters of sustainability and fully as urban institutions. The future goal is to identify a new Green Campus model, in which the expansion of “space for an accomplished Right to Education” (Martinelli 2015) coincides with the improvement of the quality of the living space of the university community (students, faculty and staff), but also the urban quality.

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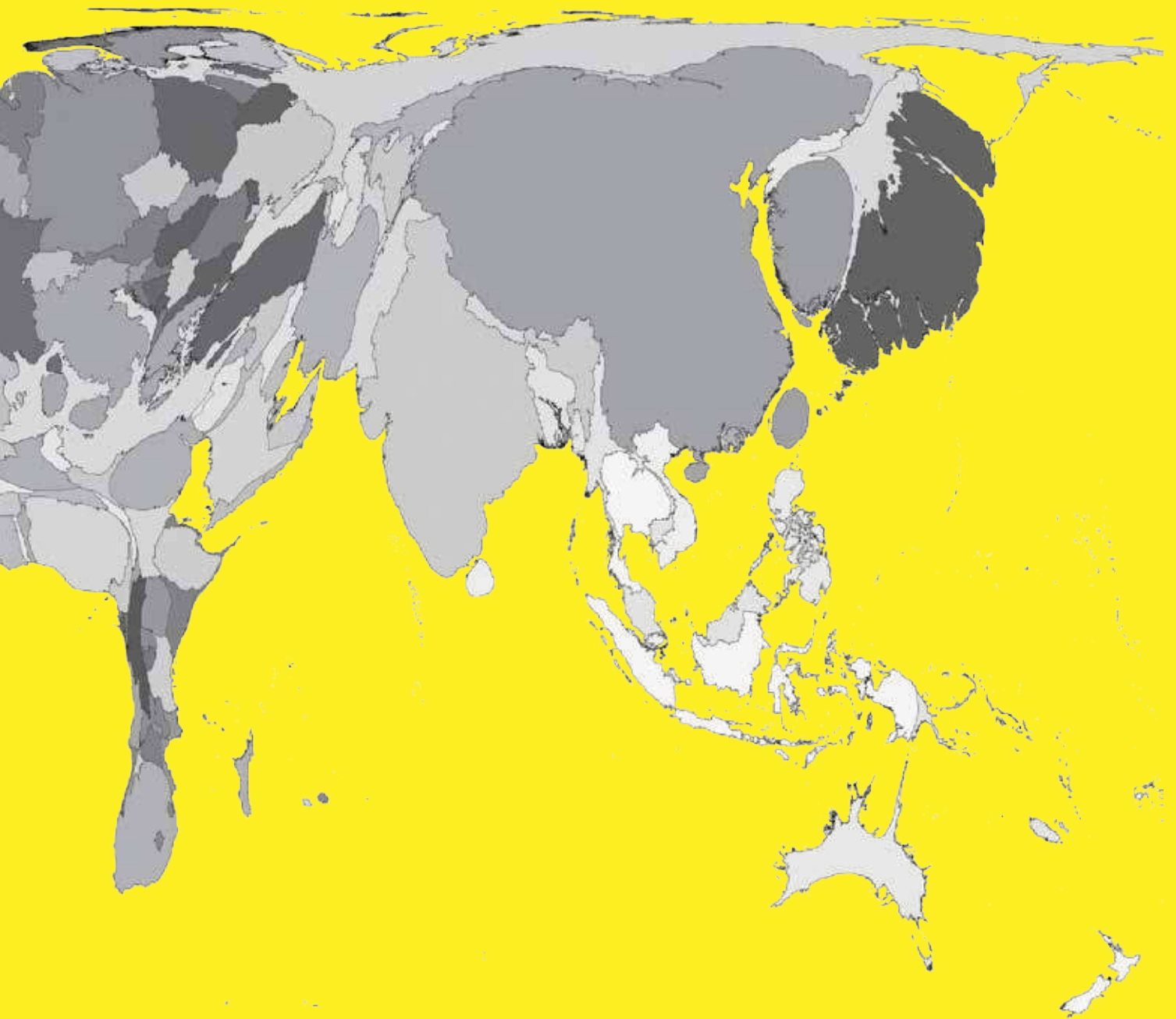
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[ecosystem]

world's average biocapacity is **1.73**
global hectares per person,
today the **ecological deficit**
is **1.1** global hectares per person

[data.footprintnetwork.org]



Map 322 'Ecological footprint' © worldmapper.org

An ecosystem is “a community of living organisms in conjunction with the nonliving components of their environment that interact as a functional unit, as a system”. Biological diversity is increasingly threatened by human activities. Meanwhile, attempting to manage the Earth’s resources sustainably presents a formidable challenge for humankind, because the processes linking ecosystems and species are complex, and an action taken in one location may have unforeseen consequences elsewhere, often far away and many years later. Researchers are invited to give their contribute to this session, with relevant studies exploring co-habitation tactics between different living and nonliving components of specific ecosystems and regions, with particular focus on the impact of man-made ecosystems. Evaluation, comparison and integration approaches toward ecosystems, as well as, the promotion of strategies for an integrated management, conservation are welcome.

[ECO/01]



Around the Lagoon

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abstract

The paper presents the outcome of the research undertaken by the Department of Architecture and Urban Studies (DASTU) of the Politecnico di Milano. It is the result of a program of Italian-Albanian cooperation (Urban Lab), launched in 2017 with the support of a grant from the Italian Agency for Cooperation and Development (AICS). The program's innovative approach consists in the close association created between a physical project of spatial and landscape planning, and a job training project addressed to local populations.

The research is focused on the area of Divjakë, characterized by the protected natural site of the Karavasta lagoon. This region is exemplary of the great potential for development of the Albanian territory, yet it also showcases significant issues; most notably how to locally transpose in a systematic and tangible manner the sustainable growth sectoral policies for infrastructures, urban development, social cohesion, agriculture and management of water, energy and waste, enunciated at the national level.

The research adopts a non-sectorial approach integrated in a transcalar design vision through interpretative readings, territorial strategies and pilot projects. The aim is to verify, at the regional and local scale of Divjakë, the vision of the "territorial metabolism" launched with emphasis by the new Albanian Territorial Development National Plan. The thesis is that only an integrated and "circular" vision of the actions on the different environmental systems can produce significant effects in strengthening and relaunching the local productive landscapes.

keywords Divjakë, Karavasta lagoon, territorial metabolism, productive landscape, local planning, rural tourism.

Introduction. A new National Plan as a background for local action

Environment and ecology are gaining attention in the vast panorama of spatial planning practices and large scale territorial projects. Sectorial plans addressing the issue of material flows - water, energy, waste - are emerging as new products within large scale spatial visions. However, the general aims of sustainable development addressed by comprehensive but sectorial plans should be implemented locally through a set of interventions integrating diverse policies and measures.

In this direction, the recently approved General National Plan for Albanian territory, focuses its discourse on the definition of strategies reframing material flows and challenging current urbanization processes from the perspective of "territorial metabolism" (Ministry of Urban Development, National Territorial Planning Agency, 2016, p.19). Coherently, the proposed framework aims to manage large scale flows, pointing at the provision of new large-scale infrastructures. At the same time, a polycentric model has been endorsed under the assumption that it will contrast the progressive urbanization around the metropolitan area of Tirana and foster a more decentred spatial structure, enabling regional processes of local development and suggesting a stronger coherence and integration within the overall spatial design strategy of the European Union. This general three-dimensional network of nodes and corridors is, however, conceived as "permeable by the surrounding natural ecosystems, with the aim of eliminating any possibility of habitat fragmentation". (Ministry of Urban Development, National Territorial Planning Agency, 2016, p.30). Moreover, to better understand the possibility that the new spatial frame could also reinforce the rural-urban partnership, the National Plan suggests that a process of regionalisation

will enable local planning action preserving and reinforcing rural and agricultural land, which is currently one of the major unspoiled resource of Albanian territory. Regional functional profiling is, thus, meant to help local administrations in adhering to the general aims and goals of the National Plan (Ministry of Urban Development, National Territorial Planning Agency, 2016, p.156-157).

Regional tactics. Reconsidering local planning

A certain divide separates the general frame of the National Plan from design processes addressing small scale transformation, hence highlighting the challenges in providing specific design tools focused on local context transformation. The aim of this study is to investigate and verify the possible implementation, at the regional and local scale, of the vision of the "territorial metabolism", emphatically promoted by the National Plan as a means to direct Albanian territory towards sustainable development. Consequently, the research proposes an analysis which mediates between national planning strategies and local contexts. Assuming a 'research by design' approach (Cattor & De Meulder, 2010, p:202-213; Viganò, 2010, p.7-41) our field of investigation includes both the land which is the object of research and the design tools and practices which are proposed to support the objectives of sustainable development. We will focus on the specific territory of Divjakë, in the region of Vlore-Fier-Berat which, in the national plan, is profiled as the target of actions reinforcing and strengthening rural and agricultural vocation with a specific focus towards eco-tourism. Our position is that only an integrated and "circular" vision of the interventions on the diverse environmental systems can produce significant effects in relaunching local productive landscapes.

The region of Divjakë is exemplary of the great potential for development of the Albanian territory. However, it is also representative of the difficulties in translating national sectorial policies into systemic and tangible practices in the local context. The strategies for infrastructures, urban development, social cohesion, agriculture and management of water, energy and waste, are diverse lenses through which we can examine the same land. They are layers of sectorial policies. Nonetheless, their implementation at the local scale implies foreseeing a set of discrete interventions, integrating the different strategies and their planned goals. Reinforcing agriculture and managing the water flux, or protecting the coastline and developing rural-tourism – just to mention a few examples – should translate into direct integrated design actions, reinterpreting the landscape and building new hierarchies within the region. In relation to this issue, we consider the coastal region of Divjakë, its rural and natural landscape, an exemplary case study pushing research to larger findings which can be adapted to different regions.

Around the lagoon. Research methods confronting with case study specificity

In recent years the Divjakë region has been the subject of an increasing demand for local economic development. Different transformation perspectives and contrasting tourism development strategies are competing in this fragile but dynamic region. To better understand local resources and opportunities we have focused our attention on the region's most relevant feature: the lagoon and its complex natural environment. The region is, in fact, strongly characterized by the presence of the Karavasta Lagoon and the surrounding National Park.

The lagoon has a double significance in this context. On the one hand it is a landmark, capable of representing the whole territory to a national and international audience; on the other it is also a specific productive landscape, at the centre of a whole range of activities and economic practices. Around the lagoon a complex set of territorial relations binds together the agricultural land, the protected natural environment, the shifting coastline, the existing urbanizations, the two main rivers (Seman and Shkumbin) with their delta, and the water system governing agriculture irrigation.

Accordingly, the lagoon is here considered as the centre and the key-frame of four distinct ecologies which are defined in the research according to their spatial structure and physical features and in relation with their current and perspective uses. We use the word ecology, according to its etymology, as a relation between populations and the places they inhabit, in a broader sense (Banham, 1976). Defining different ecologies implies a strong interpretative effort, which is not neutral and is, thus, part of the transformation project. This interpretative effort provides a lens clearly affecting the way problems are categorized and transformations are proposed.



*Fig 01 The lagoon is a key frame in a larger set of relations between different ecologies.
students: M. Bianchi, F. Fantinato, D. Tirrito (2017-18), Politecnico di Milano.*

Each ecology is the subject of different intervention strategies integrating the sectorial goals of the national plan, and offers the opportunity to develop diverse pilot projects which can be considered as examples and models for future implementations. With this structure the proposed territorial project seeks to provide guidelines for the future development of the region, gathering both public and private resources around the construction of a common landscape. The project's structure is part of the research method but it is also a consistent part of its results to be verified in future implementation.

The aims of this study, which adopt a research by design approach, is precisely to help local administrations in experimenting innovative planning tools to address sustainable development. The specific regional situation, in fact, is highly dynamic both in social processes and in geomorphological transformation, factors which recommend an attempt to implement innovative design tools. Local planning approaches are currently focused on a more traditional and static land-use planning, which is systematically bypassed both by individual actions of illegal construction and by natural dynamic phenomena of land transformation (erosion, sedimentation, etc.). Against this scenario, we propose a process developing general territorial strategies through guidelines and pilot projects, which stand as positive examples of innovative action. The guidelines are derived from general strategies and from the first pilot projects envisaged. They summarize the rules of the game and put an emphasis on the replicability of pilot projects, enabling the local administration to deal with process of transformation, which cross scales, with a flexible attitude while retaining a precise control over the legal frame and contrasting illegal actions. The four ecologies of Divjake

Divjakë's land, just as most of Albania, is primarily devoted to agriculture. A large part of the existing lagoon was reclaimed as agricultural land between 1948 and 1968, and the lagoon landscape has since become more and more fragile, as has occurred in many other places in the Mediterranean region. Currently, the lagoon is detached by the sea by a long sandy coastline where a thick pinewood forest has developed. At the east of the lagoon, cultivated fields occupy the space between the lagoon and the hills, small plots are dotted with an increasingly

thick strip of one family houses, built according to a certain legal uncertainty in the recent decades, along the road leading to the major city center of Divjakë. Beyond the hills, the highway, which is the main functional link to the rest of the country, delineates the limits of the Divjakë region

The project identifies four different ecologies. The four ecologies are: the lagoon itself, the fields; the urban strip, and the coast oasis. Each of these different ecologies is the subject of a specific strategy implementing sustainable development goals and suggesting innovative productive landscapes.

1. The lagoon

The Lagoon intervention strategy focuses on water management. Governing the whole water system, the lagoon assumes key role in the region: it is both a target of ecological preservation and a tool to manage the surrounding land through water control. The lagoon has always been considered by local population as a relevant productive landscape and the expectation of recovering fishing activities has been frequently frustrated. At present, careful attention is due to water quality and most of the proposed interventions are directed to its improvement. More specifically a range of interventions involve the remodelling of the lagoon through ground works, which control phenomena of erosion and sedimentation already underway.

Firstly, the construction of a small number of artificial island in the lagoon serves as an opportunity to carry out phytoremediation interventions in the most polluted part (south) whilst providing a new habitat for wild-life, as is currently the case in some small islands of "spontaneous" formation. In the long run, the islands can also be considered as "spot" supporting fishing activity .

Secondly, water control is also the object of the proposed re-opening of a direct connection with the open sea. The lagoon current situation is at risk, and its future survival is uncertain. Threats are connected both to the general geomorphological situation and to human current and previous activities. (Ciavola et al., 1995; Brew, 2003; Munari et al. 2010;). The re-openings of a direct connection with the sea is, thus, of primary relevance and and periodical excavations already represent a high cost for the municipality. However, this intervention is integrated in a general landscape proposal remodelling the coastline, and its natural environment.

Finally, the edge of the lagoon, is the object of a specific landscape proposal, integrating different parts: a ribbon of salt-water gardens, mainly made of halophilous plants, have the double aim of providing an attractive environment and protecting the inner agricultural land from the salt water infiltration. The gardens, organize a loop of pedestrian and bicycle paths, giving access to a few piers - some of them are already in existence - enabling inner navigation . Beyond the salt gardens, a strip of land is provisionally cultivated with barley, to reinforce protection against salt water. This strip marks the access to the lagoon with a clearly visible and recurrent element in the agricultural landscape.

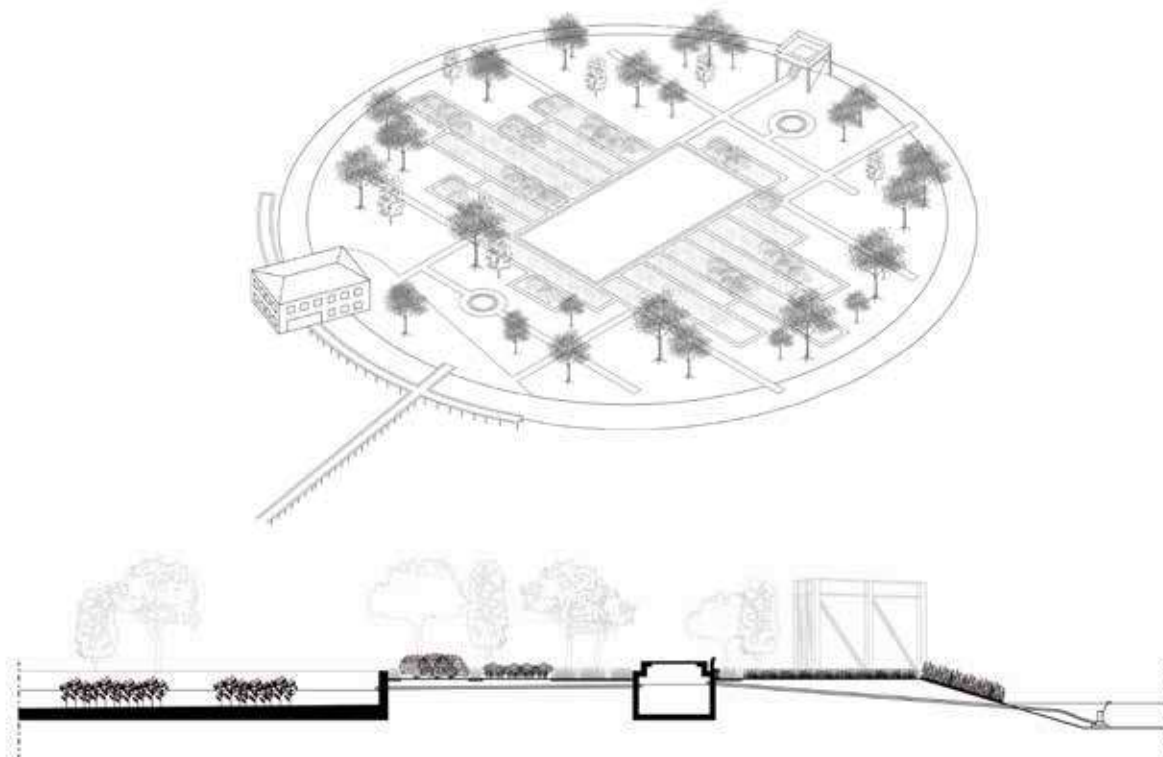


Fig. 02. Artificial island on the lagoon performing water phytoremediation and phytodepuration.
Students: D.Brugnoli, G. Campelli, C.G.Legato, (. 2017-18), Politecnico di Milano.

2. The fields

The fields are the object of a project improving the whole agricultural system, requalifying the water regulation system and reorganizing the urban-rural relation. It must be noted that the agricultural sector is here represented both by small, family owned, plots and large proprieties where agriculture is more industrialized. All the projects concerning agricultural requalification should carefully consider both scales of production, especially so as to enable smaller producers to cooperate and reach the market with high quality products.

The link between agricultural production, rural-urban relation and rural tourism is very strong, and each intervention requalifying the fields and rewriting the landscape can improve the attractiveness of the land, making new economic activities – such as rural tourism – feasible.

Water requalification is the starting point of a whole set of proposed interventions: canals are remodelled and carefully planted making them a relevant part of the phytodepuration system capable of treating both agricultural pollutants and urban waste water. Although agricultural pollutants are expected to decrease in time, as cultivation turns towards organic models of production, the canals system of depuration can function as a flexible tool to answer the need of urban waste water treatment in different seasons, avoiding the over-dimensioning of the infrastructure for purposes of tourism. Requalification takes into account the existing canals system, and the proposal for rural tourism development are consistent with its morphology.

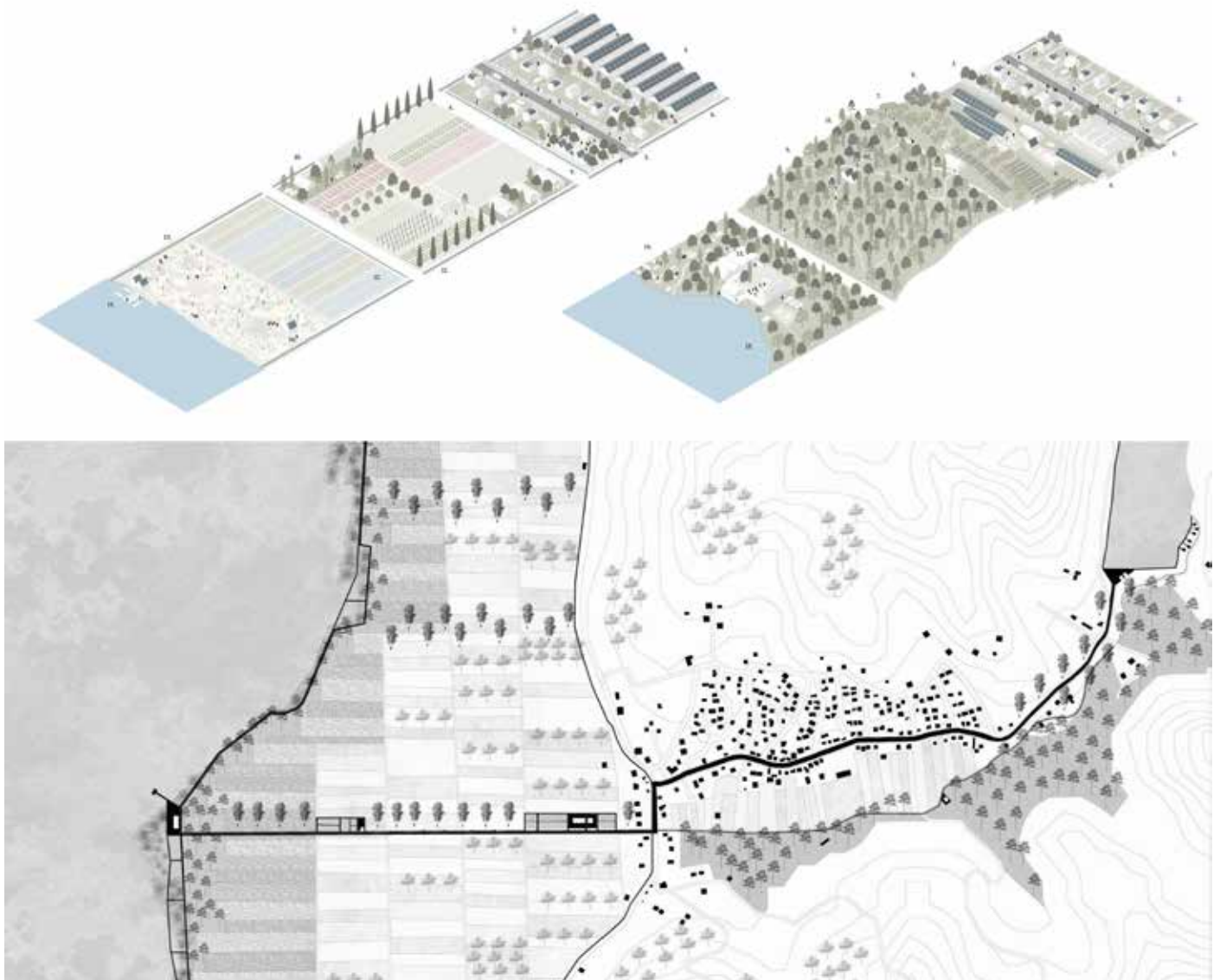


Fig. 03 Requalifying the plain for agriculture. Territorial sections. Students: C. Catapano, P. Dipace, P. Nobili Vitelleschi (over), and: M. Bianchi, F. Fantinato, D. Tirrito (under), 2017-18, Politecnico di Milano.

The plain is, in fact, characterized by a dense net of canals and “white” roads along the canals. Small “white” roads, running in east-west direction, connect the lagoon to the villages on the hills, crossing the major urban development, situated along the main local road (north-south). This ready-made structure for pedestrian and bicycle paths, can be exploited to improve the tourist’s experience of the plain, as well as the hills. The project, thus, singles out these roads as essential supporting infrastructure for small rural-tourism installations and

presents several implementation schemes, which adhere to the characteristics of local rural architecture. Rural tourism is here considered as a possible extension of the agricultural economy, adding new activities to existing small enterprises. However, the issue at stake in this specific situation is how to provide the infrastructure needed while in the meantime improving the rural landscape, making it not only more productive but also more attractive. Finally, agricultural production can be improved by changing cultivations: growing more vegetable and fruits and less cereals and, thus, recovering traditional cultivation. Irrigation methods can be changed as well. For example, leaching can be adopted for those fields which are closer to the lagoon, enabling the cultivation of vegetables notwithstanding the salt content of the ground. However, the most relevant shift in production concerns the ability to reach the market. This is a complex process: it requires the reorganization of relations between producers so as to foster the possibility of sharing basic means of production, organizing harvests and logistic and finally fixing and communicating quality standards.

Coherently, in answering the energy and infrastructure related issues, which affect the urban system and the fields altogether, we propose interventions fostering collaboration and resource sharing between producers, which can be the starting point for the creation of more complex productive alliances. In recent years, a relevant increase in the number of greenhouses, indicates a transformation and improvement process taking place in agriculture. The project proposes to use green-houses to organize energy production and distribution. Greenhouses are clustered, along the main road and linked by a micro-grid, collecting and distributing the produced energy. The cluster can be the basic unit to share energy, but also waste treatment and in the long run it can become the starting point for a new model for the organization of rural development. As clusters are organized across the main road they also offer the possibility to consider the road requalification and their project. Thus, they are tightly linked to urban system improvement.

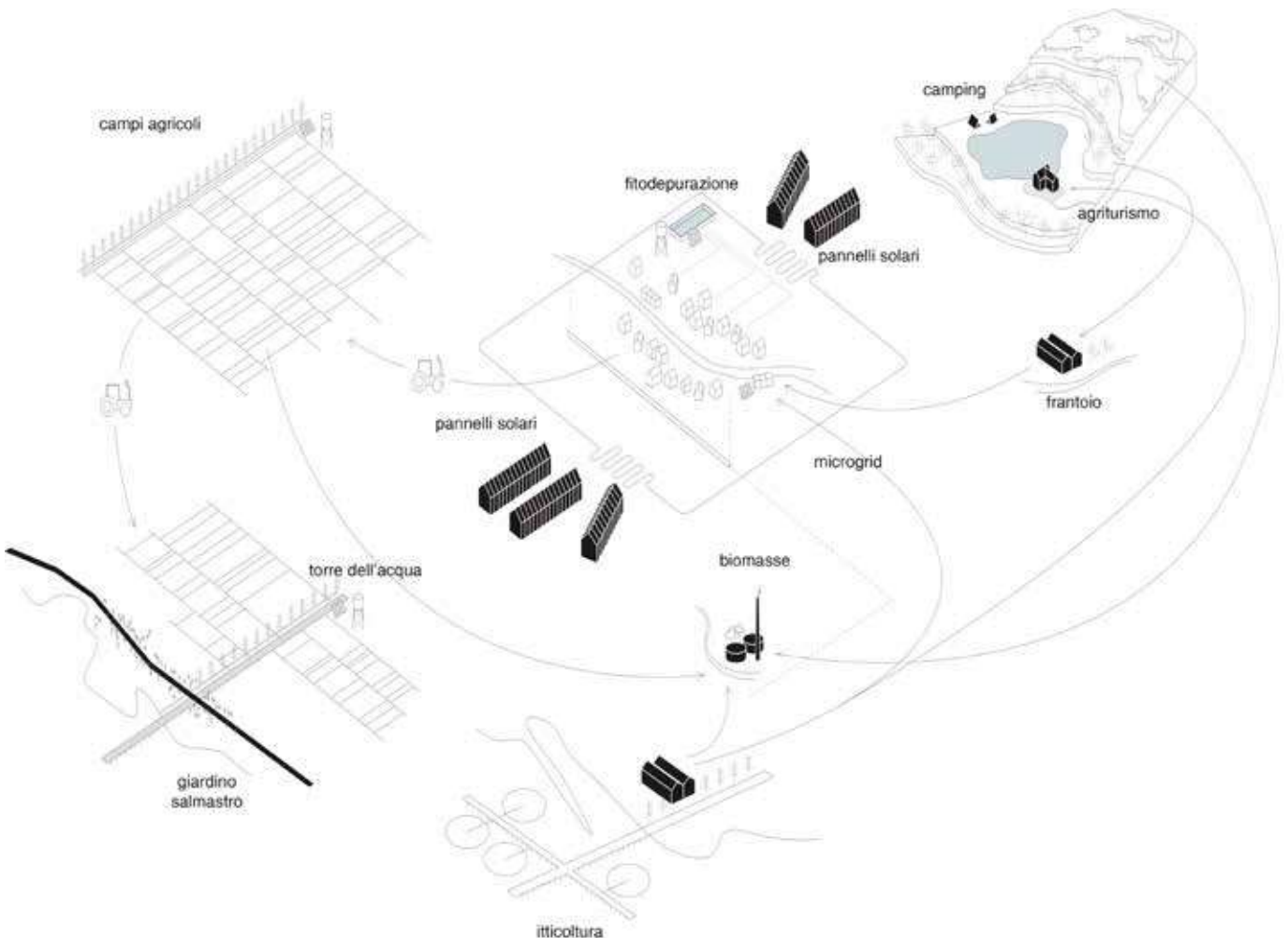


Fig. 04 Strategies to implement circular economy in agriculture, students: C.Catapano, P. Dipace, P. Nobili Vitelleschi (2017-18), Politecnico di Milano

3. The urban strip

The main road running along the plain in north-south direction and connecting the center of Divjake to Fier and to the highway, is bordered by recent urbanization, which is largely the outcome of individual actions, carried out in a climate of legal uncertainty. A strategy targeting the requalification of this diffuse housing stock is here

of primary relevance and is directly linked to the goal of improving agriculture and developing rural tourism. The proposed interventions aim to both contrast illegal building in the fields and providing the missing infrastructure to the existing "urban" environment. They also consider, as general goals, reducing pollutant levels and energy consumption, improving public space, thus achieving a better quality of life and making the built landscape more valuable.

Interventions directed towards the remodelling of the existing main road are directly linked to the provision or improvement of services such as sewerage and public lighting. These actions offer the opportunity to introduce what is a currently non-existent structure of the public space and provide the road with sidewalks, trees and lighting, whilst hosting simple but relevant services like bus stops, the bicycle paths and the bike sharing stations. All of these simple elements improve the quality of public space and indicate a tangible effort to reconstruct in this region a clear image of citizenship. To this extent they also collaborate re-defining a new urban-rural relation.



*Fig. 05 The reorganized main road is a tangible signal of a renewed idea of citizenship and belonging.
Students: C.Catapano, P. Dipace, P.o Nobili Vitelleschi (2017-18), Politecnico di Milano*

4. The coast oasis

Finally, the last and most complex ecology is that of the coastline. This is a highly dynamic landscape of which the limits are defined by the lagoon on the east, the sea on the west, the river Seman at the north and the river Shkumbin at the south. Moreover, it should be noted that although the northern part of this strip of land lies within the border of the core zone of the National Park of Karavasta, the southern part doesn't and it is not subject to the same protection regime. Current conditions are, thus, quite uneven: the coast is made of a sandy strip which is ever increasing in the center and eroded at the extreme. A pinewood forest separates the sandy beach from the lagoon. A smaller lagoon – the Godulla lagoon – divides the northern part from the southern part. At the south, on the land once occupied by the delta of the river Seman, soil is so salty that nobody ever succeeded in growing crops (in fact we can consider this land as a failed attempt at land reclamation for agriculture).

By contrast, the project proposes a set of interventions aimed at defining this part of the region as a unique landscape despite the different elements that compose it. The general aim is to make this landscape capable of hosting a variety of activities, enhancing natural protection while fostering productive economies linked to the natural environment. Thus, the overall proposal envisages a unique park environment strongly characterized by sand dunes, water and the forest. On the southern edge where the landscape has to be completely redesigned, the park will host innovative and technologically advanced production, implementing both agricultural and industrial

activities related to natural protection. While on the northern edge the park will continue improving the natural oasis which is already part of a well-protected and cared environment of the core zone. The main interventions can be summarized as follows.

Firstly, the project seeks to improve the interventions already taken by the local administration in reinforcing the existing pinewood, progressively thickening it, colonizing the space of the sandy beach. The pinewood forest is meant as the main connecting element of the whole park environment and is of primary relevance in structuring the new coastline landscape. However, this action is also strategic in organizing access to the beach. Reducing the distance between the forest and the sea and providing small parking lots plunged into the forest, can prevent private cars accessing the shore, and the same parking lots can be considered as flexible public spaces during the low season.

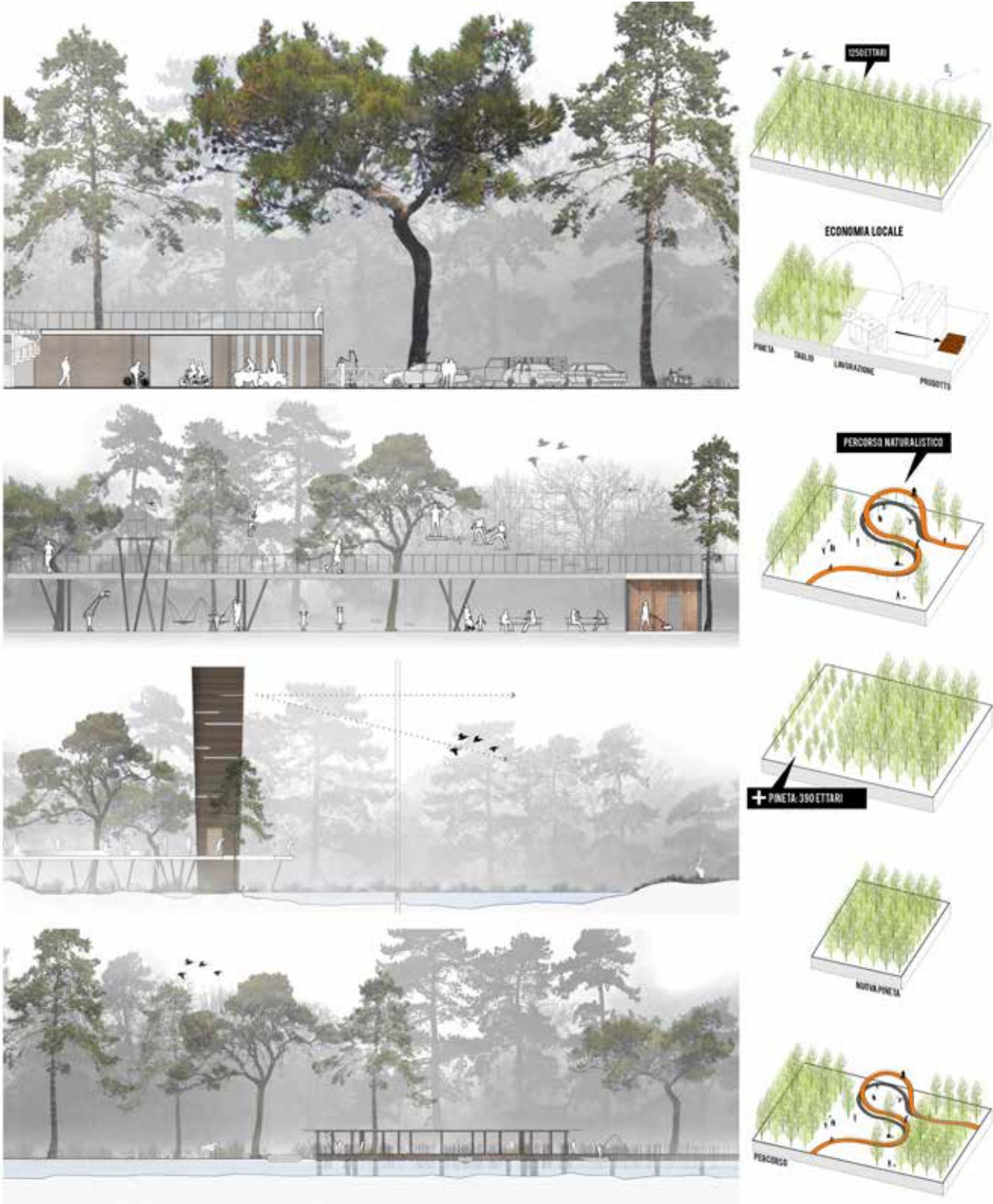


Fig. 06 Footbridges in the forest, Parks services and leisure activities are organized by a unique infrastructure fostering a new economy enhancing wood craftsmanship.
Student: E. Bertonazzi (2017-18), Politecnico di Milano

Secondly, the existing urbanization plunged into the forest and devoted to seaside tourism is to be recovered and requalified. To avoid illegal and low-quality buildings in this strip of hotels and secondary houses, but also to avoid large derogatory projects, we propose to evaluate the opportunity of a moderate extension of this “resort in the park” environment. It could achieve the double goal of requalifying the existing stock and providing a small number of locally owned and managed tourist premises. The direct involvement of the Park Administration could be taken into consideration for this intervention.

The forest also integrates a bicycle and pedestrian path, which runs along the margin of the lagoon and gives access to the piers for inner navigation and to a range of park-related services (information center, birdwatching installations, didactic paths, etc.). All of the park installations are designed to be the product of local craftsmanship and are meant to reinforce the local economy, recovering and developing local tradition of wood working at service of the park maintenance. A first footbridge, crossing the forest, has already been built by the municipality and is made of pinewood, collected from the park maintenance.

Finally, at the south of the coast line where the desolate landscape of the failed land reclamation divides the lagoon from the sea, we propose a new productive landscape. Large plots, organized on a grid recovering the former reclamation grid, are detached by the lagoon by a thick strip of pine wood forest: the land is here available for a range of activities which should introduce innovative productions strongly linked to natural protection. They will be hosted in a park environment and should be compatible with high sustainability standards. Some examples could be the cultivation of officinal plants and their transformation, the productive cycle of wood and paper production, photovoltaic energy production, algae cultivation for energy production, salt industries, etc. The programs will be subject to evaluation on a case by case basis, but the basic principle is that the region has to consider improving its attractiveness by proposing an innovative model of technological park, which can prevent depopulation becoming a major issue.

Conclusions



Fig. 07_Different economies in the National park.
Students: M. Bianchi, F. Fantinato, D. Tirrito (.2017/18). Politecnico di Milano.

As a general conclusion we can recall that our research is grounded in the National Plan effort to promote environmental protection and develop tourism both on the coast and in the lagoon area. This research program seeks to trigger innovation in socioeconomic development while reinforcing local resources and offering a positive approach towards coast protection. To promote an active protection of the region’s resources, which doesn’t simply rely on the good intentions of preservation, local administrations have to contrast very diverse phenomena of “erosion” both natural and anthropic, while they also have to face large derogatory plans. To achieve these goals a strong and reliable model of local planning is needed. Coherently, the research questions the concrete possibility of implementing National Plan strategies of sustainable development, and suggests that a thorough

investigation and review of current local planning strategies is necessary.

Therefore, the study's main proposal is an integrated project. It conceives the complexity of the existing territory and the coexistence of diverse economies as one of the major resources of the region. Coherently, the project recognized the need to work with different strategies which are not necessarily sectorial, and are frequently transcalar, as for example, strategies concerning water management which cannot be separated from agricultural improvement strategies, housing stock regeneration, or the provision of urban waste management.

Consequently, as Albania is in a process of re-grounding the whole system of planning, we consider how the region of Divjakë can offer an exemplary opportunity to challenge the very notion of sustainable development in local planning. For this purpose, the final results of our research consist in providing the municipality of Divjake with a set of development and planning guidelines, which can be tested and verified in the near future. This effort seeks to consolidate innovative design practices capable of dealing with a dynamic and yet fragile territory, which requires active and focused interventions as opposed to static and traditional land-use planning (Masoud, 2017). The region of Divjake, thus, has served both as the target of the investigation, and the background against which to test innovative design processes dealing with the multiple scales and dimensions of local planning.

Moreover, to provide guidance for reframing agricultural production and rural tourism economy – which is still in its initial phase – the research proposes the creation of a specific infrastructure, named Urban Lab, (currently under construction), which purpose is to provide formative courses for the local youth. This urban laboratory with the active involvement of civil society and institutions will be in charge of testing most of the research proposals. The research program, thus, positions itself at an intermediate level between the reception of society's needs or expectations and the reconstruction of a legitimate and participated planning practice.

Aknowledgments

The research collaboration between DASTU and the local administration first started through several didactic experiences and developed through periodical contacts and exchange over a period of five years. All accompanying images were produced in design studios held at the Politecnico di Milano, School of Architecture. More recently the collaboration assumed the form of a cooperation program supported by AICS. The cooperation program named "URBAN LAB" is developed by a larger group. The Italian partners are: Vento di Terra (ONG coordinator), DASTU (Dipartimento di Architettura e Studi Urbani-Politecnico di Milano), ICEI (Istituto Italiano di Cooperazione economica Internazionale), AITR (Associazione Italiana per il Turismo Responsabile), CESES – (Centro Europa Scuola Educazione e Società); Albanian partners include: the Municipality of Divjakë, INTBAU ALBANIA, Tirana University –School of Social Science. The Ministry of Urban Development and the National Territorial Planning Agency (AKPT) have supervised the design process since the beginning.

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[ECO/02]



COHABITATION “MACHINES”

Rethinking industrial alpine urban countryside

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abstract

How is the alpine urban countryside modified by widespread industrial production? How can the widespread production areas be reinforced as a resilient system into complex orographic contexts? What design devices can be used to rethink the existing situations?

This essay explores the issue of industrial production areas scattered in the alpine valley floors by presenting a case study in Trentino. The emerging phenomenon concerns the large diffusion of fragmented industrial areas characterized by an under-utilization of spaces, abandoned buildings, unsold sheds, vacant lots, and the need of settlements rationalization, landscape repair and environmental and functional redevelopment. The characteristics of the topographic context, anisotropic, complex, rich in diversities, allow us to recognize heterogeneity and discontinuity as a value, different things that can be together and cohabit in fragmented “constellations”. The critical signs deposited in the low and medium mountain zones are the most sensitive testing ground, which requires more effort, not to continue to cancel or exploit it, but, on the contrary, to be able to return it repaired at the mountain as a unitary “architecture”. This means working on unpleasant, insignificant or unrecognized parts that escape or are conceptually invisible to the common perceptive imagery. The knowledge of spaces, the reinterpretation of relationships with the lands morphology, the reading of critical environmental issues, discover strategies, rules and design practices to rethink a more performing, efficient, resilient cohabitation where the widespread industrial production areas can be rethought as “machines” to produce ecologies and repair landscapes.

keywords Industrial Production Areas, Alpine Urban Countryside, Design Ecological Machines, Architecture, Landscape

Introduction

Environmental decay, rapid consumption of resources, radical modification of ecosystems, climate change and widespread pollution, are among the emerging problems of the “Anthropocene era” (Crutzen and Stoermer, 2000). The new scenario is marked by the crisis, a condition that brings with it a transition from one state to another inevitably different.

The modern design principles, based on the concepts of separation and development, now appear ineffective. The crisis is a threshold (κρίσις: distinction, discernment) that questions and demands transformation by changing the point of view on the phenomena, establishing connections between apparently irreconcilable elements, articulating multiple levels of interpretation and “new paradigms” (Mostafavi and Njle, 2004).

In order that the figures of artifice can weave new structures to live with nature, able to producing ecologies rather than destroying them, the project is called to identify tactics and resources within the figures themselves, re-conceptualizing the existing as an instrument of ecological evolution, “taking care of what is placed among things, and not just what simply is” (Clément, 2015: 7). This approach forces us to renounce to a project as a pre-determined construction, in exchange for a system of “common goods” (Pai and Zaera-Polo, 2017), a “machinic landscape” (Mostafavi and Njle, 2004) able to respond to living and changing conditions. The new project requires a “creative cannibalization” (Clifford et al., 2017) of accumulated artificial residues and existing stagnant structures, reorganizing the already built materials in more resilient and performing spatial and ecological cohabitations. It is a necessity that crosses scales and geographies and that is even more evident in those marginal contexts for a long time hidden by mainstream narratives or veiled behind codified imaginaries and clichés of generalized

amenity.

The Alps represent a privileged observatory of this new scenario, we think, for example, to the effects induced by the geographically moving climate from north to south, with an estimated displacement of about 200 km in 2050 that slowly transforms the built environment together with the climatic nature. To investigate the Alpine phenomenon is necessary to go beyond the geographical determinism that links this territory to the romantic image of ecological and tourist oasis (Bonomi, 2013). It is necessary to describe a more complex polycentric reality in which modernization is still a process in progress, new productions are flanked by those consolidated, often in crisis, and where the industrial production spaces are struggling to cohabit with the mountain.

The Alps are an urbanized landscape (Figure 1). In large portions of the mountain territory, not only close to the cities, but also in smaller towns and secondary valleys, this landscape has been eroded with endless reductions and fragments where the artifice is constantly mixed with the nature.

There are not many images of industrial alpine landscapes. Today it seems that industrial production is not part of the Alpine landscape. On the contrary, it is one of its constituent elements, of a territorial construction stratified over time. In the mountainous "urbanized countryside" (Samonà, 1968), the economic activities originally related to agricultural production and the non-agricultural ones of the modernization create a mix that is difficult to interpret. An overview on the geography of production reveals the density of industrial presences, their aggregation, their location with respect to topography, railway, road and river infrastructures, biodiversity reserves and environmental emergencies. Even if the presence of industrial production areas is not comparable to the metropolitan lowland contexts, it is necessary to go deeper. In the Alpine space the presence of industry is significant in terms of impact compared to the relatively low available flat surface.

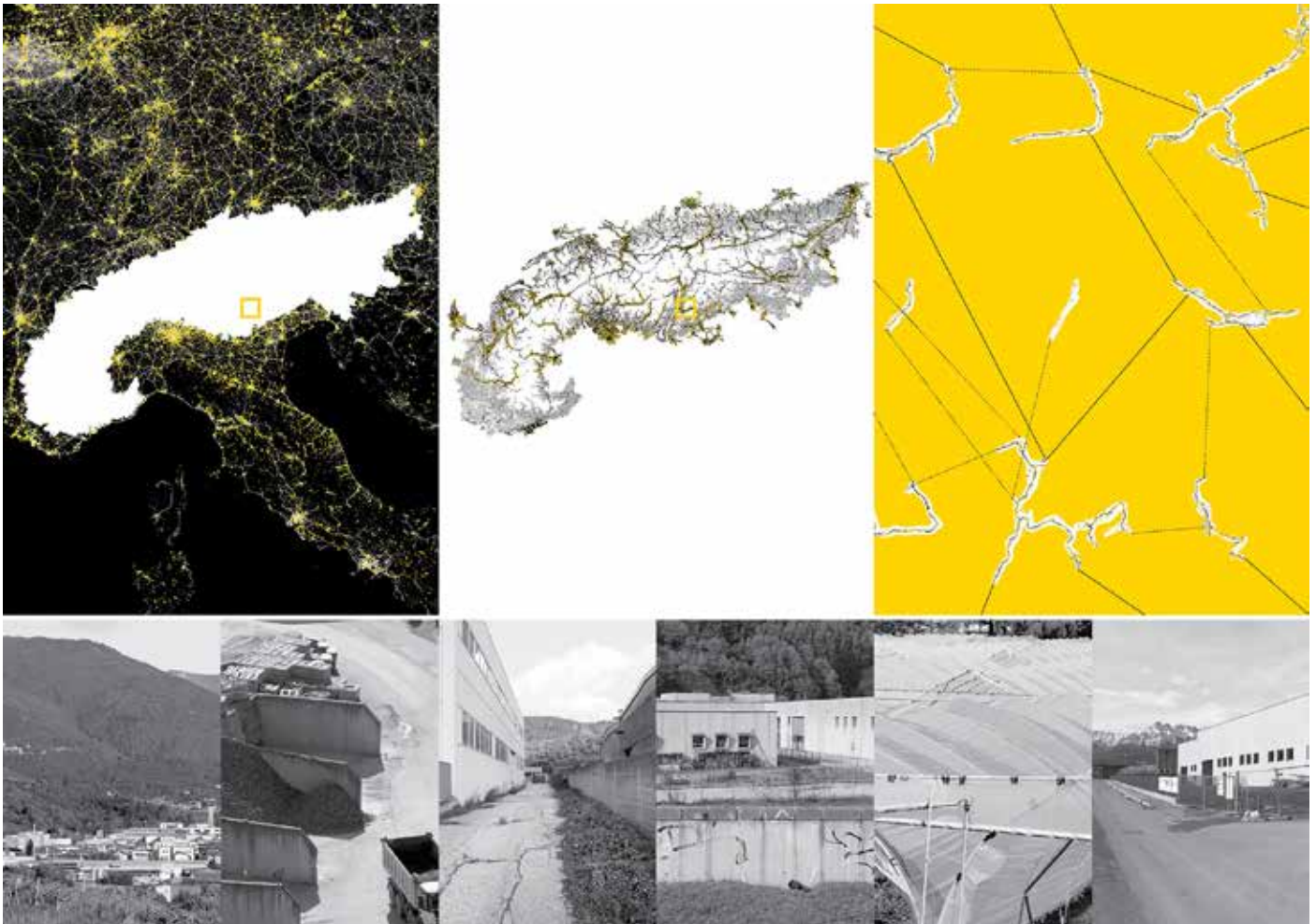


Figure 1. Industrial Alps. Mountain production platforms: low and medium mountain areas (<1200 msl); main infrastructures and urban areas (black); industrial production areas (yellow); case study territory (yellow square).

Forms of widespread industrialization distinguish large portions of the low and medium mountain lands, dot the margins of historical and recent settlements, a result at the same time of a tenacious "parochialism" and of the legacy of functionalist planning. The industrial areas are configured as spaces, more or less extensive, characterized by large building volumes, warehouses for production or artisanal activities. The environmental decay and the lack of quality of these areas are the result of a conventional design, of standardized techniques, indifferent to

places, homologous and homologating. Added to this is the lack of hierarchical services and infrastructures, the presence of residual “non-places”, abandoned or without connections with the contexts. These are composite fabrics, deeply marked by the intense development of the recent years, only partly arrested by the economic conjuncture.

The intermittent and fragile condition characterising these landscapes can be turned in a positive way. The mountain condenses conflicts able to establish dialectical relationships, thicknesses where to meet specific ecological, political, economic and social needs. Alpine spaces provide material resources, such as water and forest products, as well as benefits related to well-being, such as the air and the recreation of the mind, in a large share of biodiversity and cultural diversities. In history, despite their marginal position, mountain regions have been among the main concerns of society, guardians of the fundamental resources for the development of urban construction, just think about the events of the Republic of Venice and the large Arsenal factory. In recent years, the reflections induced by the new environmental and ecological paradigms translate into a new attention, a cure, a necessary project.

Taking care means to repair something, remedy, but also protect. Taking care of the industrial fragments means exploring a project by parts, intended as a dialogue between different natures, where to make productive activities and landscape live together, grasping not only the constraints, but also the opportunities of a delicate and fragile environment like the Alpine one.

Objectives

The subject of this research¹ is the low-tech and low-spatial articulation material that dot large portions of the Alpine mountain: the industrial “mikrokosmos”² (Zecchin, 2017), existing sheds and fabrics, “scattered confetti” and more or less large plates of industrial production zones where the malfunctioning and the non cohabitation with the orographically complex landscape is revealed first of all as an environmental and ecological emergency. For their extension, these materials are discontinuous, heterogeneous, opaque, conceptually veiled spaces, which require us to experiment with new approaches able to making them more efficient and responsive to the contemporary needs, less in conflict with the environment, more inclusive from the social point of view, more energy-efficient, as “machines” that produce ecologies. In this horizon, the research aims are the quantitative and qualitative knowledge of this phenomenon and the design experimentation of a rewriting that alludes to a new order of relationships with the mountainous palimpsest.

The research is detailed in a specific case study in Trentino region: the valley system east of the city of Trento along the initial part of Valsugana valley, corresponding largely to the territory of the Comunità di Valle Alta Valsugana and Bersntol. Here, the industrial production areas have a similar plant and settlement model, but are different in terms of production types. The constant consumption of soil corresponds to an almost total indifference of the prefabricated shed type, showing density as an advantageous component now defined only by the rules of distance from the road border and between buildings in the lots.

The special orographic condition - in the absence of a continuous weld between the urban and the interlocking open spaces, in a territory rich in characteristics and places of landscape value, with a high level of infrastructure of the valley-floors - determines very special characters. The transition from an essentially agricultural production to an industrial-artisan economy was less abrupt than in other contexts, affecting singular nodes. The main industrial development took place for large productive plates, while the original agricultural activities soon reconverted to the service of tourism. Consequently the spread, of small and medium-sized production areas, is more disjointed than in other contexts and it is differentiated by specialized sectors. Yet they represent a continuous low noise, always present at a careful look (Figure 2).

In the investigated reality, the urbanization of the countryside started in the 60s, in the “city in extension” (Samonà, 1976) of the “Comprensori” - now “Comunità di Valle” - as a response to the need to restore a sense of living in

1 / The study and the methodology of this research have been applied in the collaboration with the Urban Planning Service - Comunità di Valle Alta Valsugana e Bersntol, within the project of the new PTC Community Territorial Plan and the specific studies on industrial production areas conducted by the Author under personal responsibility.

2 / The notion of “mikrokosmos” has a special meaning, it refers to the notion with which the Hungarian composer Béla Bartók, to name his 153 progressive pieces for piano, defines a collection and cataloging of heterogeneous parts, fragments of ordinary motifs, of popular songs, of different rhythms and their recomposition with the classical ones in a new significant structure. The choice of the fragment, its clarification and its assembly with others, spaced out by the use of empty intervals, refers to the possibility of giving meaning and depth to small apparently ordinary and banal universes of signs, integrating aspects that are apparently irreconcilable with a work concretely rooted in the reality of things. In this research, “mikrokosmos” describes the forms of widespread industrialization that distinguish large portions of the Alpine low and medium slope lands. It is about proceeding to explore the back of signs and things in order to discover the deeper aspects, to understand and to make intelligible a deeper nature.

the Alpine valleys marked by conditions of great weakness and from consistent flows of emigration. In 1967, the Provincial Urban Plan by Giuseppe Samonà (Samonà, 1968) defines an ambitious project, a new territorial design that rethinks the infrastructural organization, the allocation of spaces for industrial production and social equipment, the environmental values and the innovative use of these resources for tourism development. These tactics were placed within a hypothesis of modernization conceived as a response to the recognition of the loss of settlement sense with respect to traditional agricultural areas and marginal settlements. The choice of industrialization is seen as an alternative to the exodus from the valleys and as a pivot for the reconstruction of vital territorial relations. The idea of an “equipped countryside” - as a “city in a garden”³ - can be now rediscovered and renewed in contemporary forms. An urban countryside is a built space that is “productive”, an infrastructure-landscape re-designed over time. And even the industrial areas are part of this precious infrastructure, a construction that has characteristics and potentialities that deserve a more in-depth and responsible project.



Figure 2. Alps Low and medium mountain alpine production lands. Industrial and artisan fragments in the case study urban countryside.

Methodology

The perspective of this study is the action research, articulated in interwoven phases: to the field knowledge follows the study of best practices already applied in other contexts, to the articulation of meta-projectual guidelines, follows the their experimental application in a territorial strategic framework and in some pilot areas identified as significant of the emerging investigated issues.

The first phase uses the tool of the journey to discover the hidden industrial production areas widespread on the “folds of a cape”, the valleys as “architectural rooms” (Zecchin, 2012). The investigated territory - a “coring” of 20x30 km which includes different fragments, areas and buildings, waste and residual spaces - allows to probe the “territorial anisotropy” (Zecchin, 2017), related to the particular morphological situation, and to describe the hidden and invisible drawing of industrial fragments to be re-oriented. The study of real phenomena and spaces highlights the critical issues, the experiences of analysis in the field identifies heterogeneous families of production areas. New maps tell the found pieces, record the distribution of different materials and put them in relation to other pieces and their ecologies.

3 / “Urbs in horto” is the famous motto of Chicago, the city in a garden.

The second phase considers the analysis of the environmental components that interact with the industrial production areas. This survey is aimed at understanding the phenomena through qualitative and quantitative descriptions. Their spatial representation aims to visualizing the distribution on the territory, putting them in relation to the geographic factors, the localization of the activities that generate pressure on the environment, the distribution of sensitive areas. The aim is to turn the environmental critical issues into opportunities, an "outil" to rethink productive landscapes of quality.

In the third phase, the study of best practices is systematized in the formulation of guidelines - a sort of manual in the field, a design canvas - for the implementation of ecological and landscape equipments in the industrial production areas, organizing the most appropriate meta-projectual rules in the investigated mountain context. The aim is to promote the sustainable urban regeneration and redevelopment of the existing industrial spaces, connecting them to the landscape, environmental and architectural elements, through ecological integration/mitigation tactics that enhance the relationships with the other mountain spaces. The landscape component is the fundamental requirement for a an overall project, the renovation of the settlement system, the redesign of open spaces and discarded edges, the use of blue/green infrastructures as structural elements.

The fourth phase proposes the industrial production areas as parts of a "constellation" (Figure 3), reinforcing the margins and thresholds, making them interact with ecological networks, infiltrating the vegetal elements, the connections, the multifunctional micro-equipments, where it is useful to design a requalification over time, preserving the free spaces as environmental resources and constructing a matrix of ecological interconnected productive places.

Within this matrix, in the fifth phase the research deepens the design verification in the pilot areas: fragments recognized as strategic for their size, location, relationship with the infrastructures and the local territorial realities. These industrial and artisanal production areas are often in continuity with peripheral commercial or urban spaces, but also specialized functional zones, landfills or waste collection centers, wider fragments characterized by intense extraction activities close to abandonment or with a production slowed down, or lands affected by the phenomena of protected agricultural crops, greenhouses for the production and processing of agricultural products of an industrial nature. This availability represents an important resource for the project and its possibility to experiment different ways of cohabitation able to remaking landscapes.

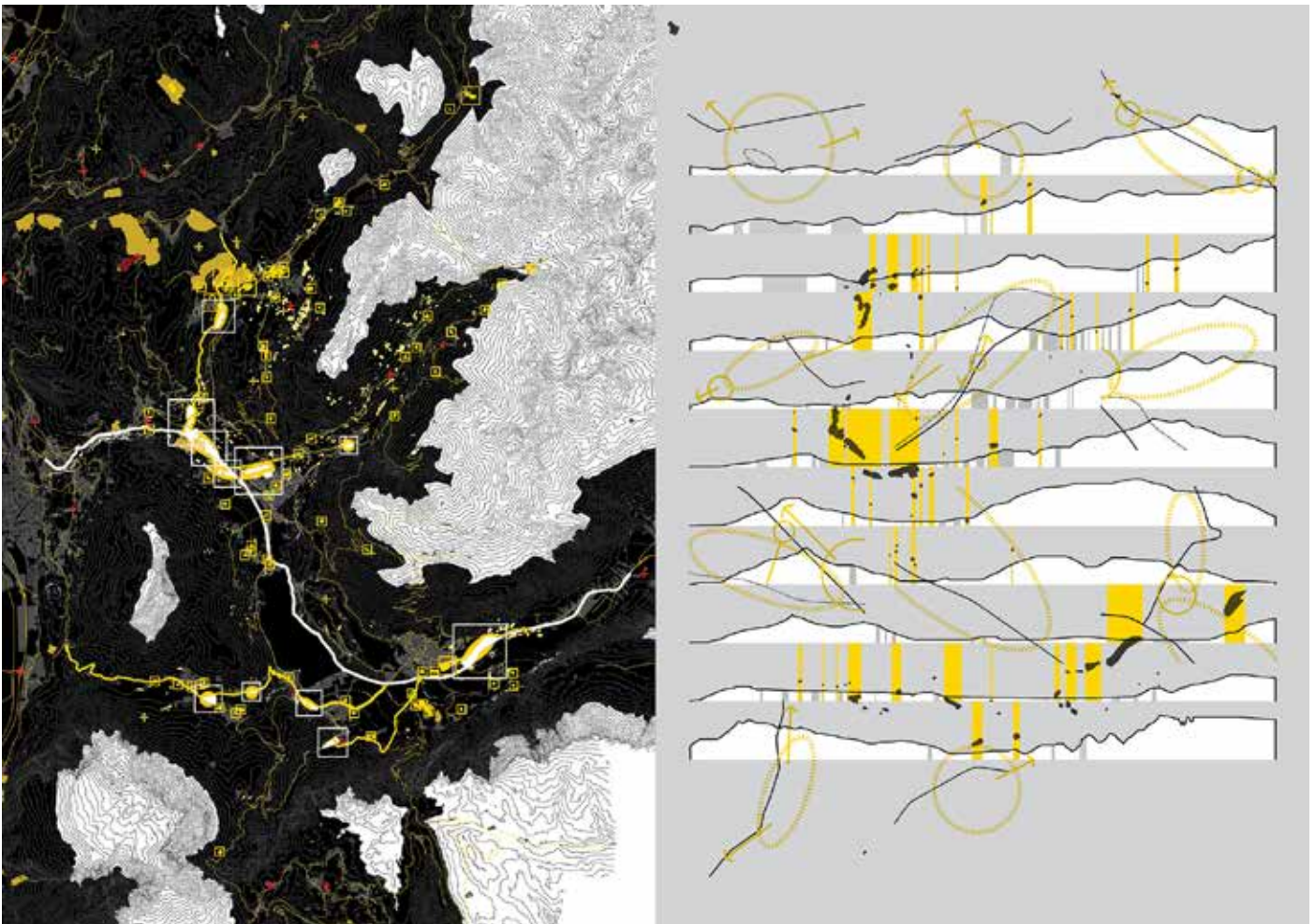


Figure 3. Constellation of poles. A network of interconnected strategic industrial production areas. Strategic frame: main tubes; main connectors; strategic industrial areas; industrial corianders.

Results

In the explored valley system, the industrial production areas occupy a surface of 1.884.480 Sq m, of which about 30% (581.284 Sq m) are vacant spaces. In this territory, the common phenomena to others Alpine urban countrysides concern the concentration of the industrial areas in the valley floors, characterized by the presence of important infrastructures and services, the decline of the existing industrial areas in marginal mountain municipalities, came to the thresholds that fear the disappearance of the production tissue, the coexistence of the industrial production with the widespread agricultural and tourist lands. The emerging phenomenon concerns the large diffusion of local degree fragmented production areas (municipalities: 1.002.382 Sq m, vacant 36%, non-urbanized 353.546 Sq m), particularly those planned and not yet realized. The recent economic crisis and negative trends have produced a dissemination of abandoned buildings and unsold sheds, and generally an under-utilization of spaces. To these issues are added the need for policies of settlements rationalization, in line with the tertiarization in progress, and the demand for landscape repair projects and environmental and functional redevelopment interventions in these critical, but strategic, areas.

The journey recognizes "junkspaces" (Koolhaas, 2006) full of potential, considered ugly by those who live there, indifferent to those who cross them. Spaces that we believed had nothing to teach us, nor that could be admired, because they were very different from the Alpine pleasant spaces to which our imagination is used, places without merit, characterized by the juxtaposition of objects and spaces often summarily designed. Identified as actual or potential "dross" (Berger, 2006), these pieces of productive Alpine "urban countryside" can become structuring elements of the landscape, common goods, "machines" to recover the environment.

Almost all industrial production areas are exposed to hydrogeological risk and subject to air pollution. The climate change implies a significant increase in the seasonal temperature, especially in the summer (+ 5°) and of the precipitation, albeit marginally (+ 2/3%), but with significant reductions in summer and winter (-6/9%) and increases in autumn (+ 7/15%). The constant progression of climate change and its impacts requires resilient spatial mitigation and adaptation tactics.

The industrial production areas lap 4.800 km of watercourses. From the qualitative status of these watercourses emerges the lack of environments under high ecological conditions, the widespread presence of river sections where the good ecological condition is unstable, the particular emergency of watercourses insufficient ecological status. In the explored territory there are many water sources and three main areas of attention for intense exploitation of the groundwater that correspond to the main industrial production areas. The environmental deterioration is due to morphological alteration and constriction or rectification of natural flats with settlements and incongruous uses of the border spaces, reduction of the vegetation bands and indispensable ecological filter, alteration of the natural flow regime due to the combined sum of the major water spills and also as a result of deferred water refunds. A significant improvement in the ecological and landscape equipment can produce indirect positive effects in relation to these issues.

In terms of soil consumption, this territory is predominantly affected by forests (32.4%) and agricultural areas (18.6%). The urban areas reach 22.4% with peaks around 50% in the valley floors. The potential new soil consumption is about 1.059.375 Sq m because next to the many vacant planned industrial areas, there are approximately 671.634 Sq m of residential areas and approximately 387.741 Sq m of areas for new urban expansions which are planned, but not realized. These data conflict with the about 28% of the entire building stock that is empty, a large unused heritage that recalls, on the one hand, its recycling and, on the other hand, the opportunity to regenerate by densification of the existing spaces, eliminating further possible agricultural land consumption, even in heavily infrastructured areas such as the industrial areas.

The areas subject to reclamation processes, the landfills in use, the waste and inert processing zones, the porphyry and gravel quarries, are the spaces in continuity with the industrial production whose physical and conceptual meaning is today opaque, obliterated, neglected, overlooked, struggling to perceive them as potentially new landscape activators places. The industrial extraction activity occupies an area of 3.572.328 Sq m (stock: 40.250.000 Cu m millions). The recent economic crisis that particularly affects the building sector, has had a strong fallout on the extractive sector, with an unprecedented collapse, mining concessions requests new extensions, deserted auctions of quarry lots, abandoned areas before the material depletion, high levels of unemployment. In this moment of stagnation, it appears necessary to look for solutions aimed at converting current critical issues into potentials, favoring opportunities for a revival of the sector starting from a better integration between quarries and ex-quarries, landscape and environmental contexts.

Cultural and natural places and networks conform a sensible territory with which to establish new cohabitations. Approximately 19.000 Ha of forest is qualified as a production forest (4,5 million cubic meters). Diffuse phenomena of abandonment and largely spontaneous reforestation are present as a result of the changed socioeconomic conditions, yet forestry is a resource that can interact with future industrial landscapes.

The contact margin between industrial production and agricultural areas is about 170.056 linear meters. The used agricultural area tends to the specialization in fruits and small farming. The 1.290 farms have an average

surface area of 5,2 Ha, divided between arable land, woody crops, meadows. The fragmentation of agricultural landscapes, the abandonment of the more marginal ones, the transformation due to protected industrial crops (greenhouses), are the main critical elements. The industrial greenhouses occupy an area of 1.812.030 Sq m (52.000 linear meters). The vast greenhouse surfaces in recent years occupy many low sloping farmlands, making counterpoint to the portions of historically agricultural surfaces and terraces now occupied by the new forests. The presence of industrial plants for the production of small fruits produces a widespread transformation of the traditional productive landscape.

Based on the field analysis and the systematic study of best practices applied in other contexts, the research declines the theme of the ecologically equipped industrial production areas in a highly landscaping key. The guidelines, developed for the specific mountain context, are based on the need to define strategic themes of landscape and ecological regeneration of existing production areas, extending also to the design of possible extensions.

The thematic framework is led to 7 strategic issues: logistics, the transport system and mobility; settlement, the urban and territorial system; landscape integration, the system of edges and insertion in the landscape; architectural quality, the system of the built and the identity of the places; open space quality, the porosity system and blue/green infrastructure; environmental sustainability, the system of risk, soil and subsoil, energy, noise, waste; management, the joint management system. The guidelines identify a set of design strategies, objectives, rules and materials aimed at guiding the regeneration and redevelopment project of these areas. Starting from the analyzed specific settlement and production structure, the guidelines apply to three types of areas: big plates, these are larger pole areas of greater size and have localization features and logistical connections that play a territorial strategic role, with an aggregate character; small plates, these are existing or planned areas, of smaller size than the previous ones, and have a local logistical connectivity, with a punctual or aggregate character; corianders, these are existing or planned small areas, isolated and/or internal fragments in the consolidated urban tissues, with a single mononuclear character. An application matrix of the guidelines interwines the different types of production areas identified to the different degrees of application priority of the actions.

Artificial soils are transformed into multi-functional grounds for water phytodepuration or storage and drainage, on the model of the most recent experiments of multi-purpose topographic "playgrounds". In this process, tactics are central to the remodulation of densities, morphological and settlement rules of edge construction optimize soil consumption and to conserve the vacant spaces as green reserves, the prediction of thick ecological margins achieves high standards of quality and local ecological endowment. The ecologically oriented infrastructure of the industrial areas, proposes a systemic approach to the project, able not only to preserve current ecological functions, but to establish new ones where these are absent. This linked structure of resilient voids can have a positive impact on fragility through the definition of a widespread and articulated network that integrates in the design of spaces, the quality of places to reduce or mitigate the risks associated with climate change, plumbing, and eco-infrastructures, activators of new and more systemic life cycles. To these themes are added those related to the architectural re-cycle, for widespread micro-interventions of building recovery, according to spatial organizations with greater flexibility in the use of spaces, the insertion of new functional mixité and new activities, the creation of green and habitable soils on roofs, the recomposition of performing enclosures, the increase of energy from renewable sources, the selective densification, through the insertion of new architectural bodies to weld the discontinuous edges, or the selective thinning of some other parts, re-naturalizing them or returning them to agricultural production. The industrial production spaces can also be reorganized internally, assuming scenarios where two or more companies choose to live together, or for small companies share common facilities and services, realized by densification between different existing buildings. Retrofitting, addition, subtraction, grafting, wrapping, are tactics that can be aimed at the integration between architectural and vegetable organisms at the different scales, from the revegetation of walls and building façades through vertical green systems to works of urban reforestation and tree sprawl.

It is to structure a repair project over time, a metamorphosis that can will return a more comprehensive quality. To tell this possible transition it is important to start with a new image, the "mikrokosmos" (Figure 4) as a protective figure to interpret a landscape designed by reconnected parts, whether these parts produce porphyry, stone, gravel, vegetables or other products, a "constellation" of fragmented production spaces, recognizable and in tune the topographical mantle that holds them together. In this re-imagined idea of the mountain countryside as a productive space, the industrial areas can be reintegrated with the other equally productive spaces of agriculture or forest. Production spaces are also gardens, with a relatively small size, where to find a widespread quality, where biodiversity infiltrates the built and artificial grounds, in a synthesis of different natures that cohabit in an equipped landscape. The territorial strategy proposed by this research reconsiders the industrial production areas as active fragments, places interacting and performing with natural ecological networks lapping or cross them. The image of analogous "mikrokosmos" corresponds to the assembly of the sequences of industrial production areas along the natural liquid networks and the valley topographic system.

A particularly significant pilot verification is conducted in the Cirè industrial area (206.153 Sq m, vacant: 7.665 Sq m) and the nearby brownfield (625 726 Sq m). The first is a linear production district located at the foot of the slope on flat topography. The high degree of morphological incoherence, the heterogeneous quality of settlement, are the main sensitive elements. The second is a brownfield where heterogeneous and no well-marked signs have been deposited over time, characterized by the presence of a large portion subject to degradation and, more generally, by a still uncertain destiny. Starting from a historical agricultural use, the current destination is in part the outcome of environmental remediation after the extraction activity (with porphyry scraps) which still persists in two portions. The area is also affected by the localization of timely interventions without integrated design (waste platform, electric cabin, inert materials processing plant, some scattered houses, a fuel station and numerous greenhouses). It constitutes a territorial reserve to be programmed through a unitary project of a technological productive park.

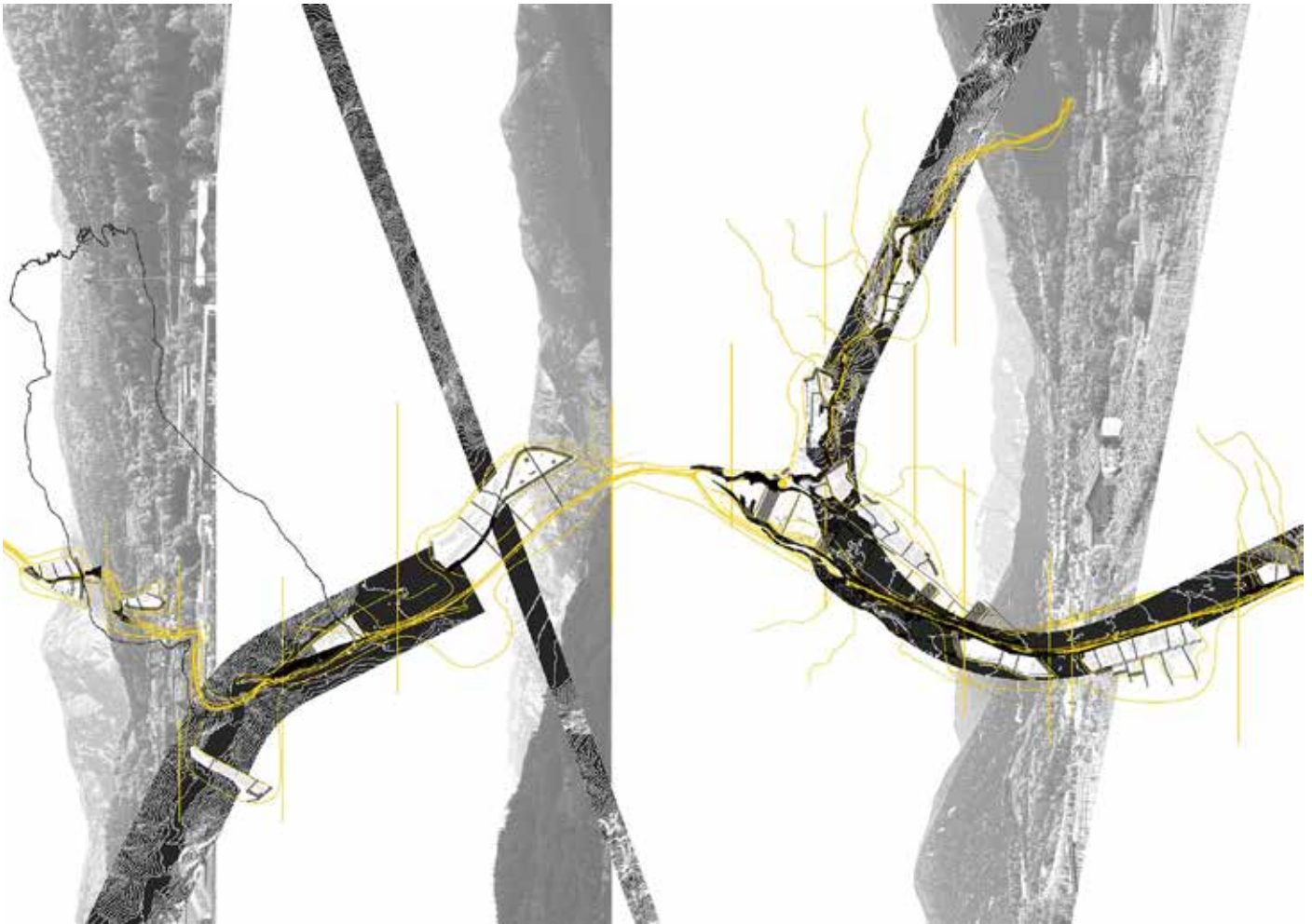


Figure 4. Analogue "mikrokosmos". Assembly of the sequences of industrial production areas along the natural liquid networks and the valley topographic system.

For these extended fragments the project defines a new ecologically equipped landscape, the environmental requalification of the edges, the architectural and energy regeneration with the possibility of densification of the existing built, the enhancement of the river and its spaces as a structuring element, an equipped connection blue/green infrastructure, the reclamation of the quarry areas with the restoration of the network of agricultural ditches, the realization of green penetrants and ecological corridors, from city to river, through equipping linear plant systems (Figure 5).

The new landscape defines a striated palimpsest, a matrix where the production spaces - greenhouses, cultivated fields, micro farms - will be able to settle down and change over time.

The industrial production and its environmental and landscape criticalities (visual impact, soil and water pollution) are thought in a positive way, as an occasion to create a park composed by production grids and paths, blue infrastructures and water ecological repair systems, green penetrants and vegetated transects, productive and leisure equipments. The processing facilities, industrial systems that require more space, can be placed within the large empty spaces of the actual gravel quarries that are being dismantled, finding a more appropriate and discreet relationship with the continuity of this new landscape. The park is designed by productive percolations able to ensuring complete environmental sustainability and security, that become the opportunity to define a

promenade to enjoy the landscape and the exhibited industrial cycles. Green penetrants, equipped vegetation edges and blue filaments draw a permeable figure that works like a living machine (Figure 6).

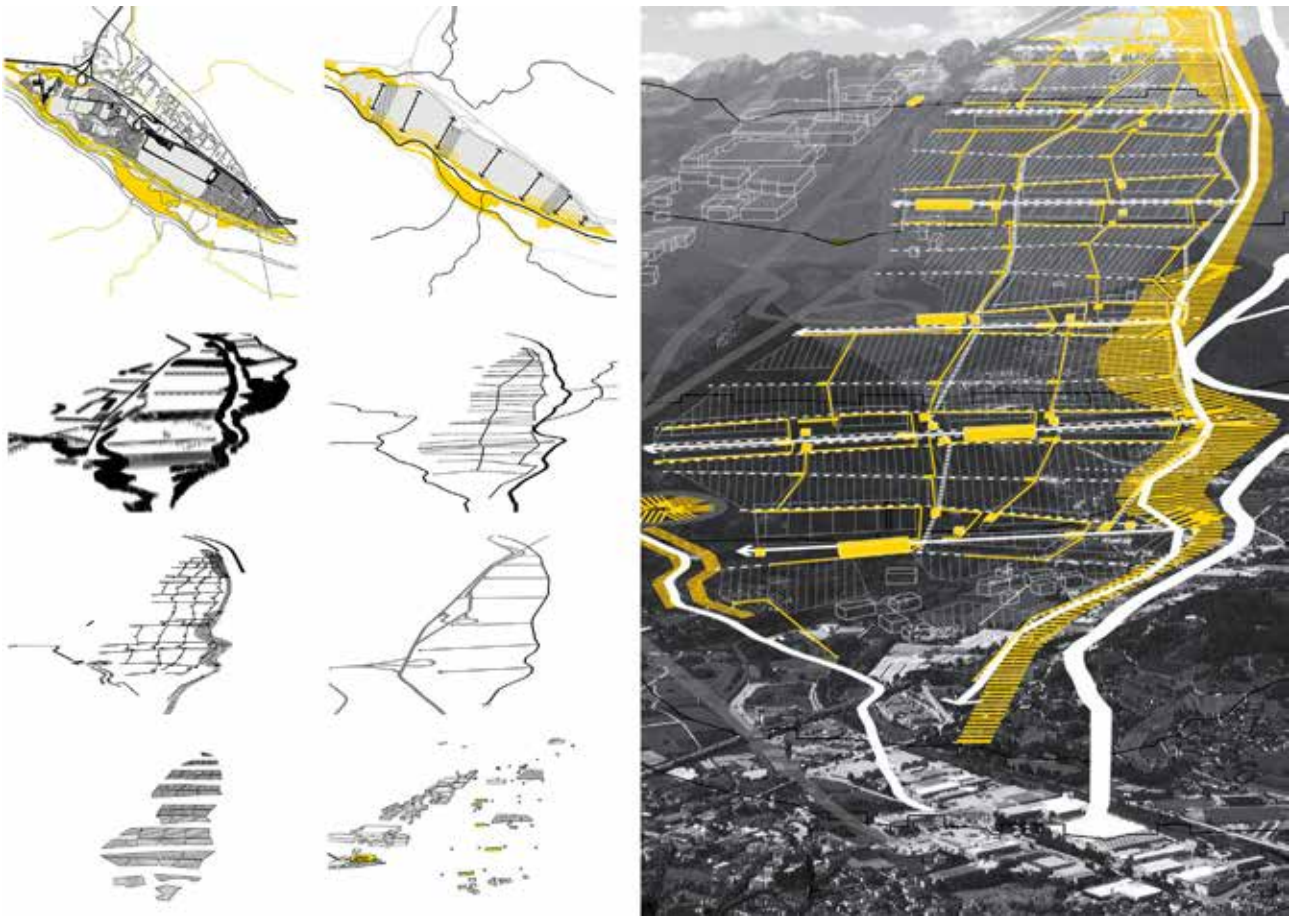


Figure 5. Pilot project, Cirè industrial area and brownfield. Fabrics and filaments: vegetable elements; water systems; production topography; roads and pathways; water cisterns and phytoremediation wetlands; agricultural fields and greenhouses; buildings and equipments.

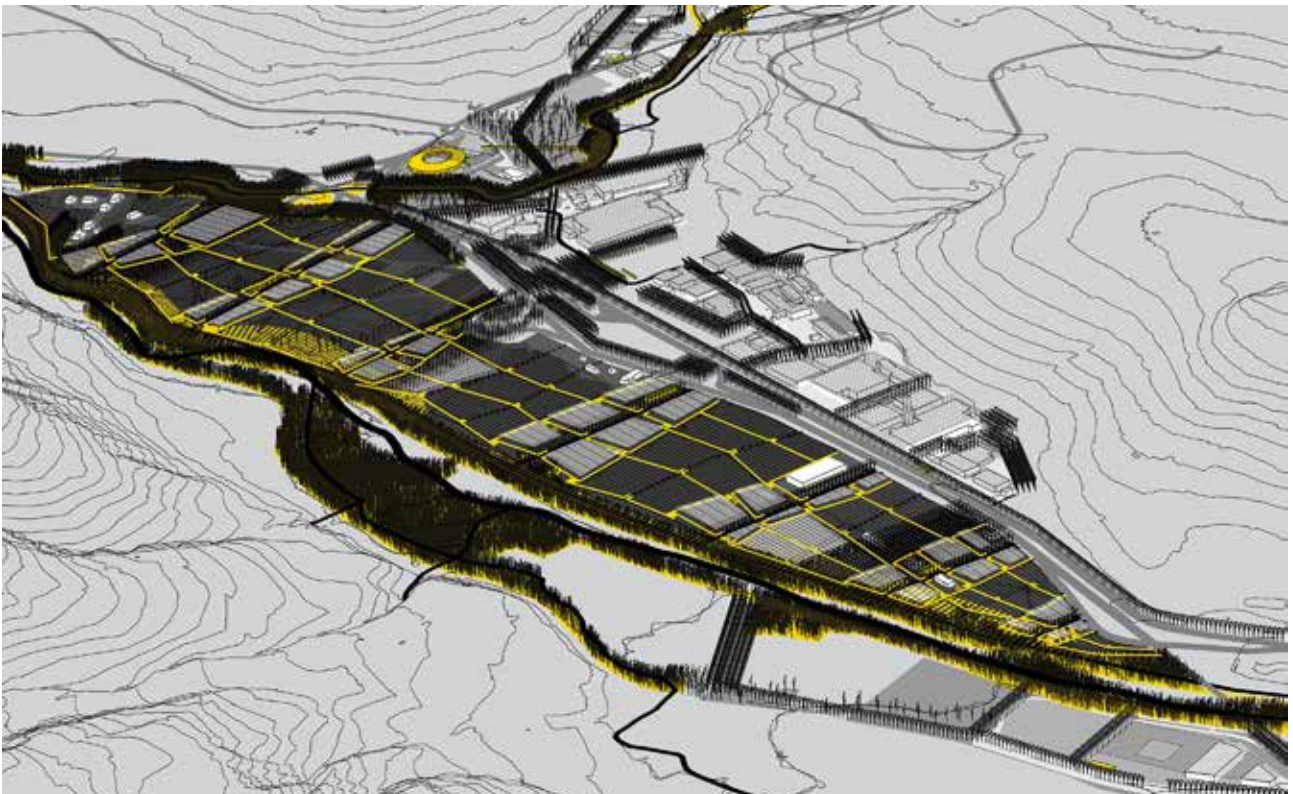


Figure 6. Landscape machine pilot project. Green penetrants and equipped vegetation edges, blue filaments and spaces for water accumulation, purification and infiltration, redesign a streaky and permeable figure that works like a living machine.

Conclusion

The characteristics of the explored topographic context, anisotropic, complex, rich in diversities, allow us to recognize heterogeneity and discontinuity as a value, different things that can be together and coexist in fragmented "constellations". The section is a resource, because the mountain starts from the bottom! The critical signs deposited in the low and medium mountain zones are the most sensitive test field, which requires more effort, not to continue to cancel or exploit it, but, on the contrary, to be able to return it repaired at the mountain as a unitary "architecture". This means working on unpleasant, insignificant or unrecognized parts that escape or are conceptually invisible to the common perceptive imagery.

In the observed phenomenology, the rethinking of the industrial production areas does not necessarily go through the reuse of what is abandoned or vacant. Widespread micro-spaces intertwine living and work, extremely varied coworking spaces, but also rewriting large open surfaces are signs of the metamorphosis underway of production systems traced by new paradigms linked to environmental and ecological quality. Optimizing the existing by regenerating it, recycling and retraining in an eco-efficient cohabitation, that is inclusive of environmental and landscape issues, can be achieved through the rationalization of employment of the soil, logistics, territorial supply chains, focusing on the redevelopment, as urban fabric, of some precise locations where the industrial buildings are concentrated, on the mitigation of the environmental and landscape impact of the existing production areas or any future enlargements, on the identification of ecological conversion measures, both at the different scales. The widespread "mikrokosms" of industrial production areas of medium and small dimensions, in their making and discarding can be rethought as "machines" to produce ecologies and repair landscapes. The need to develop new forms of landscape, different from the current ones, starting from abandoned or underutilized spaces in the production areas, intertwines with the climatic and environmental critical issues, with the need to enhance the spatial and natural heritage and recovery the existing, without consuming further soil. These are instances that intercept current industrial areas, even those still in use, spaces that can offer a new environmental quality, enhancing the hybrid spaces, margins and thresholds that define the production figures in the city-landscape, helping to reinforce the attractiveness and competitiveness of these places.

In all cases, the industrial production areas are perceived as impacting building aggregates and require a rethinking that necessarily consider the relationship, today poorly valued, with the mountain morphology and the vision from below and above, the intensification of the elements of naturalness in the built, the network of the urban relationships, providing the functional and spatial mixité, the reintegration of production areas into polycentric networks, to make them attractive and interchanged poles at the wide territorial scale and in systemic terms. It is the question of exploring design tactics related to gray, blue and green infrastructures, of service and parking areas, of hydrographic networks such as green reinforcements, linear parks or widespread porosity of the soils, punctually equipped as public spaces and gateway of the new public transport systems. The strategies, experiment in ecological terms the landscape potential quality of these areas working on the metabolism of the built landscape through adaptive and resilient transformations able to build over time a real frame as the common good in a broader sense. At the base, the idea of considering the fragments of the industrial production areas not as separate individual entities, but as elements of a broader "constellation" within which to weave new relationships, making landscapes and experiment with new hybridizations and minglings.

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[ECO/03]



New ecological agro-environment strategies in the Metropolitan territory of Bari

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abstract

The latest trivialization of suburban ecosystems, mainly due to the expansion of the sprawl phenomena and the resulting peri-urban agricultural soil, associated to the fragmentation of the natural areas for the realization of new facilities and of the industrialization processes of agriculture, is causing a relentless "artificialization" of Mediterranean landscape contexts with the consequent depletion of their endogenous resources, a phenomenon that can also be possible to find in the existing habitats in the metropolitan area of Bari.

The Lame (erosive cracks), real geomorphological identity components of the karstic territory of the Apulia Region, have always been eco-landscape corridors, a peculiar natural and cultural heritage composed of a high level of biodiversity, potentially of greenways to be discovered and be protected for public use, related to the increase of economic growth and a model of sustainable development to be pursued for the implementation of the 2030 Agenda policies of Sustainable Development.

The promotion of innovative projects related to food culture for the cities, the valorization of the beauty of both distinctive landscape and urban ecosystem constitute innovative assumptions for the promotion and the development of partnership forms between enterprises, research centers, territorial representations and stakeholder.

The territorial governance and cooperation associated to the modern urban planning policies and to the adopted strategies in the present case, the metropolitan area of Bari, as identified by the Del Rio Law 56/2014, show how the vision of a plan pilot founded on the agrifood can renew a long-term competitiveness and transform at the same time the processes of sustainability, social innovation and urban development.

The ecological planning shows how the policies on the ecosystems safeguard turn out to be extremely important for the purpose of multidisciplinary approaches, leading towards an integrated action able to go beyond the single-sector policies, such as those related to agronomic, urban planning, soil protection, nutrition, and the economic and social ones.

keywords Greenway, Ecological planning, Food Policy, Multifunctional Agricultural Parks, Productive Urban Landscape

1. Introduction

"New dimensions of the Contemporary City and forms of sustainable agricultures in the peri-urban areas between city and countryside" is a research program, which responds to the need for innovation of the relations between urban areas and agricultural territories, through a participated approach and a particular attention to the peri-urban spaces.

In the peri-urban field, in fact, we can highlight the long path carried out by urban planning in the last twenty years, by reflecting also on the open space project as a new urban material to face some unsolved topics about the modern city, that have serious consequences today on the contemporary one. (M.V. Mininni, 2012)

The peri-urban space, already defined by the thought of P. Donadieu (in Urban Countryside and Landscape Sciences) and by the Landscape School of A. Magnaghi, constitutes the favourite place for the construction of innovative projects within the process of strategic planning of the Metropolitan Cities, since the same cultural debate of reference let us think more about the problematic points and the critical issues related to the "urban sprawl" dimension.

At the same time, the Urban Regeneration policies can constitute the strategic context for activating environmental sustainability policies of agriculture in the spread phenomena that, through biodiversity protection and social innovation, of the urban food strategy (as outlined by the Life Action Grants 2017 Sub Programme Climate Action-

Climate Change, Mitigation and Adaption) become key issues for the definition of Local Agenda for Sustainable City (as reported in the Bologna Charter for environment 2017, drawn up in collaboration with Anci, ASVIS and Urban@it).

The new extended dimension of the Metropolitan City becomes the suitable territorial domain to define project globalized dimension, through a multiscale and multidisciplinary approach, that identifies a series of levels capable of interacting from the scale of agricultural landscape, through initiatives of multifunctional agricultures, to the identification and provision of new ecosystem services, through the support of new sustainable uses of landscape and new forms of tourism.

The intermediate scale of the metropolitan areas (defined by the Del Rio Law 56/2014), analyses the Multifunctional Agricultural Parks, which are useful tools for the implementation of strategies aimed at the biodiversity protection, the social innovation in the rural areas, and at the Urban Food Strategy and Policy, as stated in the Milan Urban Food Policy Pact (in 2015), which identifies the most appropriated agro-environmental asset for the future of 117 European cities.

The forms of settlement dispersion in Urban Countryside, as mentioned by P. Donadieu, constitute the project scale of interface between urban and agricultural spaces in order to promote new lifestyles, to enhance the short-chain markets of local agricultural products, to activate agritech startups, to plan urban and social gardens, educational farms, and finally, to reconvert the architectural heritage of ancient abandoned settlements in order to identify new spaces for the commercialization and tasting of local products related to food and wine tourism.

2.Strategies and targets for a sustainable agriculture model in the peri-urban areas

The governance adopted in the metropolitan policies aims at a model based on institutional and social cooperation, at the rural landscape development with the reinforcement of the metropolitan rank through institutional centrality, raising at the same time the historical tradition values, the preservation of natural spaces and the quality of local communities life.

The subsidiarity valorization and the cooperative relationship between the different players involved in the territory, the correct use of intrinsic resources, the development of partnerships between enterprises, research centers, territorial representations and stakeholders constitute models of social and territorial cooperation for the promotion of a sustainable economic growth based on innovation, on valorization of landscape, cities and territory.

The targets of the research program "New dimensions of the Contemporary City and forms of sustainable agriculture in the peri-urban areas between city and countryside", previously named, aim at the promotion of forms of peri-urban agriculture and food production in the light of the increasing climatic changes, with due regard to natural resources and to environmental, agricultural, socio-economic issues of the metropolitan context of reference.

The integration of territorial governance policies with the valorization systems of agricultural landscapes, the Urban Regeneration projects in the suburbs and the policies defined in the Rural Development Program represent starting points for the implementation of innovative plans useful to the promotion and the revitalization of urban fringes, border areas and peri-urban and marginal spaces of the contemporary city. (Perrella D., 2007)

The policies of territorial planning identify, in the implementation of Strategic Projects in the Territorial Landscape Plan of the Region Apulia (PPTR), the possibility of identifying a shared path on the development dimensions and representative of all the requirements of local administrations being part of the metropolitan territory of reference.

The protection and valorization of the rural ecosystem of the metropolitan area of Bari, our context of study, is essential in the implementation of integrated policies, that identify in the territorial equipment, defined by ecosystem and environmental invariants (like the Lama, real erosive karstic cracks which act as an ecological connection between different territories), in the Metropolitan Parks (like Alta Murgia National Park, Lama Balice Regional Park, Lama San Giorgio-Giotta Regional Park), and in the Multifunctional Agricultural Parks of requalification and enhancement defined by the City-Countryside Pact of the Territorial Landscape Plan of the Apulia Region (PPTR), areas to be preserved in order to increase rural biodiversity, by supporting pilot plans and paths aimed at the promotion of regenerative productive systems (Metropolitan City of Bari, 2017).

The implementation of Pilot Projects for the valorisation of the Lama focuses on some main objectives to be achieved, such as the raising awareness and respect of nature, the biodiversity increase, the requalification of historical and settlement evidences, the habitat reinforcement for fauna species, the launch of specific startups of fundamental importance for the production of biological agricultural products of quality with the implementation and encouragement of regional policies supported by the European Fund of the Rural Development Program of the Apulia Region that is centred on policies to improve the competitiveness of the agricultural and forestry sector, the environment and rural space, the strengthening of local management and planning skills through the promotion of models of biological agriculture and activities intended for green jobs.

3. The methodology proposed for the project “New dimensions of the Contemporary City and forms of sustainable agriculture in the peri-urban areas between city and countryside”

The methodological framework with which we intend develop the research project includes the assumption of the following four keywords, in particular:

- Multidisciplinarity and interaction for the resolution of complex issues;
- Multi-scale approach;
- Complementarity between theoretical study and experimental approach;
- Connection with the territory and its actors.

The need to deal with some major issues of modernity, by innovating our own descriptive and project tools, represents an option to be pursued in the research program, such as defining lines of action and projects characterized by the tension between the necessity of adaptation to contemporary lifestyles and the unknown dimensions enlarged to the metropolitan city landscape.

The identification of a series of territorial levels of the methodological research work allows us to analyze the landscape macro-scale, by comparing the great transformation processes of biodiversity protection, of the fight against desertification, of the rethinking of urban sprawl phenomena, with the mesoscale of metropolitan areas identified by the national and regional policies (the Suburbs Plan, Urban Regeneration Programs, Landscape Strategic Projects) and finally, with the micro-scale or local scale that corresponds to the level of the peri-urban space, that is an important interface between city borders and countryside wedges.

The structure of the research project is articulated, in every phase of its development, on a double work plan, by supporting the development of methodological issues of general value with the “experimental” phases, focused on identified cases studies.

The research project “New dimensions of the Contemporary City and forms of sustainable agriculture in the peri-urban areas between city and countryside” is first of all aimed at the territory, its responsible Authorities and the enterprises of the agri-environmental sector and the social actors involved in the field of agrarian multi-functionality (social cooperatives, new agricultural entrepreneurs, Territorial Laboratories, Eco-museums) able to experiment an application methodology addressed to local development.

The articulation of the proposed research consists of four distinct phases concerning the critical interpretative analysis, the recognition and interpretation, the elaboration of settlement peri-urban models and of sustainable agricultural projects for good practices of the City-Countryside Pact and an application case study referring to the metropolitan context of reference.

The first phase examines the evolution of typologies and housing patterns that through a careful morphological-type analysis and the identification of formal and spatial dominant features of territorial resources, defines the formulation of morphological-type abacuses of settlements.

The second phase of recognition and interpretation analyzes the various most significant contemporary European experiences on the topic of the peri-urban agriculture, as a model for a new proposal of the city landscape, followed by the next phase focused on the elaboration of peri-urban settlement models and sustainable agricultural projects oriented towards good practices to be implemented for the City-Countryside Pact of the Territorial Landscape Plan of the Apulia Region, recognizing some paradigms of the project in the peri-urban area. The last phase, on the other hand, represents the application on the metropolitan context of Bari, carried out in collaboration with Local Authorities, Research Centers and stakeholders, able to identify landscape scenarios between ordinariness and sectoriality, by measuring themselves in a fairly conflictual territory.

4. An urban research defined between contemporary urban fringes and innovative agricultural landscapes

Research and innovation in the agricultural sector represents a new methodology capable of replacing the sector-based approach with a quality systemic approach that can combine the needs of the territory, its inhabitants and their ideas in a single domain of development.

The innovative models of precision agriculture (agriculture management strategy that optimizes production yields and cuts down the environmental impact), and the circular economy themes, constitute a new approach based on the collaboration between public administrations, citizens, institution, technical-scientific research and enterprises. (Martinelli N., et alii, 2017)

Biodiversity and agrobiodiversity safeguard of natural ecosystems, the interpretation of territory government integrated policies about the future of agricultural landscapes and the correlation between the world of quality agricultural production and rural areas planning are elements to be considered for the implementation of innovative projects to be promoted for the restoration of marginal and peri-urban areas. (Pandey D., 2007)

The work of urban research between indistinct fringes of contemporary city and innovative models of agriculture relies on an articulated methodology, divided in four steps as following:

- 1) in the construction of the process of knowledge of the territory;
- 2) in the description of the city and landscape project;
- 3) in the definition of urban policies that can be validated on a number of sample areas;
- 4) in the identification and methodological application in the metropolitan context of reference.

A careful process of knowledge proposes a reading of the territory and of the selected city, through the identification of the problems concerning the settlement dispersion, the urbanizations fragmentation and the analysis on the urban sprawl considering the impacts of these phenomena on the agricultural spaces and on a balanced relationship of the peri-urban landscape with the countryside, that plays a role in a multifunctional way. (Magnaghi, A., Fanfani, D., 2010)

The process of territory knowledge identifies the formation processes of the extended city focusing the survey on categories like the rural margin, the urban margin, the border, by intersecting them with the urban morphologies of the consolidated city, with the discontinuous pattern and on rural side with those of the deep countryside and the structural forms of landscape (hydrographic networks, geological landscapes, forest formations, lame, caves, ect).

The multifunctional vision of the countryside highlights the value and the complexity of the relations that contribute to structuring the agro-landscapes quality, these no more conceived with the single purpose of cultivation and production, but now seen as sceneries intended to be widely used and intended to offer a perceptive vision of the rural space and also production of public assets.

The peri-urban agricultural areas of the contemporary cities can therefore become laboratories for the development of an agriculture able to generate a territorial added value, by mobilizing the share capital and reconnecting territorial forms and identities, and foodstuffs quality.

The description of the city and landscape project analyzes the Apulian territory and the experimentations and innovations in place, deriving from new the Landscaped Plan (PPTR) and in particular on some of the 5 Strategic Projects of the Territory (the Ecological Network, the City-Countryside Pact, the Requalification of the Coastal Landscapes, the Valorization of soft mobility and the Usage of patrimonial Assets).

In this phase, the processes of transformation of urban dynamics, spatial relations, and the definition of the local development, sustainability and biological agriculture are fundamental components for planning and transforming the peri-urban agricultural space and enhancing the beauty of the landscape.

The role of the Multifunctional Agricultural Parks of valorization and requalification laid down in the City-Countryside Pact, and the metropolitan parks implemented in various experiences, describe some proximity elements on which laying the bases for planning models of integrated agriculture able to increase the needs of the communities in terms of well-being, to improve inhabitants lifestyles, to encourage the creation of urban standards for the cities, spaces for leisure time, loisir, and to favor the sustainability of the agri-food chain for products of quality and excellence.

The function of productive agriculture, linked to nutrition and food culture is addressed by the community policies towards the production of products with quality brands, coinciding with the territory to which they belong, according to processes of biological agriculture and the recovery of traditional techniques of cultivation.

The agri-food policies and the involvement of new forms of youth entrepreneurship by creating innovative skills in the field of peri-urban agriculture and small and medium-sized enterprises in the agri-food sector, lead on one side to a networks view between territories, carried out through competitiveness, technological innovation and the development of a sustainable tourism oriented towards the local products quality enhancement; on the other side, they outline strategic functions in a sustainable way for the cities that see the strengthening of social, economic and political phenomena.

The last step of the research concerns the application of the work methodology described above to a case-study. For example, we could suppose the realization of an integrated hub of excellence in the metropolitan context of Bari, by creating vineyards-gardens, vertical orchards, vegetable gardens, Garden Fab, combined with Technological Cluster of enterprises, research centers and stakeholders, by restoring at the same time degraded or no more productive soils, through urban regeneration policies with due regard to environmental identity within promotion programs of the food quality culture.

A significant territorial sample, where you can validate the research methodology here set forth, is undoubtedly the Metropolitan City of Bari; with its productive excellence and top-quality agricultural products, the city represents an area where you can enhance territorial equipment by reinforcing the identities sense of belonging in the individual contexts.

The visions of the Metropolitan Strategic Plan of Bari give us the opportunity to implement the strategies of the research project, through the outlined five main areas concerning the promotion of human and social capital, the enhancing of territorial equipment, services and network infrastructures for smart cities, the infrastructures for

the development of logistic and productive areas and the enhancement of mobility in the metropolitan system. The results expected from this research will see a comparative analysis of good international practices of integration between city regeneration and agri-environmental policies, with the construction of Knowledge Frameworks for the creation of an Atlas of the metropolitan food of Bari, the creation of an Atlas of analyses and interpretations of the urban forms and the countryside in the peri-urban area and the experimentations of City-Countryside Pact models in the metropolitan context of reference, by analyzing forms and processes.

5. Conclusions

The role of the *Lame* (erosive cracks), intended as greenway and the Metropolitan Parks in which these can be inserted, leads to a reflection on the strategic importance of inclusive projects about social agriculture, on the valorization of products of high quality and on the well-being conditions of the cities inhabitants, increasing the equipment of urban standards in a new form, which is analyzed in this contribution.

The agri-urban becomes a driving force for the City-Countryside Pact that in recent Regeneration experiences of the main metropolitan regions of Europe, performs not only the tasks of food quality production, but also of hydrogeological safeguard, environmental and landscape quality improvement and the activation of locally-based economic systems.

The support to agriculture in order to counteract the agricultural soil consumption, the promotion of urban competitiveness and quality, the valorization of the historical-cultural rural heritage and the construction of a new scenery between city and countryside that preserves the agricultural activity and society, represent the main development goals for the implementation of a rural governance focused on a strategic planning at metropolitan scale.

The peri-urban space defines a field of competence in which urban planning shows a complementarity between plan and project of space, between policies and common visions.

The policies of the Local Agenda for Sustainability must pay attention to the emergence of the public dimension of the landscape project, intended as an open space, as ecological infrastructure and as a life context in search of an ordinary planning identifiable as a new space opportunity.

The strategic vision of the agricultural multi-functionality is addressed, therefore, towards the innovative production of food for the cities meant as niche market, as places for food education and food culture, as occasion for health care, for fight to food waste, by reconsidering the contemporary city in its flash and stone dimension. (Sennet R., 2005)

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[ECO/05]



COASTAL UNIVERSES

Narratives of the Coastal Domains Design Research at the University of Patras

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abstract

The countries of the North-eastern Mediterranean share a number of challenges to their degraded coastal environment, including vulnerability to natural hazards and other impacts of climate change, as well as stringent pressures due to intense urbanisation and conflicting land-uses, overexploitation of natural resources and agricultural lands, land based and sea pollution. The fragmentation of the relevant legislation, the lack of rational policies, integrated and sustainable development strategies, failed to restrict inexorable financial exploitation, setting at risk the protection of the shared coast and its fragile ecosystems.

Coastal Domains is an on-going interdisciplinary, independent design research at the Department of Architecture of the University of Patras. During five academic semesters and a multitude of case studies on targeted coastal territorial contexts, the initiative explores, records, assesses, and envisions sustainable futures for the North-eastern Mediterranean coastal territories.

Coastal Domains aims to study the Coastal Landscape as a critical subject of architecture. The activities of the Coastal Domains initiative are grounded in a rigorous and extensive territorial analysis of specific geographical contexts, focusing on complex forms and means of representation. The Coastal Domains 'atlases' constitute cartographic, drawing and data archives of geographical, morphological, historical and ecological conditions and transformations of diverse coastal contexts while the 'panoramas', programmatic speculations and design projects for managing ecological, urban, socio-economic challenges in a foreseeable future. The online platform www.coastaldomains.org is an archive and networking tool to consolidate, link and make public academic research and activities, design projects, references and data.

keywords Architecture design research, Mediterranean coastal landscape, Resilience, Landscape ecology

Introduction

Coastal Domains is a multiyear collaborative design research and education initiative at the University of Patras, Greece. The context of the research is the North-Eastern Mediterranean, an Urbanized Archipelago which is undergoing rapid transformations.

For over 3.500 years, the Mediterranean has been continuously lived and depicted, mythologized and narrated. More than a physical, geographical context, it can be described and interpreted as a cultural, economic and social construct. An ancient network of urban landscapes, ports, monuments, a field of diversity and opportunity; the North-Eastern Mediterranean Coast is an intense testing ground for crisis and climate change, challenging notions of development and progress with cycles of emergency, structures of commons and patterns of bottom-up resilience.

Today, one most pressing issues the countries of the North-Eastern Mediterranean Basin are encountering is the challenge of sustaining the ecological, settlement and economic framework of their shared coast. The Mediterranean Coast is inhabited by millions who face tremendous pressures due to socio-political tensions, habitat degradation, wetlands loss, climate change, sea level rise, to name just a few. It is a common ground that for decades the lack of integrated and sustainable strategies, the fragmentation of the relevant legislation and rational policies have failed to restrict inexorable financial exploitation, setting today the protection of the Mediterranean coastline and its fragile ecosystems at risk.

Since Spring 2016 and during the last five academic semesters, over fifty four Coastal Domains design research projects explore territorial, geographical, morphological, social, economic, ecological conditions and transformations of various urbanised, infrastructural, wetland coastal contexts as domains, as framed territories and project collaborative new ways of understanding, recording, envisioning and governing our shared Mediterranean coast.

Objectives

The relationship between human settlements and coasts is dynamic, involving human and environmental processes. Coastal Domains' primary goal is to comprehend the North-Eastern Mediterranean Coast as a point of interaction, a superimposition of pressures, a synthetic product of natural and environmental processes and pressures in tandem with the ever on-going human appropriations. Coastal Domains aims to envision and design forward thinking and sustainable frameworks that reduce vulnerability to increased coastal hazards, habitat degradation, and environmental change and to support resilient human communities in a dynamic context.

Coastal Domains aims to study the coastal landscape as a critical subject of architecture. Architects par excellence can operate on diverse scales, comprehend and challenge natural and man-made processes, respond to issues of settlement, environment and the economy, in order to establish a framework, strategically plan and evolve a synthetic development or construct. The outcome of the Coastal Domains design experimentation and speculation aims to provide a solid foundation for sustainable planning - beyond mere land-use, protection, and education. Mediterranean coastal communities face tremendous challenges, the complexity and enormity of which demand innovative, forward thinking, trans-disciplinary research agendas, approach and policy that can serve beyond a practical, open model for merely addressing coastal sustainability.

Coastal Domains in parallel is developing an open, integrated data archive on specific typologies of North-eastern Coasts for knowledge sharing, coordinated planning and risk management; To diagnose the tremendous territorial transformations the Mediterranean coastal zone is currently undergoing through the assessment of threats and opportunities in order to find appropriate design tools to intervene; To develop design thinking with employing a hybrid of methodologies developed from design, ecology, and infrastructural planning trying to map and to respond to complex issues. By utilising concepts and methods from other disciplines in combination with embracing the concepts of sustainability and ecosystem design, capabilities to design and intervene expand beyond the confinements of architecture as a discipline. Understanding better the interactions between physical, socio-economic, political and ecological processes is a starting point for triggering deliberate -rather than forced- transformations and through this process, elicit informed decision-making.

Coastal Domains though being an academic initiative promotes a contemporary design approach that enables new models of research and design thinking. The design research projects developed by the initiative operate outside the boundaries of the traditionally defined architecture and planning disciplines, generate a common discussion, eventually leading to design strategies that are meaningful to a wider public. During all stages of project development, Coastal Domains' participants work closely with local communities, environmental agencies and NGO representatives, authorities and policy makers, stakeholders and external experts in order to incorporate their knowledge in the projects, to effectively present and open ideas to the public and to eventually deliver innovative, comprehensive and feasible masterplans for implementation.

Methodology

Coastal Domains conducts trans-disciplinary research and design projects that envision innovative solutions to coastal challenges through collaborations across an array of academic perspectives. The initiative builds knowledge capacity by bringing together a variety of disciplines to address the most poignant and pressing issues encountered at present on the shared Mediterranean coast. Through trans-disciplinary research and design projects, academic partnerships, and educational curricula, public events, exhibitions and publications, Coastal Domains connects educators and experts, students, researchers and the community, fosters interdisciplinary collaboration, and builds a collective body of knowledge, to approach, record, assess, envision and communicate the Mediterranean's coastal tomorrow.

A research community / analysing context

Coastal Domains is a research by design and not a prescriptive or prescribed design method. At the beginning of each academic semester, participants are introduced to a specific coastal context within a wider geographical setting that constitutes the overall focus of the Design Studio. Through the rigorous mapping analysis of a specific territorial context, participants raise questions, articulate interests and document specificities. As issues are

not given a priori, nor are there any programmatic preconceptions, each project develops employing different methods, sets specific goals and directions and evolves as a self-generated process!

In contrast to the modernist take today there is no tabula rasa! Coastal Domains initiates an inquiry into how architecture is taught, theorised and eventually practiced at a larger to a building scale, in response to the unavoidable 'built' context. Practical considerations regarding government and community engagement, building as 'adding' versus un-building as 'deleting', ownership but also authorship direct the approach towards innovative strategies that operate simultaneously across the disciplines of architecture, urban design and planning, ecological design even historic preservation.

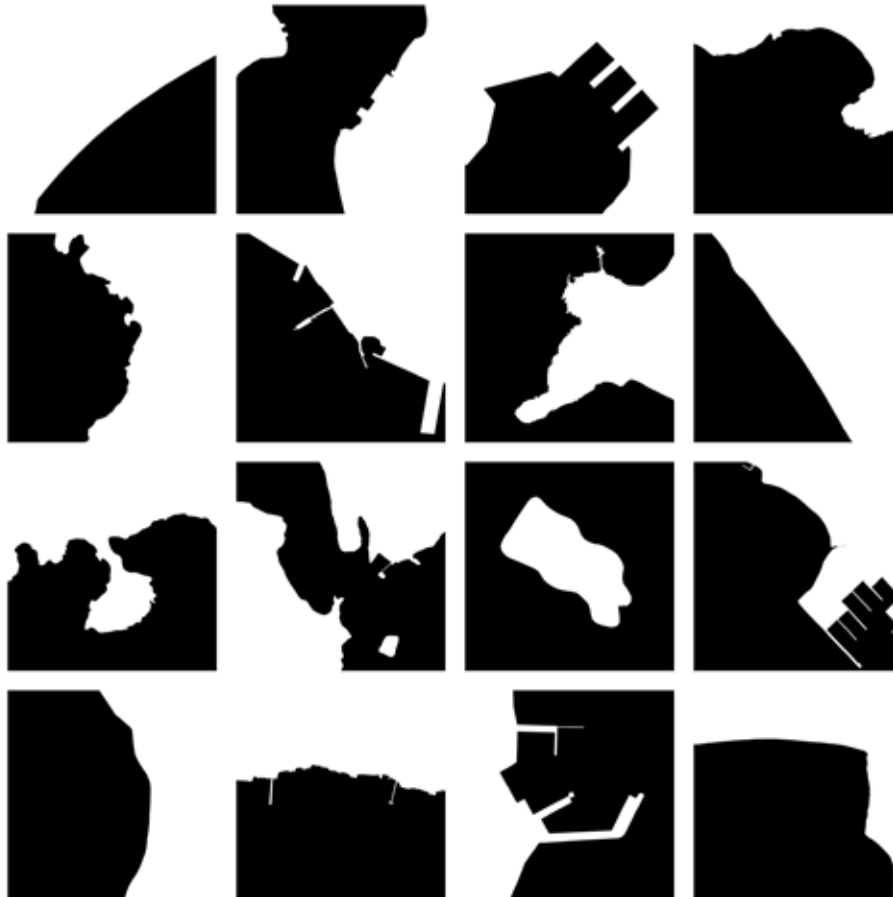


Figure 01_coastal domains_ 1x1km coastlines

The contextual research is initiated on a 1.0 x 1.0km coastal territorial 'frame', a 'domain' (fig. 01). Through systematic analysis participants explore, unveil, describe and assess geomorphological characteristics and phenomena by means of aerial photos, maps, drawings, texts. For the purposes of assessing access 'to' and 'from' the coastline, drone photography is employed. Alternatively a great medium is the trip-in-view platform, an open archive of high resolution videos and stills of the entire coast of the north Mediterranean¹. On the basis of common and standards, the strict, rigorous, intensive mapping exercise gradually uncovers and documents the changes that shape the coastal social, economic, political reality, still at this stage, with a common for all participants architectural language. The common specifications allow for the critical and quantitative comparison amongst domains, while the multiplicities and contradictions become gradually apparent even striking. The investigation of a geographical region through GIS mapping unveils unconceived networked connections while the decoding data allows for their further critical correlation.

The domain mapping investigation continues with a focus upon the historical aspects eventually developing into an analysis of the social, economic conditions that eventually triggers a process of revealing the diachronic strata that identify the structured [as built] vs the natural environment. Beyond the drawing and mapping exercise, participants investigate historical recordings and references in literary texts alongside etchings and paintings of the 19th century travellers and landscape painters². In the form of pictorial mosaics with common specifications,

1 / www.tripinview.com

2 / <http://eng.travelogues.gr/>

contexts are further recorded and compared as per the following criteria: geomorphology, flora and fauna vs human conditions of settlements or production, textures, boundaries and access to the coast.

The intention is not to depict subjective readings but to describe the Coastal Condition in the most precise terms possible. In that direction, traditional cross sections are an excellent tool for 'deep' looking, studying, comprehending, documenting, communicating an observation, a recording, the assessment of pressures (fig. 02). Or by means of axonometric representation, the categorization of pressures upon an under protection, vulnerable ecosystem.

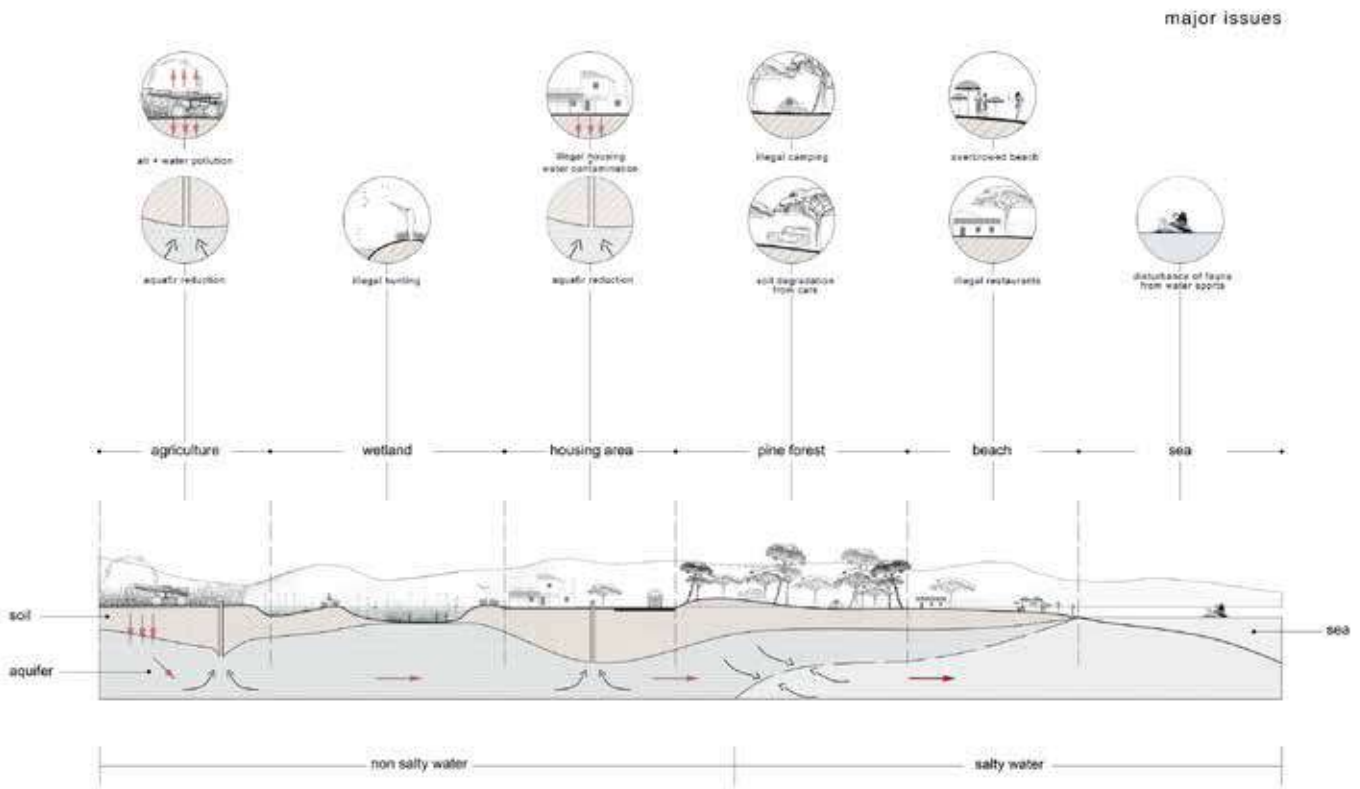


Figure 02_coastal domains attica_marathon issues_ S. Kakalis, A. Tzoutsas

The participants eventually focus upon the analysis of the structural elements of each domain and embark upon a process of revealing pressures through layered readings (fig. 03). Gradually daily routines or diachronic process of a domain are revealed and documented through time diagrammes, spatiotemporally overlapping and reoccurring phenomena depicted in animated plans [.gif] or geomorphological formations across millennia in spatio-temporal sections.

Site characteristics and poignant issues arise through mapping. Localizing subjects in functional settings is a critical motivation of the mapping approach. Framing a coastal condition purposely leaving things out, 'deleting' or even 'subtracting', allows the unveiling of critical social, historical, technological or environmental elements (fig. 04). The singling out of a territorial condition in an objectified context, facilitates an understanding of the highly complex structures of the Coastal Landscapes.

Coastal Domains is an on-site, hands-on initiative! Along the process and in the course of an academic semester, trips of the whole team on the various domains is very critical. Once the mapping analysis is established, participants travel to and visit all the domains of the geographical context under investigation (fig. 05). On site contacts with stakeholders, policy makers, administrations provide geospatial, social, economic, political, scientific and technical insights otherwise very complex to comprehend; while through architectural sketching, participants make new recordings or confirm assumptions and questions they have raised.

On the basis of this systematic mapping approach, in turn incorporating the in-situ findings in the documentation participants gradually develop an interest, a focus, an expertise. The layered deconstruction and reorganization of collected and mapped data ultimately reveals unexpected connections and conceptual directions. Converging, overlapping, disjoining context dynamics, loose abstractions, eventually become design tools that generate change in a logical, fluid manner. Questions begin to have political dimensions and seek responses through design (fig. 06). Coastal Domains being committed to an open ended, non-standardised approach, the outcome of recording each context unfolds as a highly specific and unique strategy for intervention.

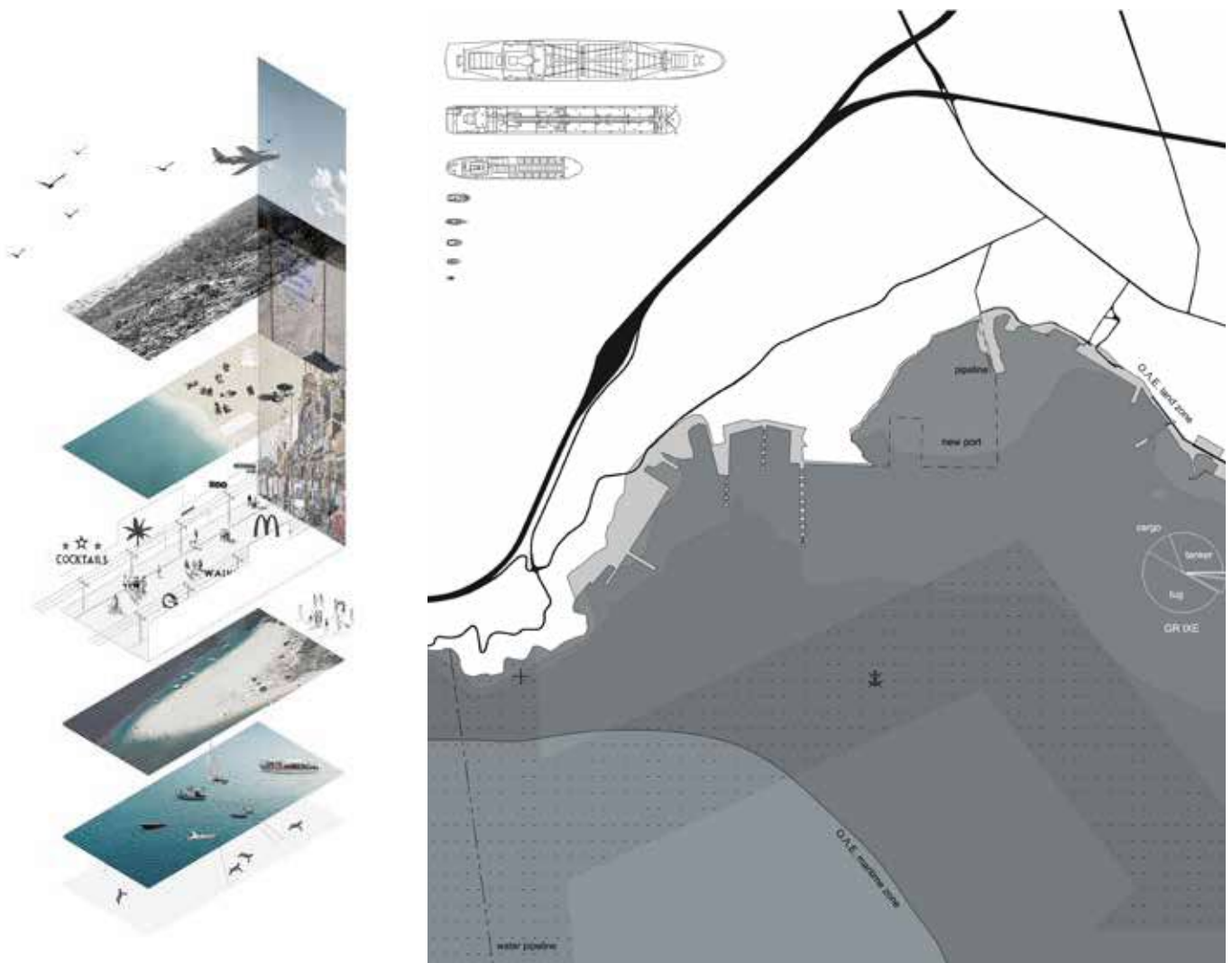


Figure 03 / left_coastal domains ionian_marathonissi_pressures_ S. Kontinou, A. Zachariadi
 Figure 04 / right_coastal domains attica_eleusis_vessels map_A. Xenouli

Results

Communication

Coastal Domain's visualisations -including mappings, drawings, artifacts publications and exhibits- provide a powerful platform for communicating approaches, recordings, ideas, and strategies. Visuals are created and employed to stimulate thoughtful explorations, encourage dialogue, and ultimately trigger action.

From the outset of the Coastal Domains initiative, its online platform³ serves as a tool instrument for archival, interface, multimedia and networking purposes. As the design research is a dynamic process, the platform is continuously updated and developed to consolidate, link and solicit data and references, design projects, academic research and activities. As each research project develops, the platform attains more depth being continuously reedited by the individual participants. The platform intended as a public archive, is live and open source!

In parallel to the platform, each Coastal Domains project is compiled and delivered in the form of an atlas that constitutes the printed cartographic, drawing and data archive of conditions and transformations but also of the design speculations for the specific coastal context.

Committed to strengthening community, economic, cultural, and ecosystem resiliency, Coastal Domains aims at challenging established planning processes by fostering communication and by collaborating with academics, community leaders and planners. In the course of the last three years, a series of synergies and alliances have also been initiated. Amongst others, in 2016-17, the Coastal Domains Attica⁴ option studio was conducted in partnership with the Housing institute at the Vienna University of Technology and the Inland to Coast elective research class⁵, in collaboration with the Design Academy Eindhoven.



Figure 05_coastal domains ionian_field trip

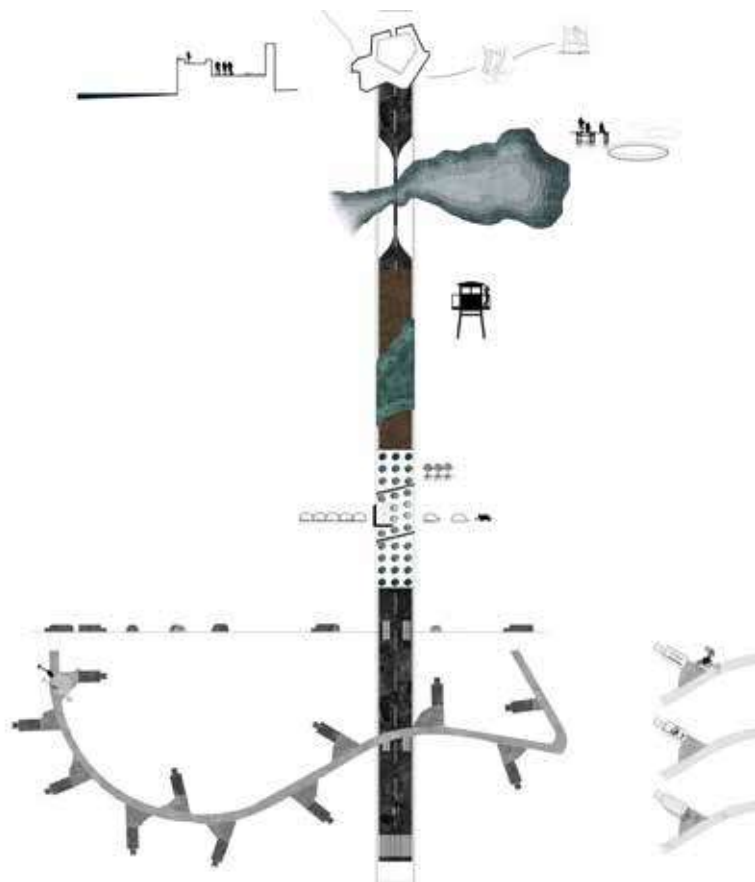


Figure 06_coastal domains ionian_actium_forward operations_strategic diagram_A. Biza, K. Sofianidi

Coastal Domains has participated in academic colloquia, think tanks and exhibitions. Notably, in 2017, the installation at Tomorrows⁶ exhibition organised by the Onassis Cultural Centre - Athens, gave snapshots of the on-going design research process in the form of sixteen Atlases. The visitors revealed the content of each research by physically engaging with the artefacts (fig. 07). The common layout of the books and specifications of the mappings challenged the visitors to deduce correlations between the Domains.



Figure 07_coastal domains_ tomorrows exhibition 2017_ photo L. Kalpaxidis

Design speculation

Coastal Domains, opposing to a 'one size fits all' approach, encourages research that evolves into very individual design responses. Each distinct condition and reality demands different actions that trigger different visions.

Following the strict methodological mapping of contexts, Coastal Domains is developing a typological understanding on the Coastal Landscapes. The typological ordering has made the comparison of conditions possible which is a critical element for the further development of the initiative's work. On the basis of the fifty four case studies to date, there are seven explored typologies with diverse character and potentials:

- Soft Coastlines /vulnerable coasts, often wetlands and fragile coastal ecosystems under nature protection - Reclaimed Landscapes / post industrial landscapes, heritage sites
- Infra-Coast / sites of active production and interchange, harbours, shipyards, quarries
- Tourism Landscapes / leisure landscapes developed for mass or local tourism
- Insular Inertia / uninhabited, deserted islands under pressure for development
- Hard Coastlines / coastal occupation in the form of urban, suburban, sprawled or second home, planned or self-built settlements
- Landscapes of recovery: coastal contexts characterised by the impact of a state of emergency or disaster.

Coastal Domains sets tools, vehicles to trigger 'change' through design speculation. From the outset of a project, through intensive contextual mapping, the appropriate tools for transformation are sought after. These tools evolve into cohesive strategies for transformation (fig. 08). To date these strategies range from an environmental mechanism (fig. 09), a new legal framework, a new state, a re-programmed infrastructure, a strategic demolition, in some cases it is merely a building! The design strategies delivered are bold, innovative. Visions are provocative in challenging assumptions and expanding common understanding while informing real policy and decision making.

Conclusion

Coastal Domains initiative within 3 years of operation is building up a prototypical archive of conditions, references, ideas and approaches to record and change targeted Coastal Landscapes of the North-eastern Mediterranean. Coastal Domains works with a new generation of architects concerned beyond land use with the pressures and impacts of tourism, illegal development, infrastructure, politics, capital driven interests, climate change, energy challenges. Fostering openness and encouraging partnerships, Coastal Domains promotes an inclusive and adaptable environment as an essential element for interactive and collaborative work.

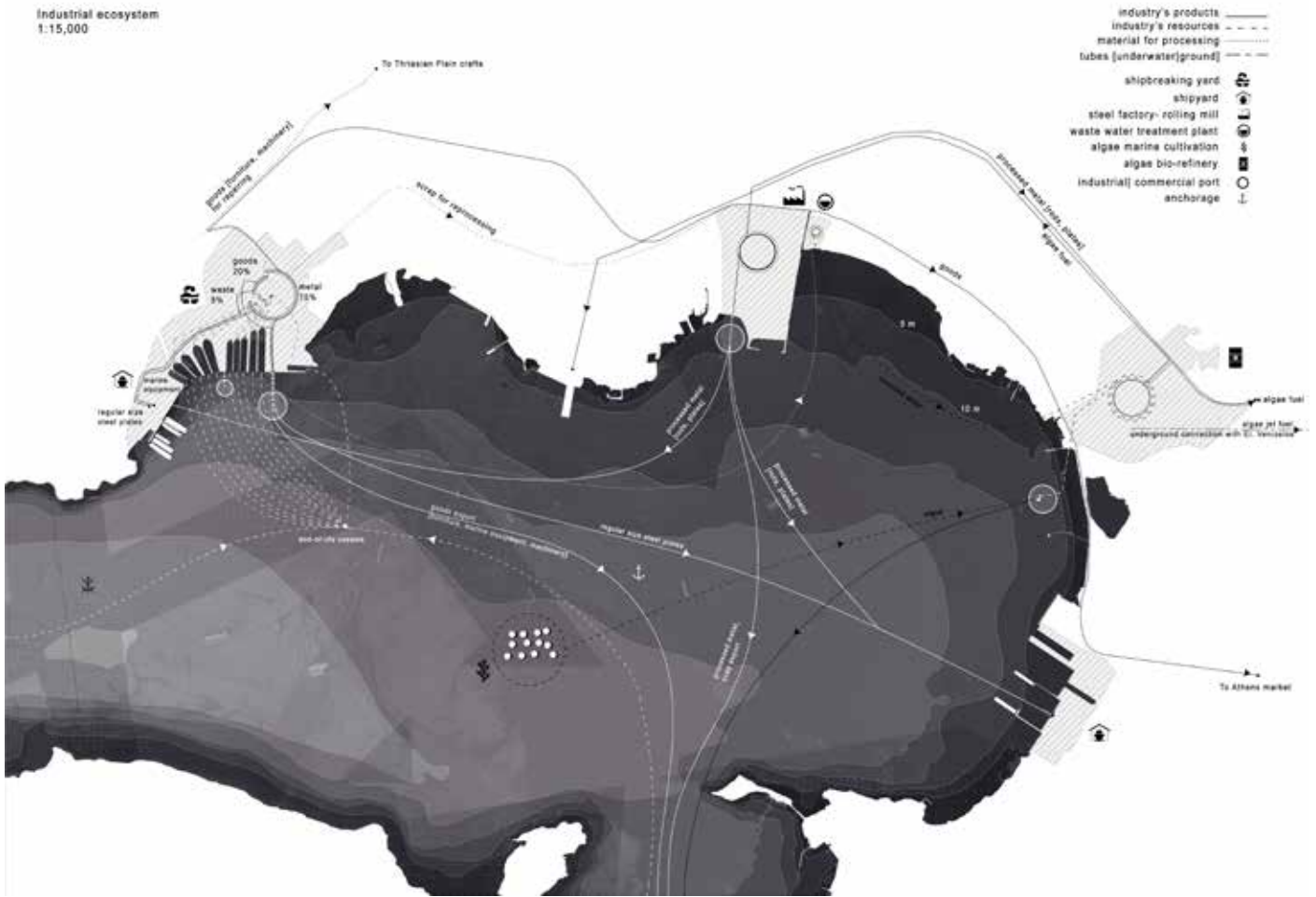


Figure 08_coastal domains attica_eleusis_stories of territories_masterplan_ A. Xenouli

Through this approach Coastal Domains facilitates new ideas and partnerships with the potential to create a more adaptive and sustainable coast in projection to tomorrow's resiliency challenges.

Acknowledgements

Demetra Katsota, architect, associate professor University of Patras, research initiator & team leader Konstantinos Petrakos, architect, research coordinator
 E. Akiouzoglou, M. Alexiou, S. Andronikou, E. Arapakou, Ch. Athanassiou, M. Avouri, A. Biza, A. Bouraimi, M. Bryone, C. Carvouniaris, Ch. Colicchio, M. Daskalopoulou, G. Drakou, G. Georgiou, N. Georgopoulou, I. Giannopoulos, G. Giassia, T. Gkikas, M. Horsch, A. João Sá, D. Jorge, S. Kakalis, M. Kalaitzaki, F. K a l l i k o u n i, M. Karamichalis, A. Karkoulia, I. Karoutzou, X. Kekkous, V. Kourti, S. Kontinou-Chimou, M. Koutsoudaki, I. Levendi, G. Machaira, P. Maragkakis, S. Martins, S. Meletsi, M. Moneou, A. Motsis, Ch. Mylonopoulou, E. Nikolaou, F. Panagopoulos, M. Papadea, F. Papadopoulos, O. Papaioannou, A. Papamichalopoulou, P. Pitsiladis, A. Ritsoni, K. Roussou, E. Sakketou, J. Schulz-Greve, P. Scorda, Th. Serdari, M. Siaveli, K. Smagulova, K. Anna Sofianidi, P. Spyridonidou, A. Stakia, e. Tsarkou, Th. Tselepidis, G. Tsoukalas, A. Tzobanaki, A. Tzoutsas, I. Trikogia, M. Tziora, A. Tzoutsas, D. Xanthi, A. Xenouli, A. Zachariadi, research team members, fourth and fifth year architecture students at the Department of Architecture, University of Patras.

The territorial contexts and departure points for the Coastal Domains projects on the North-Eastern Mediterranean Coast were the Ionian Sea - Spring 2016; the Saronic Sea - Fall 2016-17 and Spring 2017; Venice's Domini da Mar - Fall 2017-18, Nauplia - Spring 2018. During Fall 2016-17 the Coastal Domains option studio was delivered in co-operation with TU Wien, Institute for Housing & Design, instructors F. Orso, P. Rajakovic, A. Zoehrer. During the same semester, an elective research class was delivered in collaboration with the Design Academy Eindhoven and the City Circles Initiative, instructors Fortuyn, I., Melis, J.

We would like to thank all colleagues, experts and locals for their input and support during the course of research, field trips, reviews and public presentations.

programmatic activities through the national park of Schinias



leisure | access to the sea



environmental - ecosystem observation



walking | cycling



sports



cultural | archaeological



agricultural | hydroponic greenhouse

09_coastal domains attica_marathon_palus intensio programmatic activities_S. Kakalis, A. Tzoutsas

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[ECO/07]



Assessment of possible effects on ecosystems of small hydropower plants under construction in Valbona Valley National Park, Albania

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abstract

Hydroelectricity is increasingly used worldwide as a source of renewable energy, and many mountain ranges have dozens or hundreds of hydropower plants, with many more being under construction or planned. In Albania, under the framework of the National Strategy of Energy Production, a huge number of projects have been drafted for the construction of small hydropower plants in most of Albania's rivers, without taking into consideration their irreversible negative impacts on the environment. It is happening also in the "Valbona Valley" National Park, where are planned to be constructed 11 small hydropower plants, between quotes of 214 m to 1510 m elevation, by means of channels or tunnel wires with different lengths, ranging from the spring of Valbona River to all the streams that run into Valbona River, such as Kukaj, Markoci, Sqapica, Çeremi, Motina, Miloshi, Dragobi Oterg, Kau Oterg, Shudeshnice, and "Cave of Kaurri" streams. In the focus of research was the identification and assessment of possible effects on ecosystems of small HPP construction in the Valbona River and streams. There was shown that the construction of small HPPs in the "Valbona Valley" National Park has been done in violation of the international and Albanian legislation on protected areas. The negative environmental impacts on ecosystems at the "Valbona Valley" NP are important and irreversible, on the local and regional level, in terms of damage and destruction of virgin natural aquatic and terrestrial ecosystems, irreversible damage to endemic, subendemic and endangered flora and fauna, etc.

The Albanian Government must be aware giving permissions and must immediately stop the construction of the HPPs in "Valbona Valley" National Park and consider other ways of more environmentally friendly renewable energy production, such as solar or wind power, taking into consideration saving the environment and sustainable development for today and next generations.

keywords Assessment, Ecosystem, Effect, Small Hydropower Plant, "Valbona Valley" National Park

Introduction

Energy remains one of the most critical economic, environmental and development issues facing the world today with some 1.2 billion people - about 17% of the world's population - still lacking access to electricity [UNIDO and ICSHP, 2016: 6]. Clean energy and access to electricity have been recognized by the United Nations as key to development. As such, energy access is the seventh Sustainable Development Goal (SDG). Yet, clean energy exists with other SDGs, including alleviating poverty, education, improving environmental conditions and combating climate change, in both developing and developed countries [UNIDO and ICSHP, 2016: 6, 7]. Hydropower, the power derived from the energy of flowing water, is the world's leading renewable source for electricity generation globally in recent years, supplying 71% of all renewable electricity. Reaching 1096 GW of installed capacity in 2016, it generated 16.6% of the world's electricity from all sources [REN21, 2017: 22, 33; WEC, 2017: 3, 5].

Hydropower plants of 0.1-10 MW in capacity are considered to be small HPPs and work on run-of-river (RoR) scheme powering the base load [UNIDO, 2015: 2]. Small hydropower, defined by installed capacity of up to 10 MW, is for many years the backbone of electricity production in many countries in the EU, since the beginning of the 20th century. Nowadays, it contributes to around 1.9% of the world's total power capacity, around 8% of electricity production within the renewable energy mix [European Small Hydropower Association, 2016: 3-4] and 6.5% (<10 MW) of the total hydropower capacity [UNIDO and ICSHP, 2016: 7]. There has been a substantial increase in the number of hydroelectric power plants in recent years in 27-EU-Member States [ESHA, 2016: 7], as well as other European candidate countries, such as Turkey [Koç, 2012: 1420], Serbia [Panić, Urošev, Milanović - Pešić, Brankov,

and Bjeljic, 2013: 341], Montenegro, Albania [Energjia.al, 2018; NANR, 2018], etc. In 2010, nearly 21,800 SHP plants have been in operation. The biggest number of SHP facilities is installed in Germany (>7,500), followed by Austria (2,590), Italy (2,430), France (1,900), Sweden (1,900) and the Czech Republic (1,450). It is expected that the overall SHP number should reach up to 24,000 by 2020 [EHSA, 2016: 4, 7] (Figure 1).

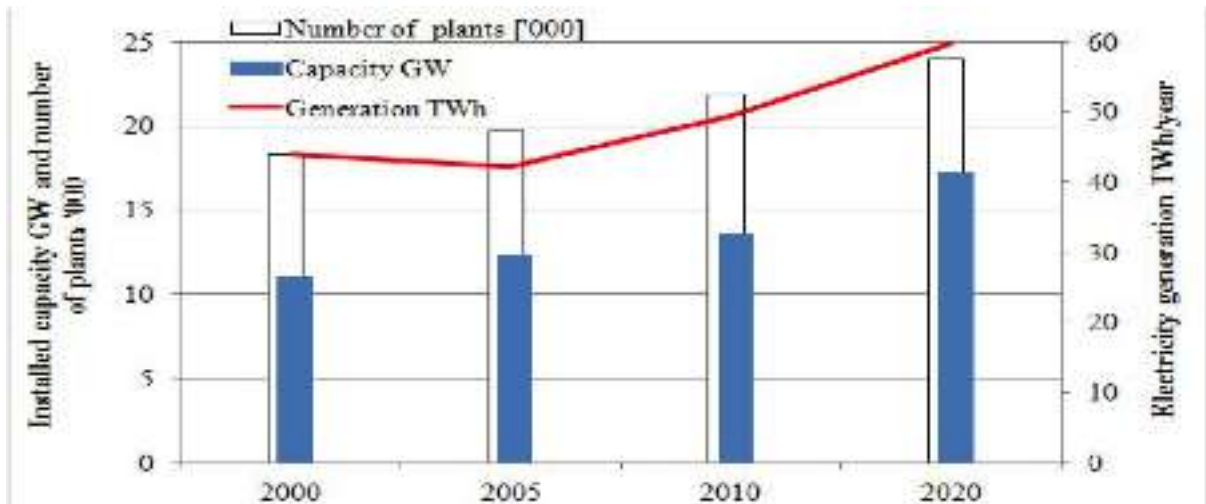


Figure 1. Number, installed capacity and electricity generation of small HPPs 2000-2020 in the EU

The overall installed capacity in Southern Europe (Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, the Former Yugoslav Republic of Macedonia, Montenegro, Portugal, Serbia, Slovenia and Spain) is 6,286 MW while the estimated potential is 16,310 MW (Figure 2/b). This indicates that approximately 39% has so far been developed (Figure 2/c).

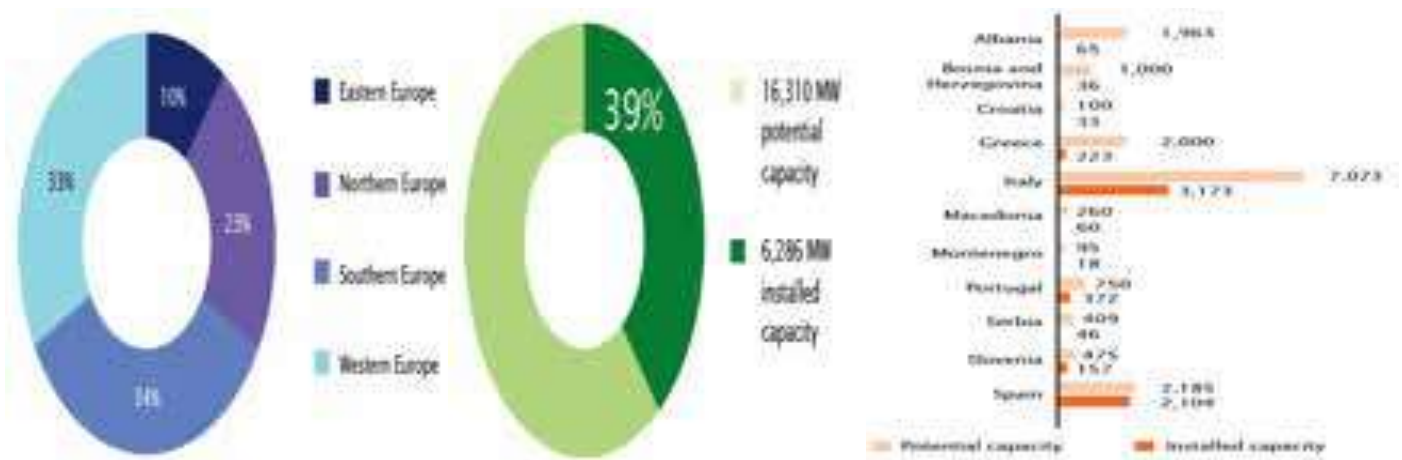


Figure 2. a) Installed SHP capacity in Europe (MW), b) Developed SHP potential in Southern Europe (%), c) SHP capacities in Southern Europe (MW) [Source: UNIDO and ICSHP, 2016: 25, 28, 29].

In Albania, under the framework of the National Strategy of Energy Production 2013-2020 and 2018-2030, a huge number of projects have been drafted and signed for the construction of small hydropower plants in most of Albania's rivers. The latest reports of the National Agency of Natural Resources [NANR, 2018], stated that, started from 2002 to 2017, 183 concession contracts have been signed for the construction of 524 small HPPs with a total installation capacity of 2165 MW and an annual output of 9342.31 GWh, of which, 117 small HPPs were built before 1990s and newly constructed, 43 are under construction, and 364 HPPs that have not yet started construction. Their energy production accounts over 28% of the total energy generated annually in Albania [Energjia.al, 2018]. Although the ecological impacts of large dams are relatively well known, the effects of small hydropower plants and their weirs have been much less investigated. Small scale HPPs have the same components as large ones and require less construction time and resources. Small HPPs plants can be installed on small river or streams, with varying impacts on ecosystems depending on the site's geographical, hydrological and biotic characteristics [UNIDO, 2015: 2]. All small HPPs, like any HPP, are site specific and their output depends on the hydraulic head, flow rate during the year, geological and geographical features, equipments (turbines and generators) and civil engineering works. Making use of existing weirs, barrages navigation locks and dams for small HPPs can significantly reduce environmental impacts, costs and implementation time.

While offering ecological advantages from a global perspective, such as climate change mitigation, emergency management, and reduction of flooding risk, the operation and construction of (small) HPPs may cause some environmental impacts on the local and regional level. The construction of the main (dams, reservoirs, diversion channels, penstock, powerhouses) and accompanying (roads, transmission lines, substations) structures are the initial sources of impact. During construction, there are direct impacts of deforestation and land preparation, as well as indirect impacts associated with transportation, construction materials, and energy requirements [Cuoto and Olden, 2017: 96]. Benejam, Saura-Mas, Bardina, Sola, Munne, and Garcia-Berthou (2016: 295-236) reported that small HPPs in Ter River basin (Catalonia, NE Spain) showed to have irreversible environmental impacts on the local and regional level, including changes on ecosystems, a significantly lower presence of refuges for fish, poorer habitat quality, more pools and less riffles and macrophytes, and shallower water, while Koç (2012: 1416) reported for harm to fish populations, a loss of aquatic habitat, a significant change in natural flow regimes, and deterioration of the landscape from 24 hydroelectric power plants operated and constructed on dams, rivers, and canals in the Buyuk Menderes Basin and in the West Mediterranean Basins in Turkey. Small HPPs (including mini, micro, and picahydel systems) are likely to cause, per kilowatt of power generated, no less significantly adverse environmental impacts than large hydropower systems and some other conventional sources of energy [Abbasi and Abbasi, 2011: 2134].

Objectives

The objectives of the study were:

- Identification of the main streams of Valbona Valley National Park;
- Identification of the higher endangered ecosystems, aquatic and terrestrial flora and fauna species;
- Assessment of possible environmental impacts on ecosystems of construction and operation of SHPPs in the Valbona River and streams;
- Recommendations for mitigation of negative environmental impacts.

Methodology

The National Park of Valbona Valley belongs to the Albanian Alps which lies in the center of the Eastern Alps, Kukes Region, Tropoja district, in geographic coordinates 42°27'12.6 "N and 19°53'28.68" E. It is the most visited park in Albania, hosting both national and international visitors. It was declared "National Park", by the Decision of the Council of Ministers No. 102, January 15, 1996. It has an area of 8000 ha. It is protected area category II of IUCN: National Park (Large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities) [NAPA, 2018; Elba, 2010/a: 34]. Valbona River rises from the mountain of Malesia e Madhe, it is 50.6 km and the watershed is 657 km², and the main branches of the river are the streams of Çerem (15 km), Mullareka (27 km), Motina, Milloshi, Gashi, Bushtrica, and Vrella of Shoshan. The study was carried out during the period 2016-2018 and was focused on the collection of data of Valbona Valley NP, the touristic attraction sites, the biodiversity and specific ecosystems, collection of data of planned HPPs to be constructed on Valbona River and other streams that permeate the Valbona Valley NP, the endangered flora and fauna species, assessment of environmental impacts of SHPPs, based on project and EIA Report, the independent overview related to the EIA Report for two HPPs in the Dragobia Zone, the site visits, and the global, European and Albanian legislation. A questionnaire (with 12 questions) was prepared and completed with inhabitants of the area and tourists on their perception on environmental impacts of the small hydropower plants (data not shown). The obtained data were analyzed and processed to reach conclusions.

Results

In the Valbona River and streams are planned to be constructed 11 small HPPs (+2 before 1990), between quotes of 214 m to 1510 m elevation, by means of channels or tunnel wires with different lengths, ranging from the spring of Valbona River to all the streams that run into Valbona River, such as Kukaj, Markoci, Sqapica, Çeremi, Motina, Miloshi, Dragobi Oterg, Kau Oterg, Shudeshnice, and "Cave of Kaurri" streams (Table 1) [Elba LTD, 2010/a: 1, 53-67; Elba LTD, 2010/b: 4-5, 21-40].

Table 1. Constructed and planned HPPs under construction in the Valbona River and its streams

Nr	Area / HPPs	The upper quote (m, a.s.l.)	The lower quote (m, a.s.l.)
1	Area I, HPP-1/A	1020	945
2	Area II, HPP-1/B	1295	945
3	Area III, HPP-2	945	822
4	Area IV, HPP-3	822	670
5	Area VI, HPP-9/A	532	313
6	Area IX, HPP-10	313	242
7	Area XI, HPP-12	214	174
8	Area XIV, HPP-5	1145	670
9	Area XV, HPP-7	1123	532
10	Area XVI, HPP-8	1510	532
11	Area XVII, HPP-14	925	451
12	Area XVIII, HPP-15	451	220
13	Area XIX, HPP-16	852	322

Possible environmental impacts of Small HPPs in Valbona River and streams

Positive impacts

Renewable energy production (hydroelectricity) and gross revenues. According to the EIA Report [Elba LTD, 2010/a: 9, 11, 12], the total investment reach of 56.8 million €, the annual planned hydropower of 303 million kWh, the gross revenues - 20927700 € (0.069 €/kWh), and the investment of the construction be covered for three years. So, the most positive impact will be for the constructing company.

Employment. According to Municipality "Bajram Curri" [BC Municipality, 2017] and the EIA Report [Elba LTD, 2010/a: 44, 49], the socio-economic situation in the villages of Margegaj Administrative Unit, where the Valbona Valley NP belongs to, is at a very low level with 1-2 dollars per capita/day. The EIA Report was stated that "during the construction phase will be employed about 200 employees, with an average monthly income of 20 thousand to 38 thousand Albanian Lek or 140-270 Euro..." and, during the operation phase, there will be employed 24-28 employees (20 permanent employees at HPPs and 4-8 service employees [Elba LTD, 2010/a: 49] or 0.93% of 3016 residents of Margegaj AU [BC Municipality, 2017]. It is acknowledged that there will be no visible positive impact on the welfare of the area's residents, while the development of tourism in the area would provide much more revenue and would affect a large number of residents of the area. Today, in Valbona Valley, there are 38 hotels and inns, with about 1000 beds and over 150 employees or 4.97% of the inhabitants [BC Municipality, 2017]. According to REC Albania [2015: 33], the total contribution of the electricity sector in 2013 was only 2% of GDP or 2.7% of revenues reported in the state budget, while the employment (unofficial data by Albanian Power Corporation) was 1014 employees. According to the World Travel and Tourism Council (2014), direct tourism contribution in Albania was 5.5% in 2014 with a target of 6.1% of GDP by 2024, the total GDP contribution was 13.9% (2013) with a target of 20.9% in 2024. In 2013, the direct employment and total employment contributions were 41000 jobs (4.3%) and 146,500 jobs (15.2%), respectively, with a target of 210,000 jobs (19.5%) by 2024 [REC Albania, 2015: 33].

Negative impacts of small HPPs during construction and operation phase

There will be significant impacts in land, geomorphology and land cover during construction and operation phases, such as: changes in the local topography and landscape, ground and soil erosion, soil contamination, damage and loss of forest land, pastures, and agricultural land, soil pollution from different contaminants, soil pollution from solid waste, chemical emissions and deposition on the soil, soil pollution from sludge deposits, impacts and risks related to land use (quality and quantity) as well as significant changes in future land use programs, changes in buildings and man-made facilities, land expropriations, changes in the geological structure, damages to geomonuments, changes of the paleontological, sedimentological, geomorphologic, carstic character, etc, changes in the physical and biological cover of the land, changes in the density of the road network, etc.

According to the project and EIA Report [Elba LTD, 2010/a: 76, 82, 83], there will be lost 1000 m² agricultural land, 5000 m² forest (flora species, not specified what and where), erosion will be present at grade 2-3 (over medium),

10,000 m² forest and agricultural land, which will be compensated by the construction company. There will be irreversible impacts because of newly constructed roads (33,700 ml for access to HPP facilities, waterworks, etc. + 5 km to reach the derivation channel and the pressure pool) passing through a virgin wild area, using of 142,000 m³ concrete, ground and rock excavation of 672000 m³, filling and placement of 10,000 m² using 672,000 m³ working volume for the construction of HPPs and roads, interruption and/or isolation of wild habitats (flora and fauna), interference between the natural path of bird migration, soil contamination from sludge deposits, etc. [Elba LTD, 2010/a: 5, 83, 84, 87]. Most of the impacts will be more visible during the construction phase.

Impacts on air quality and atmosphere. During the construction phase, because of use of heavy machineries for transport, excavation, disposition and construction, there will be present several air pollutants emission such as PM10 and PM2.5, flour-organic (volatile) compounds, different aromas, hydrocarbons (HC), lead (Pb), aerosols, CO, SO₂, and CO₂, but they can be managed.

Major impacts on hydrology and water resources

Aquatic species have evolved their life history strategies primarily in direct response to the natural flow regime. Changes in water level rates and fluctuations, frequency of concerns (floods and droughts) and intensity (speed and low stress levels) can affect their survival and growth [REC Albania, 2015: 22; SHERPA, 2010: 5]. In regulated river systems, modified stream flow regimes are associated with large fluctuations in the thermal mode, affecting the behaviour of aquatic species, especially fishes, while, in the long term, it can cause selective disappearance of tangible downstream species. The main problem in the small HPPs to prioritize the flow of water in three directions: irrigation, free flow of the water for conservation of aquatic fauna and flora, and for energy production. Effects on hydrology and water resources will be important, especially in the preservation of ecological water for the continuation of aquatic flora and fauna at risk or at risk of extinction.

The main impacts in hydrology and water resources that will be present during construction and operation phases of small HPPs are: changes on the water flow regime, changes, quantitative changes in water bodies, changes in water quality from nutrients, such as chlorophyll, microorganisms, alkalinity, electrical conductivity, temperature, secondary effects on water pollution (water used for the irrigation of agricultural lands and underground water), modification and changes in drainage of natural waters, changes in the density of the hydrographic network (km/km²), changes in the hydrology of the area, reducing the ecological waters, changes in the shape of the watershed, etc. At the EIA Report [ELBA LTD, 2010/a: 77-79], reducing the amount of water in the Valbona River bed is considered irrelevant to aquatic life. According to our country's experience, reduction of the water flow, associated with temperature rise and decrease of the amount of dissolved oxygen, results in reduction of ictidal populations, while mountain trout and marble trout - two globally endangered species, which are part of and the Red List of protected species in Albania, almost have no longer shelter there.

Impacts on aquatic and terrestrial flora and fauna

The construction and operation of small HPPs will strongly influence the modification of land and water habitats and ecosystems. Lake dams interrupt migrating fish paths and significantly degrade the quality of habitats. They completely alter and/or modify habitats, creating a very important entry gate for alien species. The history of hydropower development in Albania is filled with examples of violations (habitats, ecosystems), most of which are irreversible. Valbona Valley NP is a very rich area with common, endangered and endemic fauna and flora species.

Terrestrial and aquatic ecosystems

The geographic position, climatic conditions and the rich hydropower network of the Valbona Valley National Park constitute a suitable terrain for the development of a variety of plant and animal species. High altitude differences above sea level (from 300 m to over 2000 m), very high peaks and deep valleys, and numerous water springs create ideal microclimate conditions for diversification of species of plants and animals. The stream slopes and the Valbona River itself are also microclimate environments very suitable for the development of rare and endemic animal and plant species. According to the EIA Report [Elba 2010/a: 34-39], in the Valley of Valbona Valley NP, from Rrogam to Bujan, are noted these oak forests, beech forests, coniferous forests and alpine pastures vegetation types, represented from specific woody, shrubs and herbaceous species.

Endemic, sub-endemic, rare, endangered, or at risk of extinction flora species

Valbona Valley NP is homeland of hundreds of rare, endemic, sub-endemic, endangered, vulnerable flora and fauna species, included on the Red List of Albanian Flora and Fauna, the Habitat Directive or Bern Convention, with European or global importance, etc. [Diku, Papparisto, Miho, Mahmutaj, Bego, Shuka, Nika, Hoda, Shumka, 2016: 9-11; Elba LTD, 2010/a: 36, 37; 42; NAPA, 2017] (Table 2, 3).




Table 2. The most important flora species

Endemic, sub-endemic, rare, endangered species	<i>Aster albanicus</i> subsp. <i>Albanicus</i> , <i>Sambucus nigra</i> , <i>Centaurea candelabrum</i> , <i>Agrimonia eupatoria</i> , <i>Digitalis lanata</i> , <i>Dryopteris filix-mas</i> , <i>Hypericum perforatum</i> , <i>Juniperus communis</i> , <i>Salix reticulata</i> , <i>Paeonia mascula</i> , <i>Ramonda serbica</i> Pancic., <i>Wulfenia carinthiaca</i> Degen, <i>Moltkia doerfleri</i> , <i>Moltkia petraea</i> , <i>Viola kosaninii</i> , <i>Gentiana lutea</i> , <i>Dioscorea balcanica</i> , <i>Arctostaphylos uva-ursi</i> , <i>Alchemilla albanica</i> Rothm., <i>Orchid</i> sp. <i>divaricata</i> , <i>Colchicum autumnale</i> , <i>Edraianthus serpyllifolius</i> , <i>Galanthus nivalis</i> L., <i>Geum bulgaricum</i> Panc.
Locus classicus	<i>Lunaria telekiana</i> Jav.
Global conservation importance	<i>Orobanche krylovii</i> , <i>Plantago reniformis</i> G. Beck (for Europe is located only in this territory)
Medicinal plants	<i>Salvia officinalis</i> , <i>Achillea millefolium</i> , <i>Colchicum autumnale</i> , <i>Dioscorea balcanica</i> , <i>Urtica dioica</i> , <i>Parietari aofficinalis</i> , <i>Sambucus nigra</i> , <i>Fumaria officinalis</i> , <i>Vaccinium myrtillus</i> , <i>Papaver rhoeas</i> , <i>Malva sylvestris</i> , <i>Rubus ulmifolius</i> , <i>Rosa canina</i> , <i>Hypericum perforatum</i> , <i>Chicorium intybus</i> , <i>Verbascum thapsiforme</i> , <i>Primula officinalis</i> , <i>Fragaria vesca</i> , <i>Prunus spinosa</i> , etc.

Fauna

The Valbona Valley NP is very rich in fauna. Fauna is presented with amphibians, reptiles, mammals and birds (Table 3).

Table 3. The most important fauna species

Amphibians	<i>Bombina variegata</i> , <i>Bufo bufo</i> , <i>Bufo viridis</i> , <i>Hyla arborea</i> , <i>Rana balcanica</i> , <i>Rana dalmatina</i> , <i>Rana graeca</i> , <i>Rana temporaria</i> , <i>Salamandra salamandra</i>	
Reptiles	<i>Testudo hermanni</i> , <i>Testudo graeca</i> , <i>Emys orbicularis</i> , <i>Algyroides nygropunctatus</i> , <i>Lacerta agilis</i> , <i>Coluber gernonensis</i> , <i>Coluber najadum</i> , <i>Coronella austriaca</i> , <i>Lacerta trilineata</i> , <i>Podarcis muralis</i> , <i>Podarcis taurica</i> , <i>Anguis fragilis</i> , <i>Coluber jugularis</i> , <i>Coluber gernonensis</i> , <i>Elaphe longissima</i> , <i>Vipera ammodytes</i> , <i>Vipera berus</i> , <i>Lacerta agilis</i> , <i>Lacerta viridis</i>	
Mammals	Brown bear (<i>Ursus arctos</i>), wild goat (<i>Rupicapra rupicapra</i>), capriole (<i>Capreolus capreolus</i>), wild cat (<i>Felis silvestris</i>), lynx lynx (<i>Lynx lynx</i>), wolf (<i>Canis lupus</i>), <i>Martes martes</i> , <i>Martes foina</i> , <i>Canis aureus</i> , <i>Vulpes vulpes</i> , <i>Lutra lutra</i> , <i>Meles meles</i> , <i>Mustela nivalis</i> , <i>Sciurus vulgaris</i> , <i>Glis glis</i> , <i>Rhinolophus ferrumequinum</i> , <i>Rhinolophus blasii</i> , <i>Mustela putorius</i> , etc.	 
Birds (44 species)	Wild cockroach (<i>Tetra urogallus</i>), Balkan eagle (<i>Circus pygargus</i>), <i>Gyps fulvus</i> , <i>Alectoris graeca</i> , <i>Falco peregrinus</i> , <i>Falco cherrugo</i> , <i>Buteo buteo</i> , <i>Aquila chrysaetos</i> , <i>Columba livia</i> , <i>Columba palumbus</i> , <i>Streptopelia turtur</i> , <i>Cuculus canorus</i> , <i>Upupaepops</i> , <i>Picus viridis</i> , <i>Dendrocopos syriacus</i> , <i>Sylvia atricapilla</i> , <i>Muscica pastrata</i> , <i>Aegithalos caudatus</i> , <i>Turdus merula</i> , <i>Parus caeruleus</i> , <i>Parus major</i> , <i>Sitta europaea</i> , <i>Certia brachydactyla</i> , <i>Oriolus oriolus</i> , <i>Lanius collurio</i> , <i>Garrulus glandarius</i> , <i>Pica pica</i> , <i>Pyrrhocorax graculus</i> , <i>Corvus coronecornix</i> , <i>Corvus corax</i> , <i>Fringilla coelebs</i> , <i>Serinus serinus</i> , <i>Carduelis chloris</i> , <i>Carduelis carduelis</i> , <i>Emberiza cia</i> , <i>Emberiza cirulus</i> , <i>Emberiza citronella</i> , <i>Passer domesticus</i> , etc.	 

Endemic and sub-endemic fauna species of national, European and global importance

There are many species such as: *Agardhiella zoltanorum*, *Leuctra malcor* Murányi, *Leuctra mortonifeheri* Murányi, *Nemoura anas* Murányi, *Rosalia alpine*, *Aricia anteros*, *Satyrium album*, *Parnassius Apollo*, *Pieris brassicae*, *Thecla betulae*, *Bombina variegata*, *Lacerta agilis*, *Rana graeca*, *Rana temporaria*, *Triturus carniflex macedonicus*, etc, which belong to endemic, sub-endemic, critically endangered species, the Bern Convention, Habitat Directive, European Red List of Butterflies, Albanian Red List, etc) [Diku, Papparisto, Miho, Mahmutaj, Bego, Shuka, Nika, Hoda, Shumka, 2016: 11-12].

Aquatic ecosystem of Valbona River

Aquatic ecosystem of Valbona River is the only one of its kind in the area. The most important plant species that meet in these habitats are those of the genders *Thypha*, *Equisetum*, *Poligonum*, *Salix*, *Orchis*, *Alnus*, *Ranunculus*, *Pinguicula*, etc. Of the animal species are the fish, the amphibians, from the reptiles are yellow-tailed turtle (*Emys orbicularis*), snakes of water (*Natrix natrix* and *Natrix tesellata*), and mammals are *Lutra lutra*, seagulls, ducks, geese, etc.

Rare and threatened fish species

The Valbona River is the habitat of the marble trout (*Salmo marmoratus*) (Figure 3/a) and the Brown trout (*Salmo trutta fario*) (Figure 3/b), which are two typical cold and rich in oxygen water species, whose survival will undoubtedly be influenced by the construction of the HPPs, because it is impossible to live on low water flow, high temperature, and dissolved oxygen. Other typical endangered of clean and cold waters species are *Telestes montenegrinus*, *Cottus gobi* and *Phoxinus lumaireul*, threatened by reducing the amount of water in the stream because of HPPs.



Figure 3. a) *Salmo marmoratus* (Marble trout); b) *Salmo trutta fario* (Brown trout) in Valbona River [©Nika, July 2015, In: Diku, Papparisto, Miho, Mahmutaj, Bego, Shuka, Nika, Hoda, Shumka, 2016: 9]

Ecosystems and habitats with interests, in danger because of HPPs in Valbona

Ecosystems of alpine rivers and herbaceous plants, Code 3220, are laid in the middle and the upper part of Valbona and Gashi Rivers, where the HPPs are planned to be constructed. Habitat is dominated by perennial herbaceous flora such as *Alnus incana*, *Rhamnus alpinus*, *Aruncus dioicus*, *Carex pallescens*, *Rhamnus alpinus*, *Equisetum* spp., *Epilobium* spp, *Calamagrostis* spp., *Saxifraga aizoides*ose, *Heliosperma pusillum* subsp. *Albanica*, etc., geological formation of the substrate is calcareous.

Ecosystems of alpine rivers and shrubs and woody plants, Code 3240, are laid in the most upper part of rivers and habitat is dominated by *Salix* species (*Salix elaeagnos*, *Salicetum eleagni*, *Alnetum incanae*, *Salix caprea* and *Salix amplexicaulis*. Both habitats are home of *Salmo marmoratus* and *Salmo trutta fario*, as well as some other aquatic and terrestrial species (*Aportodeasma ragdina*, *Dendrodrilus rubidus rubidus*, *Lumbricus rubellus*, *Elaphe longissima*, *Salamandra salamandra*, *Triturus alpestris*, *T. Vulgaris*, *Bufo viridis*, *Bombina variagata*, *Pelophylax kurtmuelleri*, etc, and several insects and butterflies (*Leuctra mortonifeheri*, *Nemoura asceta*, *Nemoura vinconi*, *Nemoura anas*, etc.).

River bed is an excellent habitat for different algae (*Hydrurus foetidus*, *Lemanea*, and some silica microscopic algae) which serve as the primary nutritional source for other aquatic species. Reduction of water flow and change of the river bed will affect significantly this group, as well as other aquatic species.

All the above mentioned impacts were not taken into consideration by the decision-makers giving permission of small HPPs construction.

Concerns of residents, NGOs, environmental specialists and domestic and foreign tourists regarding the construction of small HPPs in the Valbona River and its branches

Residents and touristic businesses of the area had no information before the starting of the construction of HPPs in the Valbona Valley NP, and they were alarmed when the construction of HPPs started on the upper stream of Valbona River. The Valbona River is one of the few places that have remained unharmed, enabling the preservation of biodiversity. By 2016, the Valbona River and Valley are threatened not by irresponsible individuals, but by the Albanian government through the adoption of small HPPs. Building 11 HPPs in 25 km in Valbona Valley in Albania is a capital punishment for the river, it is just as if the US does the same in Yellowstone Park (BalkanWeb, 2016). Destroying Valbona is an environmental, ecological catastrophe, reduction of water flow will eventually eradicate the mountainous trout and will affect the entire ecosystem of this valley. Breaking down an important chain of ecosystem chain would completely ruin it.

VOA (Voice of Amerika), on February 26th, 2016, at the news editions, commented that the residents of Valbona oppose the construction of HPPs at the NP, because it hurt the tourism and ecosystems, etc.

In 26th March 2016, "Standard" newspaper published a letter of a British tourist company "Black Mountain LTD" directed to the Albanian Prime Minister where was expressed was concern about the construction of the HPPs in the few virgin areas of the country and Europe, suggesting to stop HPPs and preserving the cultural and natural heritage, the authentic environment and nature's beauty for the future and next generations. In April 2016, a petition was signed by the residents of Valbona, environmentalists, and thousands of domestic and foreign tourists, as well as REC Albania [2016] to stop HPPs and to find other ways of power generation. In April 21, 2017, just one day before "Earth Day", the Balkan Tour team (Leeway Collective) published a sensitization video on Facebook <https://vimeo.com/214224557>, which went viral and was posted more than 27000 times at the first day and continues to post nowadays. It has a unifying message: "The indifference of the Albanian government towards the continual destruction of the national park Valbona Valley is unacceptable".

Since March 2017, the Valbona Valley NP is shaking with blasts, day and night, and no one knows how much will be the irreversible impacts because of the construction of HPPs and the introduction of three kilometres of the most beautiful and most intact part of Valbona in the tunnel [Mjedisi.al, 2017]. Environmental permits are given in violation of national and international laws and agreements, because the park is IUCN (International Union of protected area, category II since 1996), it is part of the Emerald Network and Bern Convention and Natura 2000 planned site. HPP projects have disregarded the Aarhus Convention, Espoo and the Bern Convention - where Albania is a signatory part. TOKA (Organization for the Protection of Albanian Alps) and residents of Valbona have sent the case at the Administrative Court and several court hearings have been held, but the power of corruption continues to be stronger. Till the final court decision, the Valbona Valley NP is being damaged irreparably in the meantime. Only the National Territorial Council (KKT) and its chairman (Prime Minister), may reject the application for extending the construction permit and stop HPPs.

Conclusion

The Valbona Valley National Park is one of the natural virgin ecosystems, still intact, very important at the local, national, regional and global level. The small HPPs designed for the construction of the Valbona River and its branches will be associated with significant irreversible impacts on soil and soil geo-morphology, climate, the aquatic and terrestrial flora and fauna, including globally important, rare, endangered and threatened species, such as marble (silver) trout, mountainous trout, etc., as well as significant negative impacts on biodiversity and landscape, etc.

The responsible institutions for environmental protection have not implemented the legislation in force for informing the public on the projects to be implemented in their area (obligations deriving from the Aarhus Convention, the Bern Convention, the Birds and Habitats Directives, the Water Framework Directive, EU resolutions for Albania, especially for HPPs in April 2015 and April 2016).

Local residents, NGOs, local and international public, national and international touristic agencies, etc. are concerned about what is happening in the Valbona Valley NP.

Except to the economic interest of construction companies (>3.3 million kWh of hydropower and >20 million Euros gross revenues per year), the social impacts of residents (employment and welfare), both during the construction and operation phase, are negligible (28 people or 0.93% of the population), while today, in the tourism sector only there are employed >150 employees or 4.97% of the population, with a short perspective >10%.

The relevant authorities have approved HPP projects without or fictitious EIA, without public consultation, finding justification that, according to the Law no. 123/2013 "On Concessions", for HPPs, the National Protection Agency is the authority to decide whether an in-depth assessment or a preliminary assessment (Law no. 10440, dated 07.07.2011, "On Environmental Impact Assessment", amended by Law No. 12/2015). In most of the HPP projects, the process passes through a preliminary assessment. There is a reality that for the developer is very simple to get the environmental permit/statement, pointing out that the check-and-balance principle is inexistent.

The Albanian Government and relevant institutions should:

- revise all the HPPs environmental permits in the Valbona Valley NP and in all protected areas of the country and

- suspend the licensing process and environmental permits for the construction of other HPPs in Albania in the form of a moratorium with an initial 5-10 years' term;
- consider the review of the entire licensing practice of existing HPPs, including those that have started construction and those that have not yet started construction, for their discipline and/or cancellation of those that are in flagrant violations of domestic and international environmental legislation;
 - consider the public participation in environmental decision-making in all cases regardless of the size of the project, in compliance with national and international legislation in force;
 - fully implement the European Directive on Environmental Impact Assessment in the process of approving hydropower projects (Directive 2014/52/EU, 16 April 2014, entered into force on 16 May 2017, a directive amending previous EIA directives (Directive 2011/92/EU, EIA Directive 85/337/EEC), which are expressed through Law No. 10440, dated 07.07.2011, "On EIA", Law No. 12/2015, dated 26.02.2015, "For some amendments to Law No. 10440 ...", Law No. 91/2013, dated 28.02.2013," On SEA ", DCM and other by-laws in the country;
 - implement Law no. 111, 15.12.2012, "On Integrated Water Resources Management", where is mentioned that it is obligatory to obtain a water permit in the form of an authorization, concession or approval issued by STCCU, referred to DCM no. 416/2015 about water potential, quantity and flow;
 - think about finding less destructive opportunities for the environment, evaluating scientifically ecosystem services as a whole, for maintaining important ecological, living and social services.

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[ECO/08]



Persian Garden as a sustainable model for landscaping with respect for the ecosystem

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abstract

Persian Garden is a prototype of garden emerged in Iran in the 6th century BC. This garden has special features which makes it distinct among other styles and persisted over more than two millennia since its first mature expression in Pasargadae. Ecological reasons to respond to extreme climate conditions in Iran along with the metaphorical ones to represent Eden led to create such phenomenon. In Persian garden, natural and human elements are utilized to integrate Persian culture to a physical-symbolic expression in harmony with nature.

Despite this historical phenomenon, recent landscape design in Iran failed to follow former sustainable methods and conventional way of gardening is interrupted due to modernization. Current static and isolated design threatens ecosystems and nature, especially in this arid country with drought crisis so such site design needs a profound shift in the principles to include adaptation and enhancement of ecological services. The main objective of this paper is to recognize ecological services existing in Persian garden that led to its sustainability. To reach this goal, this paper investigates complex, interrelated systems of Persian garden components such as water, vegetation, fauna, soil, materials and culture in the Persian Garden with the emphasis on the role of water and vegetation. To achieve a sustainable site, healthy relationship between these systems are critical as they are tightly woven together both impacting and supporting each other. This paper applies descriptive-analytic method in historical and documented sources to study different aspects of ecological services and Persian garden. Moreover, Fin (Shah) Garden in Kashan, which is the oldest surviving Persian garden in Iran is being studied as a case study in this paper.

keywords Persian Garden, Sustainability, Ecosystem Services, Water, Vegetation

Introduction

Being located in the vast arid region forced architects to find innovative solutions to deal with harsh geographical conditions in Iran. One of these solutions is Persian Gardens as a pleasant green space that could respond to climatic conditions. Such traditional landscape architecture in Iran developed sustainable features that made it survive through history. Persian Garden is a symbol of vernacular sustainable landscape architecture in Iran.

The first Persian garden, built as royal gardens in 6BC by Iranian emperor, Cyrus the great, was called Paradise, meaning "closed garden" and "Paradise" in English is derived from this word (Fadaie, Mofidi Shemirani, 2014b: 320).

Being surrounded by walls in addition to other natural features such as water irrigation and planting design made a microclimate in the garden to moderate the heat and dryness of surrounding environments. Different fields of knowledge, such as technology, water management and engineering, architecture, botany and agriculture were applied to create Persian garden. (Shahcheraghi, 2015)

In recent years, cities in Iran have shown increasing signs of environmental problems due to the negative impacts of urban activities. The degradation and depletion of natural resources, climate change, and development pressure on green areas have become major concerns for cities. Climatic conditions have become worse confronting the water crisis. In spite of such problems, in modern landscaping vernacular Persian garden principles and sustainability features are forgotten. Green spaces which consumes too much water and need high maintenance are the result of such wrong management.

In response to environmental problems, urban planning policies in developed countries have shifted to a sustainable focus and authorities have begun to develop new strategies for improving the quality of urban ecosystems. (Dizdaroglu et al., 2010) Regarding all these issues, it becomes necessary to revise the current urban policies and landscaping in Iran and develop new planning models for urban development considering Persian garden as a sustainable model to foster ecosystem services.

State of the art

The researches which are conducted about Persian gardens are numerous which tries to specify different aspects of Iranian gardens of historical, functional, geometrical, and other perspectives. As sustainable design approach has become more common recently, sustainability in Persian garden has been noted too. Generally, such researches fall into three categories:

- First the ones which try to find principles of sustainability in Persian gardens. "Fadaie" and "Mofidi Shemirani" study sustainable parameters in the creation of Persian garden in arid regions of Iran and summarize the principles of "Creating Sustainable Communities" research by "Rosen". (Fadaie, Mofidi Shemirani, 2014b), (Rosen, 2007) "NorouzianPour" in his paper states that Persian garden consists of three orders including: Planting Order, Watering Order and Lodgments Order and analyzes them with two evaluation systems in sustainability, BREAM and LEED. (Norouzianpour et al., 2012) The number of such papers is a little and this area of study needs more deep concentration.

- Second: Papers which try to find sustainability aspects in case studies. "Kohi" investigates the attributes of Iranian Garden, Plants, Land, Water, Pavilion and the Impact of Humans in Shazdeh Garden in Mahan. (Kohi, 2014) Other Case studies of papers include Comparison of Shazeh and Eram garden (Fadaie, Mofidi Shemirani, 2015), Hashtbehesht and Jahannama garden (Fadaie, Mofidi Shemirani, 2014a). Also "MahmoudiFarahani" in her article has a comprehensive look at Persian garden, architecture and components and focuses on three gardens Fin, Chehelsotoon and Shazdeh.

- Third: The ones which concentrate on the role of Persian garden as a green space in urban sustainability. "Rostami" and "Lamit" assumes Persian garden as a key ingredient for city's living sustainability and investigates people's motives for visiting gardens and its influence on general well-being. (Rostami et al, 2015), (Rostami et al, 2012) "Shakiba" and "Pashaei Kamali" tries to illustrate the role of garden in achieving the sustainable city and maintaining the ecologic balance in Iranian cities. (Shakiba, Pashaei Kamali, 2012) Some articles fall into more than one category mentioned above. For instance, "Dabiri" and "Moradi" in their article discuss about the contribution of a Persian garden as a key for promoting sustainability of today's cities and take the Dolatabd garden as a case study. (Dabiri, Moradi, 2014)

Objectives

The main objective of this research is to investigate ecological services existing in Persian garden with the emphasis on the role of water and vegetation in landscaping. To reach this goal, ecological services, parameters and features of sustainability shall be studied too. The final objective is to scrutinize Fin Garden as the oldest surviving Persian garden in Iran in the light of ecological services.

Methodology

The research methodology of this paper is descriptive-analytic method. The research framework of this paper includes three parts: the recognition of Persian gardens, the study of ecological services and sustainability factors, and finally an analysis of such factors in the case study of the paper. Persian Gardens and sustainability are studied based on available historical sources and documentations. To draw conclusions, findings of this library study are combined with field study analyze in the Fin garden as the case study. The emphasis is on the role of water and vegetation in the garden because the complexities of each part are too great to discuss in a paper of this length.

Persian Garden

Persian gardens are distinguished by certain common features that date back to the time of the Cyrus the Great, who ruled the Achaemenid Empire during the 6th century BC. Archeologist David Stronach discovered the remnants of stone channels in Pasargadae garden during his excavation of that historic site in Shiraz province. (Stronach, 1994) These gardens with the palaces which were opened to the green spaces are called "Pardis". Pardis means garden in Farsi it is adopted into English as "Paradise" (Fadaie, Mofidi Shemirani, 2014a: 33). One of the most important principles shared by the Persian gardens is the "Char Bagh" (meaning four gardens)

layout (Figure 1). According to this design, geometry is predominant in landscape architecture of the garden and there are longitudinal and transverse axes dividing it into four parts. Along these axes there are waterways. These four divisions symbolize four Zoroastrian natural elements – sky, earth, water, and plants. After Islam, these gardens were a symbol of Eden as mentioned in the Quran. (Ansari, Mostafazadeh, 2016)

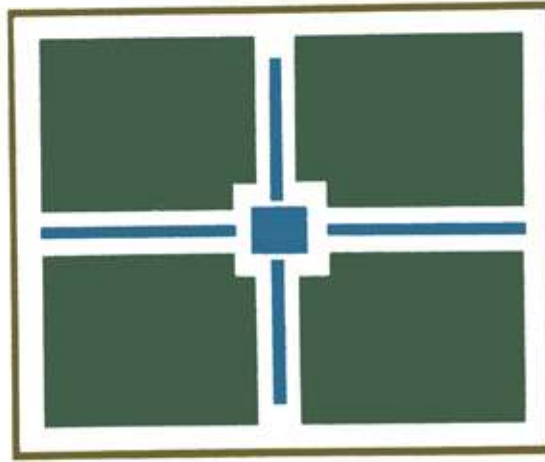


Figure1: Char-Bagh Layout of Persian Garden / Source: Shahcheraghi, 2015: 42

This quadripartite layout of the garden in addition to the water supply and the arrangement of trees and plants in the garden leads to a specific micro-climate carrying outstanding universal value. The garden includes architectural components such as peripheral wall, entrance gate, mansion and ancillary buildings like bath and stable too. (Fadaie, Mofidi Shemirani, 2015: 97). Man-made elements are in harmony with nature too. Persian Garden while having a common layout, the overall design was adapted to the different climates they were being created in. As shown in figure1, architectural components, water system, vegetation, soil and wind are the main parts of Persian garden.

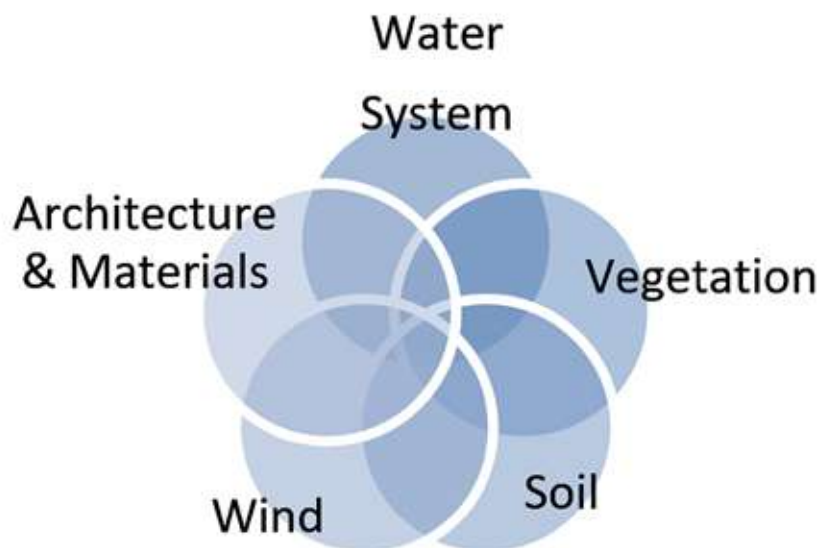


Figure2: Persian Garden Integrating Components/ Source: Authors

1. Water Order in Persian garden

In Persian gardens holiest of all elements and myths is water (Khansari et al. 1998) or as Moynihan describes it: "Water is the most essential and central element in the Persian gardens" (Moynihan 1980).

The source of water in most Persian gardens is Qanat (Figure 3). Qanat is an indigenous method of irrigation, invented by the ancient Iranians, and carried water from mountains bed through the interconnected wells, creating underground streams, taking water to far-off places. (Shahcheraghi, 2015) Qanat is a passive infrastructure that directs water through underground canals using gravity from the underground aquifers deposited at the foothill of a mountain by infiltration of melted snow. It is one of the most sustainable water irrigation systems in the world as it only sources dynamic aquifers. (Kamalvand, 2012)

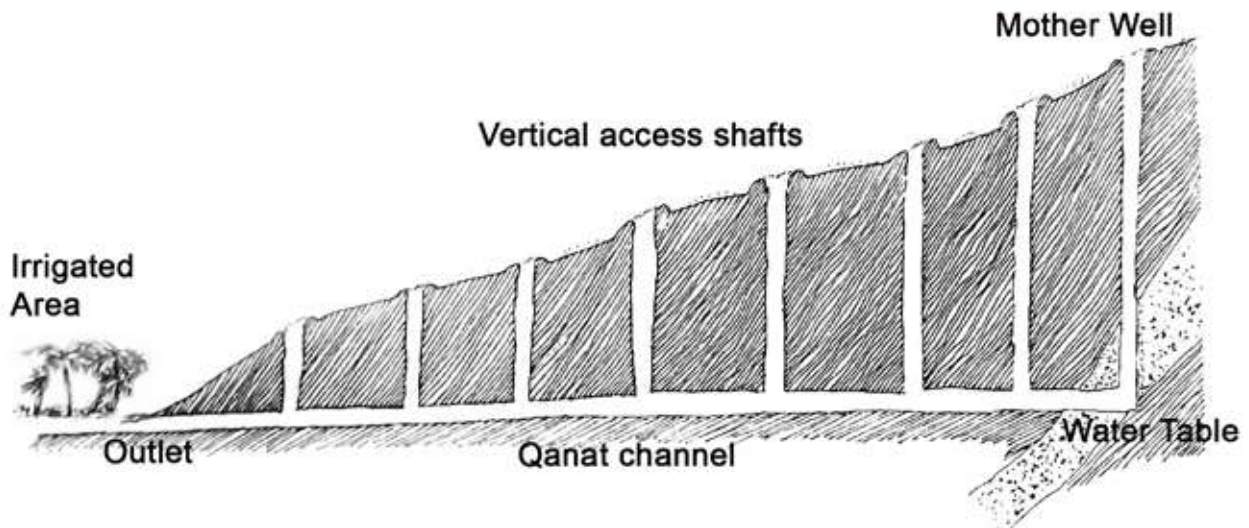


Figure3: Qanat Diagram/ Source: Authors based on Zangheri et al. 1943: 46

Water plays an important role for both functions (irrigation) and ornamentation. The extent of Persian garden, depends on the amount of water, and the garden designer creates microclimate, by channeling breezes over water to reduce air temperature and increase weather humidity.

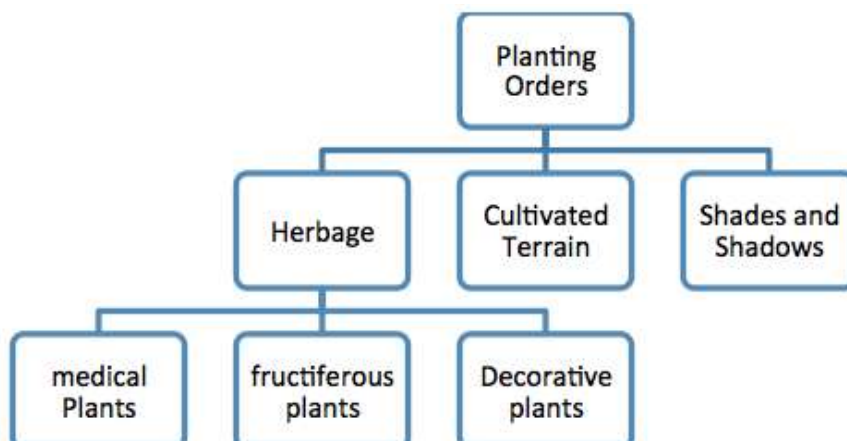
Also, the pattern of char-bagh is usually defined with the intersected water channels or streams. The streams usually had a sufficient slope to enable the irrigation system required for the garden (Khansari et al. 1998), (Pirnia 1994). Other than water channels, the front space of the pavilion was usually dedicated to a pond or large pool to reflect the image of the building and sky connecting the realm of the earthly to the heavenly. (MahmoudiFarahani et al., 2016: 5)

2. Vegetation Order in Persian garden

After water, plants are the most sacred elements in Persian garden. They have semantic roles such as “Tree of life” with a healing power in Zoroastrian belief. Even after Islam, the Quran represents a similar metaphor, the tree of Tuba as the Heaven Tree. (Ansari et al. 2008) According to Hobhouse, in Persian gardens, the evergreen cypress represented immortality and the flowering almond the regeneration of the earth in springtime, while the date palm could provide an all year- round sustenance. (Hobhouse 2003)

There are diverse kinds of vegetation in Persian gardens: Flowers, Clover and different kinds of trees. In Persian gardens, trees are usually used for three reasons; beautification, shading and fruiting. Evergreen trees like: Cypress, Pine and Plane, placed in the main passageways and Fruit trees, like: Berry, Pear, Quince and Apricot, Pomegranate and so on are placed between karts (Parterres). Evergreen trees in these gardens are utilized as natural shading devices and they are used to resist the storms and local dusty winds. (Ansari, Mostafazadeh, 2016) Furthermore, in Persian gardens, instead of the Lawn, “Spast” -a kind of Clover- was used as pavement. Spast had different sustainable characteristics; absorb the weather nitrogen and give it to the earth, repelling the insects, could be preserved easily, needless amount of water than Lawn and also, used as cattle fodder during cold seasons (Zamani et al., 2009: 36).

Table1: Planting Order in Persian Garden/ Source: NorouzianPour et al., 2012: 281



Ecological services and Sustainability

Sustainable design as defined by SITES is “design, construction, operations and maintenance practices that meet the needs of the present without compromising the ability of future generations to meet their own needs” (SITES 2009a). This is based on the definition of sustainable development from the United Nations World Commission on Environment and Development’s Bruntland Report, *Our Common Future* (UNWCED, 1987). For site design, this translates to fostering both human and natural ecosystem health, closing material and resource loops, and designing with respect to nutrient and water cycles.

Ecosystem Services: Ecosystem services are defined in the Millennium Ecosystem Assessment as “the benefits humans obtain from ecosystems” (MEA 2007). Living elements of ecosystems, such as vegetation and soil organisms, interact with the nonliving elements such as water, air, and bedrock in ecosystem processes to produce goods and services that offer direct or indirect benefits to humans (Table 2).

The MEA groups ecosystem services into four broad categories (MEA 2005):

- Provisioning, such as the production of water, clean air, food, and medicines.
- Supporting, such as pollination, waste decomposition, and nutrient cycling.
- Regulating, such as global and local climate regulation, erosion control, disease control.
- Cultural, such as health, spiritual, recreation, and relaxation benefits.

Table 2: ecosystem services/ Source: SITES 2009a

Ecosystem Service	Function
Global climate regulation	Maintaining balance of atmospheric gases at historic levels, creating breathable air, and sequestering greenhouse gases
Local climate regulation	Regulating local temperature, precipitation, and humidity through shading, evapotranspiration, and windbreaks
Air and water cleansing	Removing and reducing pollutants in air and water
Water supply and regulation	Storing and providing water within watersheds and aquifers
Erosion and sediment control	Retaining soil within an ecosystem, preventing damage from erosion and siltation
Hazard mitigation	Reducing vulnerability to damage from flooding, storm surge, wildfire, and drought
Pollination	Providing pollinator species for reproduction of crops or other plants
Habitat functions	Providing refuge and reproduction habitat to plants and animals, thereby contributing to conservation of biological and genetic diversity and evolutionary processes
Waste decomposition and treatment	Breaking down waste and cycling nutrients
Human health and well-being benefits	Enhancing physical, mental, and social well-being as a result of interaction with nature
Food and renewable nonfood products	Producing food, fuel, energy, medicine, or other products for human use
Cultural benefits	Enhancing cultural, educational, aesthetic, and spiritual experiences as a result of interaction with nature

Ecosystem services as a basis for design: Providing new ecosystem services, or protecting existing ones, creates a firm basis for sustainable site design project goals. This is a way to make environmental, economic, and even social goals clear and sometimes measurable (SITES 2009b). Measuring the contribution of a site strategy to one or more ecosystem services offers a way to assess the performance of the strategy and its contribution to the goals of a sustainable site. It also may provide some measure of the economic benefit of the strategy. (Windhager et al. 2010)

Fin Garden (Bagh-e-Fin) as Case study

The Fin Garden (known also in Persian as Bagh-e Fin) is regarded as one of the most beautiful gardens of its type, and it has been reported that this is the oldest surviving Persian garden in Iran. Reflecting its location and sacred symbolism, the Fin Garden is a masterpiece combining natural and man-made elements. (Mingren, 2017)

It is located in Kashan, just by the outskirts of Silak hills in the desert in the central Iranian province of Isfahan. (Figure 4) The garden which has been positioned in a desert has been there since the ancient time. Even middle age travelers have referred to this garden as a green and cool climate stop. (Faghih, Sadeghi, 2012)



Figure 4: Contrast between lush foliage within the Fin garden and the barren landscape surrounding
Source: Khansari et al., 1998, 80

Today, the Fin Garden is one of the nine gardens that form the UNESCO World Heritage Site known as the "Persian Garden". Garden's history goes back to Safavid Dynasty around the first half of the 16th century. Also numerous structures were added in the next periods. This garden is surrounded by ramparts and circular towers to separate internal space from outside (Figure 4).

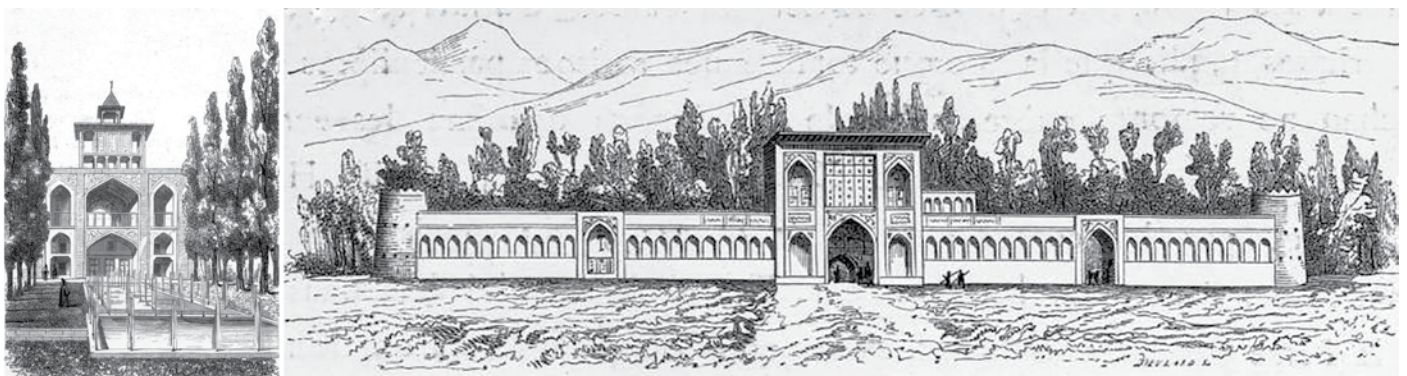


Figure 5: Kiosque Bagh Shah Fin- Residence Royal Bagh Shah Fin 1840 Sketches / Source: Coste, 1867 (Wikimedia Public Domain)

1. Water Features

One of the significant features of the Fin Garden is its water circulation. The reservoir that supplies water to the garden is Suleimanieh spring Qanat named after Suleiman I, the 8th Safavid Shah. This water originates from the aquifers of the Karkas mountains to the south, and is carried by an underground aqueduct to a reservoir about 1.5 kilometers from the garden. From this point the water enters the garden through the Howz Jushan (Bubbling Basin) Pavilion, then feeds into a series of turquoise pools and fountains before continuing down the main paths. The water pressure is such that a large number of circulating pools and fountains could be constructed without the need for mechanical pumps. (Javaherian, Shahcheraghi, 2004)

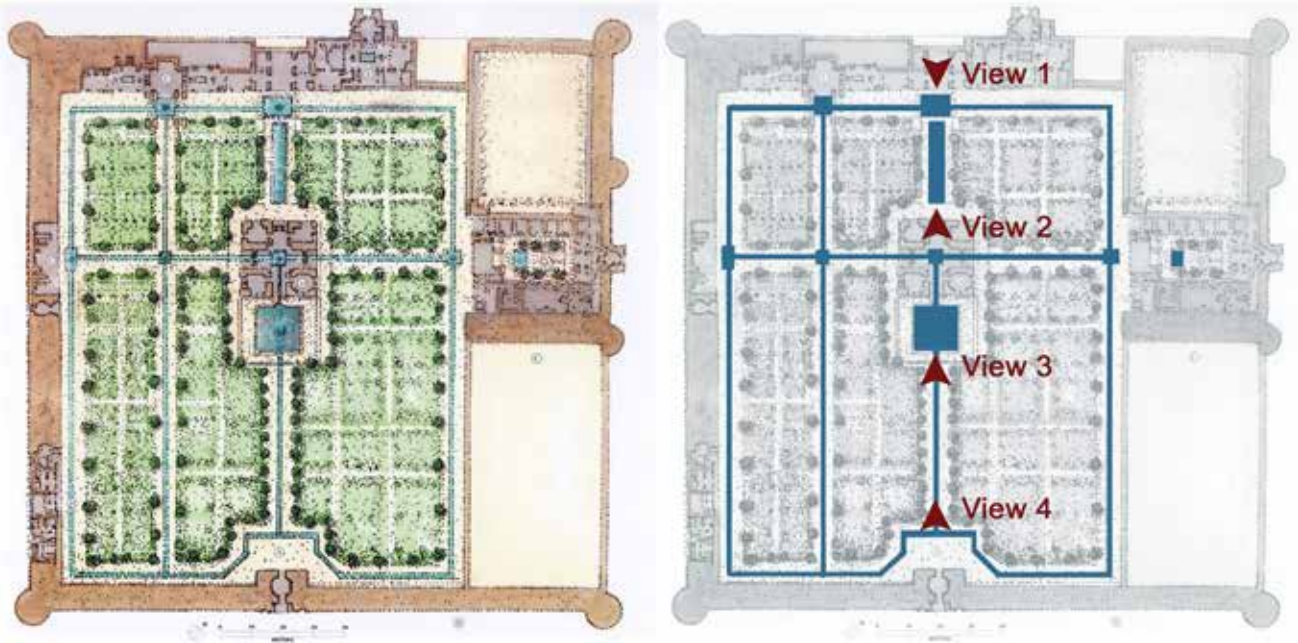


Figure6: Left:Fin garden Siteplan/ Source: Khansari et al., 1998, 84- Right: water irrigation Layer of the garden / Source: Authors

The garden contains several streams, basins and pools which are located on the axes to circulate water around the garden (Figure 6). The main pool of the garden is located in the central main square in front of the pavilion and there are four other pools covered by cupolas within the pavilion not only to be protected from the sun, but also intensifying the value of the water. (Khansari et al. 1998)

Watercourses and pools layout is geometrical following main axes of the garden framing various small buildings and garden plots. These water ways, fountains and pools are not just for ornamentation, they also increase of humidity during hot days (Figure 7).



Figure7: waterways, fountains and pools in main axes of the garden –View 1, 2, 3 / Source: Authors

After the water irrigates the trees and other plants in each garden, it flows outside the garden to irrigate farms and other lands.

2. Garden Vegetation

Garden Plants fall into three categories: First adumbrate trees that cast shadow over the paths and buildings, second fruit trees to harvest crops and finally plants with decorative purposes. Most of adumbrate trees are Kashi Cedars (*Cupressus Senperviren*) and plane-trees (*Platanus Orientalis*) and a number of white poplars on the margin of the garden that play role as windbreak against sandy winds of desert (Figure 8). Some dominant fruit trees of the garden are fig, mulberry, pear, pomegranate, willow, quince, greengage, apricot. Decorative flowers and plants which are usually planted on the border of the parterres or in front of pavilions are native flowers such as types of roses and Akhtar (considered as one of the oldest kinds of flowers grown in Iran).



Figure 8: symmetrical old Cedar trees overshadowing main path-View 4/ Source: Authors

Results: Ecosystem Services in Fin Garden

With combination of data gathered from Fin garden by document sources and field observations, it is resulted that water and vegetation play an important role in sustainable design of the garden. In table 3 main specification of water and vegetation management are listed, then they are explained in detail. Finally they are combined with ecosystem services listed in table 2. Each specification is determined by its related ecosystem service.

Table 3: Water and vegetation management in Fin garden in the shadow of ecosystem services (Authors)

			Ecosystem Services
Water Management	Underground Irrigation Infrastructure	Extracting water from underground (Soleymanieh Qanat) as the main source of water on site	Water supply and regulation
	Rainwater harvesting	Grading the site to include swales (small dips in the ground) and berms (raised earthen mounds) can help prevent surface water from leaving the site.	Water supply and regulation
	Storm water runoff control	Reducing Non-permeable Surfaces rainwater and irrigation water to soak into the ground, which filters pollutants and reduces runoff from the landscape.	Hazard mitigation
	Cleanse Water On-Site	The rainwater is filtered through the soil and plant roots, removing impurities and soil particles.	Water cleansing
	Waste water control	Controlling water evaporation by shading all over the garden	Waste decomposition and treatment

	Promote a Sense of Place	As water in Iranian belief is a sacred element, using it in different forms of fountains, waterways and pools can promote a Sense of Place in the garden	Human health and well-being benefits/ Cultural benefits
Vegetation Management	Proper Plant Selection	Matching the right plant to the site's growing environment (Native plants of arid region)	Air cleansing /Habitat functions
	Minimize or Eliminate Potable Water	Design planted areas based on soil moisture and water use zones	Water supply and regulation
	Plant Fruit trees and medicinal herbs	Fruit trees and Medicinal herbs are of the main part of Persian garden vegetation.	Food and renewable non-food products
	Designing to Minimize Maintenance	Reducing inputs of labor and of products such as fertilizers, and chemicals for pest control by planting disease and insect-resistant plants.	Human health and well-being benefits
	Clean air pollutants	Vegetation contributes biomass (leaves, branches and other plant components in layered planting that help clean air pollutants from the atmosphere)	Air cleansing/ Global climate regulation
	Windbreak	Plantings around the garden can slow wind velocity from the desert. Coniferous and deciduous trees and shrubs used individually or in combination affect air movement. Plants may be used in conjunction with landforms and architecture to alter the airflow over the landscape, and around, or through buildings.	Local climate regulation
	Shade and Cooling	Trees are effective in shading common paved surfaces, contribute to the Urban Heat Island Effect.	Local climate regulation
	Ground covers/ Turf Alternatives	Replace turf areas (high water use) with alternative ground covers, meadow or herbaceous plants such as Spast (Clover).	Water supply and regulation
	Mulching	Mulch moderate temperatures, keeping soil warmer in winter and cooler in summer and conserve soil moisture by blocking or slowing evaporation at the finished grade of the planting area	Water supply and regulation
	Soil amendment	The better and deeper the soil preparation and amendments, the greater will be a plant's ability to survive. Plants in soils that are shallow or compacted will not be able to develop deep root systems that will allow them to have access to more moisture.	Erosion and sediment control
	Preserve and Restore Habitat and Native Wildlife	Providing the basics of food, water, and cover will attract many forms of wildlife to a garden. Plants that set fruit or seeds provide food for birds and mammals. Foliage and flowers of other species are food sources for butterflies and beneficial insects.	Habitat functions/ Pollination
	Promote a Sense of Place	Native Vegetation can promote a Sense of Place specially plants which are symbolic in Iranian culture like a Cypress tree in addition to	Human health and well-being benefits/ Cultural

Conclusion

The main reason of innovation of Persian Garden was confronting severe situation in this arid country. This prototype of gardening evolved through history in spite of keeping fundamental features including Geometry, Water order, Vegetation order and enclosure. As Water and vegetation are scarce in arid regions, they are of great values. They created sustainable methods for irrigation and water displays. Traditional Iranians architects showed

water in different ways in garden and the irrigation system influenced the geometrical design of the garden, thereby preventing the waste of water. Moreover, they symbolized Eden garden and created utopian space they could ever imagine. This need and respect of water and vegetation has led to sustainability in the garden. In Persian garden Living elements such as vegetation and soil organisms and nonliving elements such as water, air, and bedrock interact together like natural ecosystem and produce services that are beneficial for human-being. They applied sustainable principles in conserving, using and cleansing water by sourcing water from underground aquifers in a passive way, harvesting rainfall, wastewater control and etc. Furthermore, proper plant selection, considering their water use, planting native plants, Turf alternatives, mulching and so on were sustainability methods they used in Persian gardens. All of these specifications cover services which ecosystem offers to human. Unfortunately, nowadays all of these Factors and principles are forgotten and water and nature have lost their respect. Investigating how to provide new ecosystem services as a basis for future landscape design in Iran is subject to further researches in the field of ecological sustainability.

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[ECO/10]



Balancing Landscapes / A management proposal for the forest of Alba/Valladares, Galicia

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abstract

Wildland fires, part of the cycle of the forest ecosystem, create social and ecological issues that must be considered seriously, especially now that climate change is extending the arid periods of the year, increasing the risk of major burnable situation. The wildfire that happened on October 17th of 2017 in Vigo, in the Galician Region of Spain burnt thousands of acres of land and damaged villages located close to the forest, even killing four people next to Chandebrito. In this situation, due to the structure of the Galician forest, the current forest management is difficult to blame: the Galician forest is composed by municipal woods and small private plots (c.a. 2ha) that don't allow easy control of the privately-owned land.

Through the case study of the forest of Monte Alba, Vigo, this paper explores the possibility for ecosystems and social systems not only to be resilient, but also to reduce the serious risk of dangerous environmental disasters. Villages in the forest should find a way to coexist in a productive way for the both systems – natural and human. Thanks to the strategic analysis introduced by the GRAF firemen in Catalunya, the specific study of the forest ecosystem and the recognition of the valuable and strategic points of the area, it was possible to define where to intervene for preventing fire to burn another village. The landowners need to be involved in the management of the forest by generating a big scale "Ecotone" through villages and nature: a buffer area that could be a support for multiple activities, responding to the need of fire protection, while simultaneously generating social-ecological and cultural services and becoming the source for raw material and renewable resources.

keywords Wildfire, Forest Management, Landscape, Disturbance, Ecosystem

1. Wildland fires and ecosystems

The forest context in Southern Europe

Fire has always affected the ecosystems of southern Europe. It is a kind of disturbance strongly connected to the dynamics of the forest: an earth-system process (Smith, 2016: 131) that redistributes locally nutrients, the ashes, and supports the regeneration of the vegetation. Over the years, people forgot the natural benefits that wildfires can bring. Due to the social, economic and environmental risk nowadays wildfires are only considered as negative. In the forest, the composition of landscape has always been related to the socio-economic needs of each civilization. Transformation of the landscape was strongly connected with the agriculture and shepherding, among other forms of economic activities of the land's owner, many of which actively burned existing vegetative fuels to clean their plots. These practices led to various forms of material buffer – a land mosaic – which prevented fires from spreading across long distances in the forest.

Nowadays, with the decline in agricultural and shepherding activities, their abandoned fields contribute to the density of flammable wildland vegetation. This is one of the reasons wildfires are becoming dangerous events, increasing in intensity and devastation. The rising temperatures caused by climate change are igniting fires in places and at times where wildfires were not previously registered. This paper analyses how landscape design can generate more resilience to wildfires. It is important to understand how a diverse ecosystem can react to disturbances, as it provokes changes in the related to the dynamics of the natural processes of a territory.

Galicia (Spain) and its fire culture

The wildland fire registered in the region between the northern Spanish province of Galicia in its border with Portugal the 17th of October 2017 is an example of these anomalies generated by climate change. Historically, October used to be a humid and rainy period in this region, however, 125 simultaneous fire outbreak (Huete and Vizoso, 2017) burnt the forest, when the hotter and drier weather created a rare and extreme episode of drought. Reports in the media underlined the fact that wildfires were intentionally lit.

The local structure of forest management in Galicia is quite complex: agricultural and forestry activities have traditionally only comprised small-scale farming - maximum 2ha per lot (Xunta de Galicia, 2016: 28), thus not allowing long-term public administration of extended portions of land. For this reason, it is relatively common that small landowners would lit small controlled fires to manage their properties (Martinez Ruiz, 1999: 336). This practice is prescribed fire: the planned use of fire to clean the forest floor or the agricultural field of all the potential combustible fuel (commonly known as waste). It has traditionally been the cheapest way to privately manage land: the fire is normally lit out of the drought period to better control it. However, without the global self-regulating systems of the forest, it is quite likely that some of these prescribed fires spread too quickly neighbouring lots causing a chain reaction and in turn the larger and more devastating regional fire.

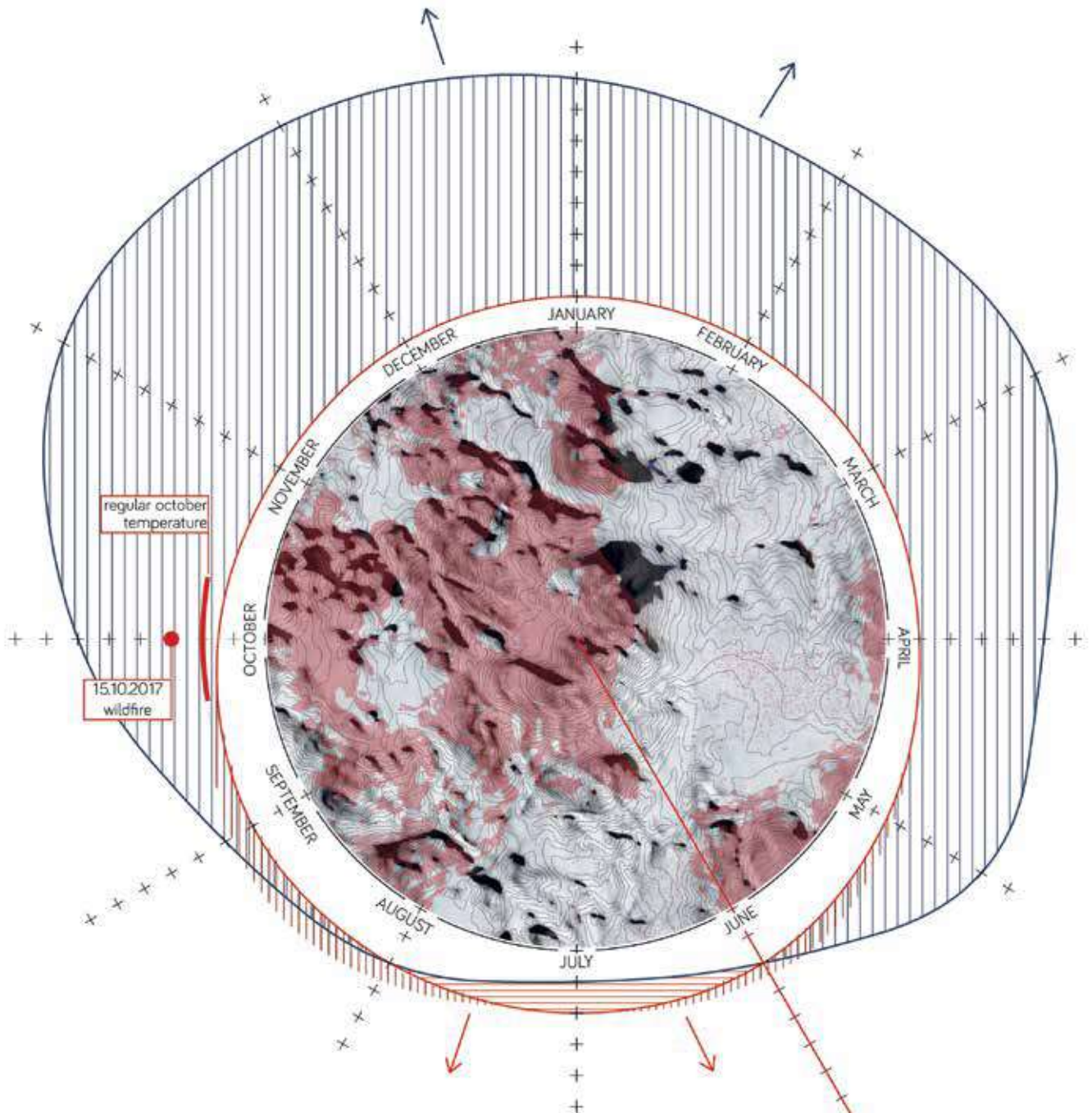


Image 1. Humidity and temperature in Vigo

2. Forest management: a social and ecological issue

In the specific Galician context, it is possible to analyse the positive feedback that fire can give to the ecosystem. The forest regenerates itself through different strategies of each species. Firstly, high intensity wildfires can have a high impact in terms of animal mortality and affecting biodiversity too. Low intensity fires, on the other hand, can have a positive effect on biodiversity (Plana E., 2016: 27) . "Prescribed fire has a neutral or positive effect on soils and biodiversity, in contrast with wildfires, which could be really damaging." (Fernandes P. M. et al, 2013: E4) Through cyclic strategies of forest management, found out through a specific case study located in the Spanish province of Vigo, it was possible to see a system in which the landowner can both take care of their land and at the same time take care of the forest, reducing the risk of wildfires, by engaging again traditional modes of productive activities.

The Vigo's case study

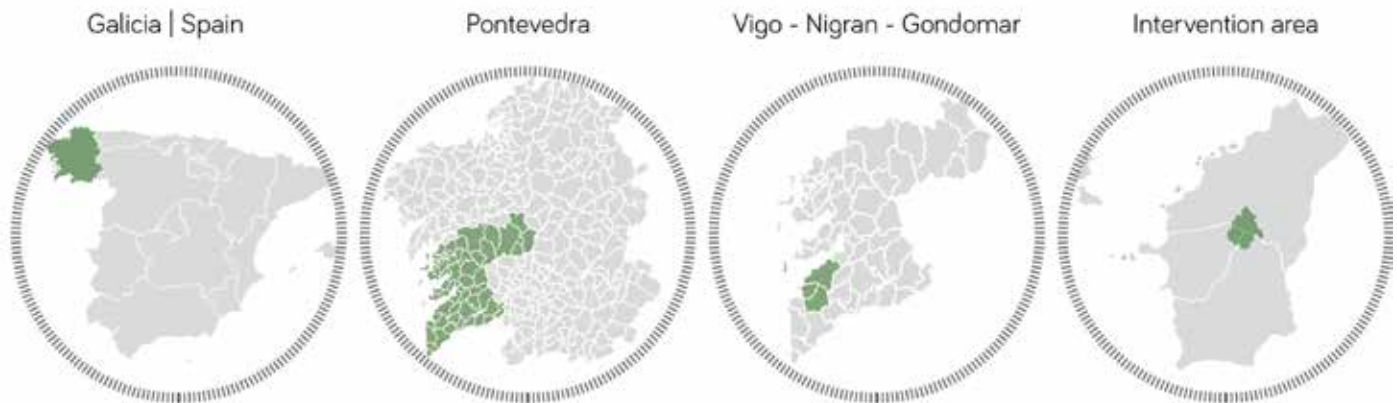


Image 2. Intervention area's location

The wildfire of October 2017 was stopped by heavy rain that cleaned the forest from all the ashes that could also generate minerals and nutrients to the soil of the forest: at the end, the forest lost out. Since the fire burnt hectares of land, we analysed just a small area, situated in the province of Pontevedra, Galicia, in between the municipalities of Vigo, Nigrán and Gondomar. It is a forest area in between the towns of Chandebrito and Alba/Valladares, with some singularities such as a quarry and an ex-landfill (closed in 2001). Among its many effects, the fire uncovered some important petroglyphs that are the witness of the rock art of Galicia (Huete, 2017). The area is also crossed by the GR53: a hiking path that is connected to Portugal.

Indeed, the most affected areas were the ones that surround the town of Chandebrito, in comparison with the areas next to Valladares, most of which are publicly owned. The mix in land ownership regimes generated an unbalanced and difficult to manage situation, because the authorities were not able to assess if small landowners took care of their lots or not. The damage generated next to Chandebrito proves that not all the landowners were taking care of their lots: it represents a design opportunity for the re-appropriation of the territory by the neighbours.

3. Pre- and post-fire: a critical analysis

The vegetation and its reaction to fire

Critical study of the existing vegetation¹ led to the identification of the different status of in the ecosystem before and after the fire of 2017. Different typologies, densities and ages of plants led to the configuration of different kinds of landscapes which reacted differently to fire. Through thousands of years, vegetation has developed different strategies to survive fire, in a resilient or resistant way, depending on its own age and its fertility period. The most common trees in the area are the maritime pine (*Pinus pinaster*) and the oaks (*Quercus robur* and *rubra*), with the presence of some *Acacia dealbata*. The most typical shrub is the *Ulex europaeus*. The blue gum (*Eucalyptus globulus*) was privately cultivated to produce wood for the paper industry, even if it is not a typical Galician tree.

1 / done thanks to the direct study in situ done the 12th and 13th of January 2018 and to the Map of the Mountains of Valladares (<http://montesvalladares.com/recursos/mapas/>).

To analyze the fire risk situation, this proposal works with the nature one can find after the big wildfires of 2017, due to its expected rehabilitation.

The wind as important part of the risk analysis, in the case of the stormy Galician coast, is a very instable factor. Due to the time of the workshop in which we developed the research, we simplified the analysis considering the variable of the south wind "Migjorn", instead of the real event of the hurricane Ophelia. Understanding that even rare situations can bring such a huge danger and damage, the project works on this special case study as only one of many scenarios of those complex phenomenon.

To evaluate the slope of the projects territory we used the strategy of the Catalan wildfire specialists GRAF. This strategy intends to detect critical points of fire diffusion. The project's territory gets divided in smaller areas, called polygons, defined by their topography and global orientation. Within those polygons the career of a running fire can be leastways a bit more predicted. They can be seen as individual units interacting with one and another.

They are classified by the number of connections they have within one another, creating a higher or lower risk of fire spreading. The polygons with a high risk of affecting others need more maintenance.

In the case of the project area there are two notable landscape units which affect fire's behavior in case of southern wind. They form buffer zones or highly risky tracks across several polygons.

As the projects area contains several settlements and commercial facilities, the polygons also get qualified by their social-cultural importance. In the moment fire happens, that even if there is a dangerous point of fire spreading which is about to catch fire, the firefighters need to safe people lives first. To improve the integral prevention- and action-strategy, both risk by connection and social-cultural importance are evaluated equally.

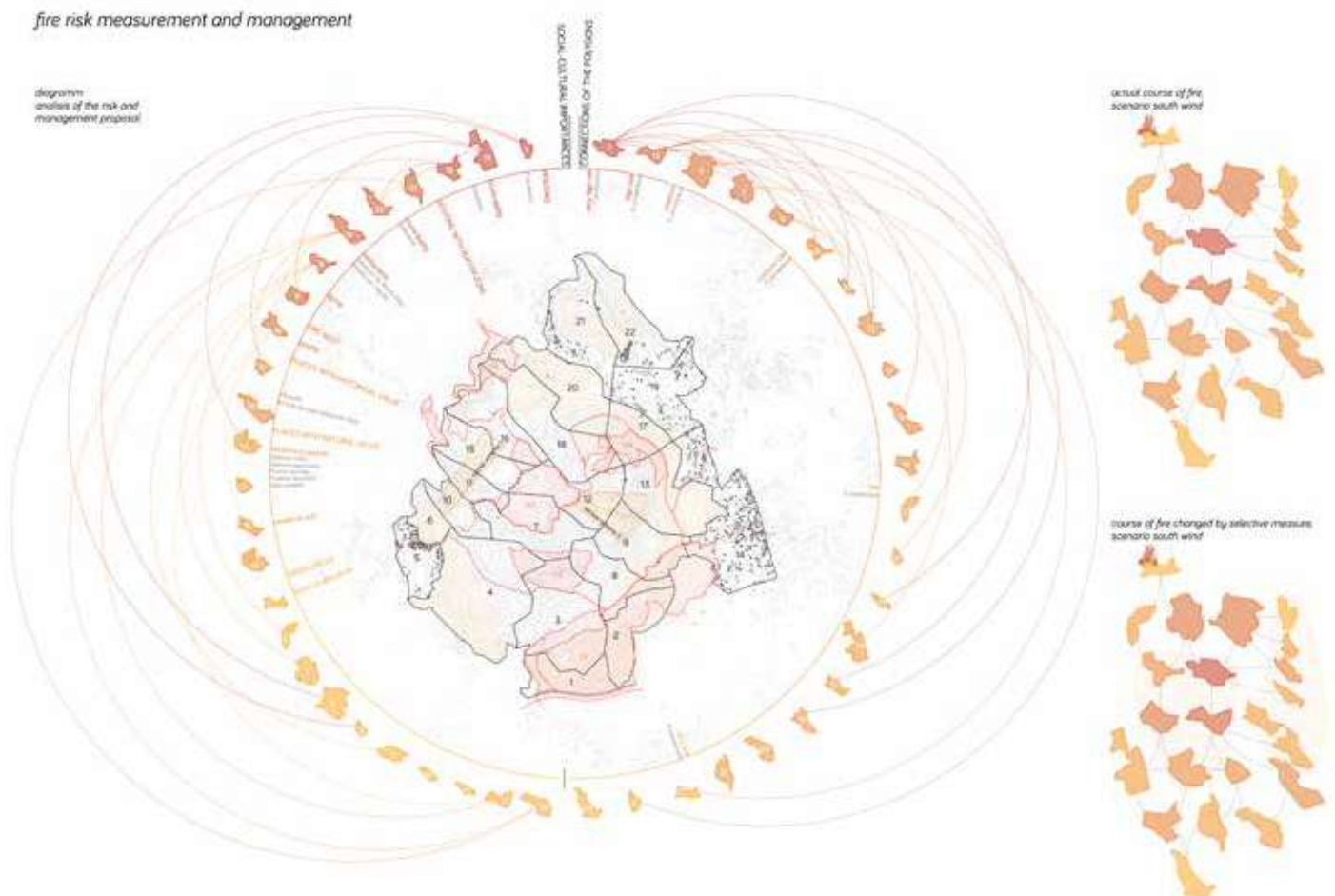


Image 4. Fire risk study | measurement and management.

5. The fire risk management

This evaluation of the area makes several points of intervention visible which can be revalued from close up. Their vegetative composition, the territorial specification and the ownership situation permit the outline of future intervention from the firefighters point of view. Those interventions consist on: keeping the existing infrastructure clear of dense vegetation, prescribed fire, grazing by animals like donkeys or goats in less accessible areas or the more expensive cut out in areas of high density vegetation.

6. A buffer zone in between town and forest

“Different regeneration strategies enable the organic landscape to be recovered after a fire. This first involves the natural generation derived from the very dynamic of the fire itself, which in many cases is unpredictable. Likewise, induced regeneration involves preventive actions that encourage or facilitate this natural regeneration” (Galí-Izard, T. 2005: 57)

A big scale Ecotone

According with the analysis, the polygons could have different values depending on their characteristics, composed, on the one hand through firefighter risk management, and on the other through the construction of a buffer zone in between the town and the forest. These are the areas detected as key for strategic planning and development. From this, two approaches can be clearly identified:

First, the plotting and adoption of polygons according to their potential risk can help authorities and communities react faster and allocate resources more efficiently, including long-term fire-fighting infrastructure. Second, the planning and creation of a deliberate ecotone in between town and forest that could function to protect people from a possible fire coming from the forest, and be incorporated in urban planning and fire-management activities in the communities at risk. We suggest part of these actions include improved roads and the re-activation of older pathways: two paths that can be connected to the main hike path “GR53” to add a layer of protection and monitoring, as well as new alternatives for walkers and athletes to discover the petroglyphs.

This simplified proposal is just an initial stage. More research and other scenarios and models that better incorporate climate change, public policy and biodiversity, are needed.

7. The Ecotone’s management systems

The proposed ecotone works as a support for multiple activities, which allows responding both to specific demands of protection against fire, as well as to generate socio-ecological, cultural and material supply services and renewable energies.

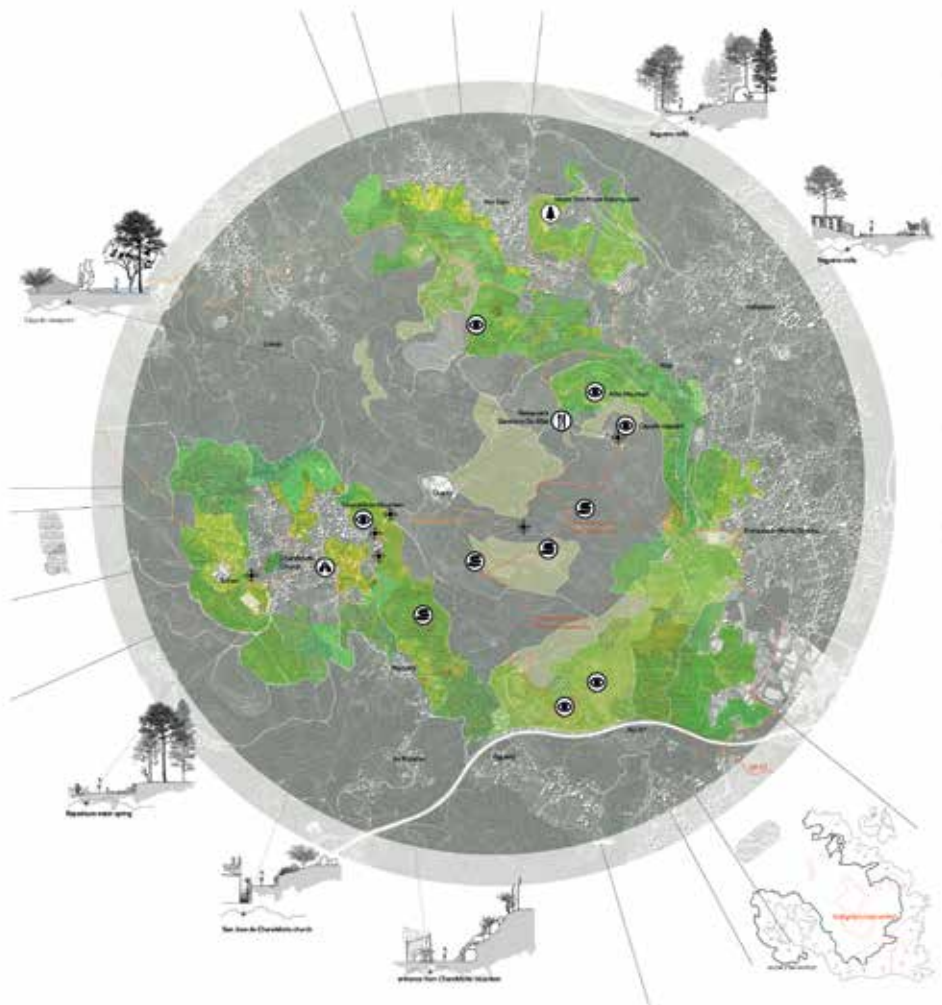


Image 5. The masterplan. The ecotone and the strategic polygons.

Based on this premise, the consideration of certain criteria led to understand that there is not a single way to approach the issue, but just a myriad of possible scenarios on any given area. Forest management could be reformed through hybrid system which can fit better with the natural landscape dynamics: different vegetation species and ages which can produce different activities such as biomass generation, wood extraction, agriculture and grazing.



Image 6. Management strategy for the ecotone in between town and forest.

The management strategies adopted are based on an extensive, multifunctional approach which considers biodiversity, improving the quality of the substrate and enhancing a sense of place and the identities of its peoples as much as the natural particulars of the territory. The proposed actions are: clearing, thinning, prescribed burning and extensive grazing (Xortó-Borràs, X. 2015). Depending on specific situations (Image 6), the intensive system is used as a mono-functional system which permits possible specific production and in some cases, greater economic remuneration for small landowners. In this case, the proposed actions are based on prescribed burning and intensive agriculture.

What is sought is an alternation between extensive and intensive systems, to ensure that the territory can respond, at the same time, both environmental and productivity issues, understanding that both systems are in constant feedback and can, potentially, result in substantial gains for the people who live in and around forests. In this sense, we propose to advice on the creation of these systems in private lots. We believe public policy needs to engage small landowners in order to support them at the beginning of the process, until they can self-organize around these issues. The communal plots, existing in the area, could be the first support.

Promoting a greater territorial link could help gradually to mitigate the risks of wildland fires and create greater social awareness. A community of informed and prepared citizens can plan and take collaborative measures to live safely with, within, and alongside forest fires (Firedadaptednetwork.org, 2015).

8. Landscape architecture and fire management

Natural phenomena are complex, cyclical processes, generators of disturbances, and often riddled by uncertainty. In this scenario, the reorganization of natural systems after a wildfire can be seen as an opportunity to relocate species, reconfigure landscapes, and think broadly about the link between social identity and environmental issues. Resilience doesn't mean just bounce back to its previous condition, but withstand the disturbance and generate new strategies to continue to function (L.H Gunderson, 2002: pos. 335).

Creative landscape architecture can germinate from devastation, acting on strategic places in synergy with the natural and anthropic agents. It opens an opportunity to face change (and not just let change happen); it can lead to long-term socio-ecological resilient dynamics.

Acknowledgements

Thanks to Pepa Morán and Ana Zahonero, who lead us in this project in the course of "Green System" at the Master in Landscape Architecture of the Universitat Politècnica de Catalunya. Thanks to GRAF Fireman and all the professionals whose expertise we drew on to inform this project. Thanks to Daniel Chávez Heras for the support and the patience. This project was made with the support of the Marcelo Zambrano scholarship program.

The paper is composed by different sections edited by the authors as following: paragraph 1, 2 and 3 by Valentina Piliego, paragraph 4 and 5 by Stella-Zoë Schmidler, paragraph 6 by Karla Paola López Carrillo, paragraph 7 and 8 by Maximiliano Rodrigo García and María Josefina Giobando.

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[ECO/11]



Heavy metals concentration in agricultural soils around the metallurgic Elbasan, Albania

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abstract

The main aim of this study is to determine the levels of soil pollution with heavy metals near the former metallurgical plant in Elbasan, Albania. In this study, 10 soil samples are collected at a depth of 0-30 cm and analyzed at the Agricultural Technology Transfer Center Fushë Kruje, between April 2017 and November 2017.

The pH of the soil was determined by glass electrode pH meter using soil water suspension (2:1). The heavy metal concentrations were determined using Atomic Absorption Spectrophotometer (AAS). Observed results showed that heavy metals chromium, nickel and cobalt ranged from 566.76 mg/kg ± 50.02, 478.57 mg/kg ± 33.19 and 30.11 mg/kg ± 3.30, respectively, or 4 times higher than EU standards for Ni and Cr.

Furthermore, the I-geo index reveals that the sites were either moderately polluted or polluted by chromium, nickel and cobalt. Similarly, contamination factor CF indicates that the sites are moderately contaminated. Pollution degree determined for chromium, nickel and cobalt metals, $12 \leq Cd < 24$ was classified as a significant degree of contamination. Based on the results, it was found that the concentration of these elements in the analyzed samples is largely high with trend $Cr > Ni > Co$ therefore it is recommended to use the hyper cumulative plant for the decontamination of agricultural land. Public awareness of the negative effects of heavy metals on human health as part of the chain's food.

keywords Heavy Metal, Soil, Pollution, Ecosystem, Metallurgic Area

State of art

Trace elements, especially heavy metals, are considered to be one of the main pollutants in the environment, since they have a significant effect on their ecological quality (Sastre J. A., 2002). The chemical pollution sources are numerous in urban and industrial areas, etc. (Madrid, 2003). The problem with heavy metals is their persistence, making it impossible to eliminate them from the environment (Sieghardt M., 2005).

Many studies have been conducted over the last few years (Market B, 2000) on the behavior of heavy metals as a result of their toxicity present in the environment and mainly on water systems. Sources of heavy metal pollution include industrial activities such as mining, metal smelting, various oil products, fertilization, pesticide use, urban waste, etc. (Kapusta, 2007). Land is an essential part of the territorial ecosystem of the earth's surface. It supports the growth of vegetation, especially for agricultural crops and plants that serve as food and nutritional resources for people. It provides habitat for a large number of microorganisms and animals. Increasing their number needs more resources, most can be produced by intensive land use by cultivating them. Each of these can cause problems with pollution and soil degradation (Wilde, 2006).

According to (Beckett J., 1993), soil pollution is defined as "entry into the environment or the presence of foreign substances or energy that we do not want or are unable to judge their causes, or are responsible for the increased damage and loss." It can be interpreted as the introduction of substances or energy from human activities in areas liable to cause danger to human health, such as harm to living organisms and ecological systems (Beckett J., 1993). Heavy metal contamination has adverse effects on the agroecosystems, such as the loss of high quality agricultural land and pollution of soil and groundwater, increased demand for clean water, contamination of urban areas and increased public health problems, low grazing quality and reduced crop yields and livestock production (Shallari, 1998).

Before the 1990s, in Albania, there were no provisions on environmental issues related to industrial facilities. Therefore, industrial activities have been one of the main sources of pollution in Albania. The country is rich in chromium and nickel minerals (UNECE, 2002) processing ore mines. The heavy industry (mineral processing and so on) can be considered a major concern for environmental issues.

Efforts to avoid the negative effects of heavy metals on human health and ecological risks are growing ever more (Sulçe, 2005). Recent studies by several investigators have shown that atmospheric fallout from smelters can contribute significantly to soil contamination with heavy metals (Paces, 1998). Metal deposition patterns, though depending to a considerable extent on climatic conditions (i.e. wind and rainfall distribution) (Elsokkary, 1978), generally decline exponentially with distance from the smelter. Study of soil pollution with heavy metals in industrial facilities, mines and factories of our country has been and continues to be the subject of research for a wide range of researchers from academic institutions and research centers of the country (Kučaj E, 2015), (Susaj E, 2017), (Sallaku F, 2009), etj. Several studies have consisted of the characterization of soils associated with heavy metal content, mobility and their effects on soil, water and plants. However, the level and level of soil pollution as well as their spatial extent remain unclear (NEA, 2014).

Objectives

The main objective of this study is to determine the level of soil contamination with heavy metals such as Cr (chromium), Ni (nickel), Co (cobalt), near the former metallurgical plant in Elbasan, Albania. To develop a plan of measures for mitigation and rehabilitation of environmental impacts, in order to preserve the environment and increase the well-being of the inhabitants of the area. Heavy metals with a high concentration may adversely affect the ecosystem and through the food chain harm human health. In areas that are contaminated and where the level of human activity on the ground (such as agriculture and grazing) is high, studies and monitoring must be carried out immediately afterwards.

Methodology

This study was carried out during the period April and November 2017 in surrounding areas of the former metallurgical plant, which is located in Elbasan, an industrial city, in the center of Albania, near to the Shkumbini River, 60km southeast of Tirana. The study is concentrated in the Elbasan Metallurgical Combine Area, 5 km north of Elbasan City but the samples are taken 100 m far away from the source of pollution. The presence of a metallurgical plant, although most of the parts of the plant are closed (UNEP, 2000) is related to a high concentration of heavy metals in cultivated land and in industry, especially with chrome and nickel metals. In the industrial area of Elbasan, within Metallurgical Combine, ten soil samples were taken between April and November 2017, which were almost 500-1000 m apart from each other. Soil samples were taken at the surface horizon at a depth of approximately 30 cm at each station. Elbasan's Metallurgical Combine covers an area of 300 ha. Soil samples were taken in the area cultivated with vegetables that are consumed and marketed for the rest of the city. Samples were analyzed at the Laboratory of Agricultural Technology Transfer Center (ATTC), Fushe Kruja. Samples of each soil were air-dried and ground to pass through a 2-mm stainless steel sieve. Their values were measured by the Atomic Spectrophotometer Absorber (AAS). The results obtained for heavy metals are compared to the environmental standards of the world's environmental authorities (Denneman PRJ, 1990), (MHN, 1994) and the EU standards. Also, the Geo-accumulation index proposed by (Muller, 1979) was used to determine metals contamination in soils by comparing current concentrations of the metals with pre-industrial levels. It generally consists of seven grades (Kučaj, 2016) ranging from unpolluted to extremely polluted and can be calculated using the following formula (Boszke, 2004):

$$I\text{-geo} = \log_2(C_n / 1.5 B_n), \text{ where:}$$

C_n = concentration of heavy metals in the soil
 B_n = natural value of element n in the soil crust.

The Enrich factor (EF) according to (LiYu, 2008) and pollution load index (PLI) according to Hakason (1980) were used to assess the level of pollution and potential anthropogenic impacts on soil. The classification of the enrichment factor is estimated according to (Acevedo F., 2006).

$$EF = C_{\text{metal}} / C_{\text{background}}, \text{ where:}$$

C_{metal} = concentration of metals in samples taken
 $C_{\text{background}}$ = concentration of metals in the earth's crust.

The contamination factor (CF) is used to determine the extent of contamination in the soil at the time of the study. The value of the pollutant factor is suggested by (Hakanson, 1980) and it is calculated:

$$CF = C_{\text{metal}} / C_{\text{background}}, \text{ where:}$$

C_{metal} = concentration of heavy metals in the soil

$C_{\text{background}}$ = the value of heavy metal calculated as 90%. The background values and those in the earth's crust are taken according to (Rudnick, 2005).

For the PLI index values such as: $PLI < 1$ represent no pollution, and values for $PLI > 1$ pose pollution in soil quality (Harikumar & Nasir, 2009). The PLI provides a summary of the total level of toxicity of heavy metals in a particular site.

The pollution load index (PLI) is estimated by (Thomlinson DL, 1980), according to the formula:

$$PLI = \sqrt[n]{CF_1 CF_2 CF_3 \dots CF_n}, \text{ where:}$$

n = the number of heavy metals studied

CF = are the pollutant factors described above. For the PLI index values such as: $PLI < 1$ represent no pollution, and values for $PLI > 1$ represent soil quality pollution (Harikumar & Nasir, 2009).

Contamination rate $C_d = \sum C F$ (Aksu, 1988) is defined as the sum of all pollutants depending on each metal in all the samples analyzed on the ground.

Results and Discussion

Accurate metering of trace metal concentrations is an important objective in the monitoring and research of the environment, as many of these elements have been identified as potentially hazardous pollutants (Chapman, 1996) regarding the concentration of heavy metals on earth for some metals. According to (Mazreku, 2005) we have the presence of heavy metals in the abandoned plant.

Table no.1 presents an evaluation of heavy metals in the Elbasan region during 1996-2015, based on various studies and chemical analysis over these years. The comparison is based on the average values of Cr, Ni, Co, Cu and Pb according to (Lausmann, 1996), (Shallari, 1998) (MM, 2000), (Osmani, 2015). These values found over the years are compared to the European Union (EU) permissible limits for heavily polluted soils.

Table 1. Concentrations of heavy metals (ppm) in the metallurgical area of the Elbasan region in the years 1996-2015

Year	The metal concentration in the soil mg / kg of DW				
	Cr	Ni	Co	Cu	Pb
1996	566.3	1928	191	96	236
1998	491	447	130	14	80
2001	494.75	681.625	199.87	29.375	126.625
2005	1318.98	1106.96	80.25	48.27	44.66
2015	353.3	486.7	103.3	-	87.5
Mean value (ppm)	644.866	930.057	140.884	46.9113	114.957
EU standards (1998) (ppm)	100	75	50		

Obtained results of soil analysis showed that the soils of this area appear fairly and moderately alkaline (the minimum value is 6.8 and the maximum value is 7.3, (Table 2). The soil quality determined by the experimental analysis shows that the storage of Cr and Ni in soil samples taken in analysis is about four to five times higher than the standard limits set by the EU. The values of Cr produced a minimum of 476.8 ppm of dry weight and a maximum of 612.4 ppm of dry weight. While the average Cr value was 566.76 ppm, compared to the standards (Denneman PRJ, 1990), (360 ppm) were twice as high as the polluted soil.

Mean values of nickel (478.57 ppm) were higher than EU standards (75 mg / kg) and (Denneman PRJ, 1990), (210 ppm) of this element on soil. The content of Ni in soil ranges from 428.4 ppm in dry weight of 521.5 ppm of dry weight. The average nickel values (478.57 ppm) referred to in Table 2 are higher than the EU standards (75 mg /

Assessment according to Geo-accumulation index (I-geo), Enrichment Factor (EF), Contamination Factor (CF), Pollution Load Index (PLI) and pollution degree (CD)

Geo-accumulation index is a quantitative measure of the degree of pollution in the soils by heavy metals. The I-geo values of heavy metals in soils near metallurgy of Elbasan are presented in Table 3. According to the geo-accumulation index, the average values of Cr resulted polluted average metal ($1 < I\text{-geo} \leq 2$), while Ni metal resulted in moderately heavy soiled with values that have attempted to 3 ($2 < I\text{-geo} \leq 3$).

The situation is different for metal Co, which analyzed stations are less polluted ($0 < \text{geo-average} \leq 1$). The enrichment factor is calculated as the concentration of heavy metals in the study area. The EF average values of Cr remains in the range 2-5 which shows moderate enrichment. The enrichment factor for Ni metal has a value of 1.88 being ranked in the second grade (minimum enrichment). The metal concentration of Co has a growing trend but still ranks in first class (not enrichment) (Table 3).

Table 3. Evaluation of, Geo-accumulation Index (I-geo average values) and Enrichment Factor (EF) in agricultural soil near metallurgy

	Cr	Ni	Co
Mean value	566.76	478.57	30.11
Igeo	1.68	2.36	0.43
Pollution class	II	III	I
EF	3.44	1.88	0.61
Pollution class	III Moderated enrichment	II Minimal enrichment	I None enrichment

Significant values of pollution factor (CF) for some stations for Cr recorded $1 \leq CF < 3$ average contamination and some other stations $3 \leq CF < 6$, average contaminating degree. The concentration of nickel metal and almost all stations Co, marked values ≤ 1 CF < 3 average contamination by (Hakanson, 1980).

The Pollutant Load Index (PLI) indicates the pollution for all the metals analyzed according to (Harikumar & Nasir, 2009) in that particular site.

The maximum value of the pollution degree for chromium metal in soil samples has resulted in Cd (Cr) = 32.06, and presents a high degree of contamination. The concentration of nickel and cobalt metal in the metallurgical lands is ranked at $12 \leq Cd < 24$ respectively Cd (Ni) = 18.92 and Cd (Co) = 13.5, a significant degree of contamination (Table 4).

Table 4. Evaluation of, Contamination Factor (Cf), Contamination Degree (Cd) and Pollutant Load Index (PLI) in agricultural soil near metallurgy

Sampling location	CF (Cr)	CF (Ni)	CF (Co)	PLI
T1	3.39	1.83	1.17	1.39
T2	3.68	2.03	1.28	1.45
T3	3.62	1.91	1.43	1.46
T4	3.59	1.97	1.18	1.42
T5	2.91	1.69	1.47	1.39
T6	1.03	1.85	1.51	1.19
T7	3.58	1.96	1.58	1.49
T8	3.61	1.71	1.30	1.41
T9	3.03	1.92	1.28	1.39
T10	3.64	2.06	1.35	1.47
Cd= (Σ CF)	32.06	18.92	13.51	

Conclusions

Based on the obtained results for the level of heavy metals in soil samples around the metallurgical plant, the concentration of Cr and Ni on cultivated soil during the period April and November 2017 was approximately 4-5 times higher than their concentration compared to the levels according to EU standards (1998).

These concentrations are the result of sample soil near the pollution area. In addition, some samples were taken around the plant area where we have the presence of industrial waste being considered as a threat to ecosystem and human health.

Based on the factors of contamination, soil samples near the metallurgy are classified as contaminated soil with range order, chromium, nickel and cobalt. This is due to the impact of external resources such as industrial activities, agricultural waste etc. It is therefore necessary to continuously monitor the level of heavy metals in the soil in order to ensure a safe environment and safe agricultural products.

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[ECO/12]



The role of Green and Landscape Planning in Urban Policies. The case of Tirana

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abstract

The recently drafted General Territorial Local Plan of the Municipality of Tirana has generated interesting discussions among researchers, professionals and other interested stakeholders regarding one of its policies and projects called "The Orbital Forest". While Tirana is dealing with densification, air pollution, and serious loss of the public space, the above-mentioned proposal has generated many civic, professional and political discussions about it being the right way to address the ever-growing environmental problems.

Therefore, this policy served as an inspiration for the article which aims to clarify some of the main issues and discussions regarding the application of the "Orbital Forest". The paper is based on a literature review of different approaches in terms of planning, followed by a review of a similar case from the City of Milan. To support the analysis a series of environmental measures are done in the city of Tirana.

Following the analysis, the paper finalizes with a series of recommendations and conclusions which can serve to the local authorities in the implementation of the policy and in providing a better environment for the city and its citizens.

keywords Landscape Planning, Green Infrastructure, Green Belt, Urban Planning

1. Introduction

Climate Changes are seen as one of the main challenges that cities are facing nowadays and will face in the future. Many cities are focusing their efforts in increasing their resilience through different planning policies. One of the main tools being used in this case is also the concept of green infrastructure, however the interpretation and its application differs from city to city. According to MacMahon (2006) the green infrastructure concept is based on two main ideas such as the connection of parks and other green spaces with each other for the good of citizens and the connection of natural areas in order to ensure eco-system services and biodiversity (McMahon, 2000, p. 6). Within the variety of different policies used by cities, one of them is also the green belt concept, which now is being re-introduced in Tirana as an innovative tool.

Following the end of the dictatorial regime in 1991 and the big transformations that came with it, Albania has entered now in the final phase of transition towards the market economy (Aliaj, B; et al. 2015). The 90s were dramatic because of the social-economical traumas and the political instabilities in the country. This atmosphere stimulated massive informal developments as the solution of the basic problems of housing and self-employment, while state institutions and laws were still very weak (Aliaj, B. et al 2008). The fast and chaotic urbanization marked the loss of the green urban spaces and increasing air pollution. In Tirana over the last two decades this phenomenon became wide-spread due to the high concentration of the population, 3 times higher than in 1990, as well as the 'planned' reduction of the green spaces down to 1 m²/habitant from 9 m²/habitant in 1990. Meanwhile 1 in 4 Albanians have migrated in the "West", stimulating through the remittances more construction activities from their families. For this reason, the construction sector for two first decades of transformation constituted circa 25-50% of the GDP (Aliaj,B; at al, 2003).

The 2000-s marked a phase of stability and economic growth of almost 6% per annum (Aliaj, B; 2008). In this phase Albanian living settlements moved from the stage of "informal/basic needs", towards practice of the

“planned city” based on development policies and strategies. The end intention of such plans was to guarantee a social-economic growth and “gains”/ “profit” towards public interests. This way the constructions became more complex and evolved in typology, from simple/individual types of 1-3 floor buildings towards constructions of high-rise buildings between 10-20 floors. Usually they were developed on individual owner parcels, aiming to increase the level of profits as well as the efficiency of the private investments, often even through corruptive practices at the expense of the public space and public interest. This situation continued till 2010, a year when global economic recession had negative effects also in Albania resulting in high insecurity and withholding of development, especially in Tirana (Aliaj, B; et al. 2015). Nevertheless, the quick development and densification in the city produced negative impacts on the environment.

Meanwhile, in 2007 Albanian authorities initiated a reform in territorial planning. The aim of the reform was not only to improve the existing legislation but to create a whole new system which moved away from the ill and outdated urbanistic system towards a more spatial, comprehensive and integrated planning system (Toto, R. 2012). As such the reform changed a lot of paradigms in planning, one of them being the removal of the old concept of the “urban boundary”, typical of a containment paradigm, in order to foster the “making room paradigm” (Toto, R. 2012). Since 2016 Albania developed for the first time its own national spatial vision, and imposed drafting of the local territorial plans in all municipalities in a time frame of 2-3 years (AKPT, 2018). Those plans underwent also through strategic environmental evaluation as an instrument of coordination between strategic aims of the development, and the environmental objectives of the approved plans. During the last decade, emphasis was also put on urban and communal forests; but the focus was mostly on aspects of decoration and beauty; rather than questioning environmental issues, reducing levels of the carbon dioxide, protecting local health, reducing high cities temperatures, or conserving heritage landscape, and economy.

One of the main municipalities in the planning process was also the municipality of Tirana. Although through strong contestations, the plan was approved in December 2016 (AKPT, 2018). One of the main proposals of the plan, is also the policy about the “Orbital Forest” (Bashkia Tirane 2016). Basically, creating a green belt, an “urban boundary” surrounding the city of Tirana. Tirana is dealing with densification, air pollution, and serious loss of the public space, the above-mentioned proposal has generated many civic, professional and political discussions about it being the right way to address the ever-growing environmental problems.

The paper is based on a literature review of different approaches in terms of planning, followed by a review of a similar case from the City of Milan. To support the analysis a series of environmental measures are done in the city of Tirana. Following the analysis, the paper end with a series of recommendations and conclusions which can serve to the local authorities in the implementation of the policy and in providing a better environment for the city and its citizens.

2. Planning with Green- The case of Milan

“The territorial coordination plan for the region of Milan” – was drafted in 2005-2008 and was revised in 2011. The aim of this plan was to coordinate in a unique vision: regional developments and local planning initiatives. It also coordinates among institutions that operate and take decisions for such territory (plans of lower level, plans of specific zones, local/municipal plans, and the interaction between them, etc.). This initiative aimed to keep an open public debate through thematic meetings that identified instruments and orientations to promote the economic growth through environmental sustainability.

Special attention was paid to: 1) the impact of the foreseen interventions in the system of transport, landscape, and environment; 2) the monitoring of environmental problems, generated during the implementation of infrastructural scenarios; 3) the regulation of the relationships among the poles of development and the hubs related to the municipal level; 4) the strategies on the control of land consumption; 5) the monitoring of natural agricultural/rural zones (PGT Milano 2015)

Viewed from this perspective, - says Ana Cestari – there is a fundamental problem in the “The territorial coordination plan for the region of Milan” (Piano di Governo del Territorio di Milano) that is also part of the former vision. The project of “Orbital Forest” that has been proposed in this plan, predicts exactly the unification of the green line of the parks around Milan, such as: Agricultural Park (Parco Agricolo), the park in the North (Parco Nord), the “Lambro” park, the parks of “Forlanini Trenno”, etc. with the purpose to form an unique green space, which according to the plan aims to become some kind of a “super urban park” with the biggest measurements in the world (PGT Milano 2015). In principle this is nothing more than a “green belt” surrounding the city of Milan.

But we should not forget that these parks have very diverse biological and ecological characteristics, and their theoretical unification in a common plan, does not function in practice. It makes for them difficult, and nearly impossible to be treated with the same methodology and strategy of green ecological spaces. It’s even more impossible for them to be united, in one single unity for biological reasons. So the idea and the pretention to design them in the same way and with the same instruments, is not realistic, not to say wrong.



Fig 1: Images of Milan region and "orbital green" park (source: Google Earth)

After such first and general assessment, the deeper critical analysis of the vision to be developed – from Anna Cestari - continues to take into consideration the main question point on what will be the costs and consequences of the implementation of the "Orbital Forest" concept? Referring further to the analysis of Vittorio Ingegnoli, professor in the department of ESP Environmental Science and Policy, in the State University of Milan (Università Statale di Milano) – if this project is implemented, Milan would be hit by the phenomenon known as "Urban Heat Island". Based on his description of the phenomenon, the city itself and especially the central and built part, has in its core higher temperatures than the peripheral agricultural rural zones, where there are recorded lower temperatures of at least ± 5 Degree Celsius (Ingegnoli, V; 2017). Apart from the well-known effects of the urbanization towards local climate, it is important that the relation of the rural zones around city-core is well valued, including the factors that contribute such as the distance between buildings, the production of heat from urban waste, the cooling from earth vegetation, from green infrastructure, etc. In short, one can say that cities in general have higher temperatures than the rural zones around them. Greenery lowers the temperature by $2-8^{\circ}$ C (Doick K & Hutchings, 2013).

Under these conditions, referring also to the second law of thermodynamics, the movement of warm/dirty air usually encourages the air to lift up vertically in the city center (where the concrete/built space is bigger) and then gradually continues moving towards rural zones, where temperatures are lower/cooler. This vertical vortex created by the warm air, and its movement towards the rural zones, gives space to the fresher/cooler air of the rural zones, also to move from green natural zones towards the vacuum created in the populated zones in the city center.



Fig 2. Ventilation in the City of Tirane

This cycle of air movement - where gradual temperature differences are fundamental - creates natural ventilation that is vital for the quality of life in the populated areas, and especially for the filtration and cleaning of the air in the cities. In this case the rural greenery functions as the lung of the populated areas. Meanwhile the more increases the population in a city, the more complex and difficult this process becomes.

This scenario also happens because of the frequent use of the same construction materials with same color and high capacity of warmth, or materials, which have big tendency to absorb heating energy. The effect of the 'Urban Heat Island' depends also from the density of the population and buildings. The risks of the 'Urban Heat Island' become even higher for bigger metropolitan zones such as London, Manchester, etc. It must also be considered that after the sunset, the energy appears in the form of radiation, but air does not get cooler because of the inexistence of the ventilation corridors that are supposed to bring in cooler air. The point is that energy in the local

built environment is withheld from other buildings in the vicinity (Oke, 1987). Seen from this perspective, some aspects of the idea of the development of the "orbital forest" should be seriously revised and corrected.

Ana Cestari, further underlines that the strategic document of Lombardy Region "Regional ecological network and territorial programming of local units" (Rete Ecologica Regionale e Programmazione Territoriale degli Enti Locali, approved by decision no. 8/8515, date 26 January 2008, paragraph 1.3, attached to the main document) describes the ecological network as - a nomenclature consisting of joints and corridors, from connecting lines that may be composed of continuous forest lines or by continuous habitat units that create the 'stepping stones' effect - which have a binding function and/or distributing function of natural ingredients in the environment. They should serve the preservation of climate and the environment without forced interference or deformation from the outside.



Fig 3. Vertical Green Buildings Milan

Then, one can ask the question: How is it possible that the document of "DPCM - Development Plan for the City of Milan" (Documento di Piano della città di Milano, especially document no.4 attached to the "Strategic Vision") contains serious scientific and conceptual mistakes as regarding territorial and environmental sciences, starting from the forecast of the green ring (the so-called "orbital park") around the city, to the lack of implementation of the instruments such as "stepping stones"? The next question is: What is the reason of the graphical presentation techniques of the plan clearly pointing out with the darkest color the existing greenery? Because thanks to the techniques and previous graphical planning techniques and experiences already consolidated in some European capitals (like the early times "Green Belt" concept of London, UK, or the "Finger Plan" during 90-s in Copenhagen, Denmark. These alternative green areas introduced in such plans can easily be evidenced in the plan without having the need to be emphasized thanks to the "visual/graphic manipulation", which remain superficial paper techniques with the aim of achieving populist graphic effects of the highlighted 'green' color. What matters really for the public interest and citizens is not the populist planning techniques which use "green color" in the plans to symbolize the speculative 'true sustainable' quality of the supposed to be green reality on the ground.

3. The Orbital Forest of Tirana

The Italian architect and urbanist Stefano Boeri has foreseen a similar development with the concept of Milan for "GLTP" of the development of the Municipality of Tirana in 2016. GLTP Tirana predicts as in Milan the creation of an 'orbital forest' system that continues around the metropolis, including parks and natural (un)protected oases. The typical "ring-radial" radio centrism of Tirana is intended to be confronted by the green of the main boulevard, similar to the axes in Italy called "viale". This boulevard was planted with trees under the "PRR, Tirana Settlement Plan" of 1925, led by Italian architect Armando Brasini.

But the problem here too is endemic, because while in the plan's report it is spoken and is always preached in the name of the principles and issues of the landscape and environmental health, the graphs of the plan always conclude and recommend measures that are related only to the urban/building assets of the city, almost ignoring the periphery.

Such planning mentality the plan often refers to it, has to do unfortunately with old models and mentalities of the classic Mediterranean school of urbanism/planning. And this happens at a time when contemporary European urban planning is not based solely on spatial aesthetic instruments, and does not consider any more buildings, towers, residential ensembles or urban zones as a whole, as the only/exclusive local welfare and development assets. On the contrary, the four major European planning schools have now evolved into that point where they consider it to be a point of departure but also as an end-point, the issue of self-sustainability of territorial and environmental development. Such territorial unity that interacts and fulfills the best qualities between different

territorial units in an organic and natural way, can only guarantee the quality and a livable urban environment. Nowadays urban landscape is considered a “habitation” not by chance. But landscape in itself would have no meaning or future without the rural-agricultural area, and without the natural periphery as a whole. Their role is not only irreplaceable, but also determinant for the future of livable urban communities (remember: Rem Koolhaas: Rur-Urb a new future for world, 2018). What then makes the difference for planners is the inherited presence and protection by any cost of these natural qualities of the urban fabric, and not the opposite one. Precisely the protection of nature and greenery within the built/urban areas is what it is of interest for the public, rather than using a “green” alibi to densify and further verticalize the city, thus increasing the chances of stopping the natural cycles explained above, which in return would lead to the creation of the phenomena of “urban heat islands”. Indeed, in the case of Tirana, the capital city during the last three decades has been transformed unfortunately from a “green oasis” into a “thermal and environmental hot spot”. So, there is a strong relation between environmental temperature, greenery, the urban heat island and environmental pollution. Unfortunately, the ‘Orbital Forest’ has been conceived as a ring-line around the city, almost like a thick separation line between the urban zone and the peri-urban living and agricultural/rural areas or natural forests and greenery. It looks more as a ‘yellow line’ for the city rather than an area or wide strip with the supposed function of urban lungs.

Therefore, the ‘orbital forest’ does not have to be turned into a wind-surge, but provide a corridor of ventilation. According to Doik, K; & Hutchings, T; (2013), for the realization of the airflow cycle from the hot island, it means for urban planning that it should take into account the distances of rural parks, the intensity of constructions, the cooling mechanisms that vegetation offers through plant evo-transpiration and lowering of the temperature. In the conditions of Tirana, the creation of green spaces in randomized form at 300-500 m distance and linear ‘stepping stones’ (meaning “penetrating forests” from periphery to the center) will enable the circulation and cooling of the hot air and the redistribution from one environment to another with normal air-load. In the case of Tirana, which is surrounded by a system of hills and mountains, the ventilation corridors constitute a basic pre-condition for the normal circulation of (polluted) air. The historic corridor Kombinat-Tujan remains a main ventilator for the city circulating of polluted air thanks to its moving currents. Therefore, even during urban restructurings or other interventions of big scale this and other corridors should remain open and functional in order to allow air circulation. In addition, the setting of the neighboring forest mass should be such that it does not hinder the refreshing winds that are supposed to circulate over the city, and over the additions of green areas inside the densified urban areas.

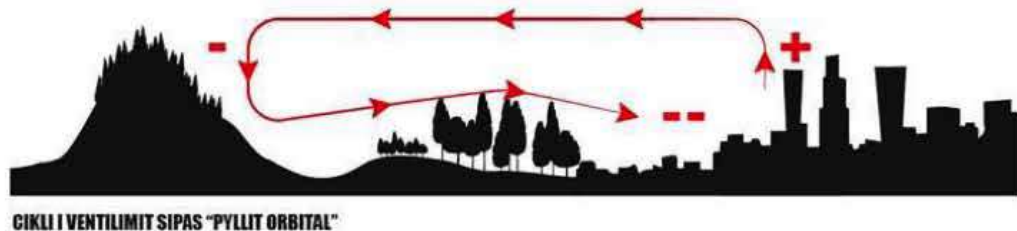


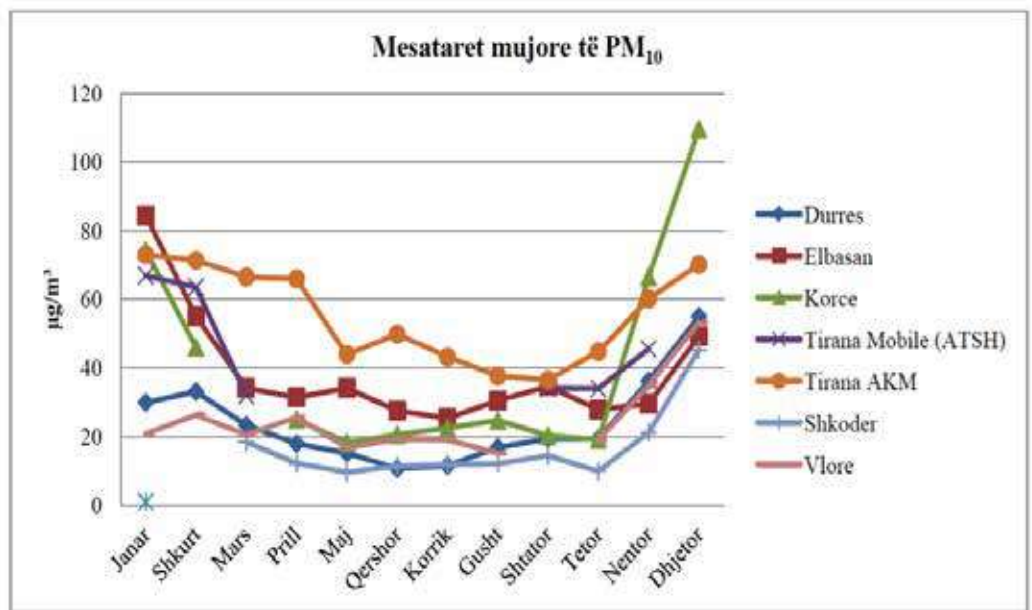
Fig 4: Ventilation Cycle of City of Tirane based on Orbital Forest Proposal

But the proposed transformation of the city periphery along the border with the agricultural/natural areas, from a gradual green/built transition between the rural-urban and vice-versa; into an “orbital park” in the form of a “curtain/line forest” (images 1 and 2 of the PPV plan in Tirana) would significantly and only further increase the temperature differences between the built area and the city center versus the agricultural/natural and rural areas. Consequently, the volume of air transportation that collects the dust/air pollution will be increased not only in the urban areas but also peri-urban areas. This unfortunately means that depositing of pollution will eventually not be in the green area of the periphery, but back in the city center. This is simply because the curtain of the “orbital forest” suddenly lowers further the temperature even lower than the rural suburbs by sedimenting the cold air streams and consequently the pollution/dust as well, exactly where it should not be: in the urban area and in the center of the city.

Therefore, in order to avoid the UHI effect (the “urban heat island”), the structure of the urban city should be cut in the direction periphery-center-periphery by creating of “green stepping stones”, (in Albanian: “pyka te gjelberta”) as they are known technically in the landscaping and environmental sciences. This literally means to create linear greenery strips of urban green spaces/structures penetrating from center to the periphery and vice versa. This is not an unknown and unsuccessful practice for urban planning in Albania in itself (see: Tirana City Plan by ISPU 1985-89 at: Tirana, The Missing City, Dharmo at al, 2017). “Stepping stones” penetrate this way gradually into the urban tissue by breaking the territorial monotony of the built urban tissue of the city, guaranteeing better natural ventilation, systematic air cleaning, and a more balanced and more human micro-climate.

4. Field Measurements in Tirana

Based on the field measurement data so far it results that despite the radical transformation of city, most of the average air pollution indicators in Tirana are going more and more below the EU standards. The dust particles value PM 10 ($\mu\text{g}/\text{m}^3$) based on monitoring results in four points of Tirana during 2016 were: 1) at ATSH (Telegraphic Agency of Albania) building, the average annual value has been $46 \mu\text{g}/\text{m}^3$; 2) at National Environmental Agency building it was $55.25 \mu\text{g}/\text{m}^3$; 3) at Tirana City Hall building has been $71.85 \mu\text{g}/\text{m}^3$; 4) and at "21 Dhjetori" has been $87.78 \mu\text{g}/\text{m}^3$. While a maximum of $40 \mu\text{g}/\text{m}^3$ is considered the average norm, and measured indicators show around 79% higher at the selected monitoring point of the Tirana City Hall, and more than double at "21 Dhjetori" selected monitoring point (National Environmental Report on 2016). The number of days that overpassed maximal accepted levels of pollution and urban heat was 76 days out of 35 maximal according to norms, and much higher than other main urban centers of Albania (Table 1).



Graph 1: Monitoring of monthly average of PM10 presence for Tirana Municipality, and comparison with other main cities of Albania (Source: RGJM_MTM).

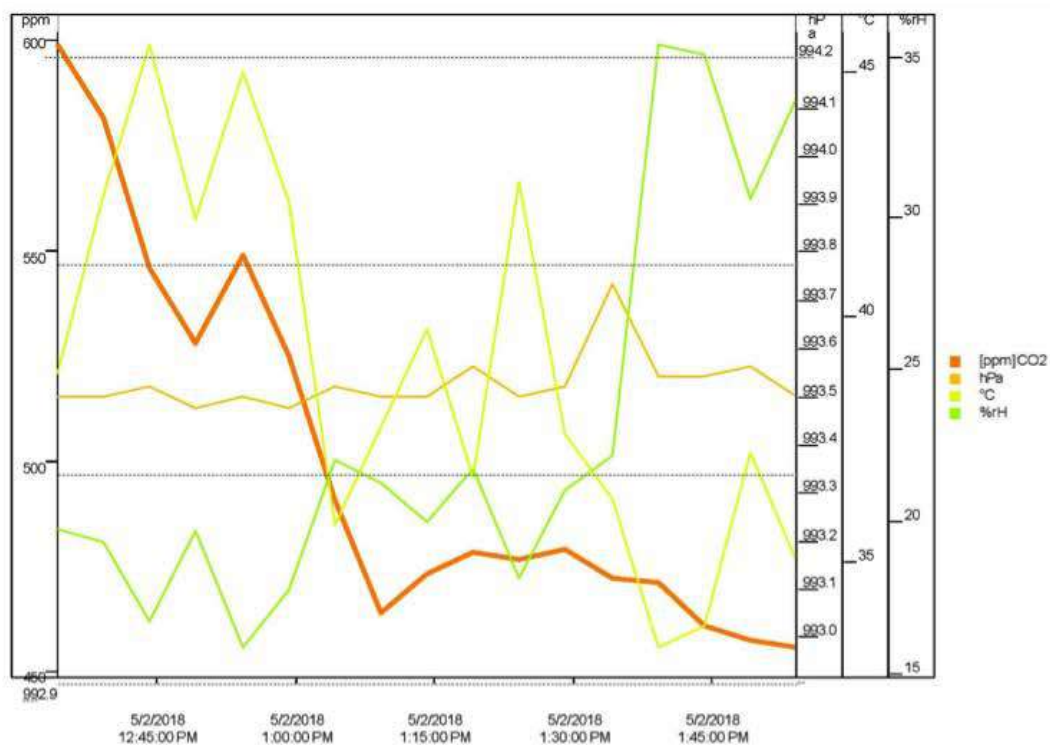
As regarding the NO₂ values on air, the four monitoring points of Tirana show indicators that are 21-90% above the EU average rates. The highest exceeding is identified at the monitoring point of "21 December" ($73.13 \mu\text{g}/\text{m}^3$). At Tirana City Hall the results are ($79.64 \mu\text{g}/\text{m}^3$), respectively 83% and 90% above the average annual rate in $\mu\text{g}/\text{m}^3$. But exactly at these points the presence of green/habitat area is very low, as build tissue and pavements, asphalts dominate. Meantime at the monitoring point of "21 December" the situation worsens by the benzene concentration on air, which goes beyond the maximal norm of $5 \mu\text{g}/\text{m}^3$. Monitoring shows that also 40% of carbon emissions come from transportation. So data analysis shows that: (i) Tirana continues to be a city where several indicators of pollution are high; (ii) The highest concentration of pollutants are at the city center and at critical zones of traffic.

Further data for air quality monitoring are collected during 2017 from Polis University, based on the automatic stations near the "Central Polyclinic" and at the station near the "Public Health Institute". They show that in the center the concentration of sulfur dioxide (So₂) is 1.6 -8.6 higher than in the other areas. As regarding Ozone, it appears 1.46-11.8 times higher; while carbon monoxide (Co) is at 1-1.56 times higher, and nitrogen oxides (No₂) appear 3-5 times, benzene 2-3.5 times higher, and toluene 6-8.4 times more. All these factors unfortunately contribute for the creation of the 'urban heat island' phenomena at Tirana.

The table below shows more details of the additional monitoring undertaken by "Polis University Environmental Lab", based on field work with regard identification of changes of temperature and relations with relative humidity, carbon dioxide, light intensity, etc., by April 2018. The stations of measurements were selected at the "central square of Tirana", at the "artificial lake park" of Tirana, at 'Willson Square' of Tirana, and at the road intersection of "21 December". The collected data shows that the temperature in the "Skanderbeg Square" and "Mother Teresa" squares are about 9-10 degrees higher than the temperature within the park. Meantime the relative humidity is also 20% lower; while the carbon dioxide concentration at "Skanderbeg square", behind the "national museum", at "Willson square" and "21 Dhjetori square" is much higher than in the area of city park (Table 2).

Table 1: Measurements on the ground on 04/20/2018.

Measured parameter		Temperature (°C)	Relative Humidity (%)	Light Intensity Lux
Place				
1.	Behind the National Museum (in the park)	30.3	26.9	95924
2.	Skanderbeg Square	38.1	22.2	96070
3.	Mother Teresa Square	38	20.4	106282
5.	The south-west part behind the Polytechnic University	28.7	42.1	72672
7.	Between the kids entertainment zone and the lake	27.2	42.3	5694
8.	Willson Square	28.5	32.2	75822
9.	21 Dhjetori	26.3	36.6	6637
10.	Liqeni i Thatë	26.2	46.7	69303
11.	Eagle Square	30.7	29.3	43513



Graph 2: Measurements at Tirana International Hotel in Tirana (source: Polis University)

The measurements at "Tirana International Hotel" monitoring station just at the main city square, shows that the amount of CO₂ is on average 500 ppm; while relative humidity is 22%, the temperature 38 °C, compared to the average level of 320 ppm CO₂ in general for Tirana. This shows that indicators get worse even that relative humidity is 44.5% and temperature 30 °C (see Graphic 1). The photos below demonstrate also the measurement of the Co₂ level, the relative humidity level, and temperature behind the "National Museum" at the moment monitoring.

Therefore, data analysis shows that the concept of "Orbital Forest" supposedly surrounding Tirana as a circle needs to be reconsidered critically as regarding environmental and landscape aspect, in order to avoid worsening of the "urban heat island" phenomenon that already exists in the city. Further analysis shows that some softening solution of the problem could be: (i) traffic management in the most critical zones where carbon discharges are higher, by promoting ecological and public transport; (ii) territorial connection center-periphery-center by "stepping stones" techniques of massive green strips to ventilate city and reduce urban heat. The last concept has

already a tradition in Albania, including the Municipal Plan of Tirana by 1985-1989, where ventilation corridors are foreseen and implemented. In contrary the center of Tirana has been heavily densified by high-rise buildings at the back of public and green space.



Fig 5 by Polis University Environmental Lab.

5. Discussion on the Orbital Forest

The actual emphasis of municipal policies on “aesthetic” and “architectural” aspects of the city planning looks as a symptom of the traditional urban planning heritage, by not considering/reading the landscape and territory as a “territorial system and a unity in continuous motion”. Apparently the decision makers of “Tirana 2030” were more interested in using the “greening campaign” as an instrument to satisfy public concerns through a political act with clear electoral interest. And there is nothing wrong to draw public gains from the act of planting trees, but when this tends to create a system of negative environmental effects something must be urgently changed. In Milan’s case urban planning practices have gotten worse from the nonsense of the so-called ecological “vertical forest”. Despite the inspiration it reflects in theory and in few isolated buildings, the solution looks more like the last option in a hopeless reality. While Tirana has still many other opportunities to build in a more sustainable way, and the big panorama of city allows still a normal ecological life. “Vertical greening” would be a welcomed concept only if it comes as an imposed last instrument/measure, and after all other preventive-curative measures have been consumed before in a strategic way. It can not come as the ‘golden formula’ and the ‘only solution’ for the existing Tirana. The “orbital forest” in the case of Tirana exacerbates further the situation, because it is more an alibi of wild density constructions, hoping that after twenty years hypothetic greening will form “urban rooms” and “territorial spaces” surrounded or plastered by trees, simply because we pretend to cure our own aesthetic selfishness, but we never aim to solve strategically the existential problems of the city.

The thermal barrier that the “Orbital Forest” creates around the city, takes the breath away from the already damaged urban tissue because of the ‘urbicide’ effects of the radical urbanization. Unfortunately, this all happens in the name of planning modernization, but the fact is that it really interrupts the difficult/complex relation of the nowadays-natural suburbs with the built/densified urban areas. Such a ‘thermal wall’ even though “green” takes away also the chance for the natural underground resources of the metropolis to develop as breathing habitat through the trees and greenery. This is a high public interest issue in regard the quality of city life and public health, so therefore communities and professional institutions must be seriously heard. Furthermore, greenery in general and the trees in itself become an arbitrary attribute only for the periphery, while the city center develops only on concrete and densifies every day more in the name of efficiency of investments. Such logic is often applied in Tirana in the most irrational way by many star-architects and local technicians who have seems not interested to know local conditions and native species, which makes in return the limited “green” investments to fail soon. It all results in a very expensive exercise! The case of palm planting on the Tirana-Durres highway, which died within a year, or the planting of certain pine trees that are not suitable for the highway because of pollution. Not only they have proven the lack of knowledge of the natural habitat and local species, but were accompanied by high loss of financial bills.

Unfortunately, politicians have been encouraging further an environmental culture through the simple “act of planting trees”, often have no idea in what altitude or climate certain species, such as palm trees, can survive. But even if they know, often the short mandate or electoral pressures make it easier for them to pretend to not see it, leaving the city to speak for itself! Vittorio Ingegnoli, states that: ... taking into consideration the aesthetic and physical traditions of Mediterranean urbanism, listening to the theories of the “orbital and vertical forests”, for a moment it gives you the idea that the landscape has started to be understood and read as a system in continuous motion... but apparently not, because political and contractual interests make it possible to extract profit from the trees.

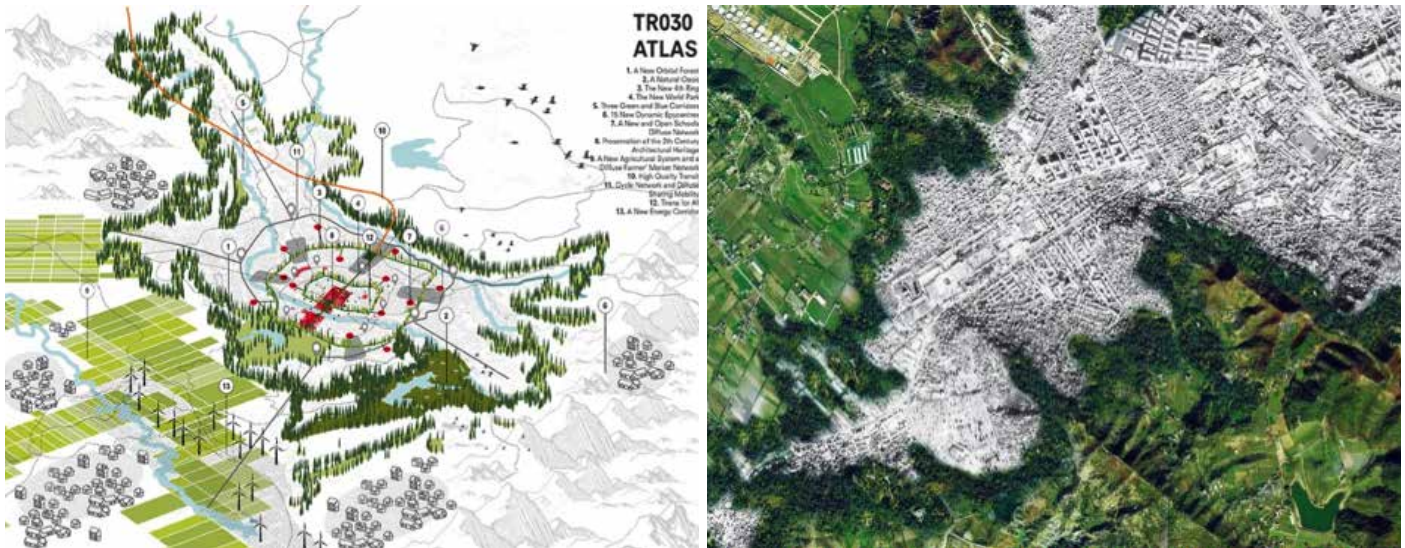


Fig 6: Images from "Tirana 2030: General Local Plan for the Municipality of Tirana, 2016.

However today a landscape planner needs to know that the shape and nature of the territory has an ecological aspect that goes beyond the architectural image. Even other variables enter the game: the quantity of tree species; trees/forests typologies, as well as their distribution, etc; are fundamental for the health of territory and landscape itself and, consequently, for the health of cities, their communities, and in their residents. For example: woods and bushes clean the air from dust and gases, they absorb the carbon gas and release oxygen. This is why the selection of forest trees is conditioned by the suitability of the soil to the requirements of the species. The trees in itself differentiate demands on the type of soil, texture, water reserves, climatic conditions, etc. Selection of trees emitting low levels of organic pollutants (VOCs) regulate the ratio of ozone production, while some trees like oaks, winds, and sprouts emit in the air fitoncide, that destroy the diphtheria microbes, tuberculosis etc. According to Porter, E., ... the Metro Vancouver has designed to add 1 million people to 500,000 residential units (Metro 2040 Growth Document) but this is done along with practical guidelines for adapting the urban forest and selecting types and management techniques in response to changes climate.

There exist many examples of success in certain aspects of city development, but often they fail with regard landscape and environmental sustainability. For example, the Dutch studio "Inside Outside" is famous for the "Biblioteca delle Alberi" a project in Porta Nuova, Milano Italy. But even in this interesting educational case, city design experts pursue only social and aesthetic functions at the expense of ecological ones. The project does not show any sense of sensitivity to reducing environmental stress, air purification or tree positioning. The crucial arguments to support it, such as breaking the "heat island" and reviving the "ecological network" in the area are not considered strangely as priorities. The green infrastructure, for several days, is offering some "cooling" mechanisms and temperature regulation through "evo-transpiration", which implies the addition of relative air humidity to 45-65%. Increasing humidity and lowering the temperature helps reduce the heat island's intensity of urban warming and impacts on the environment. In many countries, the implementation of such mechanism in urban forests is part of the water management strategy. In Vienna has been drafted a special urban cooling plan based on the project "Urban Heat Islands Vienna 2013" for the adaption of the measures for the response to the global phenomenon of urban heating; identifying negative aspects of the urban heating, and building awareness for the acceptance of measures against it during urban development initiatives.

Architect Vittorio Ingegnoli, at the stage of competition, had proposed to the "City Life contest" in Milan, the use of "stepping stones" method. According to his proposal this solution would prevent the collection of fine dust in the center of the city, thus enabling the main ecological network to be revitalized by linking the center of the city with the parks/forests closest to Milan: Biaggio Cusago region, up to Ticino. But due to political uncertainty, typical in countries such as Italy and especially Albania, many well-versed planners and acquaintances of this field of expertise have been ignored or fired by administrations and professional competitions, leading to the degradation of planning skills in the relevant local contexts. Typical is the case of the international competition "City Life" in Milan or "Park Entrance" in Tirana, which even though they were canceled, they were available only for architects and designers with vague knowledge of the local context, losing the chance to impact the life style and ecology and the city.

We must not forget that the relation between landscape and human health (public health) is very close. Nothing can justify their underestimation because of daytime pressure and problems that may arise from there. Of course, the relationship between human pathologies and landscape health is usually associated with a delicate

discussion on environmental pollution. But in the totality of the reports of the common environmental and landscape pollution problems, those that really belong to the pollution make only a small part, while the landscape is becoming more and more important. Meanwhile today are tangible those issues known as “structural and functional pathologies”, which belong to radical transformations in short time, emergencies or even catastrophes. In regard radical transformations, could be classified also the atmosphere in which as drafted the plan for the city of Milan. What has happened in Tirana during the last 3 decades could be classified the same because of specific development circumstances. Tirana is facing the great need for a new transport system, and consequently for massive infrastructural operations with have serious environmental impact. It also faces a growing emergence of fires and floods. Thus knowing and investing properly in the areas of natural and urban landscape could be the chance to solve many problems at the same time, but not in closed circles, not unilaterally, nor superficially.



Fig 7: Images form the City Life competition and the “Tree Library” project.

7. Conclusions

In order to come out of a superficial “facade forest” as well as from show of “tree planting” act, we would have to accept first with courage that we are actually on the wrong track! Then we have to focus with all our knowledge to each city disciplines, studying what is still unknown to the local expertise. Then slowly we should try to understand that trees/forests are, in fact, like a community of growing individuals! They live as a great family, as another Milanese professor Stefano Mancuso explains in his “Plant Revolution” scientific paper where he underlines that ... The trees actually communicate with one another, and are able to predict changes in the environment through the transmission of information. There is a special case, for example, in plants, which is able to take the form and the similarities of the surrounding elements of the environment. The plant is called “Boquilla Trifoliata”, a vegetarian species especially distributed in South America with an exceptional adaptation and camouflage capability: its lives according to the country’s local conditions, and takes on the likeness of the context where they are developed, thus changing their dependence morphology and expressions of good or difficult environmental conditions. So the Bouquilla’s leaves can become thicker or thinner, they can be stretched or even transformed into thorns, though it requires a great deal of strain from the plant. So the plant in this case physically expresses the surrounding conditions, context and environmental stress! In short, the lesson that comes from this story is that it depends on us as individuals and as a community if through our decisions we want to grow as a beautiful and healthy plant, or have thorns or nothing in the future!

Manusco further states ... In order to imitate something, it must first be known what is required to be imitated ... But usually we are influenced by a resistant and unexplainable behavior in relation to the whole vegetation, ... and suffering from “plant blindness” syndrome. Meanwhile the landscape design science itself is based on knowledge, understanding, and often on the imitation of the landscape itself, including the scrupulous consideration and adoption of the tree family components we are going to plant. It is always about hearing and having respect for ourselves and the society, and whether we want to positively influence our society in the future. It is apparently the vegetation itself that teaches us the principles of democracy and staying together as a community, and not the opposite!

In conclusion, it can be said that:

1. Attempts to introduce landscape and environmental agenda in the planning and governance of the territory are welcome and can play a very important role in the real transformation of cities and the improvement of community life. However, a superficial treatment, not scientifically profound, and for the interests of the time, harms not only the science of the landscape and the environment planning itself, but above all the city and its inhabitants.
2. Concepts of “vertical” or “orbital parks” are inspirational in relation to public relations. But even though very creative, they can contribute unwittingly in the termination of natural cycles in the territory, and as an alibi for further densification/cementation of the city, from developing regions, making the environmental situation and quality of life even worse. Instead of the development green as a “city ring”, it is recommended to intervene

through the “periphery-center-periphery” concept of the “stepping stones”, which guarantee the ventilation of the air via natural chain as instruments of vitality of life and stability in the city!

3. The “Tree Planting Act” should be replaced with the landscape and environment culture that first requires to know and understand local individual species, their function in the green communities in the territory, and their communication in the network as a model of natural coexistence. On the contrary, planting trees is not equal to environmental healing, which leads to the loss of green investments.

4. “Orbital Forest” conceived as a circle that surrounds Tirana in a loop, is just a dividing line between the urban areas of residence and those of peripheral greenery, acting more or less like a curtain of “yellow line” of the city. Given high urbanization rates and high density of constructions and population, it creates a strong tendency to absorb heat energy thus stimulating the creation of “urban heat island”, hindering the cycle of air circulation, ventilation and cooling of the environment.

5. “Cooling” mechanisms that provide green through plant evapo-transpiration and the temperature reduction, maintain open/transverse ventilation corridors of “stepping stones”, green environments connected at 300 to 500 meters wide distances such as hygienic-sanitary belt that enable circulation and air ventilation.

6. The selection of forest trees is conditioned by the suitability of the land to the requirements of tree species such as Ph, type of soil, texture, aquatic reserves, climatic conditions that emit low levels of organic pollutants (VOCs) which produce fitoncide, destroy microbes and increase oxygen in the air as well as the adaptation of the urban forest to climate changes.

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[ECO/13]



COHABITATION ECO-STRATIGRAPHIES: Ecology and experimental habitat hybrids

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abstract

The tactic about to be introduced is called the 'co-habitation eco-stratigraphies' represented by the layering of the social, spatial, ecological and economic strata and based on the recovery of the current daily needs of the society in the ecological urban and domestic landscapes adapted to socioeconomic-cultural requirements. From this tetra dimensional approach, the industrial ruins associated with the 'genius loci' (Norberg-Schulz, 1980) and the exploration of possible evolutionary habitats are the starting point of the 'Eco-infrastructures' research. The ecological-atmospheres and industrial or obsolete residential spaces are the main contexts, from damaged ecologies to industrial skeletons such as abandoned metro-rail stations, car parks in disuse, inhabitable domestic bridges, silos or spaces in decline located in the urban peripheries.

The framework for the cohabitation eco-stratigraphies is the Eco-infrastructure, based on three premises. First, providing services to the evolutionary habitat with facilities and common spaces and leaving free-distribution for the creation of domestic spaces as an 'input' or 'parasite' (Marini, 2008) a space reversible experimental and mutable as it may be required. Second, a search for new space management models is needed, from architectural-spatial and an economic-social perspective such as collaborative spaces (Vestbro & Horelli, 2012). Third, implementing the research about hybrids (McClintock, 1950) and its application to architecture (Fernández-Per, 2009).

If an ecosystem is a community able to adapt to the environment progressively then the eco-infrastructure and its domestic space work as a stratigraphy system, as to say a mutable atmosphere which changes accordingly with the biological rhythms of those who inhabit it. 'Domestic stratigraphy' is a tactic or prototype that needs to be tested over the long term in order to give a possible response to the spatial criteria or strata required by users.

keywords Architectural hybrids, Cohousing, Domestic stratigraphy, Eco-infrastructure, Experimental habitats

1. Introduction

1.1. Co-habitation Stratigraphies and Ecofeminism

Françoise D'Eaubonne, a Spanish-French born thinker, was the pioneer woman in patent Ecofeminism (1974), a fusion conception that associated feminism with ecology. In the early 70s, D'Eaubonne researched the relationship between gender equality and the ecological preoccupation (Guattari, 1989; Thompson, 1994) opening a new way of thinking regarding cohabitation and cohousing tactics of resources exploitation and then investigated how this relationship was related to feminism. D'Eaubonne agreed with Simone de Beauvoir when stating that the familiar cares were not feminine qualities or values. They were just a result of a social construction. For this reason, architecture and housing, with their intermediate spaces, in particular, are absolutely related to this way of thinking since the familiar cares and the burden of housework are social, economic and design 'constructions'. Consequently, the collaborative housing such as cohousing models can be seen as a solution. If the organization of the space, the distribution of "uses" in a non-traditional way or the construction of new hybrid uses and programs have an "Ecofeminism" approach, this could help to break the patriarchal connections in the housing designs, existing even in 2018. Could a new wave of Ecofeminism be a future scenario in the architecture history where it will be seen not just as a "fashionable" word but as a powerful fact-based concept?

2. Objectives

The objective of this research is based on two key points. (1) The habitation affordability as a basic and crucial welfare system and (2) The spatial innovation based on the “commons”. The objective is based on finding a path to a more affordable housing at an intermediate point between the current dual option: an expensive rental-landlord regime or a rigid home ownership. This intermediate point could be based in the assignment of use or “right of use” cooperatives. The second objective is based on the “commons” principle by Elinor Ostrom applied to architectural spaces, by creating common shared spaces inside and outside the diverse housing and habitation spheres to increase social cohesion, spatial innovation and integration of diverse uses in a compact scheme as for example the “Mat-hybrid housing”.

3. Methodology

The methodology is based on a literature review on the commons from a co-habitation perspective. The research by design and drawings as a process in the graphics (Figure 1 to figure 6) and fundamental methodology. Four keywords based on the “Commons”: community, common shared space, common labour housework, common ecological place. From the four keywords, four phases are developed: (1) Co-habitation Stratigraphies and the common ground. (2) Co-habitation Stratigraphies and new-vernaculars. (3) Co-habitation Stratigraphies and the collaborative housing or Cohousing. (4) Co-habitation Stratigraphies and living environments.

4. Results in Four phases.

4.1. Phase 1. Co-habitation Stratigraphies and the common ground

In 1990, the American political economist Elinor Ostrom published “Governing the Commons: The Evolution of Institutions for Collective Action”. She later became the first woman winning the Nobel prize in Economy in 2009 for her analysis about economic governance, particularly of shared resources. The first phase of the co-habitation stratigraphies should be based on the commons. Figure 1 shows the stratigraphies as the base for the cohabitation on the common ground. Five subtypes in the tactic are described: ecology, cooperative, collaborative housing, hybrids and a long-term development.

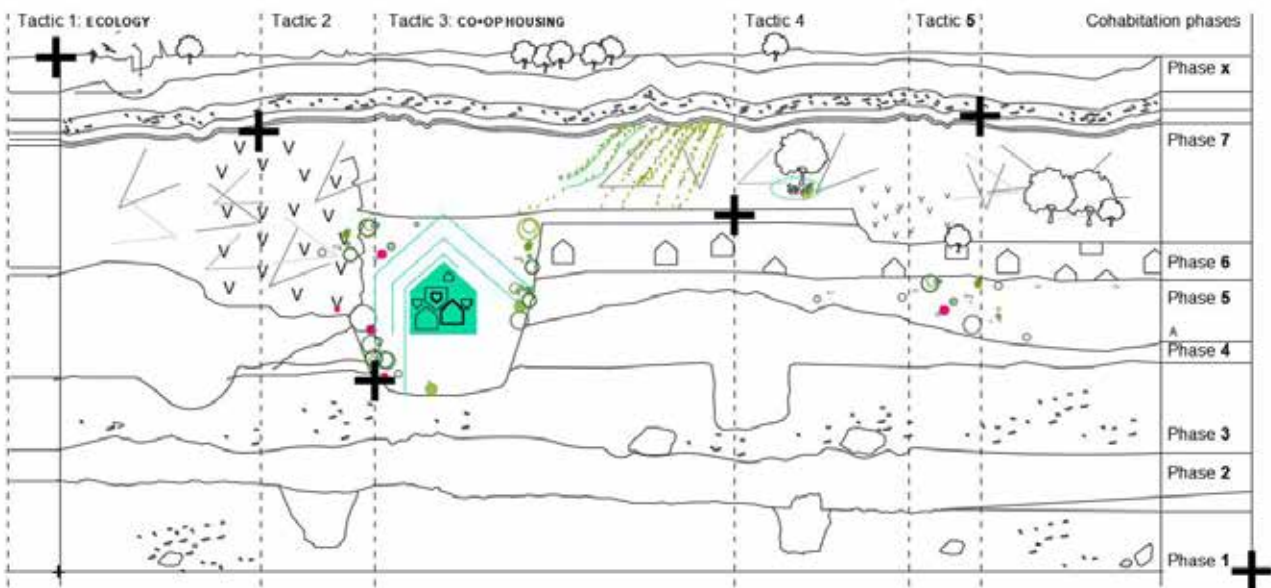


Figure 1. Focus on the Co-habitation Stratigraphies and Eco-infrastructure: mutable habitat.
Source: Own elaboration

The cohabitation tactics and eco-stratigraphies are based on a common resource. Elinor Ostrom was one of the foremost scholars and pioneers in the area of “the commons”, focusing particularly on how humans interact in order to preserve a long-term level of production of common resources, such as forests, grassland areas, water and its resources, fisheries and irrigation systems. She promoted eight “design principles” for constant management of common resources. Ostrom first analyzed several case-studies, those successful and those that have failed, then she came up with this eight design principles: the boundaries, a common-based resource,

collective-choice arrangements, monitoring, graduated sanctions, a possible resource self-management and a multilevel distribution.

4.2. Phase 2. Co-habitation Stratigraphies and new-vernaculars

In the second phase, the cohabitation tactics and eco-stratigraphies are related with the new-vernaculars. According to Rudofsky and his publication "Architecture without architects catalogue" the habitation is a matter of evolution, so the architecture is a non-pedigreed architecture or a collective-knowhow architecture created by the communal in an absolutely brainpower way in relation to the climate conditions considering the atmosphere, the weather and the environment as material arguments to shape and conform the living spaces in co-living and cohabitation. Intuition and intelligence create a guide to the "contemporaries" for today and tomorrow, a vernacular guide to the most astonishing places, spaces and locations done with-out architects. Rudofsky introduces the "communal" architecture created not by specialists but by the spontaneous and progressing activity of people with a common "tradition" intended as a sum of heritage and empirical approaches through the construction of the needs performing within a community of experience. Figure 2 shows this second phase representing the land concept and the ground resources as the minimal basis. Designing takes into account the characteristic of the ground.

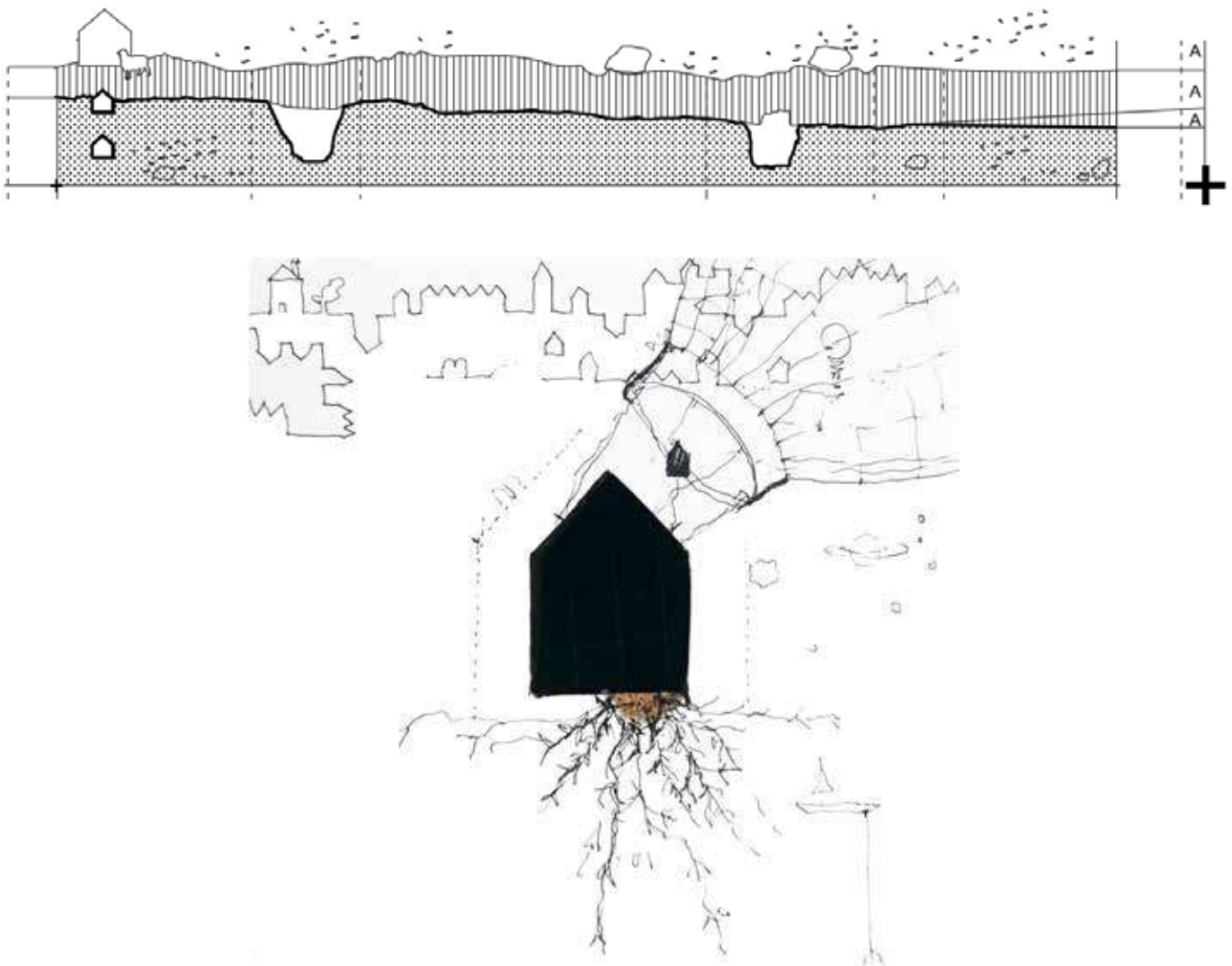


Figure 2. Co-habitation Stratigraphies and Eco-infrastructure in process. 2A) Detail. 2B) In context.

Source: Own elaboration

The common experience is based on Elinor Ostrom concept: "the commons". Rudofsky sees the vernacular architecture as a creation without fashion cycles, not as a style, but as common construction like the current German Baugruppen where residents create a construction group to build their own dwellings in cooperation. Rudofsky's ideas are focused first and foremost on the vernacular architecture, from nomadic architecture to aquatic one. Figure 3 shows this growing nature in the third phase as an atmospheric sequence.

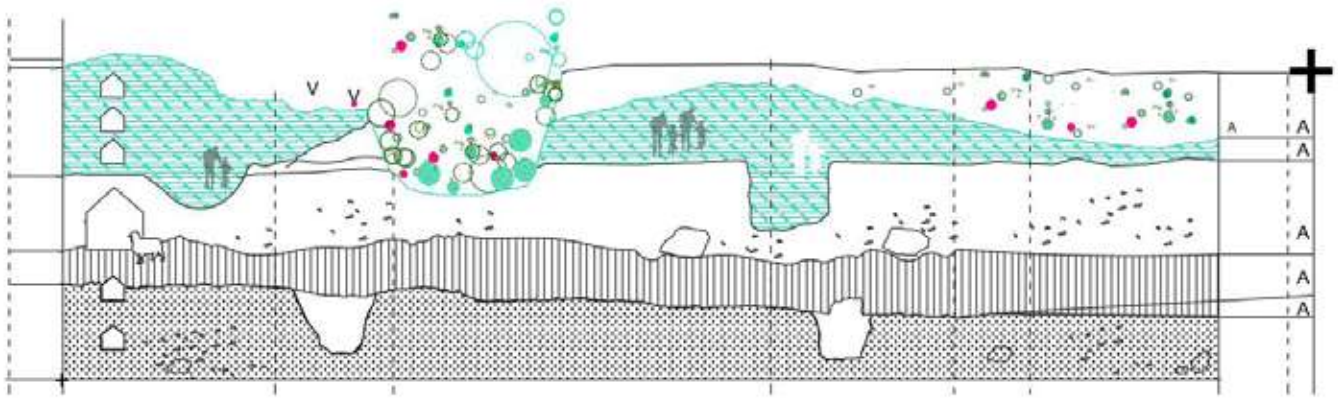


Figure 3. Eco Co-habitation Stratigraphies and Eco-infrastructure in process.
Source: Own elaboration

Ostrom and Rudofsky both analyzed communal structures, the second author made also researches about the common structures composed by adding of spaces generating different patterns from geometrical to organic, from what Rudofsky calls “pointillistic” to the arteries of the quadrangular urban structures as a system shown in figure 3. The arcades, loggia, public walkways, semi covered and covered streets are the current inexistent human-scale intermediate spaces of the new “ensanches” or “PAUS” (Spanish growths) of many contemporary outskirts, or any other urban expansion done by a dual construction between private and public, as to say a public that it is not “public” (understand as common use) anymore since it is projected as a consumer space without real public services or places to sit down and relax or lay down and contemplate the landscape, whether it is industrial urban or hybrid one, in general, a space to grow in an equilibrium, spatial, socio-gender and ecological (De Jorge-Huertas, 2017, 2018).

4.3. Phase 3. Co-habitation Stratigraphies and the collaborative housing or Cohousing

The third phase is related to the collective. In this line, the “Kollektivhus” (Vestbro & Horelli, 2012), is a co-habitation Swedish movement which took place in the decade of 1970 - 1980, as an answer to previous social democratic movements related to collaborative housing issues and the creation of the intermediate level. A new wave of cohousing based on tenants’ work started in this decade: the cohabitation tactics and eco-stratigraphies understood as a common shared space generating intermediate spaces. Figure 4, a dynamic evolution of the stratigraphies, shows this dialogue between the previous phases (phase 1 to phase 3) in the cohabitation: common ground, new vernaculars and the hybrid between nature and architecture creating microclimates in accordance with the rhythms of the human being.

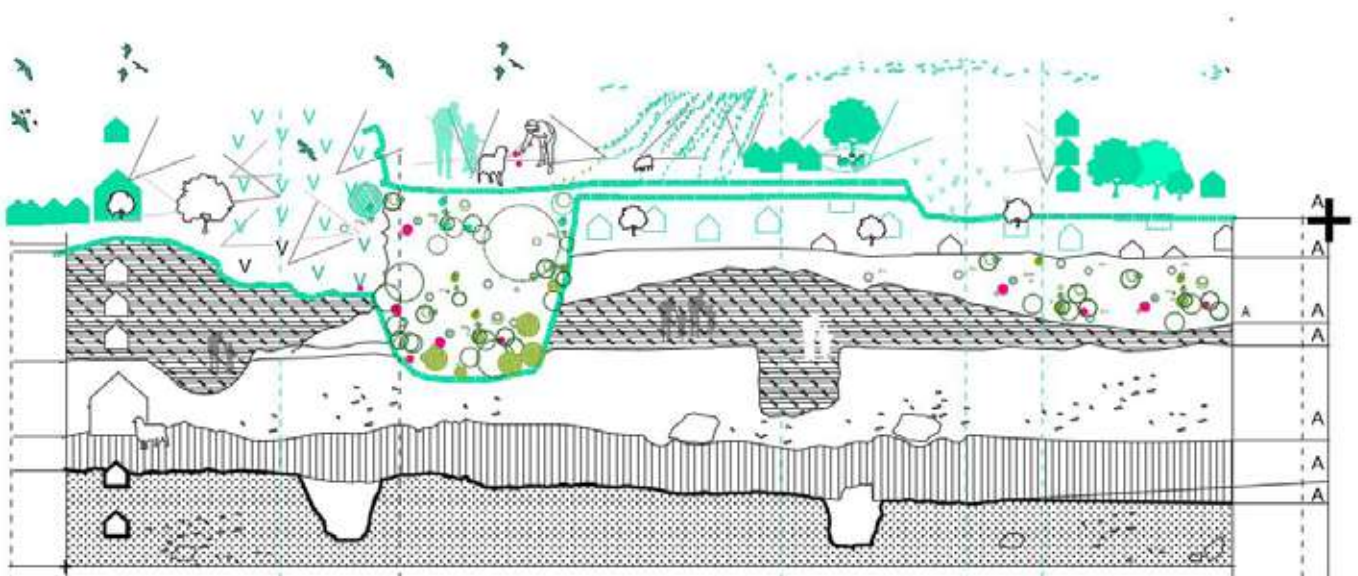


Figure 4. Eco Co-habitation Stratigraphies and ecological cooperative.
Source: Own elaboration

Following the same wave the American feminist Dolores Hayden published "The Grand Domestic Revolution", where she explained "the innovative plans and visionary strategies of these persistent women, who developed the theory and practice (what Hayden calls "material feminism") in pursuit of economic independence and social equality. The material feminists' ambitious goals of socialized housework and childcare meant revolutionizing the American home and creating community services. They raised fundamental questions about the relationship of men, women, and children in industrial society". The cohousing is the evolution of this concept, a cohabitation tactic based in the commons as shared common spaces, the burden of housework reduction performing a closer neighbours contact to promote social cohesion and social interaction in a living constellation.

4.4. Phase 4. Co-habitation Stratigraphies and living environments

The fourth phase is focused on the cohabitation stratigraphies and living environments (Thompson, 1994) which have a key point in Aleksandra Kasuba works and her "Live in environment". In the 70s Kasuba aimed to bring to an end the 90-degree angle- by setting up a diversity of spatial experiences without imitating the organic nature. A nature intended as the "terza natura" by the Italian humanist and historian Jacopo Bonfadio, with the meaning of nature enhanced by art. Kasuba environment atmosphere was developed, created and built in her own studio. The morphogenesis of Frei Otto, Christine Kanstinger and their atelier or the living pod of Archigram group represent another metaphor of the organ living space. However, Kasuba expressed how the vertical and horizontal "rigidity", the apparent neutrality of flat and unexciting surfaces suppress the innate activities of our senses, touch, smell, feeling the space without being guided by a rigid line in an orthogonal space. In the line of Kiesler anthropomorphic and evolutionary space, Kasuba generated a space like a mothering hut, the first contact with space in a not-hard touch. Live-in environment is a pioneer interpretation of the space as a feeling, without apparent structure, since the construction is diluted. Aleksandra Kasuba and Georges Peres "Especies d'espaces" described the space as a "bestiary", as a magical and intense interpretation of the diversity. Additionally, cohabitation tactic is based on the heterogeneity of the domestic space making experimental prototypes of topological cubes intended as the metamorphosis of the geometry and the user's needs (De Jorge-Huertas, V. and De Jorge-Moreno, J; 2018). In this heterogeneity, we could find the key point to colonize the existing environment to create a more living one based on architectural parasites.

In the same contour, soft spheres are a reference in the "Womanhouse" by Shapiro in 1972 and the doll's house by the Norwegian writer Henrik Ibsen (UNESCO) in 1879. Ibsen came up with freedom and broke the traditional conception of the Victorian house in Norway two hundred years ago. Ibsen's play questioned the traditional roles of women and men in XIX century. Ibsen wrote two centuries ago: "A woman cannot be herself in modern society. It is an exclusively male society, with laws made by men and with prosecutors and judges who assess female conduct from a male standpoint". Has society changed since then in a proportional way according to the two hundred years that have passed by?

Figure 5 in mono-color shows a possible completion of the cohabitation stratigraphies following the proposed approach. It shows a static moment of a dynamic and growing line that has been explained throughout the article in every four different phases. It takes into account the common ground stratigraphies, the new vernacular stratigraphies, the rhythms of the human being as the basis for the new habitats and the collective atmosphere surrounding each stratigraphy.

5. Discussion: Comparisons and evolved phases

The cohabitation eco-stratigraphies, focus on the ecology and the experimental hybrid habitats are based on four phases. The first one is centred on the new vernaculars, on the line of Rudofsky non-pedigreed architecture and Alison Smithson's theory about mat-buildings as the characterization of the anonymous collective, where the functions come to improve and enrich the structure. In the mat hybrid buildings as a cohabitation tactic the individual acquires new freedoms of action through a new shuffled arrange based on interconnections, 'close-kit patterns of association' as Alison Smithson defines, and possibilities for change as growth or attenuation and transformations. The tactic is based on these mat-spaces as a continuous permeability and studies of the common spaces as patios, Kasbah structures, street in the sky and constellations of squares.

The second one is the cohabitation and the collective: the collaborative housing in all its models and possible variables, from retrofit models to new build cohousing options. Focus on the "Architecture and Participation" of Giancarlo De Carlo (1970) and Doina Petrescu et al. (2005) referring to the clients, user and designers when talking about individuals, Petrescu exposes how "Driven by desire, participatory design is a 'collective bricolage' in which individuals are able to interrogate the heterogeneity of a situation, to acknowledge their own position and then go beyond it, to open it up to new meanings, new possibilities, to 'collage their own collage onto other collages' in order to discover a common project. As in bricolage, in participative projects, the process is somehow more

important than the result, the assemblage more important than the object, the deterritorialisation more important than the construction of territories". Ostrom's theory focuses on the participative process, as Valeria Fossati Bellani, Domenico De Massi and Giancarlo De Carlo did in Terni (De Jorge-Huertas, 2018c). Tatiana Schneider and Jeremy Till theory or Ralph Erskine in Newcastle. Erskine creates a neighborhood in collaboration with the residents. Erskine and his team design a human-scale great wall housing, a city in a building. The cooperation or the project based on the commons.

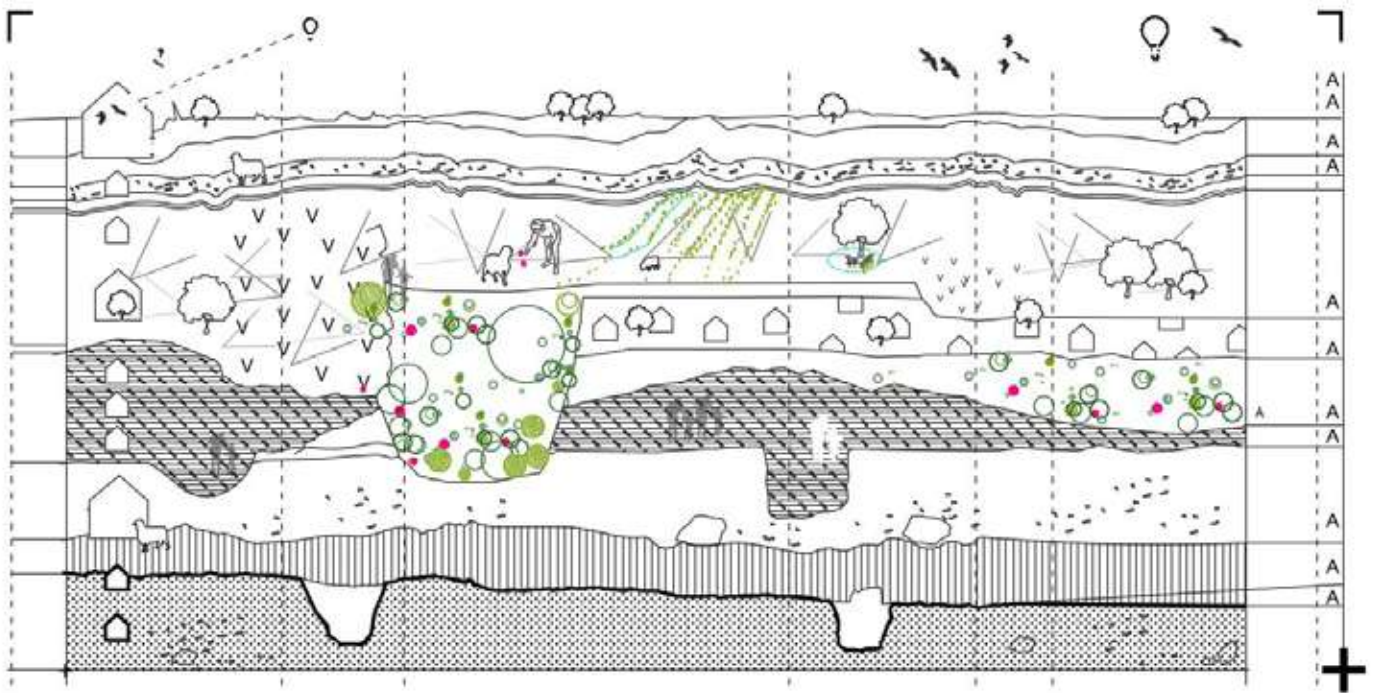


Figure 5. Co-habitation Stratigraphies and Eco-infrastructure in process.
Source: Own elaboration.

The third phase is the sum of the co-habitation stratigraphies and the common ground. The 'hanging gardens' based on the Babylon gardens as a cohabitation strategy between architecture and nature. Stephanie Mary Dalley, well known for her investigation into the Hanging Gardens of Babylon, explains how these wonders were not found in spite of far-reaching archaeological excavations. In her 1994 research "Nineveh, Babylon and the Hanging Gardens: cuneiform and classical sources reconciled" published in the British Institute for the Study of Iraq, she describes the Hanging Gardens of Babylon, as one of the Seven Wonders of the world in Classical tradition. She argues how they were not only awe-inspiring not merely for being raised upon vaults, creating an architectural masterpiece, but also for an innovative system for watering the gardens. As a result, the Hanging Gardens of Babylon are an example of a pioneer and innovative hybrid between architecture, landscape and ingenious engineering.

The fourth phase is centered in the cohabitation stratigraphies and living environments such as the 'flexible domesticity into adaptable structures' understand as a holistic approach to the search for flexible open systems and infrastructures to support new living concepts (De Jorge Huertas, 2018). In the begging of 1980, in Japan were the citizen-led neighborhoods or Machizukuri live with other cohabitation urban systems, Kazuyo Sejima's Platforms I and II were designed in this country arguing for a dynamic space. These platforms built in Katsuura in Japan were a response to the Toyo Ito "Pao". The Platforms seem to be thought by Kazuyo Sejima as a response, they were the opposite, a space of movement, a space designed as a matrix, a mixed use, if different space arrangements were required for the users. It's not an overflow. This platform was designed as an opposition to the traditional domestic space: rigid and static, silent in its walls. Sejima explained how each platform was an attempt of its own for the time "create a locality". A locality created in synchronization with numerous activities, movements and routes. This concept was called by Sejima as "Platform". She explained how the starting point of the projects was to take into account the structure. This structure was the definition of a dynamic space, a structural framework later related to more specific functions as a 'cohabitation tactic'. A cohabitation eco-stratigraphies platform to develop ecology and experimental hybrid habitats in participation with the future users.

6. Conclusion

The Co-habitation stratigraphies are the starting point and the suitable infrastructure for a variable content, an evolutionary habitat. The architectural parasites are the way to colonize the existing structures to generate the cohabitation stratigraphies. According to the four-phases developed in gradual scales: from the common ground, new vernaculars, collaborative housing to different living environments. A specific case-study could follow the line of the Andel model applied to existing buildings, a housing cooperative system in an assignment of use by adapting it to the context and conditions of the countries with the low level of social housing. For example, by focusing on the intergenerational co-housing. Some approaches to medium-rise high-density of intergenerational cohousing are being developed in Southern Europe as "La Borda" in Barcelona or the "Entrepatisos" housing cooperative in Madrid.

7. Acknowledgements

This research is supported by the Spanish Ministry of Education, Culture and Sport (MECD) under 4-year excellence pre-doctoral contract [FPU MECD 2015/00791]. Thanks to A. Paradiso for his English final revision. This article is based on the third part of the ongoing Ph.D. research on experimental collaborative housing and its collective intermediate spaces.

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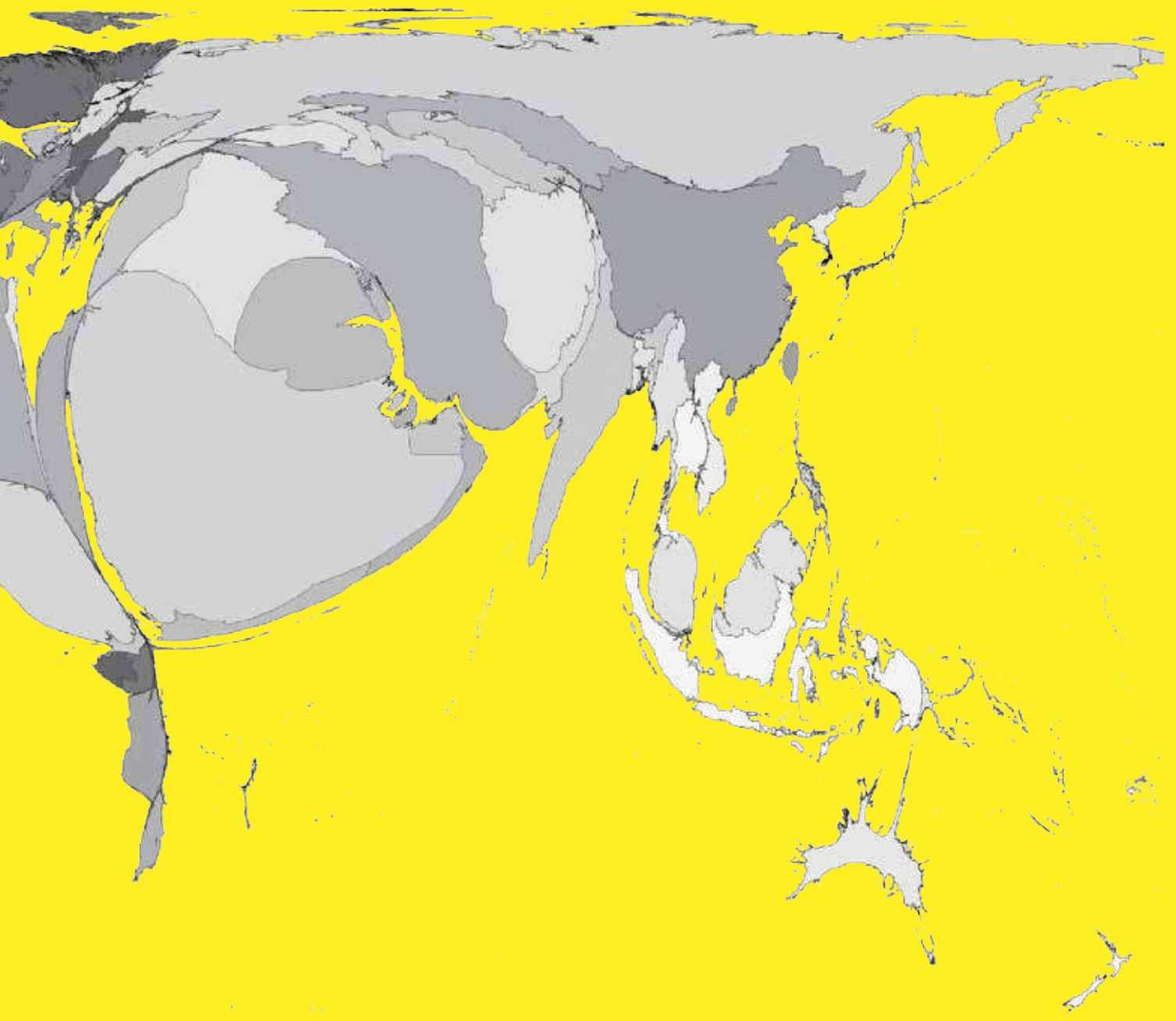
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[energy]

The world has **53.3 years** left
before current
oil reserves run dry

[bp.com]



Map 312 'Energy depletion' © worldmapper.org

The transition from a fossil fuel energy base towards renewable energy sources and broader energy saving, are among the greatest challenges for contemporary cities. The energy transition is also creating new spatialities which are yet to be acknowledged, defined, speculated and envisioned upon. The use of renewable energies is producing new scapes at different levels, and with different impacts. Therefore, it's a challenge for the next generation of researchers, to define new spaces of co-habitation between new and old energies and between new and old spatialities. Papers that deal with theoretical and philosophical issues of energy in different contexts, based on the three pillars energy and urban settlements, energy and landscape, energy and buildings - are invited to participate to the session.

[ENE/01]



Renewable Energy and Spatial Planning in Albania: Can Spatial Plans be the promoters of new energy systems in Albania?

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Permanent Workshop on Territorial Governance

abstract

The pressure from climate change and global warming has had impacts also on planning systems and practice. The necessity to adapt to new conditions, and the sought of promoting sustainable development and resilience is also re-shaping planning practices in different countries. Lead by a comprehensive and integrated approach in planning, energy, and more so renewable energies have become subject of spatial plans at different levels.

In similar conditions is also the Albanian planning practice and system. The later has changed over the last decade from a regulatory urban development approach to a more comprehensive and integrated one. Over the past 4 years a great activity has been seen in the Albanian planning practice with three national spatial plans being drafted and approved (GNTP, ICSP coast and ICSP Tirane-Durres) as well as over 41 General Local Plans being in the process.

Most of these plans do include measures for energy as well as renewable energies. Thus the aim of the paper is to firstly analyze the way that these plans deal with energy issues, and secondly the ways they can incorporate renewable energy policies. The methodology will be based on content analysis of the three plans at the national level as well as 5 General Local Plans which have been drafted and approved for a period of over 1 year. The content analysis will be followed by a series of interviews with different actors. In the end, a series of recommendations will be given which aim at improving planning practice with regard to the renewable energy sector.

keywords Spatial Planning, Renewable Energies, Energy Transition, Climate Change

1. Introduction

Albania, over the last decade has seen an increase in climate change related events with serious and significant impact. Flooding hits most part of the year in the Western part of the Country, whereas hot summers are creating drought problems every year. While there is a general agreement regarding the need to adapt and mitigate to hazards and climate change, this has to be seen in the context of the major changes in the Albanian planning system over the last years.

One of the main policy areas where planning can play an important role in tackling climate change is Energy and the transition towards renewable energies (Davoudi, 2009). Spatial Planning systems if taken in a broader sense can support energy transitions through different aspects ranging from a regulatory action, projects and new design as well as through collaboration and processes. Thus the ability of the planning system to serve as a promotor of adaptation and transition can be an interesting topic of research, especially in countries such as Albania which do have a high potential of renewable resources but limited financial capacities to directly implement projects.

The case of Albania becomes interesting also due to the high magnitude of activity in the planning system in the Albanian system over the past decade. Worth to mention, that only over the last four years, three plans of national importance have been drafted and approved, while 44 out of 61 municipalities have or are concluding their General Local Territorial Plans (AKPT, 2018). The "Europeanization" of planning discourse has also impacted the planning system and practice in Albania as now most plans do reflect "hegemonic" European/global terminology

(Allkja & Marjanovic, 2017) such as climate change adaptation, resilience, sustainability etc., however their operationalization remains questionable.

Based on the above, the aim of this paper is to analyze how the renewable energy policies are being promoted in the Albanian planning framework and the possibilities that the latter can serve as a promoter for renewable energy. The paper will firstly discuss through a literature review the links between climate change, renewable energy and planning. Then it will delve into the discourse analysis regarding three plans in order to see the way that climate change issues and renewable energies are treated across three different planning scales. The General National Plan, the Integrated Cross-Sectorial Plan for the Economic zone Tirane-Durres and the General Local Territorial Plan of the municipality of Tirana will be discussed. A series of semi-structured interviews with planners at the NTPA and the municipality of Tirana have also been conducted in order to support the evidence base and the argumentations behind the plans.

2. Climate Change and Spatial Planning

Planning a low carbon future is one of the main challenges for planners worldwide albeit in developed or developing countries. The increased frequency of extreme weather phenomena such as flooding and droughts as a consequence of climate changes is reshaping territorial and planning challenges. As such, spatial and urban planning is considered as one of the disciplines with the greatest ability of devising policies, rules and measures for the mitigation and adaptation of climate change challenges (ECTP-CEU & TCPA, 2016). As a socio-political process where decisions are taken in a democratic manner planners have powerful tools in reducing the demand for fossil fuel energy and so reducing carbon emissions. Nevertheless, although the role that planning can play with regard to mitigation and adaptation has been articulated, the tools and techniques for achieving this aim are yet to be operationalized and implemented in such manner that tangible results can be visible (Witberg & Zinger, 1999).

Climate change challenges are spread across different territorial scales and sectorial challenges, thus in order to create an overarching and comprehensive approach it is important to coordinate institutional initiatives and strategies from a sectorial and cross- sectorial perspective. All of these actions (policy, regulatory and territorial) do have important spatial dimensions, hence the role that spatial planning can play is central (Biesbroek, et al., 2009).

Planning plays an important role both in mitigation and adaptation measures. According to the IPCC mitigation is defined as 'Technological change and changes in activities that reduce resource inputs and emissions per unit of output... implementing policies to reduce greenhouse gas emissions and enhance sinks' (IPCC, 2012, p. 962). On the other hand, adaptation is defined as 'initiatives and measures to reduce the vulnerability or increase the resilience of natural and human systems to actual or expected climate change impacts' (IPCC, 2012, p. 954)

The configuration of cities and the ways in which land is planned, used and developed impact adaptation and mitigation measures (Davoudi, et al., 2009). In addition, different authors say that although planning is an important role in the mitigating and adaptive measures still its role has been limited (Bulkeley, 2006) (Campbell, 2006) (Halsnaes, 2006). This fact is interesting as most mitigation measures aim at the reduction of emissions and the switch from fossil towards renewables bases of energy, while on the other hand, according to Owens (1990) over half of the energy consumption in the developed world is related to the distribution of land uses.

Therefore, governments at different levels, and especially spatial planners, are strategically positioned as major actors in dealing with 'energy transitions' and mitigation measures with regard to climate change (Coutard & Rutherford, 2010). As such the planning approach needs to be taken across different territorial scales and policies should be geared both at the macro and micro levels. However, according to Witberg and Zinger (1999), most measures are mainly limited at the micro scale, ie buildings, while Stremke and Koh (2010) define energy transition, thus the "provision of clean, affordable and reliable energy" as one of the greatest challenges for achieving sustainable development. Hence energy transition may include but not limited to, the promotion of energy efficiency in existing or new buildings, promotion of renewable energies at different territorial scales as well as the coordination of action between different institutions and actors at different levels (Coutard & Rutherford, 2010) Energy transitions, can be promoted through a variety of measures including the enhancement of discourse on the topic, the preparation of a variety of policies that aim at promoting new renewable energies (Davoudi, 2009) as well as policies that promote energy efficiency at different scales; the planning of new/future urban (and rural) settlements with such configurations and typologies that promote and satisfy the needs for increased use of renewable energies (ECTP-CEU & TCPA, 2016); the promotion of new rules and regulation that aim to shape a better built environment (Davoudi, 2009) as well as through direct projects implementation that support and serve as best practice for future developments.

3. Albania and Climate Change

Albania according to SIDA (2011) is considered as one of the most vulnerable countries with regard to climate change risks. USAID (2016) enforces this issue by raising the fact that by 2050 temperatures are expected to increase from 2.4°C to 3.1°C resulting in more extreme weather events including floods, droughts and an increase in sea levels on the coastal side.

According to Ministry of Environment (2016) the largest contributor of CO₂ emissions is the sector of energy and transport. Besides this fact, the contribution of the energy sector has been increasing over the years as shown in the below graph:

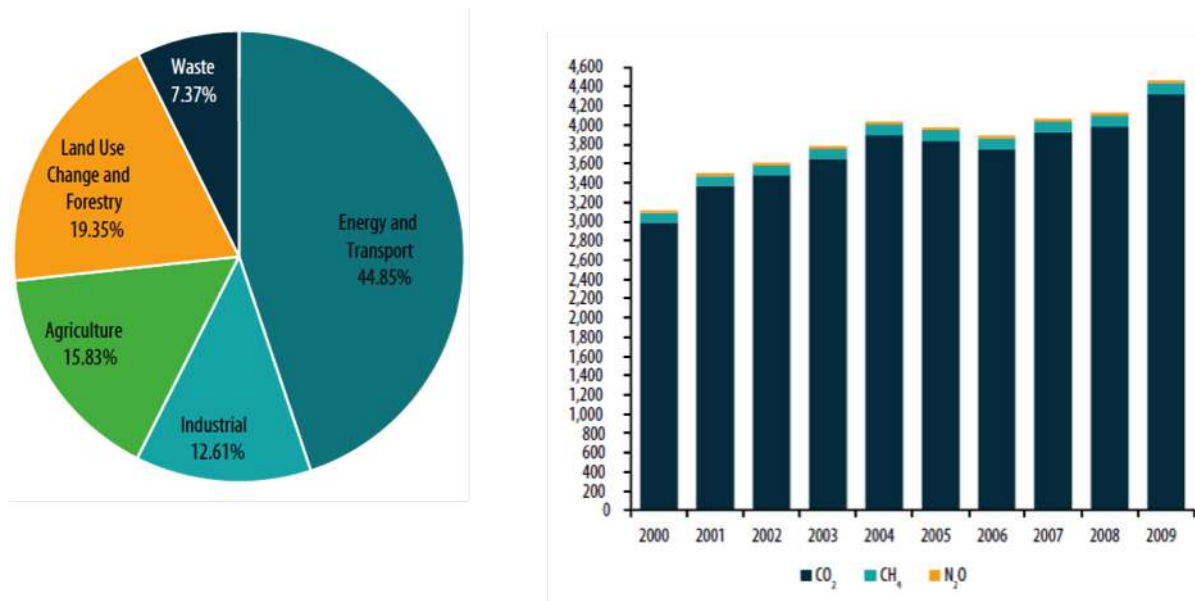


Figure 1- Energy Sector contribution in CO₂ (Source: (Ministry of Environment, 2016))

On the one hand the energy sector is the main contributor towards climate change but on the other hand it is also one of the most vulnerable sectors as well (USAID, 2016). Over 90% of energy production in Albania is through hydropower thus there is a high reliance on climatic factors such as precipitations (Ministria e Zhvillimit Urban & AKPT, 2016). In addition, over the last years, an increase in small hydropower plans construction has been seen in Albania with over 350 small hydro-power plants planned (Ministria e Zhvillimit Urban & AKPT, 2016), some of them already constructed while others are on the pipeline. The latter, besides increasing the reliance on water, has also different impacts on climate change. These plants do alter the water regimes as well as the environment surrounding them. Being developed in a country with low capacities in the implementation of environmental policies (European Commission, 2016) and with peculiar environmental impact assessments these plants are also becoming a threat for the local ecosystems.

A diversification of energy production is necessary in the country for several reasons and a necessity also in terms of mitigation and adaptation measures for climate change. The heavy reliance on water will be affected by the changes in precipitation regimes, possibly resulting in less water availability. In addition, especially during the summer, droughts are expected to increase, leaving the country vulnerable to large energy imports (Ministry of Environment, 2016). On the other hand, maximal precipitation values have increased over the last decade because an increase in the intensity. This trend is expected to continue and increase in the future causing greater flood frequency in rainy seasons such as autumn, winter and spring (ibid).

Water precipitations impact the supply side of energy, but the changes in temperatures are also expected to impact energy demand with the risk of creating a greater imbalance between the two. Higher temperatures are expected to reduce energy demand for heating in the winter but are expected to increase energy demand for cooling in the summer (ESMAP, 2009). The fact that supply is expected to be lower and demand larger will increase the imbalance and create large problems in the system. In addition, increased temperatures have also large impacts on transmission and distribution lines by reducing their efficiency. This type of infrastructure is somewhat outdated in Albania and it is estimated that 15-20% of energy is lost through these lines (Ministria e Zhvillimit Urban & AKPT, 2016), thus with the increase in temperature the inefficiency of the system is expected to increase even more.

Lastly, the areas which are expected to be heavily impacted by climate changes are situated on the western part of the country (Ministry of Environment, 2016). These areas are expected to face increased sea levels, increased

frequency of flooding as well as increased droughts during the summer. The latter is a problem in agriculture due to the fact that these are also the most productive areas in the country. In addition, most of the population, and the largest urban centers are situated in this part of the country. Being developed in a chaotic and unplanned manner (informal) over the last three decades (Aliaj, et al., 2010), their spatial configuration is inefficient and not prepared to face the enormous challenges of climate changes.

4. Territorial Planning and Renewable Energies in Albania

Over the last decade the spatial planning system in Albania has seen drastic changes (Aliaj, et al., 2014) (Ministry of Urban Development, 2014). Coming from a strong regulatory and “urbanism” approach, typical of many former Eastern Bloc Countries, in 2007 a “reform” was initiated with the aim of changing the approach and the system as a whole (Toto, 2012). Ever since, the country has moved towards an integrated and comprehensive approach in planning (Toto, 2012). New legal framework, institutions and planning instruments have been prepared which are expected to operationalize the new system (Ministry of Urban Development, 2014). Besides the initial challenges and difficulties of establishing the new approach, now the activity in planning has increased and the system has started to produce its first results.

A clearer hierarchy of planning instruments has been put in place with the General National Territorial Plan being at the top of the pyramid (Kuvendi i Republikës së Shqipërisë, 2014). The GNTP can be complemented and further detailed through (cross) sectorial plans and detailed national plans for areas of national importance. At the local level, planning authorities can and are expected to guide and accommodate development through General Local Territorial Plans, sectorial plans and detailed local plans (ibid). The change in approach from a purely urban perspective towards a comprehensive and integrated approach assumes that the plans are coordinated among sectors and spatial scales (Toto, 2012). National policies are expected to be taken and further detailed by local ones whereas a large degree of coordination and integration between the different sectors. Thus energy and climate change policies and measures are expected to be treated in the plans as well as they are expected to be coherent with other policies.

Over the last 5 years, activity in planning has seen a great increase. The GNTP drafting process was initiated in 2013 from the, newly created Ministry of Urban Development and the National Territorial Planning Agency. Although the planning process was primarily managed from the MUD and NTPA a large number of experts from different sectors of the line ministries have been part of the process (Ministria e Zhvillimit Urban & AKPT, 2016). This is the first plan of its kind for Albania, thus in this sense it marks a cornerstone for planning in country (Allkja & Marjanovic, 2017). The plan was approved in December through a Decision of the Council of Ministers no 881, date 14/12/2016, on the Approval of the GNTP (Decision of Council of Ministers, 2016). The vision of the GNTP is: “Albania, an integrated Centre in the European Economic and Infrastructure system, a Diverse and competitive economy within the Balkans, a state aiming at equality of access to infrastructure, economy and knowledge, Ensuring the protection of Natural, historical and Cultural heritage, with the aim of becoming an authentic Destination” (Ministria e Zhvillimit Urban & AKPT, 2016, p. 30). A series of objectives and policies are used to further detail the GNTP from different sectorial perspectives, including issues on climate change and energy.

The ICSP for EZ Tirane-Durres was initiated in 2014 and approved in 2016. The Tirane-Durres area is seen as one of the main economic zones in the country. The plan, although has a more economic development focus (Ministria e Zhvillimit Urban & AKPT, 2016b), touches upon different sectorial issues as well. The main vision of plan is focused on turning the Tirane-Durres metropolitan area into one of the most competitive regions in the Balkan, with a high quality of life and services as well as great environmental quality (ibid). The plan shall serve also for coordinating issues between the different municipalities in the planned area.

At the local level, out of 61 municipalities, 29 municipalities have approved their GLTPs, 4 are in the process of approval, 11 in drafting process and 17 waiting to start their drafting process (AKPT, 2018). One of the municipalities with an approved plan is also the Municipality of Tirana. The municipality has an ambitious plan to turn Tirana into a “kaleidoscopic metropole”, a vibrant place to live and work and an important future European urban center (Bashkia Tirane & Stefano Boeri Architecture, 2017). In order to compare the different approaches taken by central and local government towards climate change and energy transition, the below table represents the results from the discourse analysis of the three plans:

Table 1- Comparison of GNTP, ICSP Tirane-Durres, GLTP Tirane

Name of Plan	C. Change acknowledged	Mitigation Policies	Adaptation Policies	Link Between CC and RE	Plan Objectives	Plan Policies	Fiscal Measures	Regulatory Measures	Strategic Projects	Urban Form
GNTP	Yes- Take urgent action to combat climate change and its impacts (p28) Flooding (p209) Specific chapter of the plan on climate change. Provisions are general. Claim to mainstream Climate change policies but on a very general level (p211)	Yes- The plan offers "suggestions" at national and local level. No real division between adaptations and mitigation measures. Suggestions at national level are mostly for increasing institutional capacity. Suggestions at local level are mostly focused on the water sector and institutional capacity. No real measures to be taken, primarily focus on what Local Governments should do. (p211)		Partial- climate change impacts on water systems but limited link with energy (p29)	20% use of RE	-Diversification towards Renewable energy: (p145) -Map of RE potentials (p149); -promote capacity building in renewable and clean energies based on the Kyoto Protocol -0% energy import (p145)	NO	Partial- expresses that it is the duty of Local governments to enhance their regulatory frameworks, however main focus given to energy efficiency rather than renewables. (p145)	NO	No direct link- compact city as a norm
PINS Durana	Yes- respond to global challenges for tackling climate change impacts	Yes- Similar to GNTP. No division between mitigation and adaptation. Same recommendations as GNTP for national and local government. No Territorial measures. (p164)		Yes- only on energy efficiency (p153)	Energy efficiency by 50% (p59) Reduce CO2 by 25% (p60) 50% of public buildings energy efficient (p122)	Encourage RE use on different spatial scales; from decentralized districts to individual buildings; Through GLTPs, LDPs shall be promoted and planned areas for RE; RE restricted to individual solar panels and use of biomass (p143)	NO	NO	Y- only on energy efficiency	No direct link- Compact city; energy efficiency
GLTP Tirana	Yes- climate change as a challenge	Yes- "sustainable city" (p10). No real measures regarding mitigation and adaptation. Only discourse on climate change risks. Follow COP21 objectives.		No	No real objective on renewable energy. mentions high utilization of RE (p10)	Main aim- sustainable city with high utilization of RE (p10). Briefly mentioned regarding encouraging RE; greater focus on EI	NO	Y- only with regard to energy efficiency	Y- New Energy Corridor. Focus on wind turbines Elbasan-Tirane and Biogas central in rural areas. (p102)	Compact and Polycentric (p9) "an intensive city"

All three plans acknowledge the fact that climate change is the paramount challenge for the future of territorial development through a general discourse on the topics of climate change, its risks for the territory and primarily extreme weather events such as flooding. The GNTP makes a large reference to the third communication on climate change by the MoE, and most of its analysis are based on the later. In addition, there is also a convergence of the measures to be taken between the two documents. On a similar manner ICSP Tirane-Durres deals with climate change issues, while the GLTP of Tirana uses a more general framework regarding climate change. Their arguments are mostly normative, evidencing general challenges but not any specific issues related to domestic territorial features. Climate change comes across as an important issue in all three plans, however, when the policies and objectives are set, there is no clear division between mitigation and adaptation measures. This is not an objective in itself, however, enforces the above generalist approach and the clarity of discussion on climate change.

There is a missing link between climate change and energy transition. Although the two are discussed by all three plans their treatment seems that of a sectorial approach rather than an integrated and comprehensive one. Their only link (indirect), is through the reduction of emissions and through the proposed measures for energy efficiency. In fact, climate change is not even seen as a challenge also for the energetic sector, taking in consideration, that is a sector that relies heavily on water and precipitation. This issue, surprisingly is not taken up neither by the Strategic Environmental Assessments of each of the plans. Also in this case, the only (indirect) link between climate change and energy transition is through energy efficiency.

Although the three plans promote in form of discourse and objectives the use of renewable energies, they lack operationalization measures in order to achieve them. Thus in all three plans, there are no "fiscal" measures that could trigger the development of the renewable energy resources. In terms of providing regulatory conditionality, neither of the plans achieves or has adequate measures. Plans at the national level are relatively limited in terms of the new regulations they propose, while the GLTP of Tirana is limited only to energy efficiency at the building level. Through the regulative framework at the urban level the GLTP is focused primarily to the orientation of buildings and urban space in such manner to make better use of passive heating and cooling. In addition, these serves also as a basis for the promotion of more sustainable urban configuration forms.

Another method for promoting renewable energies is also through direct projects that can serve as best practice or examples that can be taken afterwards from the private. This is limited however only to one project from the ICSP Tirane-Durres which is aimed at energy efficiency in existing buildings. However, the project is only at the conceptual level as there are no detailed provisions neither there is a timeframe nor a budget for the project. The GLTP of Tirana also proposes a strategic project on "new energy corridor" (Bashkia Tirane & Stefano Boeri Architecture, 2017). The project proposes the installation of wind turbines along the Elbasan-Tirane highway as

well as biogas centrals in rural area (Bashkia Tirane & Stefano Boeri Architecture, 2017). Nevertheless, there are no timeframes, budget or any other measures for the project implementation. Thus said it bluntly, "only a wish list" but nothing concrete.

5. Conclusions

This paper has shown that there is an important link between climate change, renewable energies and spatial planning. The latter is well articulated in academic and professional discourses that can play an important role in terms of promoting a low carbon future, the energy transition as well as mitigation and adaptation measures. Internationally is also recognized that planning although has great potential in terms of offering a climate resilient future and achieving sustainable development is still very limited in action. Subsequently, planning can play an important role for the promotion of renewable energies and energy transition in general through policies, institutional coordination, regulatory frameworks and the promotion of sustainable forms of urban configuration. Three planning documents in Albania were analyzed vis-à-vis their measures with regard to climate change and renewable energy, with the latter being the main focus. The analysis shows that there is a general understanding with regard to climate change issues and promotion of policies to mitigate and adapt them. However, in all three plans, the integration among sectors seems somewhat limited, especially between climate change and energy issues. All three plans promote renewable energy uses, but this remains on general terms. There are no specific objectives, fiscal measures, regulatory frameworks nor any strategic projects which aim at the operationalization of the discourse.

Although it is not an aim on its own for spatial plans to do the latter, shows the difficulties of planning in dealing with energy transition issues. Mostly they are limited to urban form (in general terms) and to rules about energy efficiency, while renewables remain only at the discourse level. However, considering that the plans at the national level are the first of their kind in Albania, as well as the low experience on spatial and comprehensive planning from domestic authorities they are a good start for future development. These plans need to be further complemented with more "concrete" and territorially based objectives especially in terms of renewables.

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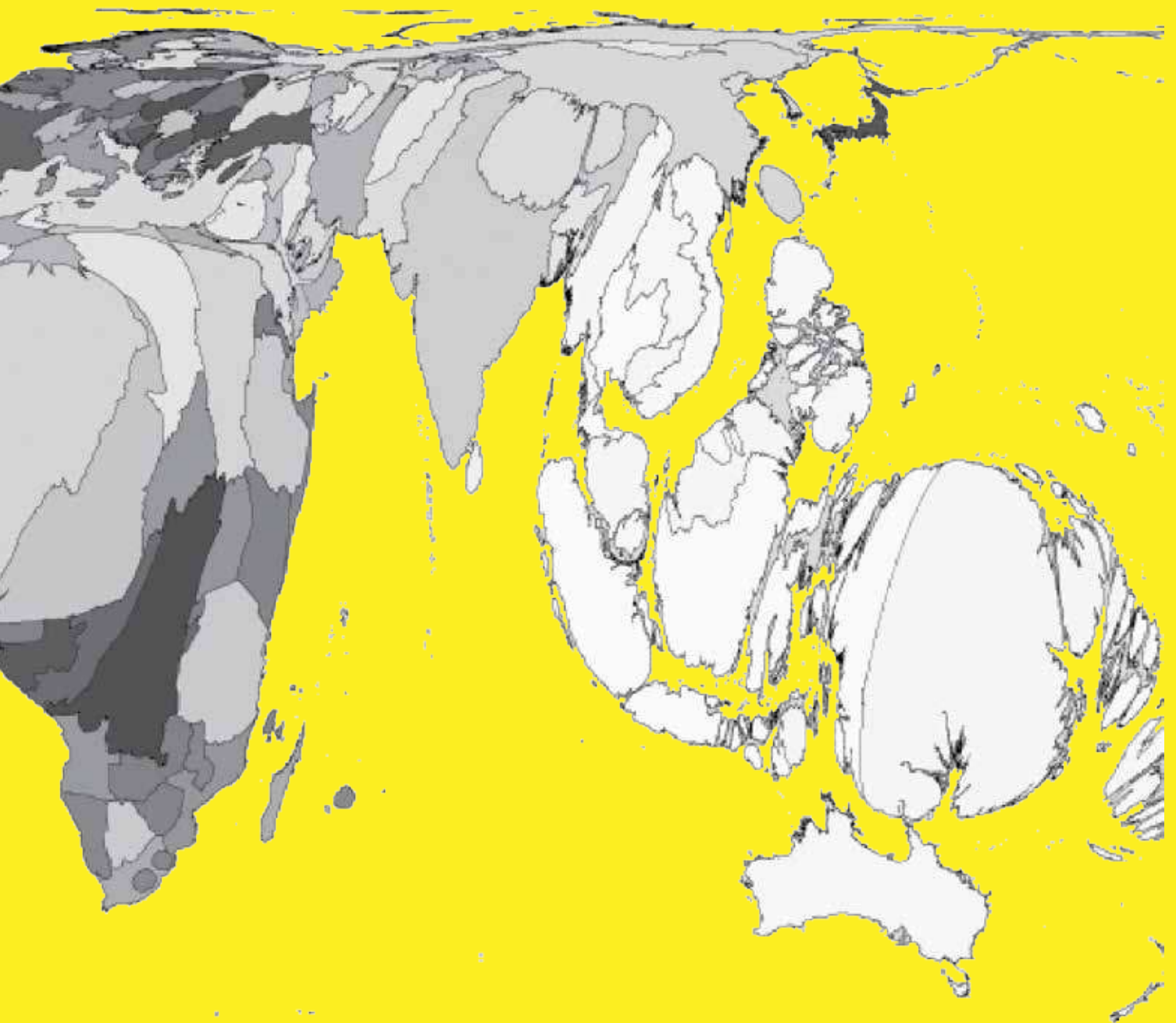
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[memory]

90% of the currently spoken
languages will have become
extinct by 2050

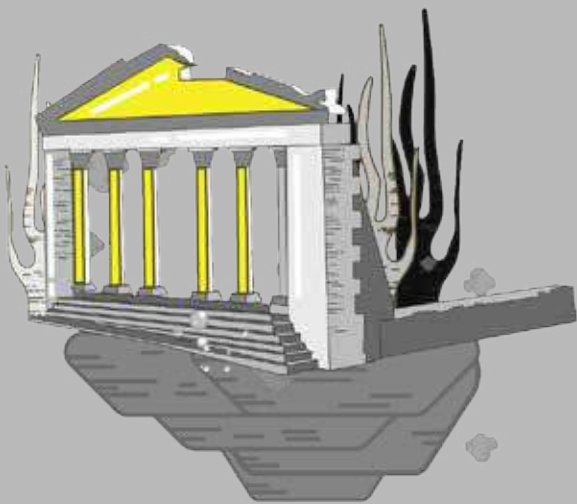
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Map 583 'Indigenous living languages' © worldmapper.org

The word memory has manifold meanings. Every territory has been transformed, modified, and corrupted by human intervention throughout the centuries. This condition raises the issue of different historical layers co-habiting in a given place and time. The topic has been widely discussed in the past, considering both extreme approaches: the tabula rasa and the exact replication of the past. This session stresses the need to define, within professional and academic practices, new interpretative tools, capable of harmoniously linking the past with future. Researchers are invited to contribute to this topic with relevant studies on innovative didactic, critical, and design approaches, whereby the traces of the past inform the future of design. Through creative tactics, memory can become the protagonist in architecture, city and landscape scenarios.

[MEM/01]



Regeneration Of Urban Space Through The Recovery Of Industrial Archeology. “Dinamo E Re” Former Plant Case, Tirana

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abstract

The main topic in this article is the research on regeneration of urban spaces through retraining inactive spaces in the city and generating, in certain settlements, a new urban tissue which can be not only material but also social. The aim of this article is to investigate on a series of strategies and designing instruments that targets the regeneration of urban areas that have lost functionality or never had one, causing this way the malfunction of an entire urban tissue.

The initial hypothesis is that through increasing the permeability, a minimal spatial transformation and creating several functions, which are consistent to the contemporary needs of the society, the image and the quality of the urban areas can be retransformed, affecting this way directly the perception of the society on a specific settlement.

The methodology followed to confirm this hypothesis will be based on the study of two cases of “industrial archeology” and also on extracting from them a series of intervention instruments (results), which will be applied then to a project. Conclusions will emerge from that specific project. So, they will emerge from an “in vitro” experiment and not by direct application of those instruments in a real context. This research is divided in two main parts: the first one investigates how two ex-industrial areas are recovered – “Le Albere” in Trento and a former industrial area in Roskilde, Denmark – and the source of instruments and intervention strategies; the second part will focus on the implementation of those instruments and strategies in a no-longer functioning industrial reality, such as the former “Dinamo e Re” plant in Tirana. Through the application of those strategies in the project of the former “Dinamo e Re” industrial area, the hypothesis put forth earlier should be verified. The importance of this research lies in the effort to provide solutions for those former industrial areas which have been included during such city expansion, but have lost their functionality, appearing this way as impenetrable and not anymore useful areas for the society and the city.

keywords Urban Space Regeneration, Industrial Archeology, City Expansion

Introduction

Urban regeneration is not just a requalification process of degraded areas. If requalifying means giving back or increasing the quality of a certain area within its boundaries, regenerating means building a new approach, a new way to behave of the settlement which includes and doesn't exclude, mixes and doesn't divide, breaks and doesn't build any spatial or social barriers. Purpose of the urban regeneration is activating different spaces within settlements which are no longer active or just remained like that since their beginnings. Certainly this goal requires not only an economic, but also an administrative effort. Even the society itself undergoes to certain transformations which orients it towards creating new rules, norms and values. The purpose of urban regeneration is not simply spatial. It seeks the entire renewal of the settlement by arising its aesthetic, functional and social values. Often, such regeneration not just increases, but also creates new values.

Over the past two centuries the western urban landscape has undergone a series of radical transformations that affected not only the social/economic/cultural sphere but also the spatial one. For nearly two centuries the economy was based on the production of material goods in various industrial areas, but since the 1970s the economy began to change basing its driving focus not on the production of material goods anymore, but on the production of intangibles ones¹.

To social changes came also the spatial transformations. Most of the spaces, which previously served to the capitalist production of material goods, came out of their original function and were abandoned. In the case of eastern states, abandonment came also consequently to the collapse of the socialist system where everything was

centralized in the hands of the state. Suddenly, very large areas were out of function, so as a consequence they created a drastic rupture in the urban fabric, especially after the demographic and also the housing construction boom. The current situation of inhabited centers in the European continent represents a significant amount of former industrial building, now out of function, and the actual city development is following two different directions. In his intervention at a conference held in Seoul on 20-21 June 2006, Franco Purini mentions the four processes that cities in the European continent are now facing:

"The first consists in the fact that these cities tend not to expand with the rhythms they had grown until recently. To a rapid and quantitatively significant expansion respond firstly a sensitive contraction in the number of inhabitants, many of whom prefer to move to smaller, less congested neighbors, and secondly a transformation from the inside, through a series of demolitions and reconstructions, re-development of unbuilt areas located close to the central ones, the use of brownfield sites and the arrangement of residual areas, as well many random settlement debris at the edge of the city's growth process".

This urban situation caused by the collapse of an economic system based on the production of material goods processed and fabricated by various industries, today represents numerous areas consisting of serialized out of function industrial sheds.

Methodology

The above-mentioned methodology will focus in a qualitative analysis of two urban regeneration cases, which are selected from a long list of interventions in former industrial areas and also taking into account some parameters, which will be explained below. Following case studies will be analyzed from the point of view of the context, of the intervention strategy and at the end, of the choices on the architectural design. In this phase of analysis some intervention instruments will be extracted from those former industrial areas, that for us will come as results (or lessons learned) and may be repeated if the same contextual conditions are verified. The final phase of this research will focus on an intervention project in the area of the former "Dinamo e Re" plant, where hypothetically the previously defined instruments have been applied (taking into account their critical analysis as well).

First place have been selected projects that try to reclaim former industrial areas of moderate size or dimensions. This is because the lessons learned from these cases will be hypothetically applied to a project of modest dimensions, as the area of the former "Dinamo e Re" plant is. Projects such as the Zeche Zollverein Mine in Essen, Kop Van Zuid in Rotterdam or the former industrial area in Bilbao, restored to function by the Guggenheim Foundation as a contemporary art museum, were left out of the analysis due to the large scale of intervention.

Contexts are also analyzed from these case studies. Determining factors in this analysis were mainly the position of the area in relation to the city (were selected cases where the former industrial area was located in the immediate vicinity of the urban center), the history that links the economic and the industrial activity to the city's social life, and the presence of physical factors (major infrastructure) that could act as a physical barrier between the city and the industrial zone.

Analysis of case studies has taken into account even if the regeneration of former industrial area envisages new residential areas as a complementary new function, necessary to create a new model of living that works in system with the existing facilities and new functions. Selected and analyzed projects are already implemented and this makes it possible to get the opinion of local actors (including of course the residents) about the functioning of the area and the quality of life after the regeneration intervention.

Study case 1 / "Le Albere" - The requalification and the regeneration of former "Michelin" industrial area. Trento, Italy

Project: RPBW - arch. Renzo Piano

Period: 2002-2016

Area: periphery of Trento, "Michelin" former fabrics

The context - urban framing

The 2002 "Le Albere" project of the RPBW studio (¾ of it already built), foresees according to the 2001 Trentos Regulatory Plan the intervention in a suburban area of the city, such as the former "Michelin" factory. The area extends south-west of the historic city and is bordered by two very strong elements for the city of Trento, the Adige River and the railway (fig. 1). The purpose of this project is to connect that piece of the territory with the river and the existing city itself, which has never considered it as a belonging part due to the exclusively industrial function and the railway, which always was a physical boundary between them. This aim is achieved through the recovery of some parts of the former factory, giving them a new useful function accordingly to current needs of the city of Trento and adding to this area a new residential block equipped with green recreation areas, which are directly connected with the Adige River, with service structures and cultural environments.



Fig. 1. "Le Albere" – Ortofoto of the urban context (Wikimapia)

The new urban fabric tries to establish a clear hierarchy between automotive, pedestrian, public or semi-public spaces, residential buildings and special buildings. As mentioned above, one of the main goals was to sew this fabric with the one of the old city. But the actual project doesn't achieve this completely, as the railway barrier still remains a difficult frontier to run, while the municipality of Trento has not yet completed the underpasses for this infrastructure and neither the pedestrian crossings that come to an end to the other side of the Adige River. Also, unfinished remains the boulevard along the railway and the road infrastructure on south of the complex. The most important access to the area passes through two points: from San Severino St. in the north and Mount Baldo St. in the south. In both cases, the access to the complex occurs through two very specific and very few frequented areas compared to the rest of the historic city.

The buildings, as part of this urban fabric, are initially developed in the east part according to linear typologies and in order to create first a dense mass along the railway line (by following the boulevard that will be realized in a second fase), and then developed in the west part towards the river park, creating blocks with an inner courtyard. Their distribution in the area is achieved in such way to concentrate the construction on the northern, eastern and southern edges, letting the west wing free and providing this way a direct link to the Adige River. As Renzo Piano Building Workshop also mentions: "The project favors a horizontal reading of the relationship between new buildings and open spaces thanks to the height of the buildings, whose rhythms and dimensional scale are comparable to those of the historical city and the pre-existing industrial activities"³, there is an attempt in the project to read the historical context of Trento and to reinterpret its urban fabric through its volumes and distances, through the elevations (4-5 floors) and the rhythm. Therefore other buildings with a special function have other typologies and are placed either at the beginning of the park or at the public squares, in order to function as attractive points for the residents of the complex and for the other citizens.

1 / It is emblematic the case of Guy Debord's studies, which clearly states, in his book "The society of the spectacle", that the capital has changed its objective today. It deals no longer with the gathering of material goods, but "...is proclaimed as an infinite collection of spectacles". In this book he emphasizes that today society rises no longer on material goods, but on visual ones.

2 / PURINI, F., *Le città innovative nel quadro della competizione globale. Il caso italiano*. Conference, Seul 20-21 June 2006. <http://www.francopurinididarch.it/testi/La%20citt%C3%A0%20nella%20competizione%20mondiale-II%20caso%20italiano%2008-07-06.pdf> (January 2016). "Il primo consiste nel fatto che queste città tendono a non espandersi più con i ritmi con i quali erano cresciute fino a poco tempo fa. A un'espansione rapida e quantitativamente notevole succede per un verso una sensibile contrazione del numero degli abitanti, molti dei quali preferiscono spostarsi nei centri vicini, più ridotti e meno congestionati, per l'altro una trasformazione dall'interno tramite una serie di demolizioni e di ricostruzioni, lo sviluppo di aree situate in zone anche prossime a quelle centrali, rimaste inedificate, l'utilizzazione di aree dismesse e la sistemazione di zone residuali, altrettanti detriti insediativi casuali ai margini del processo d'accrescimento della città."

3 / <http://www.karmarchitettura.it/2012/09/muse-museo-delle-scienze.html> (April 2018). "Il progetto privilegia una lettura orizzontale del rapporto tra i nuovi edifici e gli spazi aperti proprio grazie all'altezza degli edifici, i cui ritmi e scala dimensionale sono paragonabili a quelli della città storica e delle attività industriali preesistenti".

Program of the area and architectural project

The area of the former “Michelin” plant (established in 1927 and functional until 1997) was recognized by Trento residents mainly for economic reasons and of course employment, but still it never became an active part of the city. So, to make it participant to the lives of Trentinos citizens, after the recovery of the abandoned remaining parts and their conversion into a new organism, a series of topics had to be defined, as well as a clear program of functions, which is in fact suggested by the Directional Urban Plan. At this point, it is also up to the Public Administration to integrate the private initiative with public interests, to the best of the city as a whole.

The program of functions decided by the RPBW studio (suggested as mentioned in the Directional Urban Plan) is mixed. There are five main categories: public functions, exhibition functions, research functions, offices, services and commercial. Public functions include the open spaces of the “MUSE” Museum (Trentino Museum of Natural Sciences), public access areas, lobby lane, green itineraries linking “MUSE” to “Palazzo Albere” (villa-fortress of the XVI century, today the Museum of Modern and Contemporary Art of Trento and Rovereto), or even the Mediateca and the Library (Polytechnic Congress Center). The exhibition functions, located mainly in the premises of the Museum “MUSE”, are also partially developed in the former (already recovered) premises of the “Michelin” factory (fig. 2). The industrial structure, highlighted by the new sloping cover, responds very well to the exhibition needs of the museum. Research functions are intertwined with the study functions and are gathered around the laboratory premises, which are distributed in complex in such way to be partially accessible to the public as well. Offices are distributed in two levels in the complexes, giving a little privacy to this function. Service premises are mainly concentrated in the volumes along the railway line, which are even less suitable for residential, while commercial premises are located on the first floors of the rest of the residential buildings. The only exceptions are the first floors of the buildings directly linked to the large park. These will have private gardens, to provide a gradual privacy from the residential block to the public park.



Fig. 2. Ex “Michelin” plant, now “MUSE” museum.

Very important part of the program of “Le Albere” complex is the aspects related to water and greenery. Elements which are intertwined with the aspect of sustainability based on renewable energy and the use of technology. As mentioned above, the project tries to connect together the historic town and the Adige River through the former industrial area. All this as result of an Austrian project to build the railway line (mid-19th century), which forced the change of the river bed detaching it from the historical center and therefore, displaying the need for reclamation of the swamp area. So, the historic city of Trento has long since lost its relation with the Adige River. It is precisely this relation that the project of RPBW seeks to create, introducing the element of water (in the form of channels that collect the water and purify it through a process of fitodepuration and through shallow tubs, “water mirrors”) not only inside the housing blocks, but especially in cultural and recreational areas, transforming the water as a companion element from urban areas to the natural river area (fig. 3). The same mission is the greening system, which through use of specific trees and low vegetation seeks to visually and emotionally link

(east to west) the existing Trentos urban fabric with the former industrial zone, the recreational area of the central park, and at the end with the natural area of the Adige River. The technological aspect, which is strongly related to the sustainability of the project (the use of energy from renewable sources), is perceived immediately from the sloping roofs of buildings. Sometimes transparent (to create the greenhouse effect in the garden of “MUSE”) and sometimes partially or completely closed (where solar panels are installed), the coverings become the unifying element between the residential buildings and those with a special function. An underground geothermic system, located beneath the public buildings, also collects clean energy and distributes it to the rest of the complex. For the realization of these power systems are also engaged local companies such as THESAN (company from Turin) and thanks to this cooperation LEED Certification and Casa Clima have been achieved. Renzo Piano chooses to use longlasting materials in the project, also giving a priority to wood, as a local material: “Using wood is already an intelligent business, not just because we are in Trento⁴”, he says.



Fig. 3. “Water mirrors” inside the housing blocks.

Discussion – “Le Albere” case

“You’ll live in the historic center and you will inhabit the technology center.
 You’ll have the solidity of the brick with the brightness of the windows.
 You’ll leave the house and you will be in the center.
 You’ll leave the house and you’ll look to be at the park.
 You’ll find quality, you will not look for parking.
 You’ll have a real good refuge. Because it will be the safest house in the whole city.
 You’ll breathe culture, not smog⁵”.

With this “poetry” RPBW, studio of Renzo Piano, presents in July 2013 the new project of “Le Albere”, which through the reuse of former structures and the industrial area of the “Michelin” plant, wants to give an example of a contemporary urban regeneration in a city like Trento, which (with about 117,000 inhabitants) for the first time sees an urban intervention of these dimensions and this prestige. Four years later the project (unfinished in the southern segment) still shows some problems. Except objects with a special public function, such as the museum, the library, the mediathec or the hotel, the rest of the complex is facing the phenomenon of disregard (30 apartments sold out of 304 in total).

4 / http://www.casa24.ilsole24ore.com/art/mercato-immobiliare/2013-07-05/trento-finiti-lavori-albere-190010.php?refresh_ce=1 (article of 07/07/2013; April 2018).

5 / <http://godsavescities.weebly.com/blog/archives/08-2015> (article of 25/8/2015; April 2018). “Vivrai il centro storico e abiterai il centro tecnologico. Avrai la solidità del mattone con la luminosità delle vetrate. Uscirai di casa e sarai in centro. Uscirai di casa e sembrerai al parco. Troverai qualità, non cercherai parcheggio. Avrai un vero bene rifugio. Perché sarà la casa più sicura di tutta la città. Respirerai cultura, non smog”.

As the architect Alessandro Franceschini points out in his article "In the ghost district of the archistar" in the Architects of Trento newspaper, one of the reasons of the failure of this project is the non-consideration of the genius loci of the place: "[...] one of the locations less hospitable of Trento valley, located just below the slopes of Monte Bondone, where the sun sets well before the natural end of the days [...]"⁶ and this makes that area less desirable by locals. This has probably been the reason why the area has historically been destined for industrial activity.

Even with the declared will of the municipality in guaranteeing the cooperation, in the final stage it fails to complete the necessary infrastructure interventions, so the project fails to completely connect with the existing part of the city, leaving it still in extreme situation. The high standard of apartments, and consequently their price, does not make them affordable by the average layer of Trentos, which is also the layer that forms the pervasive part of the population. The mixity of functions in the complex is not achieved, due to the high property prices and the unfair taxation of the activities by the municipality⁷ (taxing it as activities in the city center, while the complex still remains "isolated" from the existing part of the city).

Study case 2 / "Ragnarock" – The transformation of a former factory in a youth cultural centre. Roskilde, Denmark

Project: MVRDV and COBE

Period: 2014-2016

Area: Roskilde, Denmark

The context – urban framing

The city of Roskilde is quite famous for "The Roskilde Festival", a favorite destination for any rock fan. Its history, as the largest cultural festival organized in northern Europe, dates back to 1971. The festival itself is a non-profit organization, to which the folk high school Roskilde Festival Højskole joins as a structure. This school is known for its alternative teaching methods. Students and pedagogues live and study in the same place. Part of the program of these two entities is also the sustainability. They both are committed in guaranteeing clean energy for their needs, to be active in recycling waste, to consume as little as possible drinking water, to eat organic products and to inform and engage new people about environmental problems⁸.

Musicon is the area where the cultural complex is located. This area has a long history, as the "Unicon" cement factory was located there, which was moved elsewhere, leaving a number of industrial structures that were not used anymore. Buildings with different typologies make this area very interesting, giving it an informal character, suitable to activities that deal with creativity and entertainment. This is exactly what it takes to Musicon to convert itself into a new innovative and creative area for the city of Roskilde. This implies a constant and dynamic growth of urban density and quality of life, providing within the area a wide range of activities and events for different social layers.

The position of the area is between the urban center of Roskilde and the recreational area, where the famous festival is organized. Its south limit is the highway, the northern and western one is the railway line (Fig. 4)⁹. The functions in the area are summarized in several educational institutions of different levels, a research center, green and recreational areas as well as other industrial buildings. Other areas, in the western and eastern borders of the unit, are mainly residential areas, recreational ones, greenery and sports.

Master Plan program and architectural project

The project was requested by Danmarks Rockmuseum, which also organized the international contest for the transformation of the former "Unicon" cement factory into a multifunctional creative hub. The client, in this case, demanded that the informal character of the area and former industrial structures was preserved, as they still continued to be used by artists, skaters and musicians. This was a mission which intended to organize (setting a hierarchy and structure) something that essentially was "free", creative and informal. But how? The designers' idea was to create a formal contrast between the existing industrial structures and the new volumes that should basically be placed on them. The complex, as a whole, had to connect to the main road, turning finally "Unicon" into Musicon.

The Master Plan foresees the transformation of 45,000 m² of land into a high density neighborhood, which will include 8,000 m² of land that are currently a former factory. All of these will be organized around a public square that will continuously organize various cultural events. The old industrial halle will be restructured, allowing large openings for the light, but will nevertheless retain their rough character. The new obtained spaces will be connected to each other and a portion of them will host the new volumes of ROCKmagneten, while the rest will remain undetermined, according to the temporary activities or exhibitions.



Fig. 4. Former "Unicon" cement factory (now Musicon). Ortofoto of the urban context.

Over the existing volumes of former industrial halls will be built three main units: the ROCKmagneten (11,000 m²), which includes the Danish Rock Museum (3,000 m², completed in the first phase in 2014), the Roskilde Folk-school Folklore (including some housing units for students and pedagogues) as well as the Roskilde Rock Festival's headquarters. All of these new units will function in a common program system, which will converge into the main public square (fig. 5).

The Danish Rock Museum is the first part which was built by the project and the most representative one. It is a simple-looking volume with a 20m cantilever that covers the entrance where visitors access the ticket and the main lobby. The designers have conceived this moment of entry to be experienced by visitors as if they were a rockstar, reaching there with the limousine and immediately breaking into a red carpet. What makes this volume special is that it is entirely covered with aluminum plated pyramid in gold colour. The Roskilde Festival Headquarter is an office block shaped as a giant loudspeaker box, completely worn with black rubber. Frequent holes on the façade are occasionally real loudspeakers, which are used to spread the music across the principal square. The entire volume will again rely on one of the industrial halles, fulfilling thus the contrast sought by the projectors.

The Roskilde Folk-school Festival will be placed in one of the industrial halles and will contain classrooms, study halls and the relaxation area, all arranged perimetrically and creating a central space similar to a firebox. The third volume placed on the hall will be a circular volume of three floors, where 80 double rooms will be set for school students. The main idea is for the school to create different environments depending on the activities. For example: the MIND – writing, thinking, debating, leadership; the BODY – dance, music; the HAND – visual arts, architecture, design (fig. 6)

For the designers one of the goals (according to the customer's request) is also to create a "green machine" that will work based on the combination of already tested technologies. Along with Arup engineering, Wessberg engineers, LIW Planning Landscape Architects and Transsolar, MVRDV and COBE have structured the vision of the Roskilde Festival's environmental and energetic project.

6 / <http://dovelarchitetturaitaliana.blogspot.it/2014/11/le-albere-trento.html> (article of 30/11/2014; April 2018).

7 / <http://www.lavocedeltrentino.it/2018/01/13/le-albere-trento-un-quartiere-ancora-cerca-identita/> (article of 13/01/2018; April 2018).

8 / <https://www.roskilde-festival.dk/more/sustainability> (Aprill 2018).

9 / <http://wikimapia.org/#lang=it&lat=55.628081&lon=12.082268&z=17&m=b&search=roskilde> (Aprill 2018).

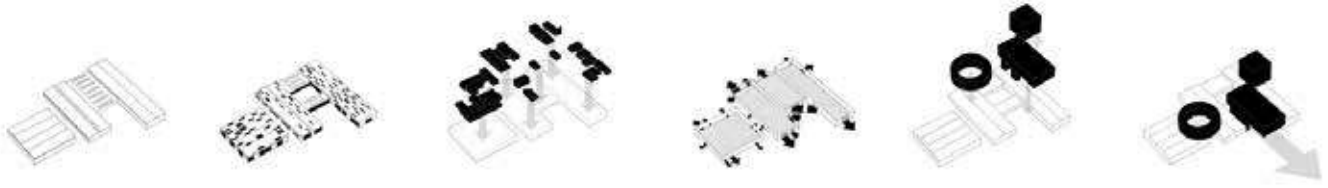


Fig. 5. The former "Unicon" transformed in "Musicon" ROCKmagneten.



Fig. 6. Images of the ROCKmagneten complex.

The whole complex, according to MVRDV "[...] is the translation of rock music into architecture; the energy, the defiance, the statement. Loud and in your face! [...] It's not just the look though. The relationship between Ragnarock and the original halls creates spaces that will breed a new generation of rock stars in a hugely creative environment¹⁰". The experience of space and architecture starts from the red carpet, continues with the climbing to the fame through the golden volume that is suspended in the air and at the end, the inevitable descent towards the bar area occurs. Every space is accessible to everyone and offers not only physical openness, but also freedom of communication and interaction, which is interpreted more in terms of creativity and comprehensiveness. The aim of the Ragnarock is to turn into a catalyst for regeneration and further development.

The layered structure (industrial archeology and new volumes) and the program of functions are intended to gather other complementary entities that would give an added value to the area. Regarding to this, architect Karsten Ifversen sees the complex as a contemporary cathedral and in the Danish Politiken magazine he says: "This is how the cathedrals were built in the past; in unknown areas. You built them in the middle of nowhere and then the city emerged around them". The principles of regeneration and restructuring of the area are based on six points and main stages: 1. Reserve; 2. Preserve; 3. Densify; 4. Mix; 5. Share; 6. Activate (fig. 7).

Results – Lessons learned from both cases

Based on the results of the above cases, the authors, also relying on the commons in processing the text, think that these are the steps to be taken to regenerate a certain area of industrial archaeological character:

- Identification of the former industrial zone in relation to the city.
- Identification of former industrial facilities that still carry architectural values or collective memory values.
- Analyzing the character of the area and evidencing the potentials.
- Identification of a main function/factor that would allow the reuse of the industrial structure and would complement the program level for the macro area (according to the spatial plan/regulatory plan).
- Completing this function in masterplan level with complementary functions and linking them to an urban system (an intervention strategy).
- Maximum involvement of local actors in order to have their direct and further interest.
- Guaranteeing the support of local government institutions to complete the connection infrastructure.
- Guaranteeing the support of local government institutions to intervene in relation to the functional program of the structure.
- Guaranteeing a mix of functions (including housing) and services for different social strata.
- Improve the urban fabric by placing hierarchy between the elements and improving the links between them.
- Improve accessibility and guarantee public spaces with temporary or final use.
- Reshaping the industrial structure in line with the genius loci of the place and ensuring the full inclusion of residents and other users.



Fig. 7. Principles of regeneration for the "Maicon" ROCKmagneten area.

Hypotetical Project

The recovery of the former "Dinamo e Re" plant and the regeneration of the area. Tirana, Albania.
 Project for diploma thesis: Architecture and urban design, 2013-2014
 Area: northern suburb of Tirana, former "Dinamo e Re" plant

Historic and urban context

The area in question is located very close to the Tirana River, in the north part of the city. The Tirana River has been historically far from the historical center of Tirana, so it is always perceived as a boundary for the city, with no real need to overcome it. For this reason, during the 1960s and 1980s (when the whole country, under communist rule, twinned once with Russia and then with China, aimed at its industrialization), a number of industries were settled along the shore of this river. This position was also favored by the presence of the railway, built during the '48s-'49s, which connected Tirana (capital) with Durres (port city). Due to the character of the river (not always calm) and the transformation of the surrounding area from its flows or wrecks, that area mainly served for manufacturing activities, like industry. Also, industries placed there were such that they needed large amounts of water in their production process, and this was favored by the presence of the river.

As mentioned above, Albania aimed at its industrialization. In "Tirana – Qyteti i munguar" it's stated: "[...] when the II Congress of the Party of Labour of Albania had set the goal of transforming Albania into an agricultural-industrial country. Thus, in a way, this plan tries to create the first models of an industrial city structure, with clear functional relations between work areas and those of residence and rest, the problems that the European city had encountered 1 or 2 centuries before, in the most difficult times of the beginnings of industrial society [...]".¹¹

10 / <https://www.archdaily.com/786489/ragnarock-mvrdv-plus-cobe> (April 2018).

11 / DHAMO, S., THOMAI, Gj. and ALIAJ, B., *Tirana – Qyteti i munguar*, Polis PRESS, POLIS University, Tirane 2016, Pg. 213.

"[...] kur Kongresi II i PPSH-se kishte vendosur objektivin e transformimit te Shqiperise ne nje vend bujqesor-industrial. Keshtu, ne nje fare menyre ky plan perpiqet te krijojte modelet e para te struktures se nje qyteti industrial, me raporte te qarta funksionale midis zonave te punes dhe atyre te banimit e pushimit, probleme keto me te cilat qyteti europian ishte hasur 1-2 shekuj me pare, ne kushtet shume me te veshitura te fillimeve te shoqerise industriale [...]".

process was used by the regime of that time not only to “sculpt” the profile of the new man (who even in the arts of the “socialist realism” always appeared muscular and in industrial backgrounds, and there was no exception even for the Albanian female), but also as an instrument to clot communities that worked and socialized in the same places, at work, so that every activity would be controlled as well as the private sphere would be limited as much as possible: “In this respect Albania had a very big change, as it was entering this stage under the conditions of a totalitarian regime that controlled and organized everything related to the movement of the population and the distribution of labor, both in the country and in the city scale”. The most representative example of these “working-dwelling” was the case of the “Textile Combination” (built around the 1950s with the help of the Soviet Union) in the west of the city of Tirana, where the industrial structure was followed by entire residential neighborhoods, mainly inhabited by the factory workers¹². The entire Combine was spread over an area of 25 ha. The surrounding residential project was implemented between ‘55 and ‘61 by arch. Skender Luarasi, but it was not completely finished. Only half of the area was built with 2-3 floor buildings, which were developed in fragmented linear typologies along the axis of the roads, leaving relatively free the inner block spaces.

During this period (‘60 -‘80) a number of industrial structures were built in Tirana, like the “Enver” Plant, “Laprake” Footwear Factory, “Misto Mame” Wood Factory, Typography “Mihal Duri” or the Brick Factory, leaving a strong industrial footprint in the city. After the 1990s, after the fall of the totalitarian regime and the almost complete political and economic isolation of the country, Albania became part of the free market, but found itself in a very unfavorable position. Her entire production capital was highly amortized, hence unable to offer an alternative to the market. Under these conditions, without any control by either central or local government, the overwhelming part of industrial structures is abandoned, stolen, broken down, as part (memory/evidence) of a dictatorial system. After this initial phase, in between the ‘98-‘99 there is another phenomenon happening in these parts of the city. Being part of the urban periphery and being characterized by large spaces, these areas began to be absorbed informally by the largely rural population that came in that period in Tirana to find a livelihood alternative, as rural areas were increasingly depleted without no alternatives.

These phenomena adversely affected the industrial heritage, leaving little such evidence in the city. With few exceptions to reuse for industrial or storage reasons, the remaining part of these structures have been turned into peripheral areas, with very bad or without services at all. Even today local government does not have a strategy for recovering or reclaiming these structures, which are still a part of the image and memory of the city of Tirana, so these areas are quite problematic. They lack infrastructure and accessibility, services and facilities. They are insecure areas and legally remain out of the active life of the city, because a large part of the houses built in these areas are still not legalized and, consequently, out of the real estate market.

The project – the urban strategy

As mentioned above, the area is located at the northern border of the actual municipality of Tirana (according to the General Regulatory Plan¹³ of 2017), near the Tirana River. The “Dinamo e Re”¹⁴ plant was built in 1987, in one of the areas destined (according to the old regulatory plan) to industry. The area was served by a railway infrastructure, road and electrical infrastructure. In the 1990s its activity was interrupted and therefore abandoned. In the next 20 years, many informal buildings (spontaneous, which can be compared to a “parasitic” relation, with survival the only reason to exist) were built in that area, thus altering the industrial structure itself, and using its internal spaces for shelter or storage. The result was a chaotic mix of industry-residential typologies, a very difficult labyrinthic access, and a now-denied relationship “city-river”. The area also was showing serious problems with public transport services, educational and health institutions, public space and also serious environmental problems, such as urban waste pollution and flooding by the river’s overhangs. However, it should be said that industrial structures were still visible and the abandoned and unused spaces still carried the potential of reuse, and perhaps, regeneration for the entire surrounding area.

To intervene in that area was studied the Continuous Productive Urban Landscapes¹⁵ strategy. André Viljoen’s CPULs, is the theory for the sustainable development of urban agriculture. This theory, which is being studied in some Latin American countries, is based on the use of unused spaces that are initially identified in the city. They are linked to each other by forming a system of green fingers, which go through the city from the periphery to the center. Surfaces and structures of these spaces can be reused and made available to the residents of the area, who can practice urban agriculture, whereby they can not only provide “km 0” food for their families, but can even sell their products to the appropriate structures nearby. The created spaces can be public or semi-private, as a combination of city life and rural one (fig. 8).

In the case of the “Dinamo e Re”, the area offers plenty of space that can be reused according to the aforementioned strategy. Its positioning near the river and near the road axis, where the new boulevard of Tirana is expected to pass, makes this very favorable occasion to start there one of the green fingers of the city. Along the Tirana River, besides the “Dinamo e Re” factory there are three former industrial zones: the former “Brick Factory and the

Construction Combination”, the former “Meat Combination” and also the wooden warehouses. Each of these spaces can be included in the same strategy and have its own specialization. If these “green fingers” were to radiate into the city radially (center-periphery), the Tirana River would link these into a green ecological sustainable system, and the main points would be precisely these four former industrial areas. So, basically this strategy seeks initially to find and recapture usable space in the area and then to place them in a distinct hierarchical system, clarifying urban design and providing better accessibility also.

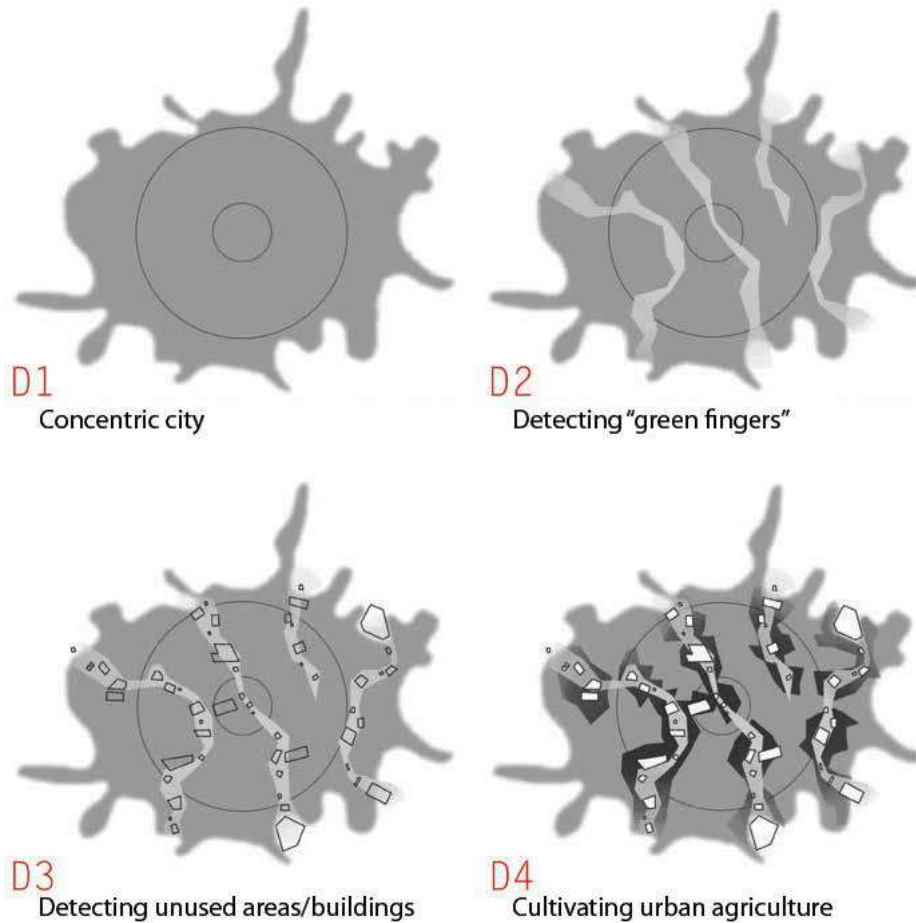


Fig. 8. Diagrams of André Viljoen's Continuous Productive Urban Landscapes strategy.

Master plan and architectural project

To design the architectural project a detailed analysis of the concerned area was started, followed by a survey of the existing state of the remaining parts of the former “Dinamo e Re” plant. Actually it is bordered by two strong physical barriers, to the north by the Tirana River and south by the railway line. As mentioned, it was built in '87 for the production and assembling of metal parts, and because of the collapse of the totalitarian system in '91, in that period it ended operating. The plant structure consisted of 3 main volumes and other complementary facilities serving the complete manufacturing process of mechanical parts. These three volumes were: the production hall, the assembling halls (which are linked together by a smaller volume destined for administration) and the boiler/furnace. The production and assembling halls, which occupy the largest surface and volume, are placed in the middle of the corpus and other objects are placed around them. Today their condition is transformed. Only the perimeter walls and partly the column system (typical industrial chapters) have remained from the production plant. From the assembling hall partially resisted the coverings (with prefabricated concrete tiles) and the columns, which are connected to the cover through industrial serial trusses. The volume of administration offices today is completely reused, but with a changed function. The offices are spontaneously turned into apartments for the residents of the area. Also, the furnace volume is also reused. The part of the technical facilities is used for dwelling, while the rest parts of the hall remains well preserved, both structure and the coverings. Other plant volumes are also distinct, but they are altered. The existing industry-dwelling relationship looks like a parasitic

12 / DHAMO, S., THOMAI, Gj. and ALIAJ, B., *Tirana – Qyteti i munguar*, Polis PRESS, POLIS University, Tirane 2016, Pg. 220-223.

13 / <http://www.tirana.al/wp-content/uploads/2017/06/Bashkia-Tirane-Plani-i-Zhvillimit.pdf> (April 2018)

14 / *Central Technical Archive of Buildings, Tirana, 2013.*

15 / VILJOEN, A., *CPULs - Continuous Productive Urban Landscapes*, Architectural Press, 2005.

relationship, where the parasite exploits the body of the host organism to survive. This relationship will also be used in the architectural concept of the project, where this relationship will strive to be a positive one.

The master plan addresses two important aspects. Firstly, it recognizes the remaining industrial structures and tries to generate a new hierarchy system based on a regular grid. In this regard, the masterplan also highlights the physical territorial traces that develop vertically (north-south) and end up in the Tirana River (fig. 9). All this aims to recover the lost city-river relationship. Secondly, the masterplan tries to create a complementary system through the program of functions. Some of the new functions in the area will be: public recreation areas near the river; new co-housing flats and sowing plots (urban agriculture); professional school for agriculture; didactic greenhouses; public greenhouses; sports field; industrial flats/industrial lofts with common central square; offices and administration; bar/restaurant; market for local products; temporary events spaces; public space for relax and socialization; solar panel system (parking + panels); mini-eolic energy system; rainwater collection tubs and filtration tubs for gray waters; public and private parking; children's playground; "wild" greenery; public greenery. The masterplan takes care of mixing industrial typology with low rise - high density housing (according to "L" shaped modules by arch. L. Sauer¹⁶), offering residential opportunities for different social layers and also an economic alternative through urban agriculture activities. Thanks to the functional program the master plan also mixes technological aspects with sustainability, by adapting in its structure clean energy production by clean resources (fig. 10).

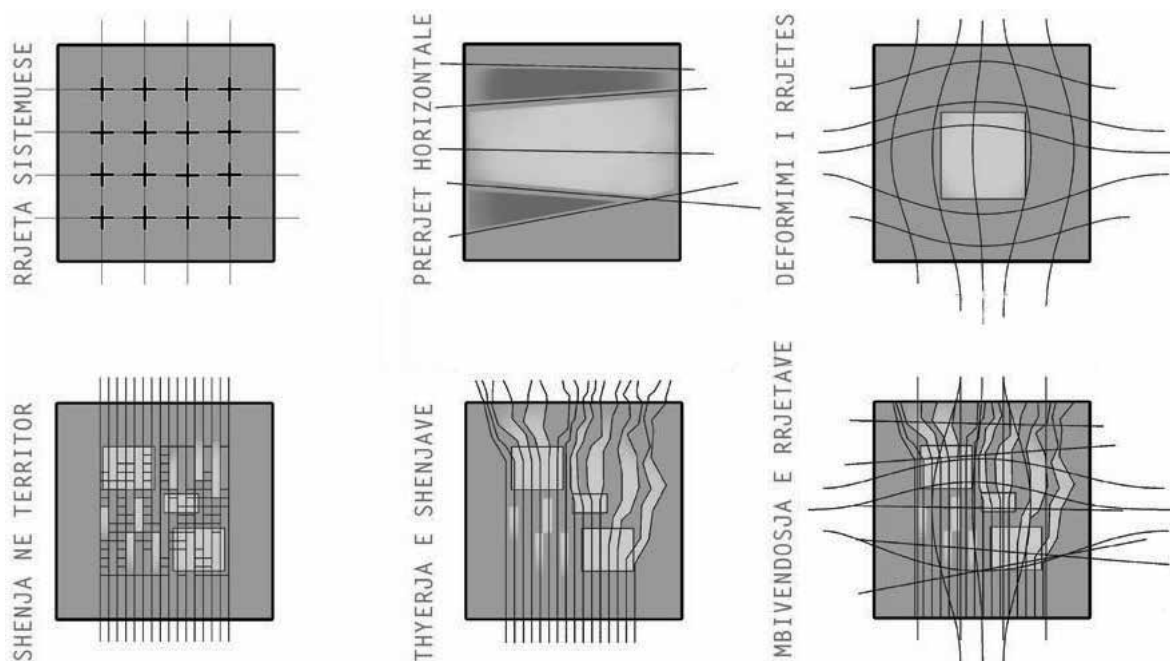


Fig. 9. Generative diagrams of the masterplan

The new volumes to be built will be divided in two main categories: the "parasite" volumes, which will be dry constructed, with distinct materials from the existing industrial structure (these will be added to the industrial buildings and will be organized in such a way to complete volumes and functions of the existing structures, so they can offer a "symbiotic" relation with the rest); and the dwelling volumes, which will be in line typologies and will structure vertically (north-south) the entire surrounding area. These will offer apartments for different social layers, with high energy efficiency, with common spaces for socialization activities, whether within the structure, whether outdoors (like rented parcels for urban agriculture).

The housing volumes that will restructure the former production halls will be organized perimetrically, using structurally the existing wall and the remaining columns. The result will be a hybrid building, with independent housing modules mounted within the existing structure. They can be implemented at different stages, depending on the residents' requirements. The total volume will be developed in three levels and the distribution to residential units will happen through perimetrical walkway (gallery), leaving the center of an inner courtyard as a central semi-private central space. These housing units will offer residence to a high/middle class, which is willing to live in an alternative environment between the city and the village, but without sacrificing the quality of the inhabitation. The market volumes, where the local products of the area will be sold, will be developed shaping a comb, which remains regular in its southern part and is deformed in the north by vectors and inputs coming from the river. All volumes are developed under the restructured cover of the former assembling hall. The cover partially preserves the industrial sloped character and partially turns into concave concrete tubs to collect rainwater, which is then reused for the market needs.



Fig. 10. General masterplan

The added volumes to the former furnace plant are organized at different levels. The part of the hall is used as a shelter, under which the volume of the museum of the former plant and the exhibition space are placed. Also, under this cover, the volumes of the new agrarian school classes, the canteen and the didactic greenhouses converge (fig. 11). The interior of the former furnace technical facility rooms are used to set up the administration offices, classrooms, libraries and the new auditorium on the last floor. All new volumes conserve the industrial character with sloping covers and are covered with light metal materials such as zinc sheets (recycled material) or cortene panels (for the most important volumes).

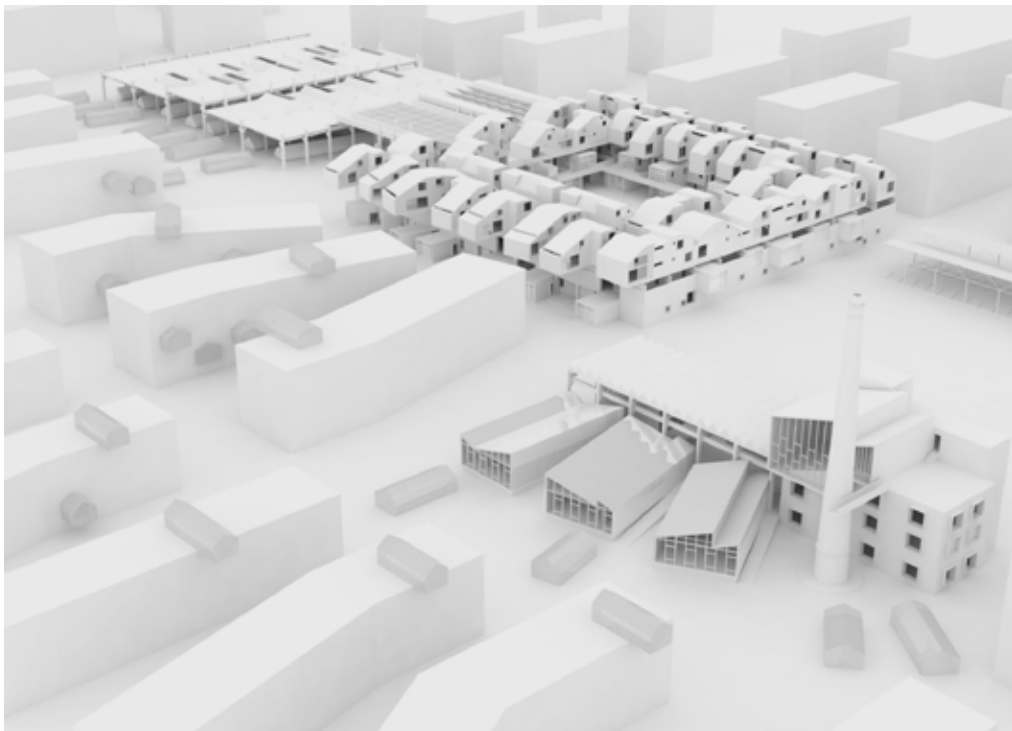


Fig. 11. Areal view of the general 3D model

Conclusions

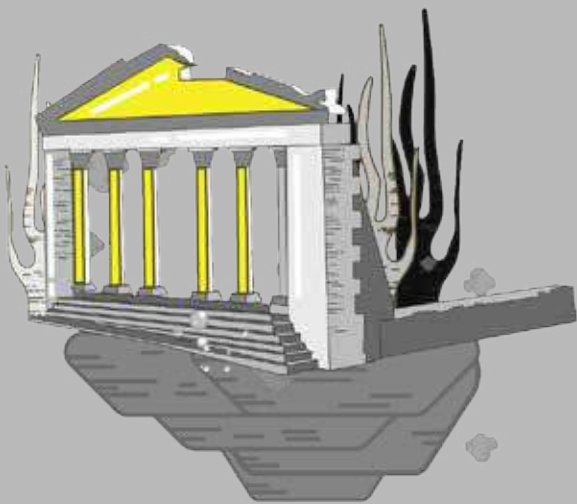
As explained in the methodology part, the final conclusions are generated by the hypothetical application of results, or instruments obtained from the analysis of the two above-mentioned case studies, in the former "Dinamo e Re" plant project. This project seeks to demonstrate how, taking into account the inputs that come from the existing context (including historical ones), being careful about preserving architectural (but also memory) layers and enriching the area with connecting infrastructure and new complementary functions, a contemporary sustainable housing model can be offered.

As a result we can say that these conclusions do not seek to be closed and absolute, but a starting point to introduce within an architectural debate not only the spaces of industrial archeology in a certain nation area, but also beyond such boundaries. The above results should be considered as a list of steps that need to be taken in succession, but may also be alternated according to contextual needs.

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[MEM/02]



Butterfly Effect. Inhabiting Post-Industrial Sites

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abstract

In the Fifties, Renaat Braem defined “jungle” the appearance of Belgian urbanization, where it is hardly recognizable a real shape or order unless its description of “diffused city”, following the infrastructural network. This is the “typical” Belgian way of settle in the territory, along with the highly infrastructural land and the heavy industries spotting all along the Walloon axis, the industrial backbone running east-west from Mons to Verviers.

Nevertheless, now that the traditional industrial exploitation is near to an end, we can find a strong identity core in this landscape, anchored to the history of these places and to the practices that there used to be acted. Belgium itself can be considered as a total industrial landscape, strongly characterized by extraction towers, smoking chimneys, ateliers, electric power stations, terrils, that nowadays remain as both waste and icons.

Starting from the case-study of Belgium, and along with the comparison with some Italian examples (such as Bussi industrial areas and the Sicilian eastern coastline) this paper will investigate the role of contemporary architectural project in dealing with industrial archaeological memories outside the compact city, offering possible strategies for inhabiting even a 120 km long route (corresponding to the Walloon axis): the challenge is to turn the relationships governing the diffused city into a key to revitalize huge abandoned lands.

Operating by fragments of a whole, punctual projects will help the nature coming back to highly artificial lands and will mix new sustainable ways of living. Thus the aim is to trigger off the transformations and trace different possible scenarios, that will take place almost automatically, with no soil consumption and enhancing the existing resources. The hypothesis is that one single transformation, if well guided, can affect the metamorphosis of very far places, as a wonderful butterfly effect.

keywords Industrial Archaeology, Functional Mix, Contemporary Project, New Nature

Introduction: welcome to the jungle

Belgium is historically one of the most advanced industrial countries, second only to UK. Since the early 20th century the discovery of coal and steel deposits started a new exploitation in four main areas following the “sillon industriel”, the Walloon axis, Belgian industrial backbone running from the city of Mons, in the western border, next to France, to Liège and Verviers, to the East. Since before the First Industrial Revolution, the iron industries are settled nearby the deposits in order to take advantage of the fossil combustible that was cheaper than the wood itself.

The rising of the coal industry got its peak at the first and second decades of 20th century. At the same time, the industrial settlements made the urbanization grow and diffuse from the production centres, especially with the workers cities. A thick network of infrastructures grew, first the railways used for the transportation of the rough materials. After 1920, though, a slow decay interested these areas. Hereafter the shutting down of the plants, the obsolescence of the unused infrastructures occurred, while new infrastructures had overlapped on the ancient rural-urban tissue composing the Walloon axis landscape. What Renaat Braem called “the ugliest country in the world”, a “mad patchwork” [Braem, 1968: 5] and defined as a jungle, is a highly artificial and urban tissue that can barely be read by a traditional Nolli’s map way. All is either background or form. In other words, it is a long built path running along the Walloon backbone made of a multiplicity of matters, residential areas, wide industrial active clusters, big industrial dismantled areas, punctual derelict buildings, bushes and forests, and the cultivated countryside pressing (or pressed by) the urban settlements.



Figure 1 Cover image of the book Braem R. (1968) *Het lelijkste land ter wereld*, Leuven: Davidsfonds.

Although the huge amount of abandoned or not in use industrial buildings, the issue of the value of 20th century objects is still unsolved, even after the important acknowledgment of the four mines sites by Unesco¹. This study wants to deal with the recovery of disaffected industrial areas, in the intermediate scale between city and countryside, where the dialogue with the diffused city becomes the featuring element, turning the fenced single-family house urbanity into open cities.

In describing the diffused city, none of the several definitions of the term is positive. It is called tentacular, sprawling, blob (Dal Pozzolo, 2002: 86): that reminds us processes of irremediable damage and consumption of the soil, that is eroded, eaten by artificial construction. Moreover, the diffused city is associated to other "demons" of contemporary age, that are infrastructures and industrialization. Huge industrial dismissal, along with social issues problems, started the problem of big amount of wasted building, soil, resources of any kind. If we read a land-use map of the Walloon axis, and knowing that almost a half of the population of entire Wallonia lives along the industrial backbone, what was generically defined diffused city is "concentrated" along the same axis.



Figure 2 Land use map of the Walloon industrial backbone.

The perception of chaos and absence of order described by Braem makes the feeling of ugliness grow, and on the other hand this is justifiable by the practices that had repeated in decades: the infrastructures conceived as cuts in the cities and territories, the undeniable pollution of soil, air and water caused by heavy industries since the 19th century, the regardless sprawl of the city in the rural spaces. The disappearing of the traditional public space made by squares and streets, in contemporary age replaced by the malls and shopping axis, is the counterpart of a city made of fences, those of the single-family houses with their own garden and parking lot, those of the industrial areas and of the commercial sites. What still makes this dramatic effect of ugliness is the absence of a general design scheme, that should aim to consider infrastructures, factories (in use or not) and cities, even diffuse, as part of a total landscape project.

Metamorphosis of industrial heritage

Is that this “jungle” really ugly or can it be a way to think a new cohabitation among all the practices composing our present life? It is still under a process called “artialisation”: a landscape to be perceived as a work of art. By the way, landscape is never natural, but always cultural (Roger, 1997:22).

Made up of a juxtaposition of architectural facts, its order is simply yet to be discovered (Venturi, 1972: 80). That determines a new beautiful perception of the ugliness, a quality that can be defined as “metamorphosis”: by this word the designer Latz describes its approach towards the project of Landschaftspark in Duisburg, Germany: by metamorphosis, he opens to an idea of the “industrial ruins” that, through the project, crosses a change of meaning in the relationship between form and context (Viganò, 2013: 16). Within the IBA experience indeed huge ex productive complexes can become places where the dialogue between artifice and nature can become active again. In Italy, a notorious case is the Bussi Chemical Factories, whose dismissal after decades of poisons and pollutions in one of the most beautiful areas of Abruzzo Region is now at trial for a rebirth for the territory between the two seas. Again, the eastern coastline of Sicily, where archaeology, nature, infrastructures, tourism and cities coexist among them and with the factories, but still don't interact, suffers from an abandonment that must deal with all the different archaeologies and make them re-cycle in a systemic way. In both examples, the painful memory of the consequences of decades of poisoning stands like a wall against any attempt to recovery the industrial witnesses trying a fruitful mix with the ecological and archaeological routes.

The metamorphosis of the meaning is both natural and artificial. In the passage from functionality to obsolescence, the technical object interlaces new semantic relationships with the area it is in. And it opens up different horizons of meaning, inducing inevitable transformations due to the action of the time. In the abandonment, the object is free, it becomes common good, matter of exploration, of aesthetical experience.

In Belgium the stress is on the remediation of the soil, with the precise intention to restore the conditions previous to the industrialization. The two soil decrees in 2008 and 2010 oblige to the decontamination of former industrial areas before any new activity, considering the soil surely polluted for caution, so that it is hard to maintain industrial heritage and realize something new. The SPAQuE, a mixed private and public society born in 1991 in order to manage public hygiene, in 2001 was assigned to the rehabilitation of dismantled industrial sites and the management of polluted soils. Its slogan, “From Wallonia of yesterday we create that of tomorrow”, leaves the door open to a politics of recycle of ancient sites and buildings, but after more than 15 years, recoveries have been much less than simple destructions. Nevertheless, several realizations have been lead, even in absence of a general scheme. First remarkable action is the acknowledgement by Unesco of two industrial categories: the four mines sites, the Grand Hornu near Mons, Bois du Cazier down-south Charleroi, Bois-du-Luc near La Louvière, and Blegny-Mine close to Verviers, nowadays all museums of industry and mines, and the four boat lifts of the Canal du Centre. From a wider point of view, there is the “route du feu” of Liège, a touristic route made up of seven stop in the territory of Liège, and the Route of Industrial Heritage, a text made by Valerie Dejardin e Julien Marquet, who detected around thirty main sites to be visited (Dejardin, Marquet, 2007); the “route of the terrils”, a chain made up by terrils² covering 200 km and 43 Walloon cities; most important, the RaVel, a very wide network potentially interconnecting all Belgium for more than 1365 km through slow mobility paths, on the footprints of dismantled railways. Although it presents some interruptions, since it is founded on the very thick network crossing all Belgium, it constitutes a sort of bloody system lively sprinkling the territory and contributing to a perception of a unitary organism.

From an architectural point of view, once it is verified its value (and this very rarely happens for “recent” buildings), the condition to restore an ex-factory is mainly the closeness to the urban settlement, and its limited size. The correlation ancient/small/inside-the-city looks to be the key for a possible recovery. Among the categorized and reused buildings along the Walloon axis, the vast majority of them is small or medium size and localized inside or at the margins of the urban settlement, while few of them are big buildings outside the city. The almost totality of them belongs to a period before the 1950. The new function, as a consequence, is related to the location and the “urbanity” of the building.

Industrial heritage is still unpopular (Tornatore, 2004: 84) and highly stereotyped. Even the industrialists have not a good opinion of it, because they don't have any interest in maintaining obsolete instruments of production. But

1 / Since 2012 four areas, the Grand Hornu near Mons, Bois du Cazier down-south Charleroi, Bois-du-Luc near La Louvière, and Blegny-Mine close to Verviers, have been recognized Unesco sites because of the highly characterized architecture showing the social organization and the workers life of 19th and 20th century in Belgium.

2 / A terril is an artificial hill made up by accumulation of mines residuals.

above all, industrial heritage suffers from a boycott by who represent the architectural heritage, because of the presumed absence of aesthetical value and weak knowledge value. The factory is one of those undesirable spaces (Di Palma, 2014) building up the actual idea of landscape, that in the obsolescence become modern ruins (Hell, Schonle, 2010).

If not all the disaffected industrial heritage can be effectively reused or recycled, the acknowledgment of an historical value or monumental witness of identity for a territory, are the assumptions for a transformations, that is capable to assign a contemporary use to the object and to ensure its transmissibility to the future. The exhausted material has to revive under new form able to enhance different development processes.

Towards agr-ind-urban landscapes

The approach to the industrial issue is continuously a matter of the antinomian couples Ugliness/Beauty, in perception, and Tabula rasa/Palimpsest, in the action. If Renaat Braem defined Belgium a jungle, where a form is hardly recognizable, still the line connecting Mons to Liège can be described as a unique strip, by following the geological conformation (which makes it belong to a wider system running from France to Verviers and then the Limburg province); on the other way, the historical stratification, the big extension (around 120 km) and the sequence of events during the centuries made it a mosaic composed by several fragments linked by the lymphatic system of infrastructures and urban diffusion.

This "system" is a strip going from Mons to Liège and defined by a shrinking and expanding of relationships between the rivers Meuse and Sambre, the highways, the railway and the urban settlements. The way the elements composing this landscape interact each other can be read in order to find the reasons why this strip can be considered as discontinuous, and those why it can be interpreted as homogeneous.

The industrial backbone is again the cradle of two antithetical notions: there you can find the so-called "black country", related to the coal industry, deriving from an idea of Wallonia as smoky and covered by dust, that of the mine tradition; the other is the notion of white country, related to chalk industry. On the other hand, nevertheless, Belgium is a "green country", coated by bushes and forests and by rural fields³. The constant elements making the strip homogeneous are represented by the running of the infrastructural network and the pressure of the ecological one: the presence of the river and the intermittence of rural and urbanized and spotted by industrial activities. The coexistence of all these different matters could be the richness of these places, and the project has the aim to enhance new positive interactions between uses, practices, forms: the special form of the diffuse city notably allows these kinds of interactions. And the design project should act as a judo move, able to use the force of the adversary (in this case, the diffusion) and turning it into a lever. The more dilated relationships of the diffused city are one of the keys to inhabiting the distance and allow people to live places generally fenced and isolated.

Six points have been selected out from the list of industrial complexes enquired by SPAQuE and basing on their relationship with infrastructures and urban cores, according to their localization, scale, age. The hypothesis is to consider the single case as belonging to a whole system, to overcome the condition of random interventions, using the diffused city as an opportunity rather than a problem to be solved. Operating by fragments means to design by space and time stages, triggering off a process of metamorphosis of long time disaffected areas, through the following themes.

Continuity – discontinuity. 20th century industrial elements were generally expelled from the cities. The selected cases want to overturn the proximity with the city as the only condition for recycle. In the discontinuity and in the distance, as well as in the bigness, there is a way for a dialogue with the diffused city, and this is possible through a punctual design.

Compactness – dispersion. Overturning the dialectic city-countryside can be here made by the six points along the Walloon industrial backbone. With the aptitude to the peri-urbanization (Halleux, 2011: 35), the soil resource is not considered as rare but as an abundant consumable good (Acosta, 1994: 43). Horizontally crossed by facilities and productive activities, the Walloon diffused city has developed after the shift from agricultural activities to industrial ones. A productive change that had as a consequence to enrich the workers who decide to build up their own single house, giving life to a countryside built without schemes, along the axis, railways before than highways. What characterizes the diffused city is the absence of centralities. In Belgium there is a lack of an intermediate scale: one essentially lives at two scales, directly passing from one's own house and garden to the highway, from local to global. One directly lives the territory and not the city, even diffused (Grosjean, 2010: 298).

Rural-urban. Thinking about the Walloon region as a "garden" (again, here it comes the artialization process) of urban regions is not such improbable. The overlaying of the industrial settlements, expelled from the cities

and become bigger and bigger after the Second Industrial Revolution, has increased the ambiguous condition of open spaces outside the urban residential areas. It is architects and designers' shoulder to find a way to mediate among all the dissimilar matters composing this particular landscape, maintaining the primacy of the soil-resource and that of the relationships with the built spaces. Even if the urbanization has become the main factor for the production of the rural space, still more than half of the territory is occupied by nature. The concept of urban bio-region looks to be applicable, thinking about how design the "second nature" (Declève, 2009: 23), finding an alternative to the urbanized countryside.

Six fragments of a 120 km long route

Obviously, not all the buildings, areas and industrial complexes can be reused and become museums; sometimes and somewhere the better choice is making the ruins come back to nature (as the pure interpretation of Simmel's definition of ruin). On the contrary, some are valuable in several important ways. First, they may be important local landmarks, simply by virtue of their size. Many have distinctive architectural features, like ornamental towers and chimneys. Their sheer size is a challenge in itself (Binney, Machin, Powell, 1990: 9). The six points are seen as new urban hinges taking advantage of the infrastructures and the special diffused urban tissue in the surrounding.



Figure 3 The fragments along the Walloon axis (in the upper part) and the four Unesco sites (lower part).

The first focus point is the Hangar of Nimy, north-side Mons, a 100 metres long gallery in steel and glass very closed to Nimy station, in the offspring of Nimy, a small urban centre crossed north-south by two axes coming from Mons. The proximity to the inhabited centre and the intermediate condition between rural and urban, along with its closeness to Nimy railway station, make this place a resource for the activation of an "extending city". It could be possible to maintain the halls, by eliminating the cladding and leaving the structure and the covering, in order to use them as a market for the goods locally produced throughout the implantation of a food forest, which would solve also the pollution problem. Following the river, one encounters the furnaces of La Louvière. The complex is sited in a highly exploited area, north-side from the city of La Louvière and divided from it by the railway connecting Mons to Charleroi, pressed by wide green zones near to the Canal du Centre. Continuous fences make the city fringes unsolved towards the open spaces and the Canal du Centre. In dealing with the residual parts, most of the buildings could be demolished, leaving the main hall and the two ancient cooling towers to be controlled ruins; the project should open the fences and designing the soil connecting the green areas into the urban core with the wide natural zone behind.

3 / A study of the area of Charleroi has been done in the Master thesis by Sven Martens, Michael Stas, Benjamin Vanbrabant, *Exploring the pays noir. Design investigations for a productive landscape in the Charleroi Region*, Promotor Bruno de Meulder, Co-promoters Cecilia Furlan, Racha Daher, Master of Urbanism and Strategic Spatial Planning, European Master of Urbanism, 2015-2016. About the comparison between Charleroi Region and Veneto Region see the Ph. D. Thesis by Cecilia Furlan, *On worn out landscapes. Mapping wastelands in the Charleroi and Veneto central territories*, supervisors Paola Viganò and Bruno de Meulder, KULeuven and IUAV, cycle XXVIII, 2017.

In getting closer to the area of Charleroi, along the river Sambre the Monceau sur Sambre Power Plant arises. It is sited at very short distance to urban margins, but it is still perceived as far because in a hardly accessible zone, upon a valley going down to the river. Considering both the architectural and the ecological value, the project should preserve only the machine hall, the chimney and the cooling tower because already target of visitors and explorers, so its function could be related to cultural and artistic events. For the remediation of the soil, it is purposed a re-naturalization of the excavations.

This issue is particularly strong for the Beez Quarries, sited eastwards, a 85 hectares site producing limestone, located in the Meuse valley, near the village of Beez and 5 km far from the city of Namur. European route E411 runs alongside. Although it is very closed to the city, it is hidden to sight by the hill it is excavated in, rich of vegetation. Its rehabilitation was proposed at the Quarry life Award, a scientific competition whose purpose is to promote projects for the regeneration of quarries all around the world. The project should slowly reintroduce plants to re-create the natural environment. It could become an area for biological research and this could include the design of small temporary built elements and pass few day observing nature.

Going forth, on the northern Meuse shore, the Engis Electrabel Power Plant is pressed between the river and the railway connecting Namur to Liège. Its construction goes up to the half of the Fifties. Made up by three operating units, it rises in a highly urbanized area, characterized by single-family houses slowly going down towards the river and crossed by the railways and national routes. Beside them, one can find the big scale of industrial settlements, a chalk quarry and two large complexes producing car components. The project should mediate between the bigness of the complex and the smallness of the residential sites, becoming a sort of hinge. The building could be partially demolished, maintaining one of the three operative units and the chimneys for their recognisability in the horizontal landscape of the Meuse valley. The demolition, reducing the scale of the building, could enhance the design of a linear river park, as a stage of a slow path running to Seraing and leading to the Blast Furnace B among the huge steel factories.

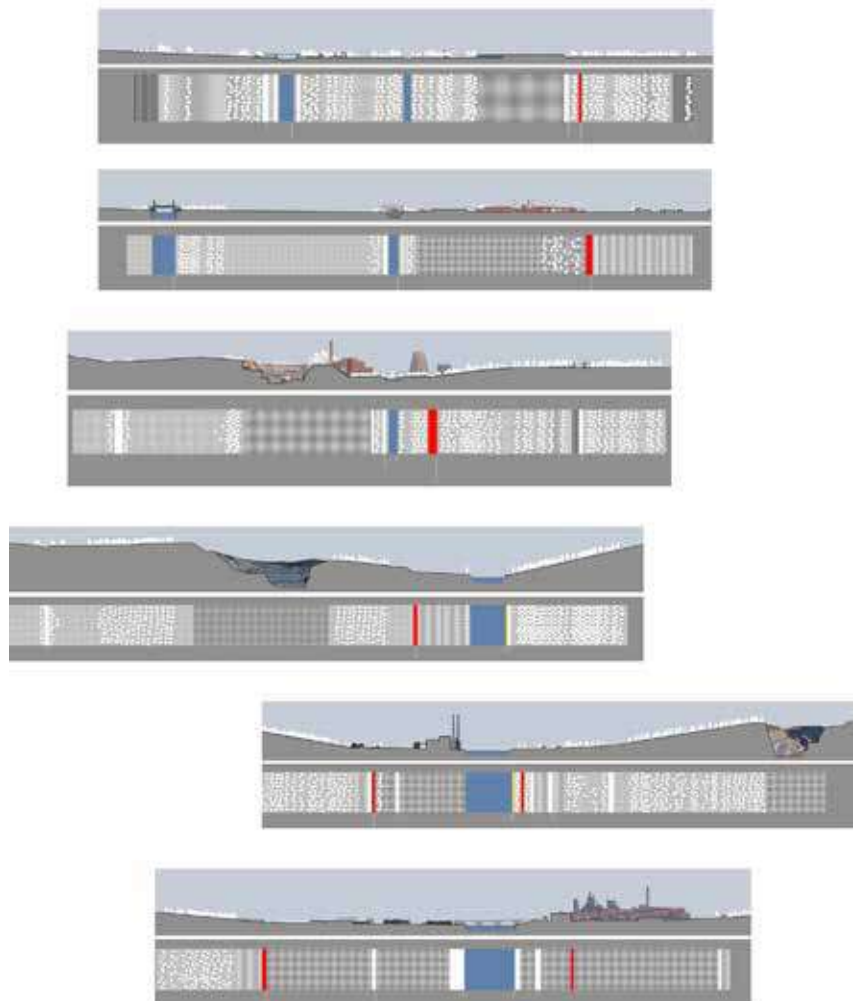


Figure 4 Sections of each area and scheme of the relationship with rivers, railways, streets, housing and vegetation, from Nimy (up) to Seraing (down).

At Liège southern limit, the city has developed with a polycentric expansion process starting from the rural cores and industries progressively covered the southern area. The Cockerill steel factory stands out, fast developed between 1817 and 1840. The period of decay started in the Seventies and now has come to a huge crisis. In December 2016 the Blast furnace 6 was demolished, opening a big scandal for the loss of one identity elements of Seraing historical, industrial, social and urban memory. The blast furnace B in Ougrée, HFB, still remains, an emblematic building very visible in the landscape of Seraing with its huge of almost 1 hectare extension. In front of the Standaard de Liège Stadium, it mirrors into the river Meuse and it is connected to the future urban boulevard and to the railway 125. It rises just in the urban fringes of Seraing, where the residential fabric is rarefying and infrastructures, with bridges and flyovers prevail. The debate of its conservation is not secondary because lots of the blast furnaces all around Wallonia have been already demolished. Its recovery project should start from the idea of controlled ruin, with mixed functions, providing sport facilities in connection with the Stadium and changing the artificial soil into green. Promoting the local identity cohesion with the city, the project would like to make the area a new urban gateway, defining the city thresholds.

To resume, the strategies are three (Tornatore, 2004: 106-107). The first is "totemization", and it consists in eliminating technical buildings and annexes and make the complex an emblematic element. The factory so clean suggests its ancient activity, becoming a landmark in the urban tissue. The second strategy is "poor conservation". This treatment wants to avoid the financial coast induced by the size of the complex and by the practices of conservation. Economy is possible because the purpose of the transformation is divided in time and function and limiting the temptation to make the building a complete document. The third strategy is that of "controlled ruin". Only a part of the buildings is restored for public. So the rest is left to its state of ruin, following the assumption that no monument can survive centuries by preserving the totality of its matters.

The whole project is considered as part of a process and made up of a series of mutations on spaces ceasing to have a productive function in the actual economical systems. Their physical transformation is intimately linked to temporality, especially concerning the scale of the complexes operating with. The issue of scale itself implies a reflection on time: the project is just an input, the most important one, for "transitional places" (Berger, 2007: 51). It has to be accepted that the solution pointed out is not definitive either univocal, and that the use by collectiveness, and time itself, intended as both weather and as succession of events, modifies the starting intentions and leads to an end that will be as good as the initial program has been free in details and precise in the relationship between the parts.

Some conclusions: the challenge of a butterfly effect

The possibility to recover big scale projects has often been prevented by the distance from the city and by their relatively modern age, that influenced the perception as cultural heritage. This concept has some exceptions, such as the IBA experience in Germany, in the Emscher valley, where the bigness itself became the occasion to rethink an entire territory whose uniqueness had to be exalted. In Belgium, although its long industrial tradition, the idea of black industry has gone over the voices who claimed for the preservation of this huge heritage spotting all the Country.

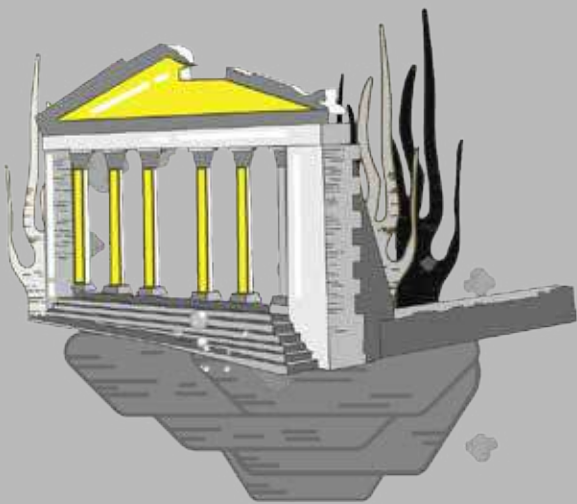
Even if, since the Sixties, the re-affectation to the industrial memory started to rise, and culminated in the recent years with the Unesco acknowledgment of the four mines sites (Joris, 2006: 33), these events remained isolated. The reflections on the contemporary developments of cities, spreading all over the territory along the main infrastructural ways, oblige to think about an alternative project of those areas defined as peri-urban. In the industrial axis running from Mons to Verviers, where most of entire Walloon population concentrates as well as huge industrial agglomerations, it rises the reflection on how to think about their re-affectation and remediation overturning the traditional paradigms. It must deal with what remains of the countryside, and with the single-family houses scale spotting the territory outside the city cores, defining an intermediate scale redesigning the territory. The potentiality lays in re-thinking the factory as a matter of an hybrid landscape, where different functions can positively mix in the wide abandoned industrial lands.

Choosing the Walloon axis as wide inquiry area and the selection of six cases displaced all along tried to underline the differences and the similarities between places even 120 km far each other, but lied by common relationships with the ecological networks, the infrastructures and the urban fringes. These elements make them belong to a system, even discontinuous, but still organic. The proposal is not a masterplan. It does not proceed by progressive zooming in. On the contrary, it is a program acting by fixing the relationships of the elements of a general organism to be part of, so that, as vegetables do, a modification in just one small part echoes in all the plant, or, in a different way, as a butterfly effect of the chaos theory: small variations in the initial conditions could cause great variations in long term. Using big ex-industrial districts as tool, even in challenge with the legislative policy serves as input for a comprehensive complex of projects activating in time, starting from the industrial issue but extendable to all large neglected areas, able to arise the common memoire of one of the most identity core of entire Belgium.

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[MEM/03]



Factory lost and found

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abstract

The process of deindustrialization which began in the 1970s in many European countries, the U.S, and Japan has clearly had—and continues to have—a significant impact on cities, leaving a vast stock of industrial buildings obsolete, and no longer suited to the functional program they were built for. Although the aesthetic of such ruins has always fascinated architects—inspired by literature on memory and the passage of time—we need to keep in mind the impact that abandoned and underused buildings have on many aspects of the city and its public domain, on the one hand, and the opportunity to keep these spaces alive while also preserving the memory of their bygone days, on the other.

In Turkey as well—albeit characterized by a different intensity of industrialization/deindustrialization process—the pragmatic value-driven approach of the factory has often been both the mirror of the efforts of transformation and modernization in the aftermath of the Industrial Revolution, and the prolific grounds for some interesting architectural experiments, starting from the period of the reforms and reorganization of the Ottoman Empire in the 1830s (Tanzimat era) with the establishment of some imperial factories, and extending all the way to the Post-Fordist era and globalization that is still underway.

Within this framework, following an overview of disused industrial buildings, this paper aims to present the industrial landscape in Turkey based on a database and mapping for a comprehensive visualization, on the one hand, and a case study in which neither the demolition of the building nor its replica have been chosen as strategies, which is quite common in the country, on the other. What has actually emerged is the idea of keeping together the memory and the will of belonging to our zeitgeist.

keywords Factory, Turkey, Recycle, Lost And Found, Memory

1. Forgotten Places

In recent decades, long-time rejected landscapes, such as disused industrial buildings and sites, have fully and urgently entered into the cultural, architectural, and urban debate, involving architects, urban planners, sociologists, photographers, and artists. It has been difficult to attribute a historical-cultural value to these spaces of production for as long as they have been active and operational; this is because for much of the time they have been considered places that are polluted and polluting, often being front-page news more because of the negative image impressed on the collective memory than for their value as historical-architectural evidence.

These are long-time forgotten landscapes for two reasons: on the one hand, because they were perceived as representing that industrialization process—which the U.S., Japan and many European countries first experienced—whose 'structure' was conceptually problematic, often triggering a debate on its social cost; on the other, because in some countries—especially those having a less pragmatic approach than Great Britain and the U.S., where institutions or associations with a strong emphasis on the preservation of industrial heritage were first founded¹—the recognition of the value of buildings and areas that had hosted productive and technical activities took more time, as it deviated from the ideal of a culture mainly based on the prevailing value of the humanistic disciplines. The urban, cultural and economic changes of the past decades have left a vast stock of factories and industrial sites obsolete, abandoned, and disused, no longer suited to the functional program they were built for: an industrial landscape to which the idea of marginality and urban and social decay has often been associated. In fact, since the 1970s, in many cities in so-called developed countries, there has been a vast process of industrial disposal which

has left behind another landscape, one of abandonment. Conceived to be on the edge of the city when they were built, today the size and the unproductiveness of such buildings and areas put the quality and functionality of the surroundings at risk.

2. The Release

Faced with such an evident problem, a rising interest in the issue has encouraged those studying the city and architecture to begin carrying out research and strategies to find the proper solutions. What were conceived as anonymous containers of material production began to be perceived as containers/producers of memory, places that witnessed the activities and people they had hosted, the economic and social history of a country, the urban transformations that, through a long process, had shaped the city in which we live.

Through this slow and gradual process of 'redemption', architects and urban planners have come to perceive disused industrial buildings as a resource rather than a waste. These are often buildings with a recent past, whose evaluation still seems suspended and hard to label based on the criteria used for the industrial heritage dating back to the late nineteenth and early twentieth centuries.

Within this context, the activity of many photographers who have dealt with the industrial landscape has certainly represented a new way of looking at these territories, becoming aware of them through a 'device' that differs from the traditional tools used by architects and urban planners. The School of Photography of the Academy of Fine Arts in Düsseldorf, in particular, hosted one of the most important schools of photography of the twentieth century; on the German scene first, and the international one later, it constituted an epistemological break for photography, especially under the direction of Berndt and Hilla Becher who directed it for twenty years, from 1976 onwards. The Bechers should be recognized not only for their crucial contribution to the artistic emancipation of photography², but above all for the way they explored that industrial landscape that was soon to fuel the interest of artists, architects, urban planners, and sociologists. The photo essays done on industrial buildings by the Bechers were based on the idea of photographing them using either grids of photos in which industrial structures of the same typology are side by side, or photos of the same building from different points of view.

"We don't agree with the depiction of buildings in the '20s and '30s. Things were seen either from above or below which tended to monumentalize the object. This was exploited in terms of a socialistic view—a fresh view of the world, a new man, a new beginning" (Grauerholz, Ramsden, 1981:18).

Their choice, which eventually became a stylistic one, fell on the use of black and white photographs, shooting buildings from a frontal view as if they are portraits, through the personification of the buildings themselves: an attribution of 'dignity' that had been absent from the international artistic scene until then. For the Bechers, photographing the distinct industrial era required the exacting and exhaustive discipline of a botanist. This approach represented the first taxonomic work carried out on industrial buildings; not so much a work of the nostalgic testimony of industrial structures, but rather a sort of recording and mapping of constantly changing realities. A 'scientific' approach—influenced by the New Objectivity—which would in turn influence the work of many photographers, including Gabriele Basilico³. Basilico first became one of the most important architectural photographers on the international scene in the early 1980s, his first photo essay being "Milano. Ritratti di Fabbriche" (Basilico, 1982). The essay represented one of the best interpretations of the 'Becher-Schule', a vivid testimony not only because of Basilico's skill at investigating and 'measuring' the post-industrial city, but also because of his reference to portraits ("ritratti") in the title of the work to define those 'personified containers' of the Milanese industrial landscape.

3. Second Life

Although the aesthetic of ruins has always fascinated architects—inspired by literature on memory and the passage of time—we need to keep in mind the impact that abandoned and underused buildings have on many aspects of the city and its public domain, on the one hand, and the opportunity to keep these spaces alive while also preserving the memory of their bygone days, on the other. In the 1970s, a period of attempts, approaches, interpretations, strategies, and practices related to the ongoing debate on the future of abandoned industrial buildings began to open up.

There is the 'rejection' of existing industrial structures and the difficulty in thinking of new destinies for these bulky structures that in some cases—especially when it comes to speaking of 'ordinary' buildings—explains their demolition to make room for new buildings. And then there is a focus on the issue developed by the institutions in charge of the protection of these structures or groups born spontaneously, sometimes through a process in which artists and local communities above all in the U.S. and Europe took advantage of the cheap availability of large and abandoned spaces, sometimes by simply squatting in abandoned industrial buildings, or by reusing them⁴.

These are mostly practices that are not based on a solid theoretical corpus, projects that basically do not touch the structure of existing industrial buildings: choosing a new program is enough to release the structure back into the urban cycle. The theme isn't new but the urgency and the extensiveness of the phenomenon has certainly triggered the need and the will to take note of it and consequently provide answers.

The gradual recognition of industrial heritage as it is intended today—as a memory of activities and places of production to which a cultural value to be conserved and promoted is attributed—has undoubtedly influenced the practices and strategies used to transform these structures. This has been facilitated by the fact that today the disused factories are located in 'central' places of the city that has grown around it and that are therefore already served by a road network that determines good accessibility, without the need to build a new one.

A third approach emerged at the turn of the twenty-first century, at a time when the tabula rasa is no longer a strategy taken into consideration or at least it is put into practice only for some parts of a disposal industrial site; there is in fact a growing willingness by architects to recycle industrial structures through the possibility that the buildings might welcome new narratives, new meanings, new architectures in tune with the evolution of contemporary architectural thought (Valeri, 2015).

The criteria that define industrial heritage often omit a vast stock of buildings with no particular historical or architectural value, but which still represent an issue that architects and urban planners should learn to deal with. In fact, the relationship with memory becomes crucial to defining the dialogue between the architectural project and industrial 'waste'; a relationship that has been changing in this first part of the twenty-first century due to a shift in the meanings of the term 'waste', as it is culturally linked to time and place.

The ability to recycle strengthens community relationships and identities, and it also paves the way to building a theoretical architectural apparatus, often overlooked or underestimated but with the potential to be a powerful device of place-making that promotes the awareness of belonging to our own time. Many recycled industrial buildings all around the world bear witness to this approach, starting with the renewal of Tate Modern by Herzog&De Meuron in 2000, continuing through the Frosilo in Denmark by MVRDV in 2005, the recycle of the craneway (Kraanspoor) completed in Amsterdam in 2007 by OTH Arkitekten, or the refurbishment of the viaduct arches in Zurich by EM2N in 2010, all the way to the recent recycle of Fondazione Prada in Milan by OMA.

4. The Industrial Landscape in Turkey

Although Turkey has not experienced an intense and extensive industrialization process like that of other European countries, it has gone through the phases of industrialization and de-industrialization, influenced by the local historical-cultural context, marking differences between its western and eastern regions, which are still today in the specific conditions of a relatively backward economy.

The pragmatic value-driven approach characterizing the design of factories has often been both the mirror of the efforts of transformation and modernization in the aftermath of the Industrial Revolution, and a prolific ground for some interesting architectural experiments starting from the period of the reforms and reorganization of the Ottoman Empire in the 1830s (Tanzimat era) with the establishment of some imperial factories, continuing through the state-led industrialization program from the foundation of the Republic of Turkey in 1923, and extending all the way to the Post-Fordist era and globalization, which is still underway.

In the early 1980s, in particular, after the military coup in 1980, neo-liberal economic policies paved the way to the rise of new industrial centres across Anatolia, epitomized by the privatization of iconic state-led factories. Meanwhile, a growing number of factories and industrial sites were left awaiting a new 'meaning'.

1 / Among the first important industrial archaeology institutions, SIA (Society for Industrial Archeology) in the United States and Canada, 1971; AIA (Association for Industrial Archaeology) in Great Britain, 1973; JIAS (Japan Industrial Archaeology Society) in Japan, 1977; TICCIH (The International Committee for the Conservation of the Industrial Heritage), a worldwide organization, 1978.

2 / In 1990 the couple received the International Award "La Biennale di Venezia - Golden Lion for a Sculptor" for their photos on industrial archaeology, which enshrines the overcoming of the peculiarity of the means.

3 / Gabriele Basilico (1944-2013) was an important Italian photographer known for his explorations of different cities that he returned to through an accurate effort at the 'measurement' of the city itself. After graduating in Architecture in 1973, Basilico continued to document the city and the urban landscape.

4 / See, for instance, the Cement Factory in Barcelona, which in 1973 the architect Ricardo Bofill started working on, transforming it over the years into his house/atelier.

This issue was documented in a research/exhibition entitled "Factory Reloaded" within the scope of the 3rd Istanbul Design Biennial in 2016⁵.



Fig. 1 Locations of the main industrial buildings in Turkey, 1830-2016. Source: <https://www.factoryreloaded.net> [Accessed 1 July 2018].



Fig. 2 Main industrial buildings in Turkey, 2016. The red dots represent the buildings built between 1830-1922; green ones, between 1923-1949; light blue ones, between 1950-1979; dark blue, between 1980-2016. Source: <https://www.factoryreloaded.net> [Accessed 1 July 2018].

The research started out by focusing on the city of Istanbul, and then it extended to the whole country within the context of the Biennial, and it is based on the fact that a comprehensive approach to the topic and its visualization was lacking, although there are publications, articles and a growing interest in industrial buildings in Turkey. Rather than conducting new exhaustive architectural and historical investigations on each industrial building, existing studies have been collected through sources such as academic publications, architectural magazines, and Turkish newspapers. In fact, based on the requests of the curator of the "Design Chronology Turkey - Draft" program, one of the criteria used to identify which industrial buildings are to be listed was the recognition that the historiographical research has attributed to the industrial structures, thus, the bibliographic consultation of manuals and guides, the completion of a list of recognized journals and architectural publications, the control of

lists and reports of buildings catalogued by national and local bodies. The second one was that of architectural quality, estimated in relation to the social meaning, the aesthetic value, and the innovative contribution attributed to the building. These criteria were then accompanied by a survey in the field that allowed for the inclusion of those buildings that bear an innovative/unique character in terms of industrial production. The time frame starts from the period of the Tanzimat reforms, which also coincided with the first period of industrialization of the then Ottoman Empire.

The idea of mapping these industrial buildings emerged from the extension of the previous report. Firstly, the buildings were mapped to get a visualization of how many there were and their respective locations in the country (Fig.1). As a further step, they were sorted by the year they became operational (Fig. 2) and the type of transformation they underwent (Fig. 3).



Fig. 3 The transformation of the main industrial buildings in Turkey (2016). Red dots represent the buildings that have not been transformed; the purple ones, buildings that went under transformation (demolished, demolished-rebuilt, restored); grey ones, buildings whose transformation has not been found (2016). Source: www.factoryreloaded.net [Accessed 1 July 2018].

The whole research to be considered as a work in progress aims to present an overall picture of industrial buildings in Turkey; to understand how the architectural and urban character of spaces of production have changed over the years; to show the number and location of industrial buildings; to increase the knowledge and awareness of the country's industrial history, the architectural and/or historical value of some industrial buildings, and the built environment we live in; lastly, to provide a basis for further historical/architectural studies on this topic, and to understand the impact of industrial buildings on the urban landscape and our daily life.

4.1. Stories: *Tabula Rasa, Replica, Recycle*

Since the 1990s, in Turkey, especially in Istanbul, many industrial facilities have become obsolete or disused. The dizzying growth of the city and the desire to make it a financial and service centre rather than the industrial hub of the country, has made these industrial structures—at one time at the edge of the urbanized area—central spots. The ensuing interest in these buildings, above all for their market-value, rather than out of a sincere historical and architectural concern, has triggered a series of demolitions, making way for new 'mixed-type' structures—shopping malls, offices, residences—and the demolition and subsequent reconstruction of the building using the same style.

One of the most controversial examples of 'tabula rasa' is the Vakko fabrics and textiles headquarters, in the high-density textile-companies municipality of Merter in Istanbul, built in 1969 by architects Haluk Baysal and Melih

5 / The research and exhibition "Factory Reloaded", coordinated by Moira Valeri, is one of the thirteen headings of the "Design Chronology Turkey- Draft", a platform that focuses on the 200 years of the history of design in Turkey, coordinated by Pelin Derviş within the scope of the 3rd Istanbul Design Biennial organized by the IKSİ - Istanbul Foundation for Culture and Arts - entitled "Are We Human? The Design of the Species - 2 seconds, 2 days, 2 years, 200 years, 200,000 years", curated by Beatriz Colomina and Mark Wigley in 2016. See the website dedicated to the research www.factoryreloaded.net [Accessed 1 July 2018].

Birsel⁶—including some works by Turkish artists on the entrance façade—and demolished in 2006 (Bozdoğan, Akcan, 2012) to make room for a complex initially intended as a hotel. The demolition of the building, which represented a rare example of the integration of architecture and plastic artworks—an integral part of the architectural project—was the first of several.



Fig. 4. Ford Motor Company, the first car factory built in Istanbul, along Salıpazarı Quay. Source: SALT Research, Photo Archive.

On the other hand there is still a widespread practice of demolishing disused industrial buildings—and not just industrial buildings—and rebuilding them using the same style, making a replica of them. One of the most discussed examples of this practice, still quite widespread nowadays, is the former slaughterhouse in Istanbul along the Golden Horn, whose quays have hosted the first industries of the then Ottoman capital. The building, built in 1919 by the architect Vedat Tek and operational since 1923, consisted of three pavilions. In 1991, following the move of the slaughterhouse from the area, the enterprise was used as a distribution centre. How to re-use it came into the agenda. The complex, however, was closed and destroyed due to the difficulties of the conveyor system. After the demolition of the original structure in 1998, with the exception of a very small block, a new cultural centre was built in the same style despite of the lack of an adequate documentation of the data pertaining to the architectural features of the slaughterhouse (Köksal, 2005). It officially opened in 2009 to host the opening ceremony of the Istanbul 2010 Capital of Culture.

Within this context, the idea of a strategy more in tune with the evolution of contemporary architectural thought is slowly gaining momentum, even though this practice is still in some ways an exception. This refers to the recycling of one of the seven warehouses in Salıpazarı, within the Galataport—one of the most important ongoing projects in Istanbul not only for its size but also for the impact it will have on the city and for its long and controversial process.

The project for the Galataport has been discussed since the 2000s, and it is now under construction based on the masterplan designed by Dror + Gensler, the winner of an invited competition. The project is in an area—located across from the old city—which from the mid-twentieth century to the early 1980s was the commercial port of Istanbul. The project runs for about 1.2 kilometers along the Bosphorus, including the Karaköy and Salıpazarı quays, and will host retail, office, public spaces and 'the world's first underground cruise operation'⁷. In this area twice there has been a clean sweep of industrial buildings, a clear example of the hostility to the concept of the palimpsest. In fact, the headquarters of the first car factory in Turkey, Ford Motor Company (Fig. 4) was located along the Salıpazarı Quay, from 1929 until the beginning of 1934. Disused for the next ten years—apart from a warehouse used as a storage area—in 1944 it was definitively dismantled.

In 1958, also occupying the area of the former Ford Motor Company, seven warehouses were designed and built by the architect Sedat Hakkı Eldem; however, since the 1980s, when the city of Istanbul began shifting from being the country's industrial hub to a financial and services centre, the area has slowly lost its functions, epitomized by the fact that in 1986 it became closed to cargo ships, and was subsequently converted into a tourist area, becoming a de facto cruise ship terminal (Odman, 2011). The seven warehouses were rented, turning the area into a cultural spot. In particular, one of the warehouses has been transformed into the first modern art museum

in Istanbul—Istanbul Museum for Modern Arts—the first example of a recycled building designed by Tabanlıoğlu Architects⁸ that will be demolished and rebuilt on the same area⁹; another one, known as Warehouse no. 5, has hosted the Istanbul Painting and Sculpture Museum of Mimar Sinan University; others have often been used as venues for the Istanbul Biennial and Istanbul Fashion Week. Work on the Galataport began in 2017, and the demolition of many buildings, not just industrial ones¹⁰ that followed, sparked heated debate in Turkish society.

Warehouse no. 5, leased to Mimar Sinan University, will be transformed into the new Istanbul Painting and Sculpture Museum, designed by Emre Arolat Architects¹¹ who, in March 2018, won the Cultural Regeneration Award—with which MIPIM / Architectural Review Future Project Awards honors architectural excellence in unbuilt or incomplete projects around the globe. The concept of the project is based on the maintenance of the reinforced concrete structural grid which, along with that of the other adjacent warehouses, has characterized this area, and therefore urban memory, since the 1950s (Fig. 5). Memory of which there seems to be no trace in the masterplan where, as stated on the architects' website, 'small, pixel-like buildings flank intimate streets and steps down into stairs towards the waterfront'.



Fig. 5 Aerial view of the seven warehouses along Salıpazarı quay. Source: SALT Research, Photo Archive.

6 / The project was published in 1970 in "Arkitek" architectural magazine, no. 340, pp. 159-166. Available at <http://dergi.mo.org.tr/dergiler/2/215/2916.pdf> [Accessed 1 July 2018].

7 / See <http://www.studiodror.com/for/galaport/> [Accessed 1 July 2018].

8 / See <http://www.tabanlioglu.com/project/istanbul-modern> [Accessed 1 July 2018].

9 / It was reported in the press that in November 2017 Renzo Piano Building Workshop published on its own Instagram account some images of the project of the new Istanbul Modern. The post was then deleted and no further information is available on the project. See <http://www.hurriyet.com.tr/kitap-sanat/iste-yeni-istanbul-modern-40661409> [Accessed 1 July 2018].

10 / Among the buildings that have been demolished along the Karaköy Quay, there are the Karaköy Passenger Terminal (Yolcu Salonu) designed in 1934 by the architect Rebiî Gorbon, see <http://www.cornucopia.net/blog/demolition-by-night-karakoy-passenger-terminal> [Accessed 1 July 2018] and the historic adjacent post office building (Posthane), see <http://www.hurriyetdailynews.com/opinion/sedat-ergin/many-headaches-at-istanbuls-galaport-demolition----111352> [Accessed 1 July 2018]; the former was registered as a cultural asset, the latter was supposed to be preserved.

11 / Emre Arolat Architects designed also AGU Sümer Campus in Kayseri, in central Anatolia, transforming the Sümerbank Textile Factory built in 1933 – one of the most important symbols of industrialization and a unique example of Russian Constructivism – into the new campus of Abdullah Gül University. See <http://www.emrearolat.com/gallery/agu-sumer-campus/> [Accessed 1 July 2018].



Fig. 6 The Istanbul Painting and Sculpture Museum (Warehouse no. 5) under construction. Photo Cemal Emden

Having removed the walls and floors, the structural 3D grid houses new containers—the galleries—connected to each other by 'bridges' and paths. The whole grid—the ground floor is open and permeable to allow public use—is emphasized thanks to the glass surface that wraps it and that, according to the intentions of the designers, will allow the visitor to plunge into the galleries and concentrate on the artworks, and then, when leaving while still remaining inside the structure, enjoy different views of the city (Fig. 6).

Following the same strategy, there is a plan to rebuild the narrow and long-planned office structure, adjacent to the warehouse in the direction of Meclis-i Mebusan Caddesi, 'with serious bearing weaknesses, with a similar sense of memory, especially in the context of the original façade' (Yüksel, 2017).

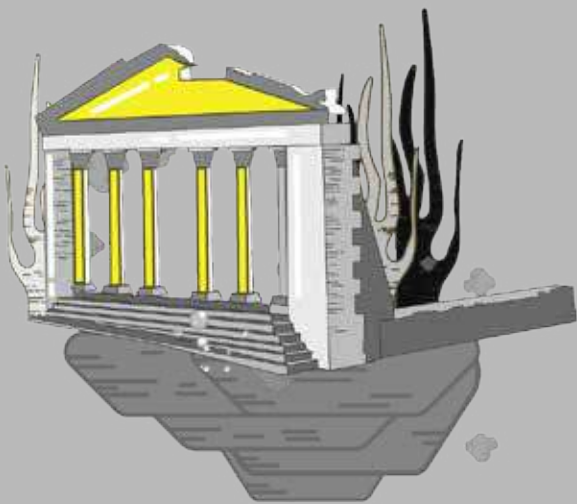
The Galataport well represents all the contradictions of the practices related to the underused buildings in Turkey; after having demolished the Ford Company and the memory of an important chapter of the economic history of the country, and replaced it with warehouses—which in turn entered into the urban memory of the city—again the axe of demolition has fallen on the whole area, keeping only one recycled building. The tabula rasa still wins over the palimpsest.

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[MEM/04]



Socialist industrial heritage in Albania. A proposal design for the conversion of the Gogonushi complex in Fier

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abstract

The Socialist regime, which governed the country from 1945 to 1990, consigned to Albania a series of industrial complexes as an outcome of the partnership with URRS' and Chinese popular Republic technicians. These titanic structures still emerge from the neighbourhoods of the most important Albanian towns, creating significant relationships with the surrounding landscape. The fall of the socialist regime in Albania in 1990 represented for the country a newfound freedom and a sense of belonging, but the interest for these Socialist industrial settlements resists to the repression of the regime's symbols. Is it possible, today, consider these industrial buildings as new Albanian heritage, capable of produce new symbolic and positive values for the community?

The proposed paper would show the work of the research group developed during a graduation thesis at the Polytechnic of Bari, in the 2014-2015 academic year¹. The research has two different scales of approach:

- on a territorial scale, we planned a strategy to create a smart network for the new Albanian post-industrial landscape, considering the application options of the Ruhr model;

- on a building scale, we worked on a pilot project for the greatest industrial area of the Albania middle-southern region. The project has two main goals: transforming the exterior ground surface from an industrial and functionalist space to a public one whilst converting the interior to a culturally oriented space, in order to create a positive dialogue between the existing industrial machines (turbines and boilers) and the new elements of project. The exterior design tries to amend the conflict that exists between natural elements and the factory through the projection of green plots that bring inside the public space different aspects of the Albanian landscape, characterized by lagoons, huges and farms.

keywords Adaptive Reuse, Industrial Heritage, Reuse Tactics

Introduction: the Albanian industrial heritage as collective memory

The Albanian process of industrialization, partially started during the Italian domination in 1930, had a strong acceleration under the Socialist regime, between 1950 and 1975. The leader of Albanian Socialist Party Enver Hoxha identified the industrial sector as an important factor in order to guarantee the autarky to his Nation (Anonymous, 1974:151-159) However, the growth of industrial sector would not have been available without the established alliances with URSS (1949-1961) and China. This exchange agreement was resulting in the building of more and more new industrial complexes, concentrated in the mid-southern region of Albania. The need for proximity to the main natural resources indispensable to productive processes determined the positioning of industrial areas in an open landscape that today has been embedded in the neighborhood of the Albanian towns. The great evocative value of these "industrial giants" (so called by the dictatorship propaganda) is richly documented by the Socialist art in the period between 'sixties and 'eighties of the 20th century.

The Realism artworks proves the propagandistic role of this artistic movement. Indeed, the pictures presented the same figurative topic: the worker was the central figure of depiction and he emerges in relationship to his working place. Setting aside the Communist propagandistic stretch about the role of these factories, it is undeniable that the construction of these buildings involved thousands of workers. Inevitably, these industrial artifacts can be considered, today, as an important heritage that testifies a collective memory for a whole community (Parangoni, 2012). Our degree thesis tried to elaborate a strategy to preserve this heritage through a necessary transformation that respect the importance of the industrial memory.

The Ruhr's model and the territorial strategy for the Myzeqeia plan

The territorial strategy looked at the Ruhr's model, as possible operational reference. As the Myzeqeia plan, the Ruhr basin appeared partially devastated from the exploitation of the natural resources by the industrial process, until 1991. After this year, the administration proposed a shared regional plan, as a result of the dialogue between 17 municipalities of the Land NordRhein-Westfalen. The goal is the creation of a regional brand, capable to attract investments from the international markets. In order to create this possibility, the strategy provided for the enhancement of cultural offering, as engine of growth and transformation by environmental and infrastructural point of view. Hence, the concept of landscape safeguard has been replaced by the concept of landscape promotion, and the negative "industrial image" turned into the positive "landscape image" (Giani,2013: 3).

The landscape became the tool to stimulate the collective imagination of the regional inhabitants, fueling the desire to participate to the transformation process. The retraining programme provided for seven pilot projects that considered different kind of strategies: recovering the hydrogeological system, building new residential facilities, enhancing the industrial complexes as monumental memories, creating a regional landscape park. All these strategies contributes to create a network arrangement formed by different layers of intervention.

According to the Ruhr's model, the creation of a network in the middle-southern region (Fig.1) of Albania has been organized between the different layers of heritage. It provides for several steps: the exploration of the territory, a survey in which it is possible discover the "invisible landscapes" Kevin Lynch, the selection of cultural heritage, through an historical research, the creation of a territorial strategy and the dissemination of the strategy through an exportable model of intervention. The first stage of the research focused on Fier a town in the middle of the region. In respect of the territorial strategy, we recognized Fier, as the "centre of gravity" of a network for the touristic promotion, according with its strategic position and the presence of an important industrial artefact as the Gogonushi complex. We recognized three layers of the network: the environmental system that spreads on surfaces, the archaeological and industrial system, instead are punctual.

Spreading between the Narta lagoon to the south and the Karavasta lagoon to the north, the strategy on the environmental system provides for the creation of a network of slow mobility, taking advantage of the canal system realized by the Regime. The canals become walkways, cycleways and waterways, which creates a connecting, green grid. In order to enhance the archaeological and industrial system we provide for the creation of routes and thematic itineraries that can attract the visitor to move between this punctual system. Later, we identified the adaptive reuse of the former Gogonushi industrial complex in Fier, as the pilot project that proposed a model for the whole region recovery. Indeed, the so called Azotiku complex has the typical features of an autonomous "island" in the urban system of Fier, well-connected with the hinterland of the Myzeqeja plan. This positionality is the reason why we started to analyze this industrial area, in order to understand weakness and opportunities of an adaptive reuse design.

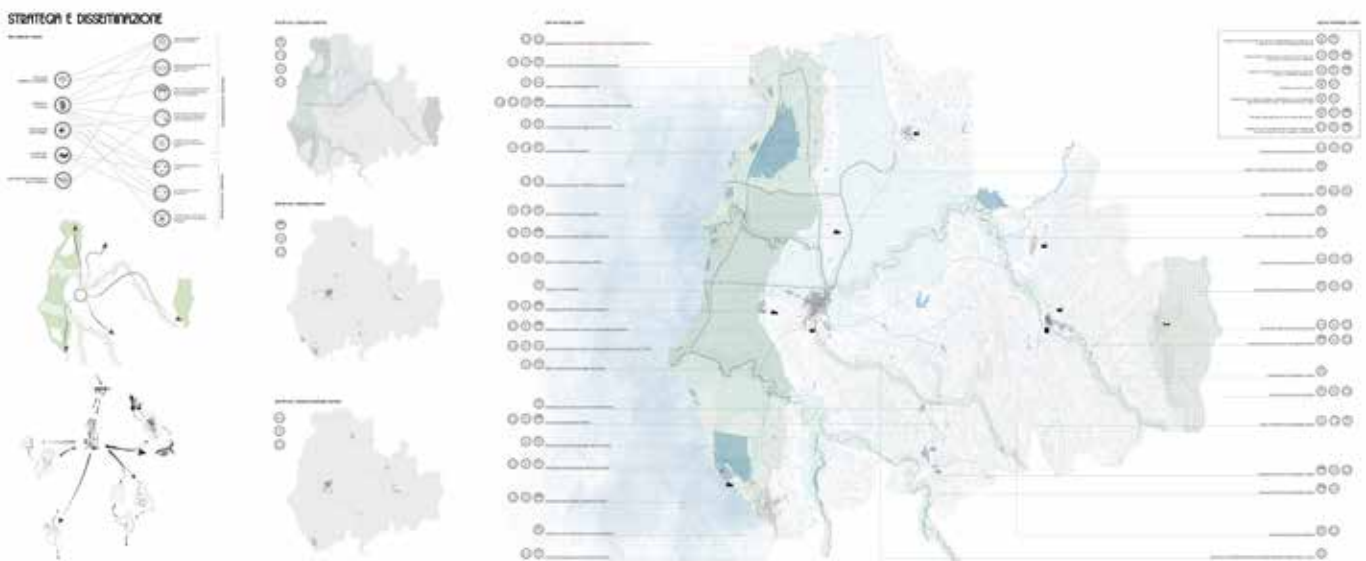


Fig.1 Masterplan of the network strategy

The Gogonushi Complex In Fier: A Typological Analysis Model For Industrial Heritage

The Gogonushi or Azotiku was built between 1965 and 1985 and it consisted of a fertilizer factory and the greatest thermoelectric powerplant of the country (T.E.C.). The construction of this complex involved technicians and workers coming from several countries (Italia, China, Russia, Czechoslovakia); this fact determined a great technological variety of this artifact. The great width (about 40 ha) and the important number of buildings made the complex a city within the city, decommissioned only in 1993. The thermoelectric powerplant produced electricity for all the southern part of Albania, (100 MW/h) and gave an employment to 5'000 workers. The T.E.C. sits in a very suggestive landscape: surrounded by hills, it extends on the Myzeqia plan in a strong relationship with the Gjanica River and the agrarian plot.

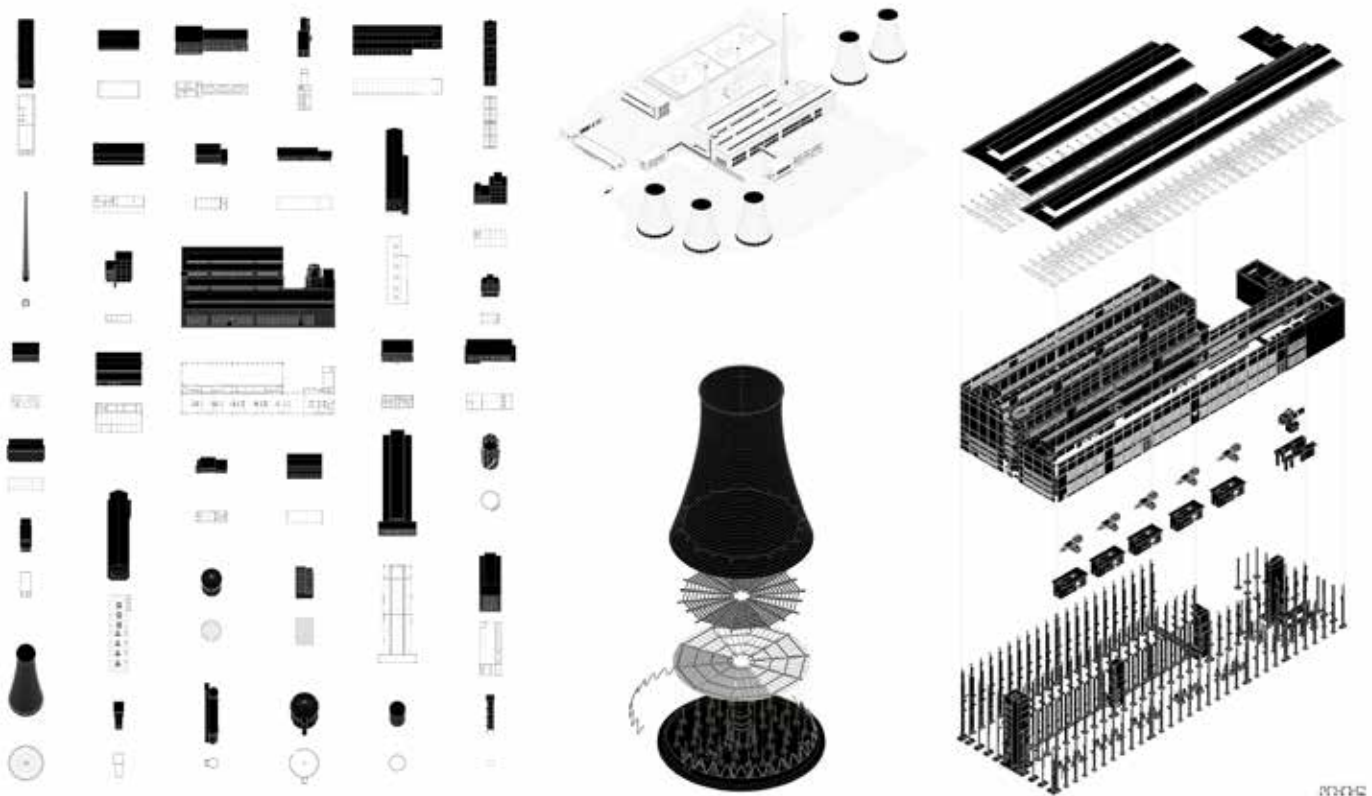


Fig.2 The Gogonushi Complex. Taxonomy of the building and axonometric view of the Engine Room and cooling tower

The study focused on the characters and structural features of the buildings, in order to understand the propensity to accommodate new facilities. Hence, we analyzed the industrial objects through interpretative drawings, creating a taxonomy that permitted us to establish dimensional, typological and structural criteria of comparison. The typological study shows a distinction between "big industrial containing objects" and "small industrial contained objects"(Fig.3). We gathered three types of big industrial objects: the "hall buildings", which rest on the iteration of the bay in the longitudinal direction and on a compact plan; the "sculptural objects", identifying the buildings characterized by a strong geometrical stereometry; the "linear objects" which correspond to the crossing points of the link between several buildings. The small objects, even though look beyond architectural issue, establish formal relationships with the big objects as "array elements" for the architectural space.

Successively, the research concentrated in particular on the analysis of the structural prototypes used in the Gogonushi complex. The construction technique joins the smaller units and is based on a concrete framework with brick curtain walls and prefabricated panels. The comparison shows the same structural bay and similar relationships between full and empty segments used in all of these buildings. The exceptional occurrence regards the greatest buildings of the complex: the engine room and the cooling towers. The engine room is composed of two halls with a longitudinal direction (the boiler room and the turbines room), held together by a central spine

1 / Supervisor of the research: Prof. Anna Bruna Menghini. (Politecnico di Bari). Assistant supervisors: Prof. Arch. Michele Beccu,(Università di Romatre) Prof. Roberta Belli,(Politecnico di Bari) Prof. Arch. Francesca Calace, (Politecnico di Bari),Prof. Arch. Frida Pashako.(Epoka University, Tirana). Research group: Arch.Massimiliano Cafagna, Arch. Silvia De Mauro, Arch. Daniele Fiore, Arch. Alberto Pice, Arch. Vito Quadrato, Arch. Pierluigi Ruggeri.

of connection. These three units correspond to the iteration of three different bays based on pillar, a stiffening beam and a truss coverage.

The cooling tower consists of a great concrete hollow compartment put on a ring of diagonal pillars that separate the tower from the basement. The hollow compartment is constituted by a hyperbolic profile, in order to facilitate the water and airflow and take into account the wind loads.

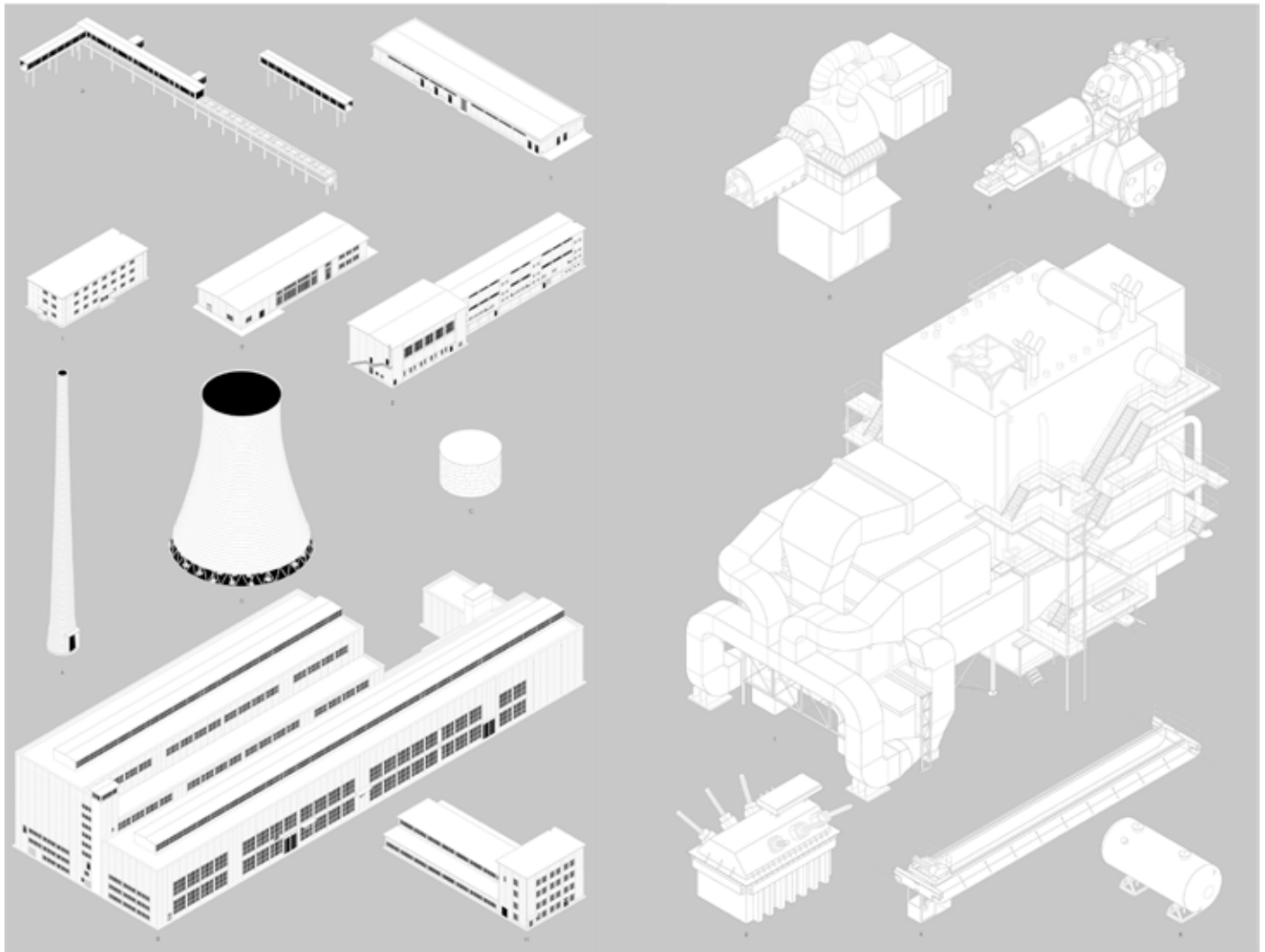


Fig.3 "Big industrial containing objects" and "Small industrial contained objects"

The adaptive reuse. Contemporary operational paradigms

Jacques Lucan recognized in his essay the contemporary tendency of the architectural design to adopt the paradigm of "operation" that replaces the original paradigm of "composition" (Lucan, 2017: 563-580). Hence, the composition provides for a classical way to conceive architecture, looking at the disposition, the hierarchy between the parts of the building, the balance with the volumes. Instead, the contemporary paradigm of operation provides for an architectural gesture underpinned by an action expressible using a verb that summarizes the concept of the building. This is especially true if the new design sets in a pre-existing context as the case of an adaptive reuse. From this point of view, the idea of operation implies the need of a strategy that becomes paradigmatic and potentially adaptable to different situations. For this reason, the research focused in this stage, to identify operational paradigms to understand how it is possible articulate specific categories useful to imagine the reuse industrial buildings. In particular, we focused on the cases in which the programme of the new design provided for cultural facilities.

1. Embedding

The first tactic of reuse consists of embedding the industrial pre-existence within a new spatial frame, a structural pattern that has features similar to the industrial artefact. This is the case of the Long Museum West Bund, realised by the Atelier Deshaus in Shanghai (2014). The new design adopts the former Coal-Hopper-Unloading-Bridge that transported carbon, as the generative element around which the architectural firm articulates the parts of the museum, embedding the industrial artefact. The new structural choice reflects the spatial nature of the bridge,

which has a longitudinal development, generating an oriented shape; a cantilever structure featuring “vault-umbrella” with shear walls. As the Kimbell museum by Louis Kahn, the structure generates a pattern organized around the bridge, based on a sequence of galleries; in certain cases, these spaces are oriented transversally respect to bridge, creating a visual relationship between new and old, in other cases the galleries are oriented in parallel to the bridge, embedding with the vault-umbrellas the artifact within the museum.

2. Connecting

The second tactic consists of the action for connecting. The new design is a complex device that connects different building set up in the same complex, originally conceived as separated. Therefore, this strategy operates in the space between the buildings. This is the case of the Architecture Faculty in Tournai, designed by Aires Mateus (2017), that provides for the reuse of a urban block, which houses two factory and a convent. The proposal project consists of connect the industrial pre-existences, by inserting a new building between the original volumes. This operation permits to create new inner urban plazas, which open the urban block to the Tournai’s citizens. The new building has a filamentous nature, with a seemingly simple interface that hides an inner complexity of the space. Indeed, the building connects both the pre-existing buildings with a covered forum in a horizontal way and through some monumental stairs in a vertical way. The volume provides also for new facilities as two auditoriums.

3. Gathering/Scattering

The third tactic consists of acting within the structural pattern of the industrial building, gathering or scattering the nature of the interior, by inserting spaces within spaces. This is the case of the Kulturspeicher in Würzburg, designed by Bruckner&Bruckner in 2003. The project area regards the river port of Würzburg, in particular the old warehouse of grain that houses a museum of contemporary art. The industrial building consists of a great brick wall and a timber frame inner structure. The architects adopts the existing structural pattern as the measuring element for the integration of new shrines that occupy the two heads of the building. In these areas, the design provides for emptying the brick wall, replacing with a tilted slats system. Within these shrines, there are the gallery of museum on three levels, which detach from the original whole creating a space in between, a walkway, which overlooks the central Halle. Across the outward that faces the river, the designers place two glass volumes, which contains stairs, coffee shops and a library.

4. Mirroring

The fourth tactic consists of mirroring the industrial building, juxtaposing a new twin building that turns on visual, function and spatial relationships and consents to keep intact the spatial character of the original building, placing all the facilities in the new design volume. The FRAC in Dunkerque, designed by Lacaton&Vassal in 2013, reflects this approach. The adaptive reuse concerns in particular a reinforced concrete pavilion, called the “cathedral”. The radical proposal of the firm provides for the duplication of the original building, juxtaposing the new twin volume as an operation of mirroring. From an expressive point of view, the clone overturns the relationship between the structure and the void: the curtainwall of the original Halle which demarks the internal void turns into a corrugated polycarbonate volume which consents to see through the envelope the solid inner concrete block. This block contains a series of platforms that house all the programme of the museum, on the contrary the original Halle is totally empty. The spatial distribution is placed on the border of the central core; it is conceived as a “footbridge”, or a cover street that characterizes the facade.

5. Overlapping

The fifth tactic consists of overlapping a structural and functional layout above the existent configuration, creating a spatial relationship between the upper level and the lower level and permitting to cross the space along different paths in comparison with the one originally working. This is the case of the Reader’s house in designed by Ensamble studio in 2012. The design proposed sets in the context of Matadero in Madrid new structural pattern that overlaps on the pre-existing two warehouses, a “new order” that reflects the tectonic principle of assembly. This order consists of a sequence of precast reinforced concrete beams that are put in the buildings through the windows of the longitudinal elevation, by virtue of the fact that the beams have the same dimension of the openings. The beams work as footbridge and vectors of study and research areas on the upper level; they connect transversally the two warehouses, originally independent each other. On the lower level the facilities are organised in an open space, but the cultural diffusion activities participates visually to the web at the upper level.

6. Carving out

The sixth tactic consists of curving out the pre-existing industrial structure, in order to convert the serial space designed for the machine in public space, to serve the visitor. This is the case of the Zeitz Museum of Contemporary Art in Capetown, designed by Thomas Heatherwick in 2017. The new design sets in a great grain elevator, decommissioned in 1991 in which the programme provide for the greater contemporary museum in South Africa. Within the cellular structure derived from the repetitive reiteration of reinforced concrete cylindrical containers, the Heatherwick firm proposes a new hierarchical organization of the space. The way to achieve this consists of carving out the structure of the silo, creating a great empty space for the hall, around which all the galleries of the

museum are organized. The result of this operation is a curve space, as a gothic cathedral in which it is possible explore the old cellular structure like an archaeology excavating out. Hence, the original space, by this “sculptural” operation, turns into an introvert space, characterized by the tubularity of the pre-existing structure.

A possible conclusion: the reuse of the former Gogonushi. The masterplan strategy and the design of the House of territory

After the analysis research, the work focused on the design proposal to transform the former Gogonushi in Fier. The conversion project has two main goals: transforming the exterior ground surface from industrial and functionalist space to a public space and restoring environmental balance, between the industrial area and its immediate surroundings. The master plan (Fig.3) proposes, an agrarian green plot that create a new inhabited basement that encompasses the pre-existing industrial objects. These new clumps arrange around a longitudinal forum which establishes a hierarchy of the public space. The new green plot guarantees the rehabilitation and the decontamination of soils and of the river Gjanica through a network of drainage system: the canals creates permeable reactive barriers, which use the force of water to confine contaminants in some manholes placed.



Fig.4 Masterplan of the project



Fig.5 Sections and plan of the project in the engine room.



Fig.6 Exhibition layout in the machine room

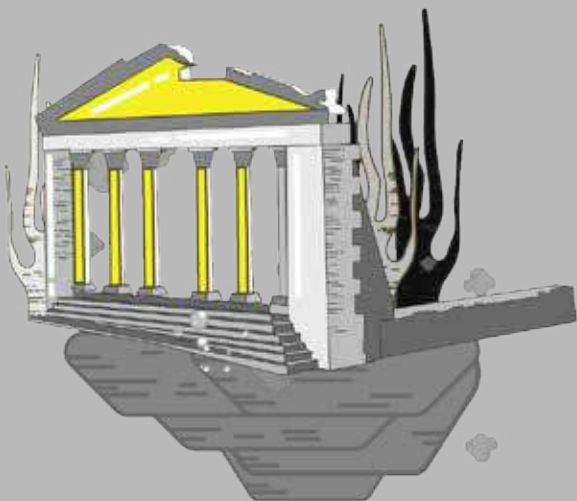
The engine room of power plant becomes the “House of territory”, which houses workshops, creative spaces and an interactive museum: thanks to some expositive mechanism cohabiting with old industrial machinery still existing, it tells about archaeological, industrial and environmental history of region, and overturns the conception of productive industry in creative industry. The new project elements were conceived as “machinery exhibition” (Fig.4-5), trying to create a semantic dialogue with industrial machines and generate new symbolic and positive values. These new grafts consist of three new volumes placed in the boilers room; this place originally housed huge

machineries, so we propose again new punctual objects similar in shape; a formal simplicity to the exterior of the objects, a complex operation to the interior. A great expositive block incorporates the still present turbines and allude to a conveyor belt conducting museum visitor through the territory's history. This cultural and interactive space, placed in the suggestive ex engine room, recomposes the relationship between regional inhabitants and the memory of their territory full of traditions. The exterior design tries to mend the conflict existing between natural elements and factory through the project of green plots, which bring inside public space different kinds of Albanian landscape, characterized by lagoons, hills, farms.

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[MEM/05]



White Roads In The Crete Senesi

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abstract

The Crete Senesi is a region located near Siena, in Tuscany, Italy. It is probably one of the most known and appreciated rural landscapes of central Italy. The appearance of this region has its roots in centuries of human intervention in order to make this formerly hostile environment suitable for agriculture.

Due to deep changes in the social and economic reality in the 50's and 60's many people fled from these countryside areas into the nearest cities, abandoning part of the lands and leaving the remaining in the hands of bigger farms basing their business on monocultures and sheep-farming. The dense network of farmhouses and dirt roads, essential for the previous agricultural system based on sharecropping, quickly became obsolete and was abandoned too. The general decay of the region has gone its way mostly unchallenged in the last decades, leading not only to a loss of landscape value but also causing occurrence of hydrogeological issues.

Agriculture not being a viable solution from an economical point of view, meant that the focus had to be turned on alternative uses to fight against abandonment. Following the idea that a place is alive when people travel it, the answer was to restore and redevelop the network of white roads build by the farmers and turning them into cycle and pedestrian paths.

These paths are based on the existing ones with an integration of the missing links. In the development of this new routes many factors came into play: historic routes, private ground crossings and the comfort of the new paths. For this last point the steepness was analysed with the help of the parametric software Grasshopper, aiming to find the route with the minimum slope.

keywords Heritage, Rural Landscape, Mobility, Abandonment

Introduction

1. The "Mezzadria", sharecropping agriculture

Dealing with a Landscape that was heavily influenced by human intervention during history, like the Crete Senesi, demands a first approach from an historical point of view, in the aim of getting a complete comprehension of the territory. In particular, being primarily forged by agriculture, an insight in the cultivation management system of sharecropping proves to be essential.

The form of sharecropping known as "Mezzadria"¹ is documented in the Sienese area starting from the first decades of the 12th century. Excluding the financial glories of the 13th and 14th century and the 1900s, Siena's economy was always based on agriculture.

In the lands surrounding the city already in the Middle Ages, in Siena as in the other inland cities of Tuscany, private citizens' property spread out. That was often the case of people belonging to the less wealthy classes, traders and artisans, who reinvested part of their earnings. They found it cheaper to organize their lands in small self-sufficient farms entrusted to a peasant family, instead of leasing them or getting them cultivated directly by employees. The "Podere"² was born, as the basic property unit the landowner gave to each settler. The sharecropping contract established that the farmer and land beneficiary was then required to hand over half of the production to the owner. Throughout history, sharecropping remained almost unchanged in its modus operandi, the changes were minimal and exclusively at a contractual level. This until the twentieth century.

Starting from the 1920s, from a political point of view, two factions were born, the landowners supported the rise of fascism in the hope of regaining lost privileges and sharecroppers with opposite intent relied on socialism and communism. The continued deterioration of contractual conditions led to a growing unhappiness among the farmers and they were able to gain a production quote of 60% in 1945. In 1964 the stipulation of new sharecropping contracts was forbidden and in 1982 the contracts still in progress were converted into leases.

The strong socio-economic change given by the dissolution of sharecropping contracts also had inevitable findings on the landscape. Lands cultivated with promiscuous cultivations, valorized with works of improvement and reclamation and well maintained, typical of the sharecropping period, were slowly lost. The land's value decreased and the farms were often sold off by owners at very low prices. Many shepherds of Sardinian origin took advantage of this and in search of better conditions, were attracted by the affordability of this land, with a low agricultural yield but suitable for pastoralism. The parts that remained cultivated were reorganized in the form of medium-large farms and now undergo a strong mechanization to remain competitive with the capitalist system. The multiplicity of crops is irretrievably lost as well as the maintenance of the territory, which is becoming increasingly scarce. The farmhouses sized for the high number of people employed as work force during the sharecropping period became obsolete and many of them were abandoned.

2. The road system, historical development and current state

The need to have transport routes, for moving workforce, farming tools, bringing the cattle to the grazing and transporting the harvest, led, during the period of sharecropping, to the development of a capillary road system, strictly connected with the requirements established by this way of organizing agricultural lands.

This network could be divided in two main types of roads: the intra-Podere ones which connected points inside the same farm and the inter-Podere ones which guaranteed the connection with other farms and/or with the main farm, the landlord's residence.

The first ones had a reduced size both in width of carriageway and length compared to the others but weren't less important. They were used to connect the farmer's dwelling house with the surrounding cultivations and pastures and used on daily basis to accomplish the farmer's tasks.

The second ones had instead more functions. They were a way for the landlord to control his peasants but also the route for handing over the crop. This inter-Podere connections reflect in their centralized structure the social hierarchy model of the time.

Other functions were carried out by this network too. During harvesting season, or for particularly demanding jobs, the settlers used to share the craftsmanship between families making the road connection between them a fundamental requirement. In a similar manner this connections were used by many itinerant professionals who were visiting the farms from time to time. This is the case of tinkers, blacksmiths, carpenters and also doctors and veterinarians and peddlers.

The road network connecting different farms not only had work purposes but also recreational ones. Known as "Veglia" is the gathering of farmers (only men were allowed to go) from neighboring farms during the evening and the nighttime with the aim of socializing, telling stories, entertaining themselves, but also talking about cultivation choices, politics and working conditions.

From a constructional point of view this roads were mainly gravel roads, referred to in this text as white roads because of their peculiar color. Only the less important ones, covering minor distances or connecting less crucial points, were made of earth.

The maintenance status was good and repairs carried out regularly, this both because of the fundamental logistic role and because the settlers were obliged to guarantee certain kinds of free duties to their landowners. Among these, road servicing.

Nowadays this network is fragmented, both for the lack of need for such a dense network and the use of mechanical means for the cultivation with better off-road capabilities compared to the bullock hauled carts and ploughs used in the past, eliminating the need of a careful maintenance.

Many of this paths have now completely disappeared, because they were not used anymore, or even because they were destroyed by means of ploughing to limit transit on private properties. The only ones which are still regularly maintained are the ones used as an access to dwellings and places of worship.

As a reaction to this phenomenon a few events were born over the years, which tried to give a new temporary life to white roads. The most successful of these is "L'Eroica", "The Heroic".

On Sunday, October 5, 1997, 92 cyclists met by Gaiole in Chianti to dispute the first edition of "L'Eroica", a cycle race on white roads. The event was born as a celebration of authentic cycling with a nostalgic streak towards the cycling races of the past. Strictly vintage street bikes, vintage clothing and vintage refreshment points characterize

the event since its first editions. A good part of the routes takes place on dirt roads, following the demanding ups and downs of the Chianti and Crete hills.

Hence also the name of Eroica, just for the heroic effort made by the participants to get to the bottom of the 80 or 160 km of the two proposed routes. The number of members grow and in 2008 they exceed 3000. From this point on the selection of the participants will be more restrictive, participation becomes more elitist but not less numerous as the 3418 members of 2010 testify. From being a competition organized by hobby for a few cycling enthusiasts in its first editions, "L'Eroica" becomes a real fashion phenomenon and is located to be the creator of a revival of vintage cycling worldwide.

"Yes, the white roads, which abound in Siena, were the input for our initiatives, together with the desire to recover the authentic roots of cycling: every tarmacking is a new wound" (Brocci, 2014: 14) says Brocci in an interview for the book "L'Eroica. La storia, le strade, le bici, i personaggi" released in 2014. Everything comes from here, from the interest of giving new life to the white roads through cycling, even if only for a few days a year.



Fig. 1 Abandoned farmhouse in the Crete Senesi

Objectives

Having examined the degree of abandonment of the territory by comparing it with that of the white roads system, the conclusion is that in order to guarantee the vitality of a territory the fundamental point is its accessibility. It was therefore thought to give a new function to this road network as bicycle / pedestrian routes for tourism, sport or recreational purposes. The idea is to connect the two centers of Arbia and Asciano with a parallel connection to the current provincial road "SP Laureatana" based exclusively on the use of white roads. This link uses, where possible, existing roads with a low vehicular traffic rate and new construction only in case of reduced sections that integrate the missing parts of the route. Parametric modelling will be introduced as a tool to plan this sections trying to minimize their slope.

1 / Italian for sharecropping, derives from the adjective mezzo=half, indicates the traditional contractual crop division ratio.
 2 / Each unit consisted of fields of varying dimensions and assigned to different uses and crops with the dwelling house for the farmer's family and infrastructures that allowed the breeding of pack animals and the means to transform and store the main products. Near the houses there was a vegetable garden destined for the crops necessary for self-sufficiency. The size of the "Podere" usually varied between 10 and 50 ha depending mainly on the quality of the soil and the amount of labour the family cultivating it was able to provide.



Fig. 2 The towns of Arbia and Asciano in relationship to the Crete Senesi

Methodology

1. Defining the area of research

For a more detailed analysis a smaller area was chosen: more specifically, the portion of the municipality of Asciano enclosed on the northern side by the provincial road "SP438 Lauretana", to the south-east by the provincial road "SP12" and to the west by the stream Arbia. The choice was made by taking the Lauretana as an axis and then analyzing the secondary paths parallel and perpendicular to it. The extent was then further reduced by focusing only on the part that is located south of the Lauretana, in the aim of obtaining an area that has only white roads inside.

2. White roads network analysis

An initial analysis phase based on aerial images was followed by an on-site inspection. The various sections have been cataloged giving each one a state of conservation and practicability on a scale from 1 to 4. The data collected were then combined with the legal status of the various roads, deduced from the regional thematic mapping of Tuscany³. The roads are so classified in provincial, municipal, neighborhood and private. Sections no longer distinguishable on the territory but present in the land register cartographies have been added to the cartography and will from now on be defined as historical routes.

For this step reference has been made exclusively to recent land register⁴ cartographies since a comparison with the nineteenth-century land register revealed an almost exact correspondence in most cases. Moreover, the purpose of this research is that of a refunctionalization of the paths and not of a strict restoration. The lost historical routes will be reconstituted only in cases where they will present a valid path for the connection of the existing truncated sections. More about that later.

Further problems were identified in addition to the lack of maintenance of some sections. Numerous barriers of various kinds (gates, bars, fences for grazing) have been identified along the routes. These specific elements were deemed not to be mapped, partly because of their temporary and mobile nature (grazing fences) and partly because they are almost permanently open as far as the gates and bars are concerned and are mainly intended to prevent vehicular traffic, and in most cases do not present an obstacle for cycling and pedestrian mobility. A further problem is presented in conjunction with the fences for grazing. Although they present the possibility of being opened at the road crossings, if there is a flock inside them, this is accompanied by shepherd dogs who generally behave aggressively towards those who approach the sheep they are protecting. Occasionally, wild boar hunts may occur that can make some routes temporarily unreachable.

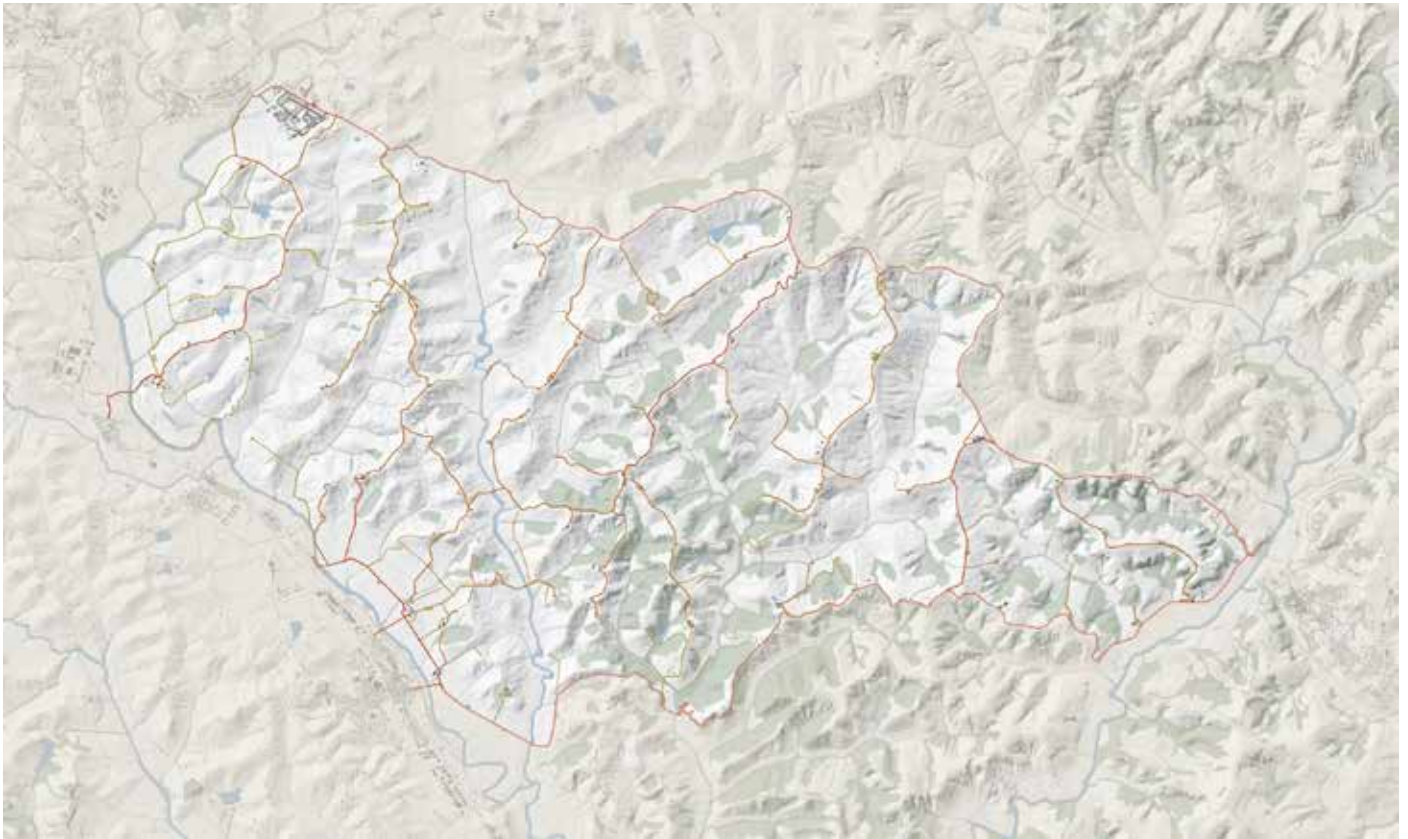


Fig.3 The road network's current state



Fig.4 Fence for grazing crossing a path

3 / "Grafo stradale", Shapefile dataset available from the Regione Toscana on <http://www502.regione.toscana.it/geoscopio/cartoteca.html> , consulted 2017

4 / "Regione Toscana, Archivi di Stato Toscani: Progetto Castore". Digitalization of the French land register (also known as Napoleonic Land register) 1808 - 1814

3. Defining the main path

The idea is to connect the two centers of Arbia and Asciano with a parallel connection to the current provincial road "SP Laureatana" based exclusively on the use of white roads. This link uses, where possible, existing roads with a low vehicular traffic rate and uses the new construction only in case of reduced sections that integrate the missing parts of the route.

The main route that has been identified starts immediately outside the town center of Arbia and ends about 1.5 km from the center of Asciano. The overall length is 27.8 km. This main path is then flanked by a series of perpendicular branches, at a regular distance, which reconnect it to the Lauretana. This opens up also the possibility of the fruition of ring routes, although these are not exclusively on white roads.

As for the categories of users, these have been identified mainly with cyclists and hikers for the full route but also include runners or people who simply want to take a walk in the proximity of the urban centers.

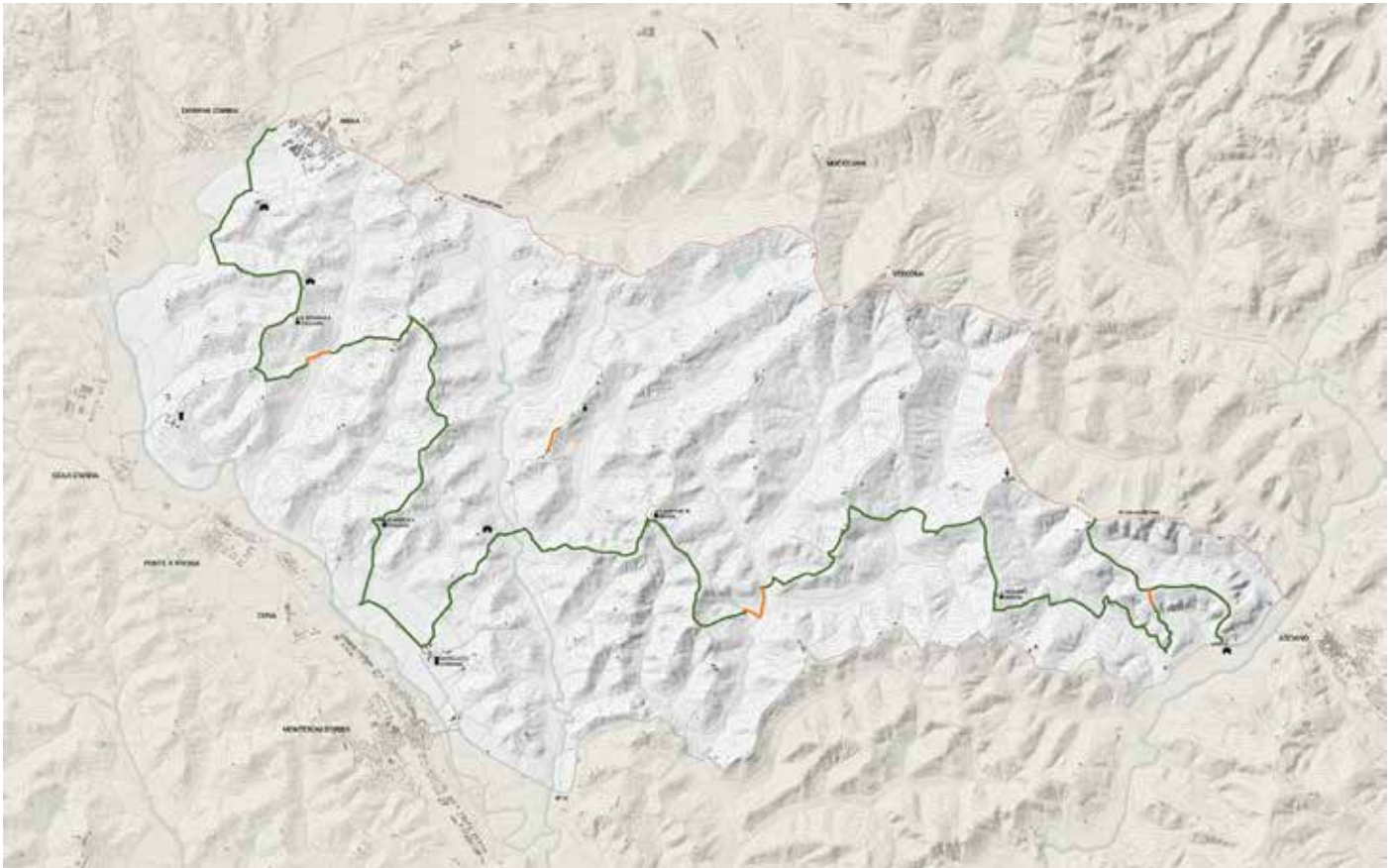


Fig.5 The main path

4. Reconnections

From the analysis of the actual state of the white road system a lack of links between the existing routes emerged in some points, due to a loss of functionality of the affected section and its subsequent abandonment.

In the restitching of paths, the use of parametric modeling and the Rhinoceros plugin Grasshopper⁵ was introduced. In particular, this tool was used to manage the slope variable, otherwise difficult to handle due to the terrain's diverse morphology and extent of the heights datasets. This software implementation is also aimed at dealing the factor comfort of the new planned links.

The program created with Grasshopper has as input data a surface that represents the morphology of the terrain, derived from Google Earth data, and two points which represent the beginning and end of the path to be designed. Proceeding by iterations Grasshopper is used to determine a polyline that joins the two points and represents the path with minimum slope.

In determining the project path, the results derived from the criterion of lower slope were compared with the traces of lost historical paths, the wooded vegetation and maps of the hydrogeological risk of the area, with levels representing the risk of landslide and flooding. In addition, the boundaries of the land register parcels were introduced in this comparison to verify any interference with private property and crops (Fig. 6).

To use parametric modeling for the paths it was necessary to bring the design criterion, the minimum slope, back to a purely geometric problem. Essential data is the morphology of the ground in form of a mesh derived from the download of a portion of the relief model available on Google Earth through the software Lands Design, currently in beta version. To make this surface usable by Grasshopper, it then needs then to be transformed into a NURBS⁶ geometry, directly in Rhinoceros.

The start and end points of the path have to be determined and projected on the surface. Starting from the first point and using a cylinder cutting the ground model a subsequent point on the intersection, meeting the condition of minimum slope and distance, is determined. The points obtained are joined in a polyline.

The number of iterations is variable and allows to change the number of segments that compose the polyline of the path. However it has been identified with experimental tests that not necessarily a greater number of iterations corresponds to a greater precision of the path identified. In fact, often with a too high number the program tends to determine a zigzag path trying to avoid even the slightest slopes of the ground and losing sight of the final goal. Other problems of methodological nature have emerged regarding the insufficient precision of Google Earth's data in the case of paths with little difference in level. In these cases the program struggles to calculate the route because small gradients such as drains are in some cases perceived as slopes at 90° and therefore distort the result. This problem can be solved using LIDAR reliefs, where available

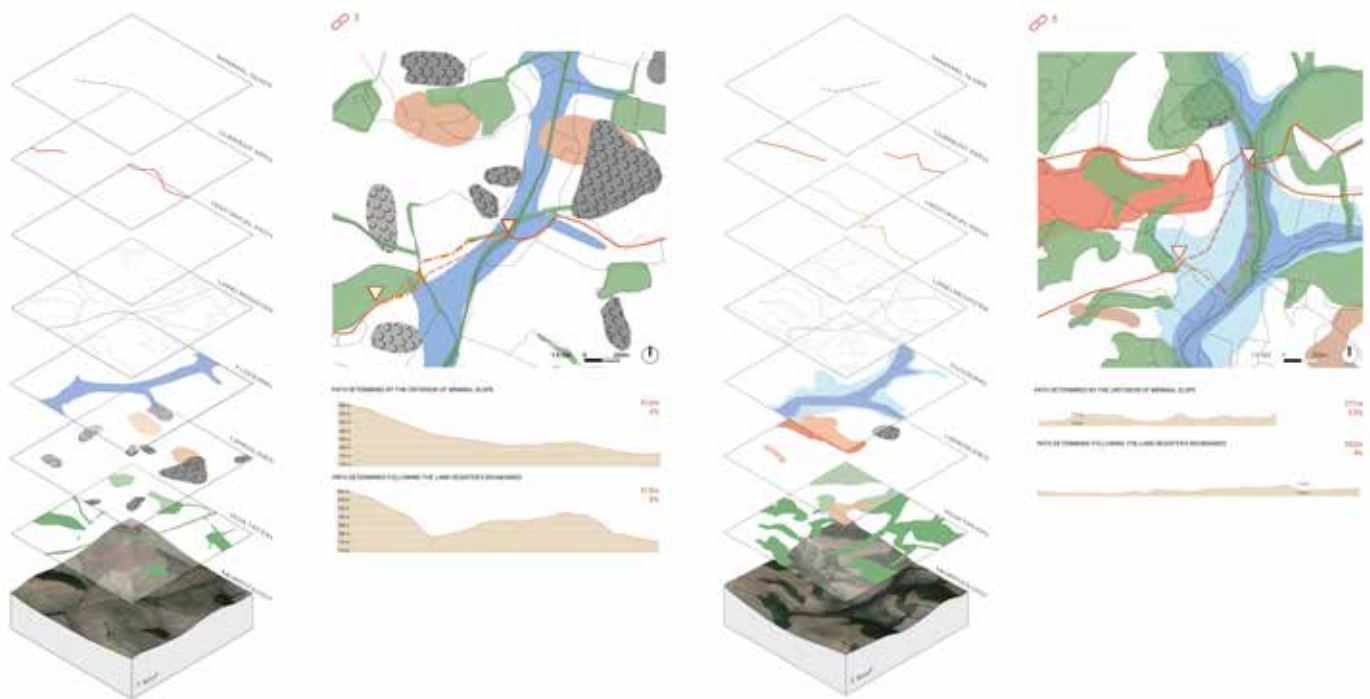


Fig. 6 Layers of data used and the resulting paths

Results

From the analysis of the white roads network's state of preservation it is derived that the provincial and municipal roads are in good condition and are regularly maintained. The municipal roads, in case they do not act as a link between two provincial roads, are maintained in their extend from the provincial road up to places of worship. As for the neighborhood and private roads the condition is very variable and goes from good to parts of the road that have become practically non-existent. Where possible already regularly maintained roads are used to build up the route planned within this research. As for the obstacles encountered along the paths' no short term solution will be effective without the legal support of agreements with the owners of the crossed lands. Combining sections of existing roads it was possible to develop the main path by means of exclusively gravel roads and limiting the need for new path constructions to stretches no longer than 1km. The goal of connecting the towns of Arbia and Asciano by white roads has been achieved, except for the last 1,5 km leading to the city center of Asciano.

5 / Plugin for Rhinoceros, is a graphical algorithm editor tightly integrated with Rhino's 3-D modeling tools

6 / Non-uniform rational basis spline (NURBS) is a mathematical model commonly used in computer graphics for generating and representing curves and surfaces

The study of the reconnections resulted in the proposal of two alternative routes, one calculated with the minimum slope criterion and one drawn following the land register boundaries. When comparing the two solutions, it appears that both paths have advantages and disadvantages. The path with lower slope is more comfortable to travel but, in the studied case, interferes with cultivated areas and therefore presents crossing problems to be solved through the stipulation of rights of way. The route that follows the land register borders in addition of having more slope is on average longer and in both analyzed cases follows watercourses and because of that happens to be in areas affected by flood risk.

Conclusions

Resuming the considerations made in the previous paragraphs, this research led to develop an approach to contrast abandonment in a rural area using bicycle and pedestrian routes.

Reusing already existing roads limits the impact on landscape and makes it possible to develop interventions with comparable low budgets. The presence of a network of low traffic rate white roads turns out to be a great opportunity and offers the ability to experience the area from a different point of view. The connection between urban centers is not undercut by this alternative routes.

The parametric approach to design proved to be very effective in the analysis of complex variables like the slope of the paths' reconnections, and combined with the other datasets permitted to draw an exhaustive picture of the examined missing links. This gives the opportunity to restore the missing connections enhancing their quality and proves to be a good method for studying confined and relatively small areas in detail.

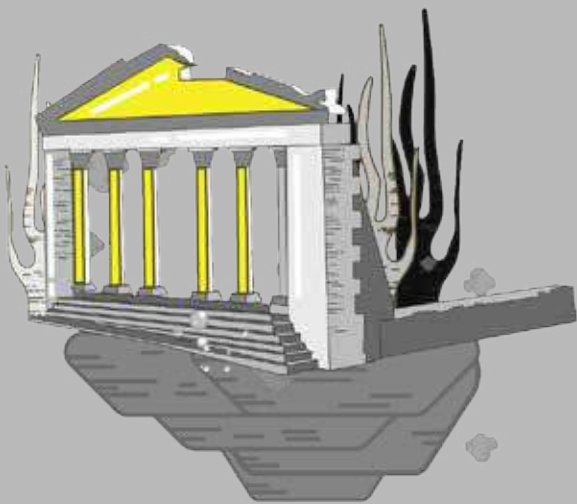
Acknowledgements

I would like to thank Luca Emanuelli and Gianni Lobosco for the support they gave me, both for the methodology and the development of this research. Many thanks also to Daniela Moderini for her project-specific knowledge and to Mario Tondello for his suggestions.

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[MEM/06]



COMMON LANDSCAPES

The evolution of commons through the story of several Catalan productive landscapes

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abstract

Common goods are commonplace in a myriad of cultures, since antiquity to the Industrial Revolution. Usually, common goods are natural resources that are used and managed by a community. In pre-industrial societies, these goods play a very important role in guaranteeing the survival of common people – those who do not own lands, as they are not members of clergy, nobility or royalty.

In England, from the 17th to the 19th century, landowners privatise common lands. This process leaves peasants without many of their livelihood, so they are forced to work for a wage. This lays the foundations to transition from a feudal to a capitalistic economic system. Due to the privatisations, peasants have no choice but to move to cities to find jobs. They take their communal practices with them, which they adapt to the requirements of the industrial society. These practices are later taken in by the public sector, through the New Deal in the United States and the welfare states in Europe, destroying self-organised communal practices. Common goods fall into oblivion during the period of splendour of social democracy.

Since the early 1970s, the crisis of welfare states and the new wave of neo-liberal privatisations make the demand of commons relevant again. The concept of new commons becomes broader, and it is redefined in opposition to the new enclosures. Nowadays, the term commons refers to systems of resources that are more complex than the ones from previous periods and it emphasises the act of reclaiming them as a community. In this paper, we want to prove that this evolution of common goods is a dynamic that is still present in several productive landscapes in Catalonia. This shows the urgency for architects and urban planners to start working on this fascinating topic.

keywords Commons, Cultural Landscapes, Productive Landscapes, Cooperation

It seems that economists and politicians can only see the world as divided between private and public, either owned by capitalists or controlled by the state, as if the common did not exist. Economists do recognize the common, in fact, but cast it generally outside of properly economic relations, as external economies or simply externalities. In order to understand biopolitical production, however, we need to invert this perspective and internalize the productive externalities, bringing the common to the center of economic life. (Hardt & Negri, 2009)

The right to live and to move about with dignity, the right to take part in government, the right to learn and teach freely, the right of public assembly, the right to public health, the right of self-realization and self-determination... The state claimed to use social rights to spare us from the excesses of capitalism. The dialectic relationship between social democracy and neoliberalism forged a system considered by many as "the lesser evil". The lucky few had their fortunes fattened at the expense of each other's time, effort and ingenuity. In exchange, however, the state guaranteed their Maslow's pyramid – or at least its base. After the recent economic global crisis, many voices claim that the failure of this model is empirical: neither does the market regulate itself, nor does the state can control its excesses.

In this context, the old dichotomy of public and private – one of the theoretical pillars of urbanism since the end of the 19th century¹ – becomes increasingly limited to explain cities and territories; more so, as Harvey (2013) states, when a minority consistently pockets the urban surplus value that is produced collectively. Against the neoliberal reorganisation of global capitalism and a State that is increasingly unable to defend the common, a

lot of alternatives emerge bottom-up from the self-organised civil society. As urbanists, we believe they must be studied in order to explore new perspectives that place value on common.

The goal of this article is to prove the hypothesis that cultural landscapes – at least the ones that we have analysed – should be placed within the broad spectrum of common goods, demanded with increasing determination since the end of the 20th century. To do so, we analyse some Catalan case studies that are being demanded collectively by civil society. Our goal is to highlight how important it is for architects and urbanists starting paying attention to this interesting reality.

In short, the main objective of this article is to prove that the evolution of common goods observed by economists, philosophers, sociologists and other academics from all over the world is a dynamic that is still present in several cultural landscapes in Catalonia. The methodology used to highlight this issue consist in a comparison of several study cases around the Llobregat River.

A Round-Trip Back To Commons

“Omnia sunt comunia”

Historically, common goods are sort of an institution or system² on which people with no properties rely to survive. In preindustrial times, the lower social strata are alone amongst the adversities of the physical and social environments. To cover their needs, they develop a series of cooperation mechanisms that allow them to help each other in the difficult task of surviving. As they only own what is given to them by natural law when they are born –natural resources–, they establish a series of pacts that lay solid cooperation models, which allow them to exploit rivers, fishing grounds, forests and meadows sustainably throughout time (Ostrom, 1990). This cooperation does not respond to a moral stance nor to affinity – it is simply a survival mechanism and a way to adapt to the environment³.

Common goods actually lead to confrontation within the Catholic Church – between Franciscans and the papacy – when they former try to establish the limits of private property⁴. Continuing the debate, St. Thomas of Aquinas sates: “In extrema necessitate omnia sunt communia” (“in cases of dire need, everything is common”). The theologian dedicates part of his work *Summa Theologica* to legitimise private property and commerce, but he understands that, when subsistence is compromised, everything is susceptible to becoming common. This exceptionality is habitual in pre-capitalist societies that understand that certain resources are essential to subsistence and must not be commercialised (Subirats & Rendueles, 2016, p. 39).

The importance of the common goods system transcends the economic survival of common people, as proven by the relevance of the Magna Carta and the Charter of the Forest⁵, one of the most important references in the Anglo-Saxon legal world and in modern political regimes (Linebaugh, 2008). Linebaugh states that both Charters convey the message that “political and legal rights can exist only on an economic foundation”. Apart from protecting the rights of the nobility and Church, the Charters also recognise that the customs of the commoners – who rely on wood and fruit picking as a source of energy, construction material, livestock feed... – are above private property⁶. In short, we can say that in pre-industrial societies, common people rely, to a great extent, on cooperation around natural resources – which no one can deny them, yet – for their survival. However, the arrival of the industrial era will change this drastically.

Two darkest centuries for commons

In England, during the 17th and 19th centuries, landowners (becoming capitalists) complete what Marx (1867) calls “enclosures”⁷ or privatisation of common land. This process leaves commoners (becoming proletarians) without their main means of production, forcing them to depend on wage labour. Despite the fact that this process faces popular opposition, its culmination lays the foundations to transition from the feudal to the capitalist economic system. Since then, physical or violent coercion is no longer necessary to find people willing to work for money.

Pushed by the enclosures, peasants move to cities to find jobs and take their communal practices with them, which they adapt to the requirements of the industrial society. Social security systems, as well as consumer and housing co-operatives appear as proletarians start to organise themselves. These practices are later taken in by the public sector, through the New Deal in the United States and the welfare states in Europe, destroying self-organised communal practices (Kratzwald, 2015, p. 27). From this moment on, common goods fall into oblivion and the duty of ensuring the survival of the most vulnerable is delegated to the State.

At the end of the 60s, Henri Lefebvre (1968) redefines the anti-capitalist fight by reclaiming the collective right to co-produce the city. The same year, Garrett Hardin (1968) publishes a controversial article in *Science* magazine

called “Tragedy of the commons”, where he talks about the damage produced to a scarce resource through collective management. The alternatives to this tragedy would be privatisation or state control. Despite the fact that Hardin is not the first to express this idea⁸, in the emergency context of neo-liberal ideas of the early 70s, his article is used to attack the social-democratic ideas that had have been dominant since the end of the World War II⁹. From that moment on, a new wave of enclosures take place (Midnight Notes Collective, 1990) and makes the reclaiming of common goods relevant again. In this context, the concept of new commons becomes broader, and it is redefined in opposition to the new enclosures or privatisations.

The return of commons

In 1990, the doctor in political science Elinor Ostrom refutes Hardin’s metaphor through rigorous research (Ostrom, 1990), proving that there have been many societies throughout history that successfully co-managed their resources. In 2009, she is awarded a Nobel in Economic Sciences, due to her work on the government of common goods. Since then, the demands on common goods forcefully emerge and object of reflection for a large amount of researchers. Such is the success of the concept, that even publicists refer to it (Subirats & Rendueles, 2016, p. 10).

Ostrom focuses his analyses on the historic idea of common goods, a resource of collective use and management, generally natural and characteristic of relatively enclosed rural communities. However, nowadays, one talks about the common or pro-common to refer to more complex resources, broadening the concept beyond legal ownership or the nature of the resource and highlighting the action of claiming and managing it collectively. As Hardt and Negri state:

Whereas the traditional notion poses the common as a natural world outside of society, the biopolitical conception of the common permeates equally all spheres of life, referring not only to the earth, the air, the elements, or even plant and animal life but also to the constitutive elements of human society, such as common languages, habits, gestures, affects, codes, and so forth. (Hardt & Negri, 2009, p. 171)

Continuing the enumeration of the quote above, in the context of this paper it feels appropriate to include the landscape in the spectrum of goods that are part of the common. This can be proved by the increasing emergence of agents around the world that demand it collectively, regardless of who owns the land. In the next section, we collect some examples of this dynamic, focussing in the Catalan context.

1 / “Since the end of the 19th century, the distinction between public and private space has been a theoretical core of the reflections on urbanism of the Western city.” (De Solá-Morales, 1992)

2 / (commons are) “a social system for managing shared wealth usually with an accent on fairness, transparency and sustainability. So it is the resource, the community and the systems they devised: the traditions, the rituals, the ways of managing it effectively (The Big Picture RT, 2016)

3 / “The collective management of goods and services that are essential to the community was not exactly an option for most of these towns. They were part of those long-lasting institutions that are deeply interlocked with the material subsistence conditions.” (Subirats & Rendueles, 2016, p. 16)

4 / “The Franciscans give prescriptive value to the mottos of Gratian’s *Decretum*- *iure naturali sont omnia omnibus* (by natural law all belongs to everyone) and *iure divino omni sunt communia* (by divine law all belongs to everyone) and *iure divino omni sunt communia* (by divine law all things are common) – which themselves refer to basic principles of the church fathers and the Apostoles, *habebant omnia communia* (keep all things in common) (Acts 2:44). A bitter debate, foreshadowing the events of Putney three centuries later, emerges between the papacy and the Franciscans (and within the Franciscan order) pitting those who affirm the rule of property, and thus negate the communion dictated by natural law, against the Franciscan groups which believe that only on the basis of common wealth can a good and just society be created on earth.” (Hardt & Negri, 2009, pp. 43–44)

5 / John, King of England, is forced to approve the Magna Carta in 1215 in Runnymede as an armistice in which the King, the barons, and Church sign an agreement through which the royal power is constrained. This important document is the origin of fundamental rights, such as the habeas corpus or the banning of torture, which are present in modern democracies, for example, in the Declaration of Independence of the United States of America, in Western constitutions or in the Universal Declaration of Human Rights. The Charter of the Forest complements the Magna Carta with regard to the rights and the traditional lifestyle of commoners in English forests. (Linebaugh, 2008)

6 / “Usually the soil belonged to the lord while grazing belonged to the commoners, and the trees to either—timber to the lord, and wood to commoners.” (Linebaugh, 2008, p. 33)

7 / Marx defines the concept of “enclosures” in the chapter called “The Secret of Primitive Accumulation” of *Capital*. Volume I. In it, he describes the process of closing and privatisation of English common lands in the 17th and 19th centuries in favour of landlords.

8 / In chapter 3 of Book II of *Politics*, Aristotle states: “What is common to the greatest number gets the least amount of care. Men pay most attention to what is their own; they care less for what is common.”

9 / “Given the impossibility to achieve non-authoritative collaboration, the only alternative was privatisation.” (Subirats & Rendueles, 2016, p. 27)

The Evolution Of Commons Around Llobregat River

The Llobregat of common goods

River Llobregat, also referred to some academics as “the nerve of Catalonia” (Ferrer i Alòs, Piñero, & Serra, 1997) due to the key role it played during its industrialisation, is a common resource that was historically used by the different communities that settled in its area of influence. The common watermills that abound throughout Catalonia since the second half of the 18th century¹⁰ illustrate the collective use of river water. Another example is the Manresa Canal, built in the middle of the 14th century, after the city is hit by a series of draughts. This medieval infrastructure still provides the city with drinking water. It is known as the most important hydraulic construction in Catalonia in the Early Middle Ages, and it carries water from Llobregat River through over 24 km, from Balsareny to Manresa. The Infanta Canal, built from 1817 to 1820 in Lower Llobregat along the left bank of the river, is an example of how local communities make a collective effort to broaden the area of influence of the river to water their crops (Alba Molina & Aso Pérez, 2008a, 2008b; Castillo Caso, 2014). This canal played a key role in the industrialisation of Catalonia, which, paradoxically, marks the end (temporarily, at least) of the long period during which Llobregat River is used as a common good.

The enclosure of the Llobregat River

As Marx observes when he describes enclosures in England, the industrialisation of Catalonia comes with the enclosure of several stretches of Llobregat River. The textile colonies of Berguedà – 15 industrial complexes lined along 30 km of the river, from Berga to Navàs – perfectly illustrate this process. Besides the factories (which use hydraulic energy from the river to make the weaving machines work), the homes and the associated services that come with them (the theatre, the shop, cafeteria, squares, parks, churches...) make them self-sufficient urban areas (Vall Casas & Sabaté Bel, 1997).

Some artisan families that are settled in the Berguedà area and have been linked to the textile industry for several generations establish the colonies, taking advantage of the very favourable legal framework¹¹ that delegates to the private sector the colonisation and modernisation of the territory. Until then, the artisans coordinated a dispersed textile manufacturing system, which relied on the work of peasants with domestic spinning and weaving machines. They complemented with this work the limited resources obtained from agriculture (mainly vineyards, exploited under *rabassa morta*¹² contracts). As mentioned already in this paper, before industrialisation, another key source of resources for peasants were common goods. However, in the middle of the 19th century, the damage caused by the First Carlist War and the enclosure of common goods greatly deteriorate the living conditions of peasants and puts their cooperation model at risk. The auction of the common mill in Gironella in 1864 to establish a textile factory illustrates a practice that becomes commonplace in this period¹³. As an alternative to the increasingly difficult rural way of life, peasants accept the tough working conditions imposed by textile artisans, who are now the masters of the colonies.

The origin of these colonies illustrates also the decadence of common goods, which will remain left in oblivion the entire period of industrial splendour. Nevertheless, some communal practices remain in popular celebrations and collective spaces of the colonies (cooperatives, vegetable gardens, washing places, theatres, parks...), forging close ties between its inhabitants, which will be key in the next section of this analysis.

The Llobregat, common again

The crisis in the textile industry at the end of the 20th century hits Catalonia and the colonies go into irreversible decline. The crisis quickly spreads to other industrial sectors. The factories that could be found throughout Catalonia in the 19th century no longer have a place in a global context in which the widespread availability of electricity and the possibility to transport commodities easily and affordably leads to the relocation of production with cheaper labour.

Having lost their productive vocation, many manufacturing plants are abandoned. The situation of colonies is especially difficult, as a lot of former employees still have their homes there. However, the city of Barcelona is not immune to this reality, and its factories are also abandoned. Neither the private nor the public sectors are able to find a solution to the deterioration of this rich industrial heritage that is left on standby, waiting for property development to be profitable again.

In the early 21st century, the civil society takes control over the situation after decades of empowerment¹⁵ and starts reclaiming these productive landscapes. In some cases, the inhabitants of the industrial plants are who

step up and place value on their homes. Such is the case of the textile colonies where, with the support of a large group of experts (Vall Casas et al., 2007; VV.AA., 2005), the cohesive local community appropriates¹⁶ them. Other times, even if they do not live on the plants themselves, the residents of the surrounding neighbourhoods reclaim the value of the factories. A successful example is the Can Batlló industrial complex, occupied in 2011 by neighbours from La Bordeta, where they collectively create a self-managed social infrastructure that includes a library, a meeting space, a centre to document social movements, a climbing wall, several workshops, a housing cooperative and social economy cooperative incubator, amongst other initiatives (La Col, 2013).

These are just some of the cases that reflect how, after a long period during which common goods were forgotten, the 21st century is bringing the collective reclaiming of the productive landscapes around the Llobregat River, which is seen as a common once again.

We would like to conclude this paper by referring to Sauer's definition of cultural landscape (1925) that "is fashioned out of a natural landscape by a culture group", as that collective work accumulated on the territory is probably what makes cultural landscapes fall clearly within the field of commons.

Acknowledgments

This article was written in Spanish by Javier Rocamonde and Natalia Alvaredo and translated into English by Carlos Heras. The authors appreciate the contributions and clarifications they received during the translating process.

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10 / *The long tradition of hydraulic exploitation goes back to the technology of the Roman hydraulic machines, which was recovered in the 15th and 16th centuries (Tarragó, Pallés, del Callejo, Prieto, & Bascones, 1987).*

11 / *The main objective during the creation of the Spanish liberal State from 1833 to 1868 is the modernisation of the countryside. To do so, a series of pieces of legislation are passed, such as confiscation laws (Mendizabal, 1836 and Madoz, 1855), or the colonies laws of 1866 (to promote rural communities; completed with the Water Law) and of 1868 (which sets the foundations for the real development of industrial colonies) (Serra Rotés, 2010, p. 242).*

12 / *"The contract requires the plantation of vines and the payment of a quarter of its fruits. The contract is valid as long as the vines live. This means that small-scale farmers have access to partial ownership of land, which stimulates labour investment." (Vall i Casas, 1999, p. 14)*

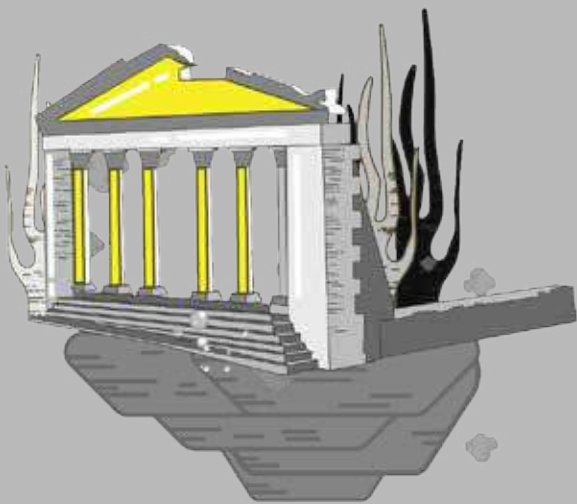
13 / *"A lot 18th-century mills, established during the commercial expansion of cereal farming, use the location and often even the buildings of medieval mills. The economic ruin of the farmers that own these mills in periods of poor harvest allows the industrial sector to buy their assets at a low cost." (Vall Casas & Sabaté Bel, 1997)*

14 / *It is important to highlight the long tradition of community movements in Catalonia: popular, republican and libertarian ateneos; anarchist collectivisation during the civil war; neighbourhood associations and district assemblies; self-managed squatted social centres, which proliferate in the city in the 80s, 90s and until the early 2000s.*

15 / *Here, the term is used metaphorically, but also literally, as a lot of neighbours purchase the properties that used to belong to the owners of the colonies. In many cases, the town halls also buy them and take charge of these public spaces.*

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[MEM/07]



Giancarlo De Carlo. Urbino Urban Design Between Geographical Vocations And Planning Strategies

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abstract

The huge expansion of contemporary cities has led to the transformation of the structural configurations and of the spatial conditions that identify urban places, revealing a critical moment in the relationship between natural and human environments. However, this crisis could also provide a chance to ponder, and modern cities could benefit from the challenges brought about by their structural, dimensional and spatial transformations.

In the light of a renewed interpretation of the relationship between urban and geographical forms, the proposed research assumes that it is possible to recognize some fruitful potentials within the new condition of cities, which are diffused and scattered over large territories, characterized by open forms and dilated sizes.

In Italy, in the second half of the last century, the discipline of urban design addressed these issues trying to define the syntax of urban construction in relation to the forms of physical geography.

Assuming this posture, the proposed paper aims to analyze some paradigmatic design experiences conducted by Giancarlo De Carlo ("La Pineta" district, 1967-69, and the colleges "Il Tridente", "Il Colle", "Le Serpentine", "L'Aquilone and "La Vela", in Urbino, 1973-83).

In particular, the principal goal is to investigate how the compositional principles and techniques adopted during the construction processes of the urban form - from those of a structural type to those of an expressive type, from the grammar of the forms to the syntax of the spatial relationships - are defined in constant relation with the forms of the orographic substratum and with the intentions of town planning. The aim of the paper is to pinpoint the strategies and the methods employed by these projects in order to understand if they can be of use in contemporary urban projects.

keywords Urban Project, Physical Geography, Town Planning, Giancarlo De Carlo, Urbino

The "resurgent porosity" between city and nature

Since the 50s of the last century, in all Western countries, the economic recovery and the acceleration of technological and industrial progress led to a massive urbanization, which has been followed by the rapid (and often uncontrolled) expansion of human settlements, by the birth of huge suburbs, which frequently have no relationships with the original or older settlements.

What is more, between the twentieth and the twenty-first centuries, this condition has reached giant dimensions. For this reason, many urban centers, all over the world, have radically changed their structural configuration. In fact, today it is impossible to refer to the compact, monocentric and centripetal structure of the "European historical city", nor to refer to the more dilated structure of the "first-generation metropolis, which is almost concentric and centrifugal" (Martinotti, 2011: 29), based on the presence of a central core and of some progressive annular rings that grown toward the periphery.

However, it is clearly recognizable that these models have been overcome by the birth of a "new boundless city", a "meta-city" (Dematteis, 2011: 19), in which dispersion and diffusion phenomena are translated into an open, dilated and polycentric urban form. These huge urban or metropolitan areas are structured as discontinuous conurbations of anthropic settlements; they expand for kilometres on the geographic body of the earth's surface and incorporate large portions of nature (such as woods, lakes, hills, or even cultivated fields, uncultivated land, un-built voids), making it difficult to distinguish between what is urban and what is rural or natural.

Because of its huge expansion, the city broke up into many scattered parts; it seems to have exploded in many fragments (Mumford, 1986: 229; Smailes, 1964: 17-32), which are now spread on the territory. This has led, on one hand, to the disappearance of the outer borders of the city and, on the other hand, to the emergence of new borders that separate the built and the unbuilt parts of the city, and which are internal to the city itself. For this reason, even if the relationship between cities and nature is in a critical condition, at the same time, the new forms that characterize the contemporary urbanized territories represent an important opportunity to renew the sense of living and to reconfigure the shape of the contemporary cities. In fact, it is possible to glimpse in such forms the opportunity of a "resurgent porosity" (Settis, 2017: 71) between city and nature, of new relational models between urban and natural environments.

Today, it is no possible to reconstruct the ancient "forma urbis", which is now disorderly (Donolo, 2011: 181), and the goal of the disciplines that deal with the transformation and management of anthropic territories should be to investigate these new opportunities, changing their cognitive paradigms, renewing their categories and their operative instruments. To do this, it is necessary to consider the entire territory as a unique anthropogeographic organism, and to consider the new complex and hybrid urban morphologies as the first unconscious manifestations of the future "city-nature" (Moccia, 2015: 76).

The Italian architectural culture and the relationship with the territory

In Italy, in the second half of the 1950s, the theme of the relationship between urban forms and territorial forms has been the object of interest in numerous theoretical and design experiences, conducted within different disciplinary fields (architecture, urban planning, and geography) and within cultural contexts that are not always homogeneous. In this period, it is possible to observe a certain "landscape attitude" (AA.VV., 1991: 32-39); in fact, these experiences constitute a set of single episodes that interpret the relationship with the landscape in different ways, but at the same time, they define the presence of a collective design effort aimed at investigating new relationships between urban and natural forms (AA.VV., 1991: 32-29).

In fact, it is not difficult to recognize the common "leitmotiv" that runs through the theoretical research and the design experiences carried out, over more than thirty years, by a large number of Italian architects (Muratori, Canella, Rossi, Renna, Daneri, Gregotti and Purini, Giancarlo De Carlo, Gabetti and Isola, etc.), accompanied by the geographers (Turri, Lanzani, Dematteis, Farinelli, Clementi, etc.), and the urban planners (Secchi, Viganò, Boeri, etc.).

All these experiences, which are often the results of interdisciplinary collaborations (e.g., the collaboration between Gregotti and Secchi or between Boeri and Lanzani in the editorial staff of Casabella), recognize the fundamental value of the relationship between the forms of the orography and the forms of the city, between the disciplines of physical geography and urban project.

Specifically, the Italian architectural culture of the late twentieth century dealt on several occasions with the formal problems arising from the new relationships between cities and territories. By harmonizing these relationships in various ways, some of the projects developed in Italy in the last century seem to offer different answers to a single and still fundamental question that still need to be answered clearly: what are the new and still latent intrinsic values to the shape conditions that characterize the "boundless city" in its new relationships with the vast territory? What are the intrinsic qualities of the open spaces and the discontinuous forms, of the polycentric structures and the expanded dimensions of the "city-territory"?

In order to study a corpus of works and researches that is so rich and complex, it is necessary to sort and compare the different design paradigms and approaches to the topic, through a detailed analysis of these experiences¹. If it seems to be impossible to categorize these experiences or to classify them in a univocal way because of their heterogeneous diversity, it is certainly possible to recognize two opposing attitudes, which can be considered as the two poles within which to place the experiences conducted by the cited architects, measuring them with respect to their proximity or distance from these extremes.

On the one hand, in fact, some projects seem to define urban forms following the principle of "adaptation" to natural forms (AA.VV., 1991: 62-69). The interpretation of the aesthetic (geographic, topographical, morphological and spatial) features of the places is the principal moment and the starting point of the urban project. Just to give some examples, it is the case of the projects developed by Saverio Muratori for the Ina-Casa districts Magliana I and II, and for the Barene di San Giuliano, or it is also the case of the projects led by Agostino Renna for Monteruscello and Teora thirty years later². The principle of correspondence between urban and geographical elements is dimensional, structural, and spatial, and it is never mimetic but always dialectical. The urban project discovers its geographical origin, and the new settlements are intended as elements of a larger territorial organism.

On the other hand, some projects seem to base the relationship between urban and geographical forms through a dialectic based on the contrast. Entrusting the task of building the city through the monumental forms of the great architectures, these theories seem to make a “leap” in scale, which concerns the entire design methodology, from the adopted grammars and syntax to the poetics that underlie the compositional processes. This is the case, for example, of the project made by Daneri, the “big snake” of Forte Quezzi in Genoa, or the case of the different design experiences carried out by Gregotti and Purini: the projects for the University of Florence and for the University of Studies of Calabria, and the project for a popular economic residential district in Cefalù. Here, the “bigness” (Koolhaas, 206: 11-24) bump into the “wilderness”. This world of forms is completely different from the previous one: here, there are strong references to the Le Corbusier’s experiences, and there is a new kind of fascination, which is linked to the recognition of the mysterious beauty of the technical forms of territorial infrastructures (bridges, dams, canals, etc.).

However, between these two extremes, we can find many other design experiences that seem to incline from time to time toward the former or the latter attitude, sometimes adopting them both according to different measures and ways, always with respect to the objectives to be achieved through the project. Among these architects stands the figure of Giancarlo De Carlo. His projects for Urbino are paradigmatic with respect to the strategical and polysemic interpretation of the relationships within the forms of the city and the forms of the territory in which it settles.

Urbino. The interpretation of the orographic forms and the strategies of the urban project

Mirko Zardini, in his essay “Urbino: un’idea di piano un’idea di città” (Zardini, 1983: 98-101), observes that one of the main important links between Giancarlo De Carlo and Francesco Di Giorgio Martini is represented by the founding value assumed by the clear nevertheless distinct ideas of the city theorized by these two architects in order to define the compositional principles and the methodological strategies to be adopted in the urban development of Urbino.

In the Renaissance, Urbino represented the “city of the prince”, and this character was expressed by the big size of the Palazzo Ducale, a “palace in the form of a city” (ibidem), which was able to let people perceive the final image of two overlapping cities from the road in the valley, thanks to the presence of its peculiar angular towers (ibidem). The potentiality of the various essences of the city was already latent in the idea of Di Giorgio Martini, and it was expressed through the dialectic between the village and the royal palace.

However, over time, as Zardini wrote, this condition became more complex, and other cities were added to original nucleus composed by the historical center and the Palazzo Ducale: the suburbs and the university colleges (ibidem).

De Carlo, as Di Giorgio Martini has already done before him, grasped the possibility of defining a new town plan capable of exploiting the new morphological condition of the city, spread in the huge landscape, extended over several hills, open and discontinuous, polycentric and integrated into the hilly environment.

Assuming the urban problems related to urban expansion mainly as morphological problems, De Carlo was able to adhere to the real phenomena, to the concrete needs and desires, to the instances that transform the city, and he was able, at the same time, to develop a precise idea of city. The recognition of the innovative possibilities contained in the new formal configurations of the city-territory open up a new world of possible relations with the natural forms, which depend on the physical contexts and, at the same time, on the political, cultural and functional requirement of the project.

Unlike what happens, on the one hand, in Muratori’s projects (where architectures arise from the interpretation of the forms of the orographic substratum), and unlike what happens, on the other hand, in the architectures of Gregotti (where architectural forms arise from the contrast with the natural forms as a great human sign in the nature), De Carlo’s architectures seem to adopt different and heterogeneous strategies that depend on the context of intervention. Within the design processes, the ways to consider and to assume the formal and spatial properties recognized in the orographic substratum depends on the needs of the places and of the urban plan. These facts are easily observable by analyzing the different projects made by De Carlo for the town of Urbino and, specifically, the university citadel and the residential district “La Pineta” These projects, which give shape to

1 / This aim is carried out within my Ph.D. thesis, an ongoing work about the relationship between urban and natural forms, urban design and physical geography, assuming as case studies some projects developed by Italian architects between 50s and 80s of the last century, in particular Saverio Muratori and Agostino Renna.

2 / In particular, these projects made by Saverio Muratori and Agostino Renna are the case-studies I am analyzing within my Ph.D. work, which focus on this specific way to interpret the relationship between city and nature – “The geographical city: the settlement as an element of the territorial organism”.

the choices made within the town plan drawn up by De Carlo a few years earlier, deal with two different urban conditions, in one case contributing to the foundation and development of a new independent urban nucleus, and in the other operating in order to delimit the shape of urban expansion in the peripheral zone to the north of the town.

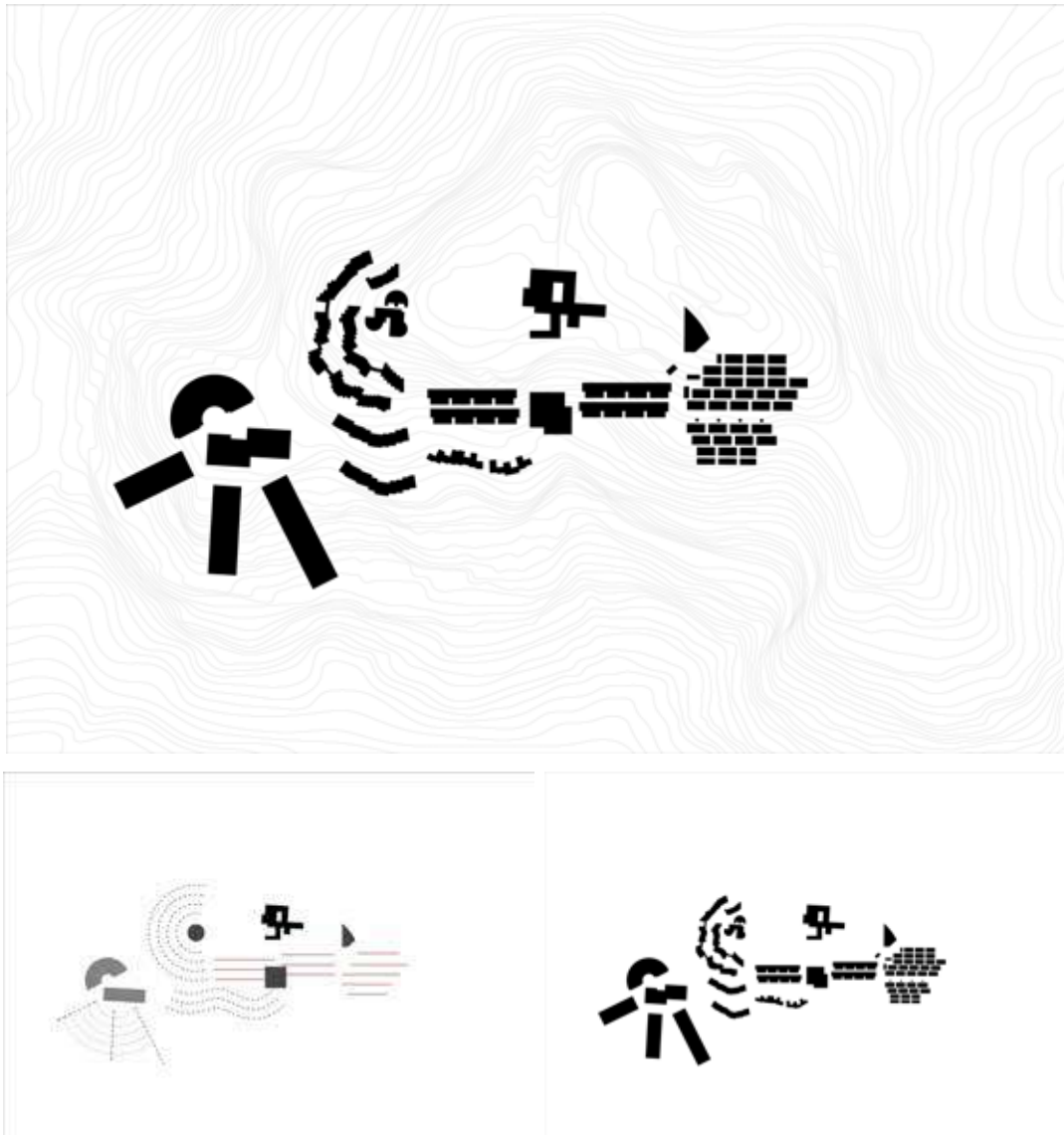


Fig. 1. G. De Carlo, plan of Urbino University Colleges. Interpretative drawings by the author.

The colleges (Fig. 1-2): "Il Colle"

The university residences designed by De Carlo in two different phases, between 1962 and 1983, are located on the hills that look toward the historical center. This portion of land seamlessly alternates rounded ridges, soft hilly sides, sinuous ridges and round plateau.

The first settlement of the whole system is the College "Il Colle", which De Carlo chose to place on an edge of the ridge of the Cappuccini hill, because it is a crucial point of the hilly structure. It is located close to the road that branches off from the pre-existing convent, and it opens itself to the panorama offered by the peculiar orographic conformation of the site. The project is composed around a central body located on the top of the hill, which hosts the public functions of the campus, including the collective and recreational rooms, the restaurant and the kitchens, the library and the conference room. Around this central body, there are some independent study-houses, which are located on the sloping terraces of the hill, and which are arranged in series according to radial lines that follow the circular contour lines.

The residences are connected by ramps, stairs and paths, which sometimes are parallel and sometimes are perpendicular to the contour lines, and which sometimes change their configuration according to oblique lines. This configuration produces a rich variety of spatial experiences that are characterized by the panoramic relationship with the vast territory and with the profiles of the old town and by the alternation of open or closed, internal or external spaces.

The dialectic between the extraordinariness of the forms of the collective building and the serial repetition of the residential cells is one of the main themes addressed by the project. It is defined in close analogy with the rules that have built up the medieval city over time, and it is based on the relationship between the emergence of the collective buildings and the “continuous bass” marked by the homogeneous iteration of the measure of the Gothic lot.

The colleges (Fig.1-2): “Il Tridente”, “Le Serpentine”, “L’Aquilone”, “La Vela”

In the following years, De Carlo plans the expansion of university residences in the form of an autonomous citadel, composing a dilated, open and multi-polar urban system. In fact, the whole complex is constituted as an urban organism that is defined through the composition and the mutual interdependence between different parts. These parts are endowed with a certain degree of formal and functional autonomy, and each of them develops its own identity similarly to what we have seen for the College “Il Colle”: setting the dialectic relationship between the emergence of collective spaces and the repetition of the residential buildings in correlation with the formal vocations offered by the specific features of the geographical elements that make up the hilly system, and also in correlation with the strategies considered most suitable with respect to the formal and functional aims of the urban transformation processes.

The common areas, which are destined for collective activities, are always placed in the conspicuous points of the territory, and they always identify the center of every single college. If in “Il Colle”, “Il Tridente” and “La Vela” colleges, the collective buildings occupy the summit of the Belvedere, in “Le Serpentine” and “L’Aquilone”, they settle in the inflection point of the undulating hillside shape. In this way the system of public spaces polarizes the urban structure; it makes recognizable the individual parts that compose the new student’s city; and, at the same time, it contributes to give syntactic unity to the whole urban organism.

Therefore, in the definition of the “form of the urban structure” (De Carlo, 1964: 27-28) it is evident the fundamental role assumed by the interpretation of the geographic forms. This choice is the result of the need to develop an organism capable of “adapting” to the hilly physical environment. However, the principle of “adaptation” is not always applied in the definition of the “structure of the urban form” (ibidem), which employ more varied attitudes. In fact, the geometries that underlie the forms of the colleges “Il Colle” or “Le Serpentine” seem to follow exactly the design of the counter lines, and also the project for “Il Tridente” seems to find its origin in the natural forms arranging the buildings perpendicularly to the terrain.

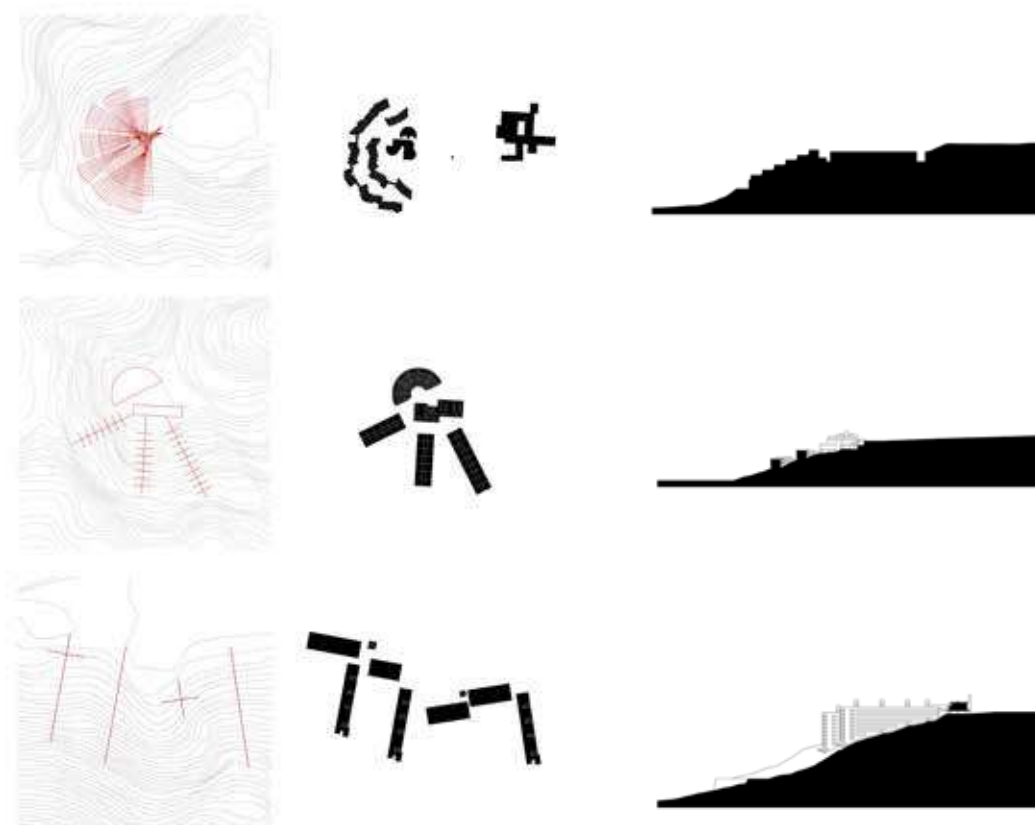


Fig. 2. Giancarlo De Carlo. Projects for Urbino. “Il colle”, “Il Tridente”, “La Pineta”. Interpretative drawings: planimetries and sections. Drawings by the authors.

Instead, the other colleges rectify the sinuous forms of the hillside, redesigning the versant of the hill as an artificial soil characterized by the regular and monumental succession of sloping terraces.

In this case, the more linear trend of the slope allowed De Carlo to adopt squared shapes, which are in opposition with the sinuosity of natural forms, in order to exploit the visual orientation of the slope towards the valley and the historic city, and in order to build a continuous artificial base visible from the valley and capable of ordering and measuring the whole system, collaborating in the designation of its overall unity.

“La Pineta” residential quarter

Unlike what we have seen for the university residences, the project for the residential settlement “La Pineta” (1967-1969) is located in the extreme outgrowth of Urbino. In this case, according to the objectives developed within the Regulatory Plan elaborated by De Carlo in 1964, the intention of the project is to delimit the urban expansion of Urbino through the construction of some emerging architectural elements. The project is thought of as an urban embankment with the task of preventing the city from invading the rich wooded vegetation of the hilly slopes.

Three tall and long buildings in the form of “dams” almost brutally intersect the steep and wooded profile of the hill. In this way, they are invisible from the city upstream of the hill and, at the same time, if we observe them from the roads downstream, they appear monumental.

The power of the architectural gesture, motivated by the desire to conclude the urban expansion, clashes with the unspoiled nature of the hills.

However, even in this case, it is possible to see an implicit and profound link between the forms of geography and the forms of urban project. The dam-buildings are always arranged perpendicular to the shape of the ground. Moreover, the sinuosity of the contour lines that design the hillside determines the geometric variations - the rotations and the slipping - of the urban system. In this way, it is possible to generate innumerable “threshold spaces”, which are always hovered between being closed or open spaces, and which are at the same time in relation with the architecture, with the city, with the surrounding natural vegetation and with the wide panorama offered by these places.

The paths pass through these spaces without interruption, tracing the profiles of the counter lines that draw the ground, moving away from the burden of the heavy masonry or coming close to it, crossing the forest, walking under the arcades, or also walking on the roofs overlooking the valley.

Finally, if in the University Colleges the morpho-typological relationships are founded on the dialectic between the collective places (nodal or polar elements positioned on conspicuous points of the territory) and the student residences (serial elements arranged by exploiting the orographic conformation), in “La Pineta” district, on the other hand, the dam-building are thought of as hybrid structures, composed of six distinct building types that are arranged almost mechanically inside a large-scale and complex edifice.

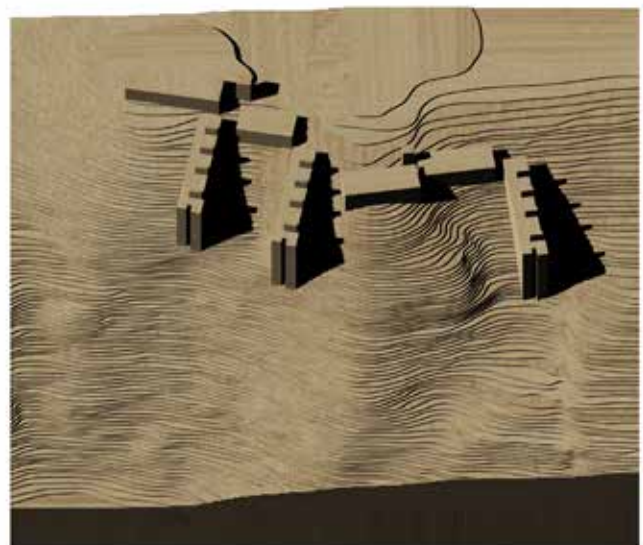


Fig. 3,4. College “Il Tridente”, residential district “La Pineta”. 3D interpretative models made by the author.

Conclusions. Toward a possible complicity between cities and nature

By observing the mentioned experience, conducted after the Second World War with in the range of Italian culture, it is possible to recognize some ideas that seem to be still profitable intuitions for the contemporary urban project. In light of the paradigm shift that has characterized urban phenomena in recent decades, these theoretical and design experiences could lend themselves to new interpretations, in order to develop and enhance the different ideas of "city-nature" theorized during the twentieth century, to experiment new and multiple urban syntaxes and grammars capable of translating into architectural forms the various and manifold ways to set the dialogue between the natural characteristics of places and the constructed spaces of the city.

Specifically, in the projects developed for Urbino, De Carlo identifies some techniques that are suitable for deciphering the "territorial reality" (De Carlo, 1964: 26-26) and for identifying the physical, metric, spatial, dimensional, topological and topographical—in one word, "aesthetic" - connotations of the landscape. Then, he chooses to preserve, to strengthen and/or to alter, to transform the recognized natural features, depending on the design strategy considered most appropriate - which can be non-unique and indeed is often subtly ambiguous. In this way, De Carlo elaborates different spatial models, which are able to solve the specific and different problems posed by the objectives pursued by town planning (ibidem).

In fact, if in the projects for the university colleges, the geographical forms constitute the origin of the architecture that becomes organic and topographical, in the project for "La Pineta" residences, the rigorous signs of large-scale architecture cut through the geographical elements and, imitating the infrastructural forms, becomes monumental.

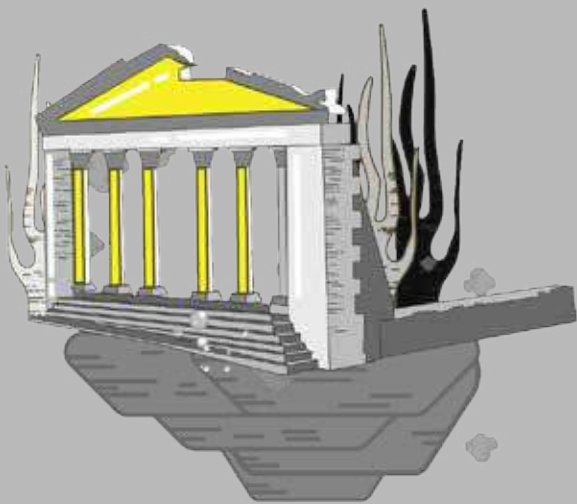
Through this way of working, as stated in his writings, De Carlo claims "the morphological dimension of the urban project, [...] whose intrinsic field of action must be the three-dimensional organization of space in terms of form and nothing else" (De Carlo, 1989: 15). The new relationship between the city and the territory, which is considered increasingly difficult by mainstream critique, becomes a relationship of "complicity", which allows urban forms to meet the requirements imposed by the town planning and which allows, at the same time, to build urban spaces capable of reverberating the original aesthetic features of the natural landscape.

Through the critical analysis of these projects (and of the other mentioned ones), through an interpretative drawing that try to identify the different formal relationship between the forms of the cities and the forms of the territories, it is still possible to adopt these strategies in the contemporary urban studies and to assume them as operable tools for the contemporary urban projects, for the transformation processes of the contemporary city-territory.

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[MEM/08]



The Importance Of The Auditory System In Perceiving Architecture

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abstract

Perception is a multiplex process of selecting information from a concrete surrounding and translating it into a specific mental and physical experience. This activity is necessary in order to provide the adoption of the individual to the living environment. It is made possible through an important mechanism: the sensorial system. The selection of the input is provided by perceptual filters and developed by previous mental patterns and experiences. Through the output of this complex process we interact and use space.

Space perception is provided by the collaboration of all the senses, although throughout the history of philosophy and architecture the sensorial systems were organized in a hierarchy according to their importance. The visual system is considered as the most important filter to experience the architectural space. But, architecture not only can be seen but it can be heard. Buildings and spaces create specific sounds, which describe their characteristics. The research analyses the importance of the auditory system in experiencing architecture and how physical features indicate in the way we perceive architectural space.

keywords Persian Garden, Sustainability, Ecosystem Services, Water, Vegetation

Introduction

“Architecture is the art of reconciliation between ourselves and the world, and this mediation takes place through the senses.” (Pallasmaa, 2012)

To perceive is a complex process of understanding and locating ourselves in the living environment. This is made possible by the collaboration of all of our senses and our body. According to Merleau Ponty, perception is not a sum of visual, tactile and auditable givens, but we perceive in total way with our whole being. The body is the locus of perception. Senses respond to the consciousness and inner thoughts of a person. Architectural work is not experienced as a series of isolated retinal pictures but in several components, such as material and spiritual essence. It offers a variety of geometrical forms and events. It incorporates and integrates physical and mental structures, giving our existential experience a meaning.

State of Art

Architecture deals with the design and the organization of the physical properties of a space. It provides not only function, but it also appeals our aesthetic sensibilities. Along with the combining of different elements in spaces, respective messages are given through elements we see, hear and touch. As a result, a symbolic vocabulary between the architects and a society is attained. To provide this silent communication, most architects consider the visual aspect of a space rather than the acoustic ones, considering this as less important for a human being and more crucial for the animal world. During the Classical Greek period, it was argued that clear knowledge was obtained by the sense of vision; and light was considered as the metaphor for truth. Nowadays, various artists and architects have diverted their attention to the auditory experiences; such as Juhani Pallasmaa, who rejected the theories about the superiority of vision and considered the important impact of all the senses in experiencing architecture, especially audition. Based on this new way of approaching architecture, the concept of soundscape

in architecture was formulated by the Canadian composer R. Murray Schafer. This concept suggests how the ear can be an instrument for designing a building and experiencing it.

Objective and Methodology

The research aims to present the connection of architecture and sound, emphasizing the importance of hearing in perceiving a space. For understanding this relationship, it is necessary to take in consideration architectural examples that emphasize the presence of various sounds and its effects on the users' experience. The research, also, aims to bring out conclusions from analyzing existing theoretical frameworks that were conceived by giving audition a significant role to humankind.

1. Seeing vs. Hearing

Throughout history, the sensorial system has been organized in a hierarchy, according to their importance in experiencing space. From the beginning of existence, the human being communicated through vocalization and hearing, creating the oral culture. But the importance of hearing was gradually replaced by sight and the oral culture was replaced with the visual culture, the sonorous space with the visual space. This transformation has had an important impact on the consciousness of human being, memory and experiences.

In the ancient and western philosophy sight has been considered as one of the most important senses for understanding the real dimension and distance of an object. "Eyes are the metaphor for the truth. Is the only sense in the sensory system that can see itself". In classical Greek philosophy, it was considered that knowledge was obtained by the sense of vision. According to Aristotle, sight was considered as one of the most noble of the senses because it approximates the intellect most closely by virtue of the relative immateriality of its knowing. (Pallasmaa, 2005). But how well can we rely on our sight?

The science of magic and illusion hold the key to understanding of how our senses work, especially the sense of sight. Visual illusions trick the brain giving interesting insights in visual cognition. Magicians, for example, are the best manipulator of our eyes. A simple magical trick that consists in joggling a ball and making it disappear, while actually it is hid by the magician in the back of his hand. The brain is manipulated from this simple trick because there is about a tenth of a second delay between information being received by our eyes and processed by the brain. The brain has to predict what is going to happen when watching an illusion. While the ball was thrown in the air, the brain expected the ball to appear following the expectation from the eye movement. Psychologists define these expectations are based on our life experiences. The brain intended to predict.

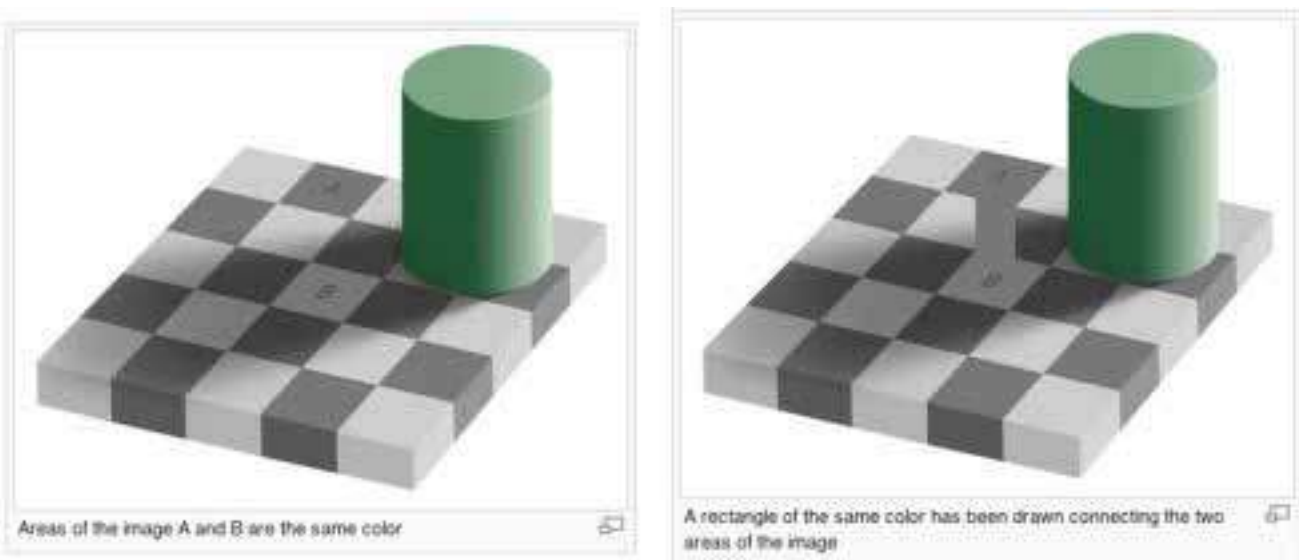


Figure 1: Checker Shadow Illusion – Edward H. Adelson

Another failure from eye perception is the experiment of the checkboard with the shading cone. (Figure 1). The checkboard is composed of squares of two different shades. It is clear that one square (square B) is lighter than the other one (square A). In fact if we place this two squares together and compare them it is understood that they have the same color and shade. In this case we are dealing with the misunderstanding of our perception based on the context. The illusion occurs when the object's properties appear to differ in different contexts. We perceive

the object as changed in the different situations. This is not the fault of vision as a sense because we perceive the specific object through a cognitive process. We base our visual knowledge in our previous experiences and as a result attention is lost, leading to not assertive results, such as those from the experiment mentioned above. With a simple situation, we may start to doubt the truth that vision brings to our knowledge.

During Renaissance, the senses were still organised in a hierarchy depending on their importance for perceiving self and the world. On the top of hierarchy was vision and the last touch. Nowadays, this hierarchical organization has lost its strength, although vision is considered as the main generator of architectural design.

Sense organs create a connection between the external and internal world. Visually a person can feel and understand better a space. Although vision is quite important to perceive the physical features of it, we get an experience as a collaboration of all inputs from all of our senses. The same object is perceived differently when all senses are present, and other perceiving experience is obtained when there is a sensorial deficiency. The perfect example to understand this is watching a movie with the sound on and later with no sound. The experience is not the same in two cases. This is because music or sound makes us aware and assertive of the situation, as a result, we gain the total information of the surrounding. This is also why soundless movies have to exaggerate the movements and facial expressions, in order to give as much information to the perceiver, although this maneuver cannot replace the information obtained by audition. Like a soundtrack in a movie, sound in architecture increases the tension and intensity of the experience of perception. As a result, this is transformed in specific emotional and psychological moods.

Hearing is the sense of detecting sound. In humans, hearing is performed primarily by the auditory system: Sound is detected by the ear and transduced into nerve impulses that are perceived by the brain. Audition is important for equilibrating the relations of giving and receiving (communication). The act of listening represents the subjective perception of a sound and an interpretation of it. Of all the senses, hearing is the most accurate one. The ear is the organ that allows greater mental flexibility through concentration, but a person can easily be distracted from a noise. Hearing is omni-directional, not focused like vision. With sight we get the first impression of the object, and this is why the tool of visualization is the primary mode of design thinking practice. "We are not aware of the significance of hearing in spatial experience, although sound often provides the temporal continuum in which visual impressions are embedded." (Juhani Pallasmaa, 2012).

2. Sound as an architectural tool

We are not fully aware of the importance of the auditory system in perceiving space. It is a mechanical process we do every day since we always associate it with vision and as a result never concentrate in the effects of sounds in our everyday life. Each space has a physical feature and each of these are indicated in the sound it makes. Void has its own sound that is easily recognizable. The perceiver becomes fully aware when in space are present different shapes and forms that reverberate differently.

Auditory spatial perception is the mind's ability to perceive space through sound. Barry Blesser, a former professor at MIT and the inventor of the digital reverberation system, argues that auditory spatial awareness facilitates the mind to perceive space through complex cognitive processes that enables us to visualize space while allowing the mind to navigate and make us conscious of being in a space. This type of perception influences our psychological mood, behavior and also our level of social interaction.

The character of a sound in space defines the nature or function of it. This sound produces a mental image composed of several data such as volume, materiality, program, location and the character of a space. Spaces exist through the use of echoes and reverberations, through the various speeds the sound has. A noise made in distance gives an echo, which is reflected to the wall, the ceiling and the floor. This information given to the receptors transforms in a perceptual experience, by which the person becomes aware not only of the presence and distance of the object producing sound, but also of the existence of the spatial elements that surround his space. As a consequence, sound indicates in our emotional moods. Typical spaces that effect our psychological state is a city with empty streets, which gives a sense of insecurity, or a sound polluted city which give a sense of irritation. These emotional moods indicate in the attitude and interaction of people.

The sound is considered as soft architecture, because of its possibility of changing our perception of the surrounding and of its important role of defining social structures (private and public boundaries) of a society. Considering these attributions of the sense of hearing, it indicates new ways of designing a new architecture that embraces all the senses, leading to a new experience of perceiving our surrounding and being attuned with it. (Schafer, 1993). Aural architecture is a way of communication between space and the users. By this can be understood if a space has a private or public character. Sound defines the function of a building. The stature and emptiness of a cathedral gives a symbolic meaning to the mental image of the user, but meanwhile these architectural solutions contribute in making sound the most important element of the experience inside the building. There is a fundamental link

between religious architecture and the sacred dimension of harmonic sound. The best example of this building typology is the Abbey of Le Mont Saint Mischel in France. The building is considered to create an harmonic and mystic sound. Architects designed the building using their ears, choosing the dimension of spaces in function of sound. The vault rises in more than 24 meters. This is a remarkable height, able to sublimate the voices inside the building. When 17 meters of the vault is exceeded, the echo phenomenon happens. The human ear is capable to detect variation of sounds. This type of sound produced creates a physical and psychological sensation to the visitor.



Figure 2: Le Mont Saint Mischel in France

One of the most exciting auditory experiences in architecture is tranquillity. This can be used as a tool for creating atmospheres and emotional moods. Even silence, absence of sound, can be an important tool for giving an experience in a building. A good example for this is the Jewish museum by Daniel Libeskind. Specific rooms which are called voids are composed of a floor filled with copper plates in a facial shape, intended to be stepped on. This process creates an echo sound followed with the movement of the person, in contrast to the deaf silence of the empty space. In this space several senses are put in work, but sound is the one that gives the real experience, the emotional and psychological mood. Without sound perception would not be the same.



Figure 3: Daniel Libeskind – Jewish Mudeum

In the writings of Vitruvius, materiality and form were considered as an instrument for formulating spatial acoustics. Materiality plays a dominant role in the way sound is reflected, refracted and absorbed. In buildings where playing of sound is the primary function, design is a result of the calculated acoustic spaces, such as the Boston Symphony Hall designed by acoustician Wallace Sabine in 1890. The position of the materials is calculated in such way to emerge spatial acoustics and to attain the control of it. The effects of this calculation are quite evident in the design of an anechoic chamber where the sound absorbent material creates a complete silence. An anechoic chamber is a room isolated from sound waves, designed to absorb all sound reflections. In this building materiality was used to acoustically distinguish between intimate quiet spaces and loud spaces with the use of acoustic walls and barriers. As a result, sound becomes the element that defines the use of space.



Figure 4: Anechoic Chamber

Bernhard Leitner, who is considered to be the pioneer of sound and space art, speaks of “corporeal” hearing, whereby acoustic perception not only takes place by way of the ears, but through the entire body, and each part of the body can hear differently. Sound from his perspective is measurable, it draws lines, builds walls, unites our perceptions and movements. He proposes a space that defines the importance of hearing and seeing, with the installation “Cylindre Sonore” in Parc de la Villette, France. The object is designed in the shape of a cylinder and it is positioned in a garden that offers a variety of landscape. A cylindrical space, with no ceiling provides all the physical properties to allow a maximum concentration of listening to the space. The inner diameter of the double cylinder is 10 m, with a height of 5 m. Behind the eight perforated concrete elements three loudspeakers have been mounted vertically like a column. The circular space between the two curved walls is a functional space for the maintenance of the loudspeakers. It provides access to the control room which is positioned on the underground level. The ring is a resonance chamber, which consolidates the sound by means of weight and tension of the curved surfaces. The hushing sound distracts from the sounds of the urban environment, neutralizing the space. This is the perfect example when sound is the architect of a space that makes us conscious of our being and existence, through the direct contact of us with sound.



Figure 5: Cylindre Sonore

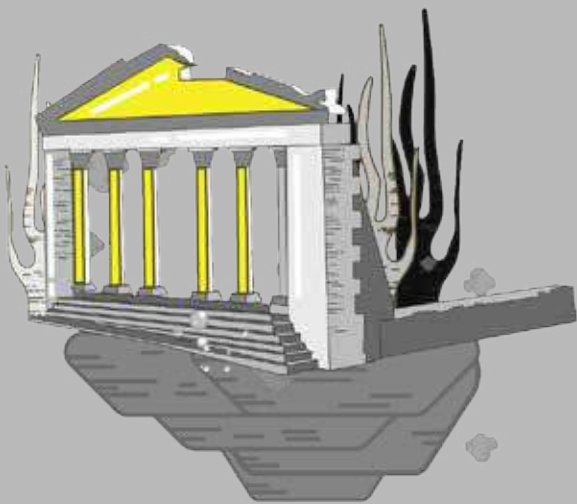
Conclusion

The research presents the importance of the role of our audition in experiencing architecture. There is a silent communication between a building or space and the perceiver. This communication happens through perception. Perception is obtained through the participation of all the senses. As a result, the visual experience is vague and the dialogue is incomplete without the auditory experience. Concentrating on the visual information makes the architect ignore the capacity of sound in creating various experiences for the perceiver in a space. Sound is an architect. It defines the functional use of a building, by establishing the public or private character of its spaces. This determination of boundaries, settle the social relations and interactions between the users. All spaces produce specific sounds that influence the emotional and psychological moods of the perceivers. By this mean, architecture becomes more memorable and gains more significance, since it makes the space navigator more conscious of his own existence.

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[MEM/09]



Designing Between Land And Water Memory And Future Of The Agro Pontino

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abstract

Stolen from the wetland during the '30s, the Agro Pontino is a fascinating area in which agricultural and industrial landscape are indissolubly tied. Among a net of canals and a mesh of roads lined with windbreaks, even today twenty-three sump-pumps work on this wide flatland located between Rome and Naples in order to avoid water dominates again. A pumping centrals network with the "case-cantoniere", are scattered on the landscape, establishing an open-air museum capable of transmitting the knowledge of the history of Agro and of five new cities. Here, past and present, earth and water, memories and future are intersected, and they contaminate each other through a framework of ancient and contemporary paths, in which the industrial architecture of the hydraulic lifting centrals are the most significant components. Recognizing its distinguishing and potential features, this essay aims to suggest planning possibilities capable to preserve historical, architectural and environmental values of the territory and of each building located there and to enhance them as material and intangible heritage of the community.

Large machines "live" inside the sump-pumps; connected to enormous pipes, they protrude on the outside and disappear in the waters. This territory played a lead role in the recent past not yet archived, it already shows the signs of the running of time. The state of neglect of the rural houses built for people responsible of the machinery, highlights the technologic shift due to mechanization. The neglect of two sump-pumps provides evidences of some phases of radical transformation. The abandoned building complex of Forcellata merits consideration. It was the first mechanic lifting centrals used to reclaim the land (1907). After it was dismissed (1927), the canal was diverted and the new pumping central was built. Within a framework of broader enhancement, the rehabilitation of Forcellata may represent the beginning of a project for reusing to narrate and to return to the communities of the Agro an essential part of their history.

keywords Agro Pontino, Reclaim, Sump-Pump, Forcellata, Landscape Architecture

Between memory and the future. New scenarios for the Agro Pontino

Reclamation landscapes represent a unique heritage of synthesis between Man and Nature, engineering and architecture, rationality and cohesion. These artificial territories – often deeply changed – hardly find a balance between their unavoidable transformation and the cultural need to preserve evidence of their man-planned origins. The Agro Pontino is one of the largest reclamation landscapes in Italy. With the passage of time men's and nature's work got indissolubly tied. Only with a closer look we can understand that the landscape is the result of a larger plan, created and planned by those that understood how men and nature could be put at work for the creation of the territory. Its value originates from the cohesion between the conceptual and the empirical work. This essay aims to highlight the potentiality of this system. Only the awareness of moving in a rural landscape silently controlled by the human technology allows visitors to understand the 'signs' of identity and the specific values of this region. Knowledge of the purpose of every component is the first step to foreshadow and design new scenarios without losing the memory of the recent past.

Know and acknowledge in order to enhance

The Agro Pontino is a homogeneous landscape in the south side of Rome, located between the mountainous systems of Lepini and Ausoni – which on the north-eastern side protrudes on the Tirreno sea with the Sant'Angelo mountain – and the Tyrrhenian coast dominated by the Circeo promontory. The imaginary line that connects the

hill villages of Cori and Lanuvio, that reaches the sea following the middle and the lower course of the Astura River, delineates the north-eastern boundary with the Agro Romano. Submerged in the stagnant water of the swamp, this wide area has been inaccessible, mysterious and too hostile to be inhabited until the '30s of the last century.

The new life of this territory began with the land reclamation started in 1918 and it is deeply related to engineering, technology and a grueling work of thousands of men who made possible its radical transformation into a fertile flatland. The challenge of stealing new lands¹ to the water stimulates engineering studies about drainage and the empirical implementation of the systems of hydraulic drainage is so amazing to create a feeling of a "creation". For sure, as the words of who lived these events convey, being the witness of this new start was thrilling: "among the days of creation, the one of the separation of the land from the water must have been the greatest: life began. [...] Among the crossings and the networks of the canals, a pleasant sound of running water everywhere gave to the flatland a vital movement as that of a good blood circulation" (Alvaro, 2008: 19). Today, observing the Agro Pontino from above, we can see a wide plain patterned with squared fields. A network of orthogonal meshes of canals delimits the plots of land and at the same time provides water for irrigation. On this homogeneous context three main roads lines pass through the region to link the cities with villages and connect them with Rome on the north side and with Campania on the south.



Figure 1: Evidence of reclamation: works for the construction of the canals, Archive of the Land Reclamation Consortium, Latina (Fondo Archivio Consorzio di Bonifica dell'Agro Pontino, Latina)

A closer look unveils a sequence of interdependent systems in the Agro Pontino: next to the major arteries, a tangled fabric of smaller domestic paths intersects a dense network of watercourses. In addition to these linear components, we can note a multiplicity of punctual elements: we find cities and hamlets at the territorial scale, and farmhouses and sump-pumps scattered along the course of artificial canals, considering the architectural scale. Routes on the water and on the land intersect each other and run parallel to tell stories of a past time. Sometimes also the recent time could be forgotten. Such is the case of the railroad track that linked the village of Velletri with Terracina², running along the plain across the slopes of the Lepini mountains and that is currently in state of neglect and obliterated by recent urbanization and by the growth of the vegetation. Ancient paths, watercourses, railways and major roads pass through the Agro Pontino altering its urbanization and influencing its expansion. Past and present time often contradict each other waiting for proposal capable of express the history and the culture of the region in the near future.



Figure 2 Evidence of reclamation: the canal locks, the bridges and the houses, Archive of the Land Reclamation Consortium, Latina (Fondo fotografico Archivio Consorzio di Bonifica dell'Agro Pontino Latina)

1 / The research was conducted by consulting "La Conquista della Terra", the magazine of the Opera Nazionale Combattenti Institute (1929-1939)

2 / This was the first route connecting the Capital with the Pontina coast. It was inaugurated on 27 May 1892 and partially closed down in 1957, in the Velletri-Priverno segment. The section between Priverno and Priverno Fossanova was closed down in 1986 while the segment between Priverno Fossanova and Terracina was closed down in 2012 because of a landslide.

3 / The XIII Comunità Montana dei Lepini (Mountain Community of Lepini) has showed interest to create a bicycle and pedestrian path on the old track of the railroad, at the suggestion of various local authorities

Memory and identity of Agro Pontino and of its inhabitants are deeply bound to 'signs' in the landscape that are capable to testify the local history and hydraulic engineering innovations. These signs are watercourses, windbreaks barriers, lifting centrals, bridges, locks, farmhouses, urban fabrics of hamlets and of the main cities founded during the '30s, which all convey the reality and the soul of this place. Like in a living organism, each component, even though apparently irrelevant, was meant to fulfill an essential task. Therefore the presence of arboreal species is not accidental. For instance, the eucalyptus trees are able to absorb water reducing humidity excess in the soil. Simultaneously they are arranged in rows along the watercourses in order to operate as windbreaks. Their role to preserve the peculiar and delicate balance between land and water of this territory is clear. Their management is in fact entrusted to Lazio Region and regulated by L.R. n. 22 of 2 May 1995 ("Definitive arrangement of the windbreaks in Agro Pontino").

Along with the components which still perform their original tasks, others have lost their functional value due to the introduction of new techniques and are now in a state of neglect or have been transformed, revealing the imminent danger of a slow loss of the identity of the territory. Considering the reclaimed landscape as a living organism which keeps evolving, the drainage equipment deserves specific attention. Even today twenty-three sump-pumps constantly work to prevent flooding during the rainiest period of the year. Past and present coexist through these huge machines, at the same time they are memory of the passage of time and essential for the existence of the plains. They join representation of human intelligence and hard will to cooperate with natural forces.

A new stage is therefore necessary in contrast to the current state of neglect. The reuse will be possible only if it is set in a wider framework of architectural regeneration of a portion of the territory. The proposal aims to enhance not the single building but the whole context in which it is located. It is necessary to consider not only conservation but to imagine new uses for the buildings and new opportunities for the Agro Pontino.

The sump pumps

The sump pumps appear as domestic architectures with rural features. In most cases they are two-storey buildings and they have symmetric fronts with large windows. They are bright and well-aerated spaces, they are inhabited by mechanical pumps and enormous pipes protrude on the outside and sunk in the waters of the channels. We can hear just the sound of the water and of the engines. There are no guards and no workers but machines, progress and intellect are the only protagonist, like in a Futurist painting. Next to every central there is the house of the keeper to which sometimes storerooms and a bakery room are annexed.

Since nowadays technology allows remote management operations, these small farmhouses are abandoned and for this reason they constitute a huge heritage. New ideas and plans may imagine innovative purposes for these buildings on territorial scale without overlooking their historical value. Currently all centrals built for land reclamation are functioning except two of them. New pumping equipment in fact replaced the Gricilli and the Forcellata centrals.

Forcellata was a coal-fired central built in 1907 and has a unique value: it was the first pump-sump in the Agro Pontino and it was built even before the beginning of the land reclamation undertaken during the '30s. It stopped working in 1934 to divert the course of the Selcella canal. The new Mazzocchio central was built and, with its seven pumps, it is still today one of the biggest in Europe. Building the Forcellata central was the starting point of a new challenge to the forces of nature, which ended with the complete reclamation of the Agro Pontino land.

The old equipment is still inside the central and they are relevant examples of industrial archaeology of the early XX century. To neglect this building entails the risk of losing the most essential part of this history: the beginning. The proposal that is now being presented involves various, coordinated actions of rehabilitation and regeneration, applicable at different scales, creating pedestrian paths at territorial scale and regenerations of neglected buildings at architectural scale. The aim is to promote economic, cultural and leisure activities, currently concentrated on the southern coast, in the hinterland. What we also want to highlight is that the simple rural architecture of farmhouses and of sump pump centrals retains a beauty that goes beyond their physical substance and stylistic features: their value is given by their being an integral part of a unitary project and their being pieces of a system in which man and nature collaborate in order to preserve the balance between water and land of this territory.

In operational terms, the "Programma Triennale di intervento nel settore delle opere pubbliche di bonifica e irrigazione, esercizio 2004-2006" (three-year program for public works for land reclamation and irrigation, budget years 2004-2006), approved by Region in 2004, represents the first step towards a planning approach that consider these buildings as heritage of the local communities. In addition to the emergency maintenance works for the Mazzocchio central to guarantee safety of the structures, an exhibition hall and a conference room were built inside the central in order to increase the usability of the building, specially for educational purposes.

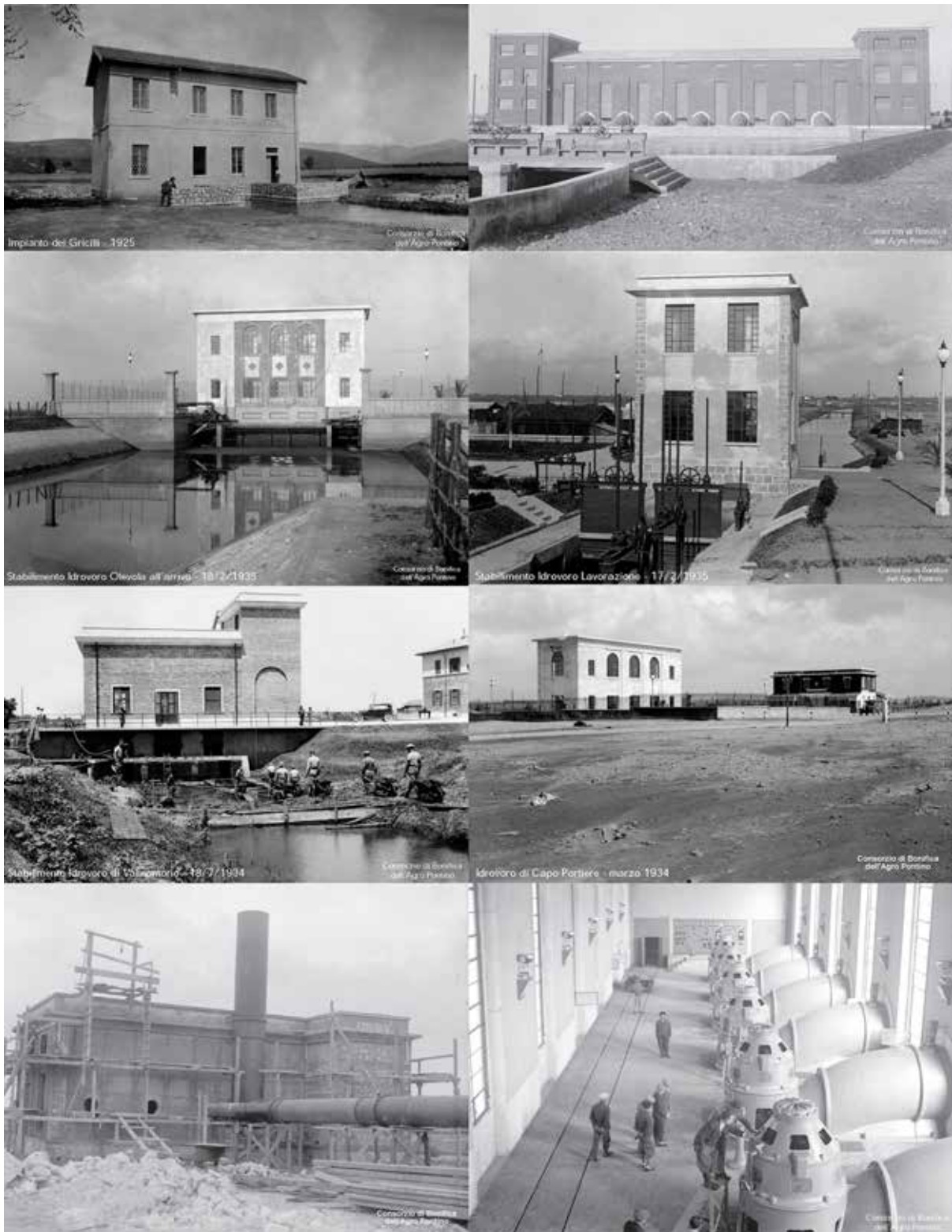


Figure 3: Evidence of reclamation: the pumping centrals, Archive of the Land Reclamation Consortium, Latina (Fondo fotografico Archivio Consorzio di Bonifica dell'Agro Pontino, Latina)

In the same theoretical logic, the farmhouses built during the land reclamation process can be identified as peculiar components of the local landscape, since they witness how land was inhabited and used. In symbolic terms, the farmhouses represented the main tool for rooting the farmers communities in the new territory, totally stranger to them until then, where they moved just to carry out the land reclamation works. Each farmhouse included domestic and farming spaces. Storerooms, henhouses, barns, stables were annexed to the houses. Each single farmhouse was located in distant positions from the others, scattered homogenously all over the territory, also to fight the process of urbanization that could again lead the workers to abandon farming. With the expansion of industrial and tertiary sectors, many of these farmhouses have been restructured, their rural essence was obliterated, and they were converted into anonymous suburban houses. Industrialization, in fact,

represented sea radical change for the local economic structures, lifestyle and the natural environment of the Agro Pontino. Nevertheless, it has proved to be a ruinous. The agricultural vocation of this territory has prevailed back in the long term, undermining the short-sighted effort to convert this region in a significant industrial hub. Many neglected factories offer evidence of the two stages of development of production that have affected the territory: one related to agriculture and the other related to the subsidies of "Cassa del Mezzogiorno" (the National structural fund for the development of Italian Southern Regions). The first industrial plants in the Agro Pontino were those for the processing of local agricultural commodities. Along with canneries, mills, pasta manufacturing plants, there were factories processing crops that are not produced any more. In fact among these plants were the sugar factory in the area of Latina Scalo (inaugurated in 1936 and closed down in 1997) that was the first factory processing sugar beet set up in the region and one among the biggest in Italy, and the tobacco factory in Latina (AAVV, 1986). Other important sites were the canneries, the mills and the pasta factories. To perpetuate the memory of these factories means to be aware of the economy, technology and agriculture of the past. These plants are important to witness the history, tradition and culture of this territory and of its inhabitants, not only for their architectural characteristics but also for their ability to transmit to the present the "signs" of a past time.

Methodology

From the methodological point of view, this investigation has been conducted consulting the historical documentation stored in the Archivio di Stato di Latina (State Archive) and in the Archivio Storico del Consorzio di Bonifica (Historical Archive of the Land Reclamation Consortium). A direct survey has allowed to compare historical data and antique photographs with the current state of the landscape and of the single buildings, identifying changes and transformations. Through a careful analysis and the comparison between historic and current maps it was possible to identify invariants, persistent factors and peculiarities within the territory of "Consorzio di Bonifica".

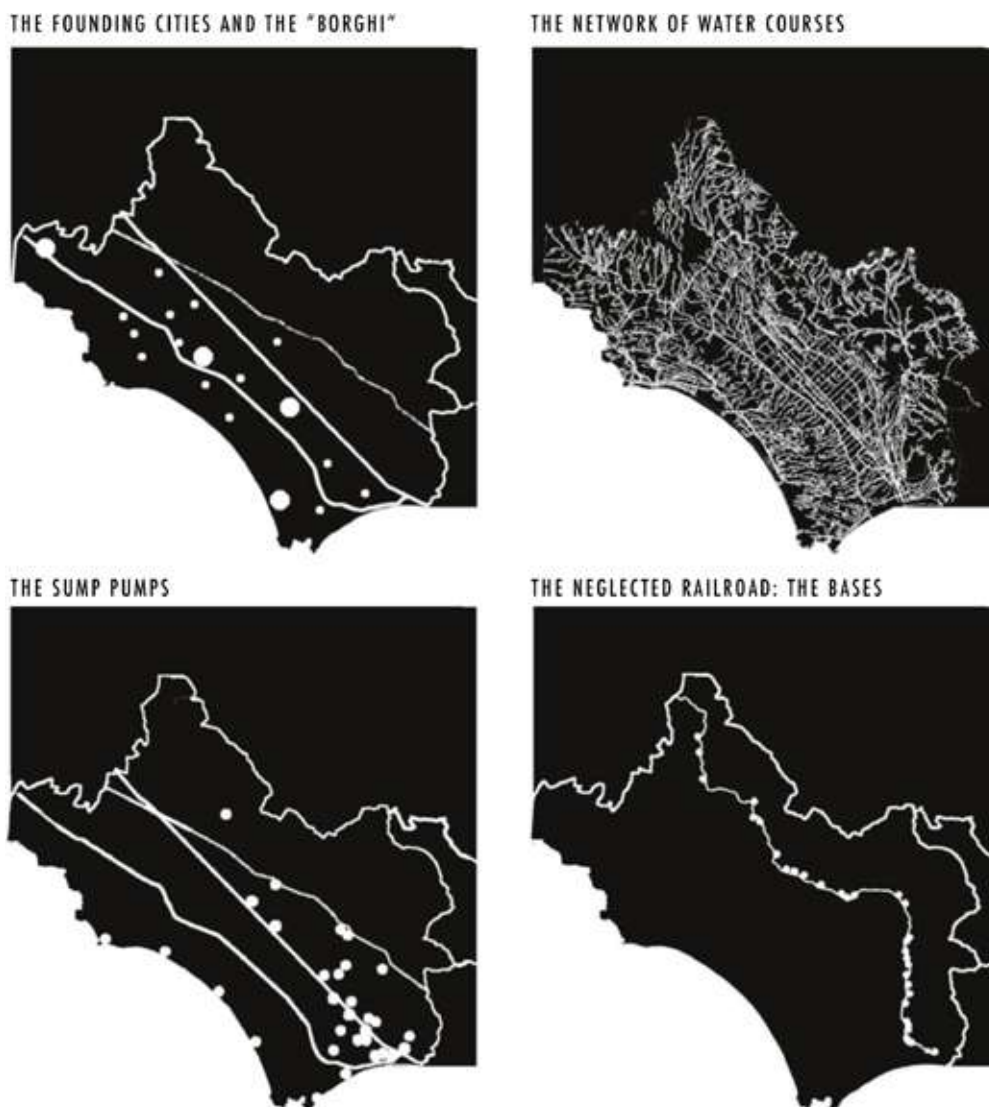


Figure 4: Graphic analysis

The first element that comes to light from the interpretation of the topographic maps, is a significant distinction between the area close to the Lepini Mountains and the area close to the coast. The Agro Pontino may be ideally divided into two parts by the River Sisto: on the right side the canals have sinuous and naturally curvy courses, while on the left side waters are canalized into an orthogonal net that delimits the squared plots of land. This geomorphologic dissimilarity corresponds with two historical stages and two different districts. On the left side of the River Sisto the Consorzio di Bonificazione Pontino (literally the consortium of the land reclamation of the Pontina Plain) was instituted in 1862 to complete the land reclamation begun by Pope Pio IX. On the right side the Piscinara Consortium was established in 1918 by Roman Civil Engineering service. The first one realized the Forcellata central in 1907 and the Tabio central in 1909. The second one built many other sump pumps achieving the hydraulic drainage of lands for which altitude differences made it impossible to obtain the same through spontaneous flows. The Piscinara Consortium also built the Canal Acque Alte according to the Pancini-Prampolini project. In 1996 the single Agro Pontino Consortium replaced the previous two consortia. It manages and controls in particular the canals, the sump pumps, the windbreaks and it stores the most important photographic archive and documentation center about the history of this territory. The complexity of the data collected required a work of selection of the available information. Through a graphic analysis, the numerous components of the territory have been isolated and studied both separately and simultaneously. Other studies about drained landscapes⁴ have inspired the research and have been implemented. Interpretative schemas have been developed to make immediately intelligible the signs of the territory, interpreting them as sets geometric symbols: surfaces, points and lines. Pursuing this systemic logic, meshes of roads, ancient paths, railroad tracks and a tangled net of watercourses have been overlaid to the vast cultivated plain. A large number of punctual components have been added to this layer such as sump pumps and every kind of hydraulic infrastructures, tollbooths and stations of the neglected Velletri-Terracina railroad, both functioning and no-longer-functioning factories, farmhouses, villages and towns. The acknowledgment of the potentialities of the territory object of the analysis is therefore the outcome of a historical and archival analysis, that has led to light how also simpler architectures as the farmhouses and other minor buildings contribute to express the peculiar identity of the local landscape. Their value is not just architectural, in fact quite often the name of designers is not even known, however, they are significant because they are small but essential elements of a wider system and of a wider project.

Historical interpretation is the key to understand that drained lands are complex environments and that the net of watercourses connects the different components, playing a fundamental role for the existence of the entire region. After identifying the historical value of the buildings and the potentialities of the landscape, to shape planning hypothesis about enhancement becomes possible. In these hypotheses past memories and future uses coexist and not conflict.

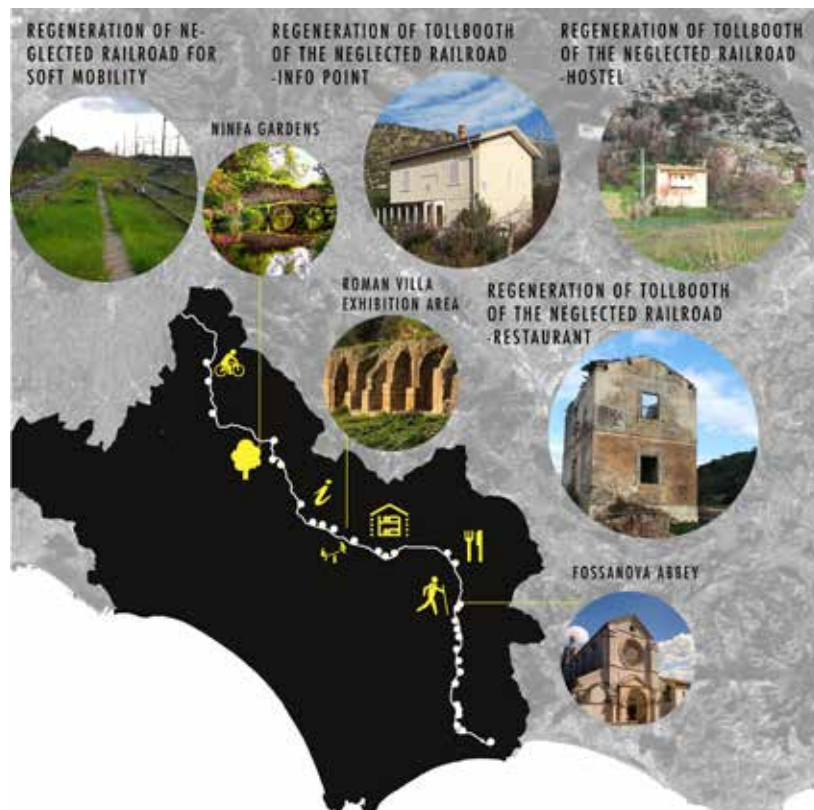


Figure 5: Project proposal for the regeneration of the disused railway line

Results: New proposals and “old signs”

The first step to understand the environmental and naturalistic potentialities of the territory has been to observe, to study and to analyze the Agro Pontino in its complexity. It and its many architectures - integrated into a single project - deserve to be preserved and rehabilitated for the coexistence of history and nature. In this context the 79 kilometers of the neglected Velletri-Terracina railroad represent a red thread, connecting the various naturalistic and architectural components on the territory.

Currently the railroad track is only partially intact. Only some track sections and some sleepers remain while other remaining pieces are hidden by the vegetation, although the track of the railroad is visible from above. The opportunity of a regeneration in order to create an itinerary for soft mobility and accessibility-for-all requirements does exist⁵. Along its path, in fact, the railroad intersects locations of artistic, cultural and landscape importance such as the Ninfa Gardens, the Lake Giulanello, the Valvisciolo and Fossanova Abbeys and its route pass close to an ancient roman villa near the village of Sezze.

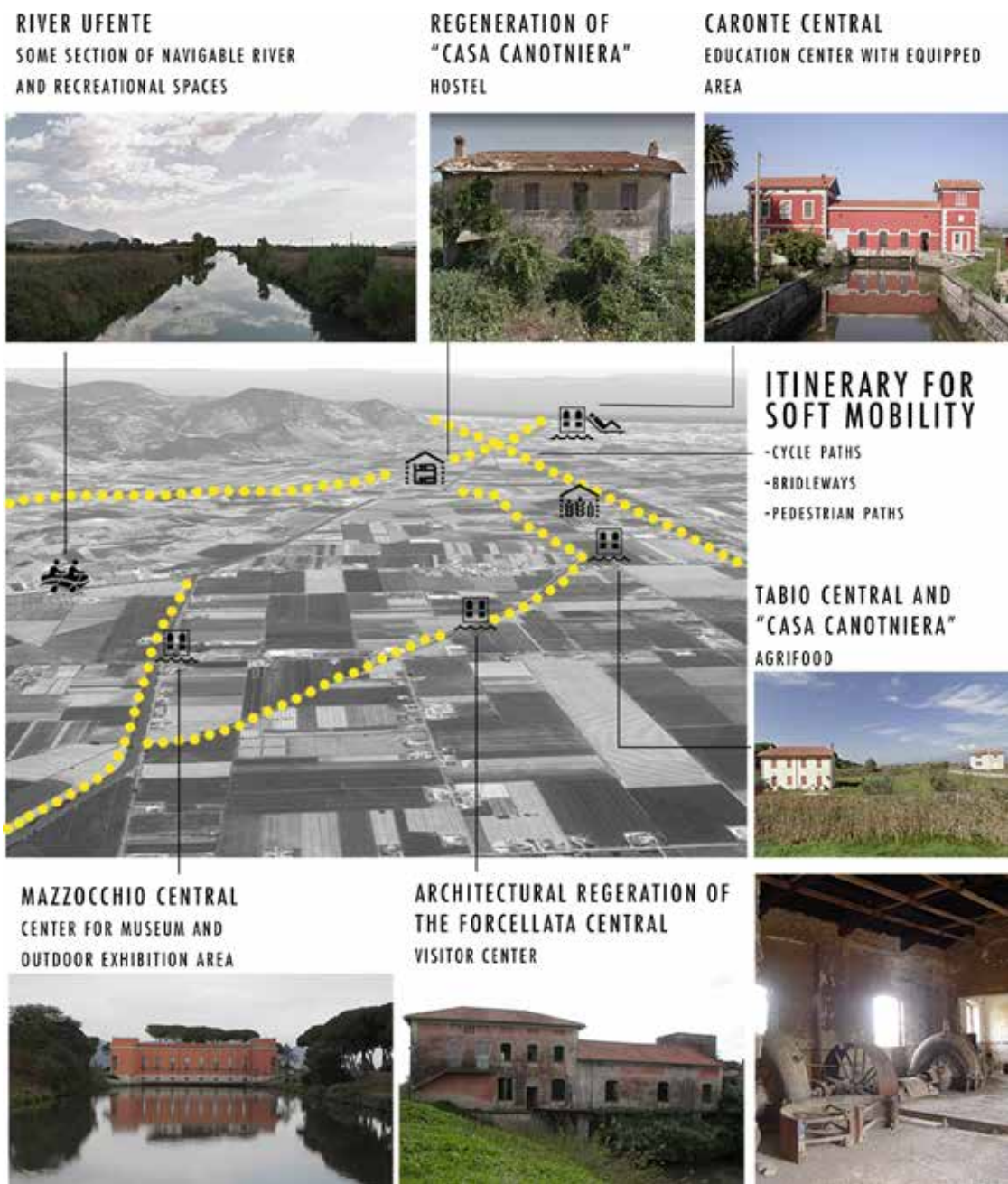


Figure 6: Project proposal for the enhancement of water ways

Its restoration could reactivate the revitalization process of this vast historical and cultural heritage widespread into the landscape. With this in mind the decayed roadhouses too – marked by small points along the path in the visual analysis - could assume the role of small facilities for tourist, low-cost accommodation and rest areas with garages for bicycles, educational workshops and exhibition halls.

The same interpretative approach could be adopted for the watercourses that intersect the sump pumps, which are typical examples of industrial heritage of the drained lands. Also in this case two different scales could be considered: on a larger scale footpaths could be created and preexisting tracks reactivated; at a smaller scale the single buildings could be rehabilitated for new uses. Our proposal is to add new itineraries, accessible by foot, by bicycle or on horseback, to the elements of the already existing layer. These itineraries would run along the canals and intersect the sump pump centrals, and thus may attract tourists and give them a way to appreciate the complexity of this artificial landscape. In this new background, the pivotal intervention is the architectural regeneration of the Forcellata central - currently abandoned - as a museum and/or a visitor center. Its proximity to the functioning Mazzocchio central, partially converted into an exhibition hall, supports the idea that the entire area may be developed and renovated for educational activities, equipped with rest points and recreational spaces for children. In a region where water is the main unifying and identifying element, to enhance watercourses, rivers, lakes and wetlands, through sustainable uses, becomes strategic from an environmental and architectural point of view⁶. In this regard, it is worth mentioning that in recent time the local administrations have implemented legislative instruments in order to encourage initiatives for the enhancement of watercourses. Only in 2015 the Region of Lazio has introduced the "Contratto di Fiume" (River Contract), a strategic planning tool for management and improvement of the territories along rivers⁷. Currently some interventions to allow to go kayaking part of the River Cavata have been adopted, together with some plans for Rivers Linea Pio, Sisto and Ufente, involving various authorities and entities. Therefore, the Pontina Plain, with its heritage, could be capable to represent both the present and the past times, through the protection and enhancement of its landscape. This is crucial for a positive economic, agricultural and touristic development.

The proposal that is now being presented involves a project, on a territorial scale, to connect the net of watercourses and the neglected industrial buildings without underestimating the peculiar rural heritage of the local landscape. New projects and "old signs" intertwine to testify history without denying a new development and a new future for the territory.

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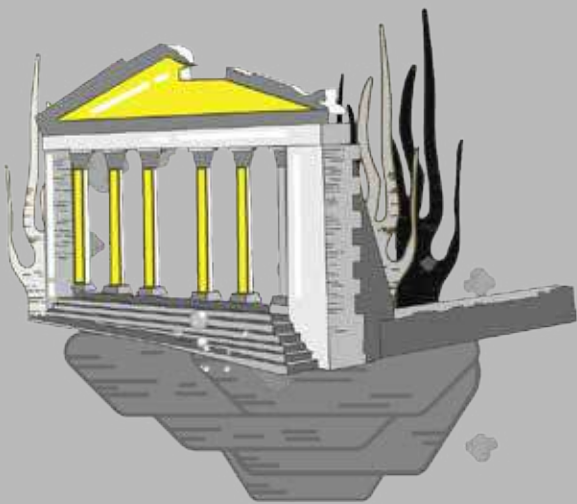
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5 / *The XIII Comunità Montana dei Lepini (Mountain Community of Lepini) has showed interest to create a bicycle and pedestrian path on the old track of the railroad, at the suggestion of various local authorities*

6 / *In this regard it is worth to mention that the Agro Pontino territory is involved in the project LIFE REWETLAND - "Widespread introduction of constructed wetlands for a wastewater treatment of Agro Pontino". The project was developed by Provincia di Latina as leading partner, in synergy with local junior partners (Comune di Latina, Parco Nazionale del Circeo, Consorzio di Bonifica dell'Agro Pontino, U-Space srl). It was finalized in 2014 and it won the prize "Best o the best Life Environment/Information projects 2014", awarded by the European Commission to the Life programs that outstand for the environmental, social and economic achievements*

7 / *The 2015 Stability Law regulated the River Contracts by including them in Article 68 bis of the Environmental Code "1. River contracts contribute to the definition and implementation of district planning tools at the basin and sub-basin level, as voluntary tools of strategic and negotiated planning that pursue the protection, the correct management of water resources and the enhancement of river territories, together with the safeguard from the hydraulic risk, contributing to the local development of these areas."*

[MEM/10]



Human Mind is the Architectural Site

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abstract

This project will represent an "...architecture that engages with the history of a site, respects existing conditions of a place, relates to present needs, and provides the potential for future use and adaptation" (Wallace, 2007). The chosen location of this project is El Diwan village in Nasr El Nuba, Egypt. The defined problem is how the Nubian youth and community mindsets and feelings are split, between going back to their heritage of their old land, and the ambition to advance, pursue their dreams, and cope with modernization.

The Nubian culture is mostly verbal and visual, and a main part of their life patterns is observed to be storytelling and reminiscing about the old days. Instead of leaving this interesting pattern go to waste, my project will focus on allowing the youth and the whole community to take advantage of this pattern in a way that develops their skills, and open new perspectives for them. The design of the project will allow the users to design their story, live it, learn from it, and eventually see it documented along with their culture that used to be only a past.

Narrating a story can have multiple structures; such as linear, open, closed, or circular structure. This project will adopt the open structure of narration, in order to create open-ended spaces that have the potential to evolve harmoniously, with a narrative structure that allows for the youth and the whole community to create their own story, and go through it, where the story doesn't have a fixed ending or one dimensional moral. The building's story will start with the existing situation of imbalance and confusion, then the users see a shining opportunity, so they get curious and take a step towards it and the journey of the present, leading to the future begins.

keywords Heritage, Culture, Youth Development, Technology, Elder knowledge

State of Art

With the current trends of globalization¹, we are witnessing how the world is growing and changing around us. Some people can adapt to the changes that take place, while others cannot or refuse to. Each one of us has his own reasons for resisting the change. The most important thing is to be cautious when making a change or trying to convince anyone with that change, as to understand that person's culture and needs.

A human's culture can range from his values, traditions, a past full of pain or glory, a heritage left behind, as well as people lost in the past. "We know and remember who we are as historical beings by means of our constructed settings. Architecture also concretizes "human institutions"—to use a notion of Louis Kahn—the accumulation and structuring of culture, as well as the layering of time" (Pallasmaa, 2013).

This paper explores the issue of cohabitation in the contemporary life and the predictable changes throughout time by focusing on a certain community, which is the Nubian community of Egypt. It is a continuation and expansion of my individual academic research under the umbrella of questioning architectural typologies.

The defined problem of this research is that the Nubian youth and community mindsets and feelings are split, between going back to their heritage of their old site, and the ambition to advance technologically and cope with modernization (Salama, 2017).

Objectives

The main objective of this research is to find ways or tools to enable cohabitation through architecture. With a special use of 'memory' and phenomenological concept strategies, this paper will act as a journey of stories leading to architectural solutions for the issue of cohabitation in Nasr El Nuba. Furthermore, it is an investigation of how human mind is the architectural site; "the human essence of architecture cannot be grasped at all unless we acknowledge its metaphoric, mental, and expressive nature... Architecture is constructed mental space. In the Finnish language this sentence projects simultaneously two meanings: architecture is a materialized expression of mental space, and our mental space itself is structured by architecture" (Pallasmaa, 2013).

Methodology

The methodology used in this research is the grounded theory, as it is an inductive methodology that allows for investigating conceptual and theoretical categories, as well as gathering data and analyzing it. In order to pursue this research, the first track is analyzing the existing location in question. And, since this research is part of another quest regarding youth centers' typologies, there was a journey of site selection. It is very important to have criteria of site selection that allows for your research questions to be investigated, and not to drift from the scope of the research.

As a start, there has to be analysis of the strengths, weaknesses, challenges, successes, failures, and development approaches. To choose a location, several Nubian Sites were studied through site visits, interviews, as well as desk research. The possible sites taken into consideration to be this project's location were categorized according to the most dominant characteristics in those places. The categories are: touristic, residential, and migration-residential. West of Aswan as well as the touristic sites like West of Seheil have exposure and better accessibility to opportunities. In Nasr El Nuba, migration-residential community, there is not much attention to the youth potential despite the collaboration between some of its villages with strong NGOs. Therefore, the project's location was chosen to be in Nasr El Nuba. Then, El Diwan village was chosen to be the location of the project within Nasr El Nuba (Salama, 2017).

In order to have the most optimum understanding of the selected site, the cultural anthropologist's approach was followed. I went on having an experience with multiple groups of Nubians, to be able to see where and how they live, how they spend their time, and to understand their behavioral patterns that make their culture as strong as it is known for. In order to be able to do a project for a group of people, one must understand the needs of those people. And, to be able to understand their needs, one should understand where those needs are coming from and how they can be dealt with (Salama, 2017). Thus, we need to understand their culture and we should get to know them as "...individuals not as data sets" (Schultz, 5).

Along with the site visits and fieldwork that included interviews as well as participatory and observatory work, desk research was done to strengthen the research and fill the gaps. A further study of the signs and motifs of the Nubian Architecture was developed, in order to be fully aware of it, and to understand how their spaces were designed in the past. Thus, understanding what this community is missing out now after being reallocated in different lands with different type of housing designs.

Intervention Strategy

The intervention to the defined problem would be by using the appropriate strategies to capitalize on healthy relationships in the Nubian community, in order to develop the youth's sense of belonging, by emphasizing, reviving, and documenting the Nubian cultural heritage. Also, allowing for development through a narrative structure that creates spaces to share their stories coming from within, and allowing their engagement in their own life decisions. Moreover, the use of media and technological methods would create an access to knowledge and would tie the youth to their roots in a way they can relate to nowadays. "Media is an important backdrop for the social, emotional, and cognitive development of young adults" (Pempek, T. A., Yermolayeva, Y. A., & Calvert, S. L., 2009).

Philosophy of Storytelling

Writing or narrating a story may have multiple structures; such as linear, open, closed, or circular structure (see figure 1). In this project, the open structure of narration is adopted, as a challenger to typical fixed endings for users. The design of the project will allow the users to design their story, live it, learn from it, and eventually see it documented along with their culture that was only part of the past.

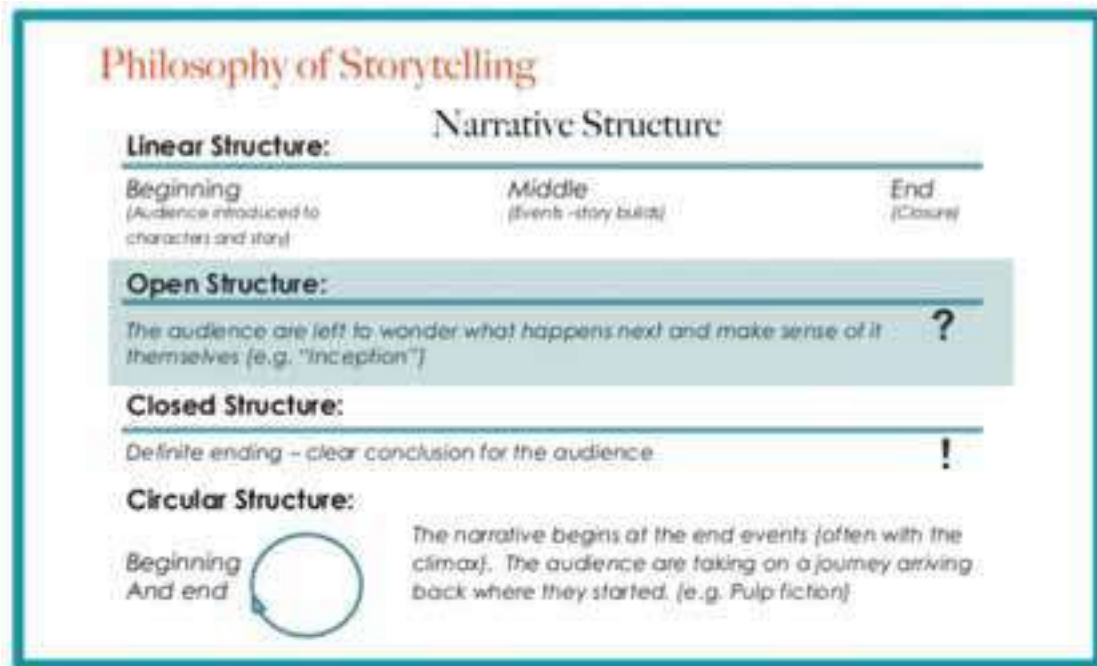


Figure 1 / Narrative Structure Types (Todorov, 2014)

HOW STORYTELLING AFFECTS THE BRAIN

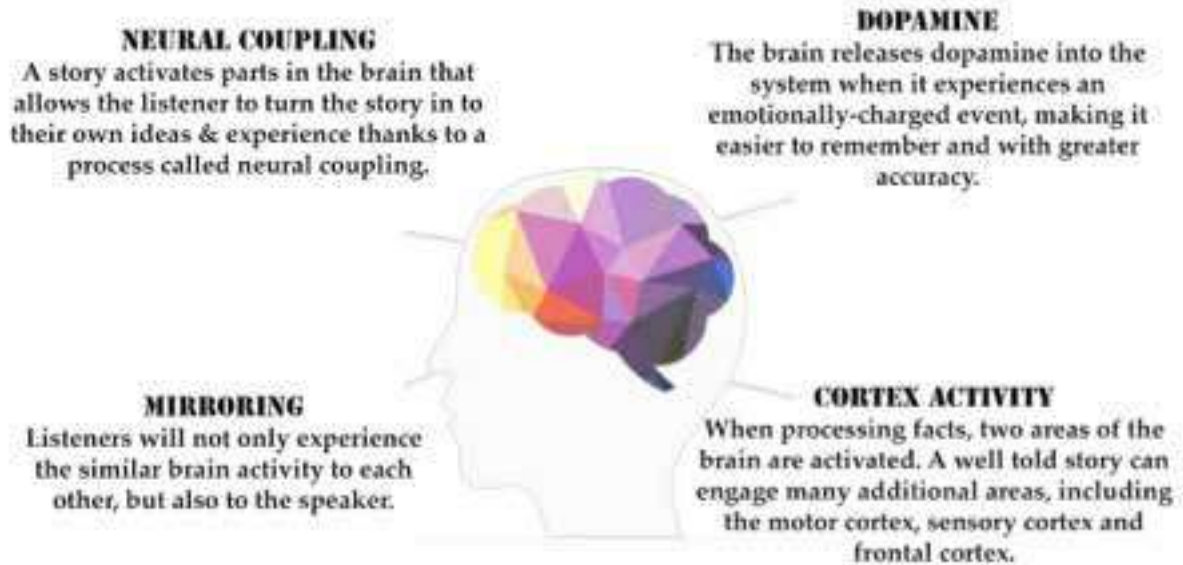


Figure 2 / Effect of Storytelling on the Brain (Olenski, 2016)

PYD Approach

In the journey of finding ways to enhance and develop the lives of the residents of the whole Nubian community and in particular the lives of the youth, the Positive Youth Development (PYD) Theory was found to be a very useful guide to provide better opportunities that allow for development and cohabitation. Although the PYD theory is mainly focused on youth, but after understanding its constructs, one gets to see how the community behavior and development are highly involved in the process (Clary and Rhodes, 2011). The PYD is based on the high plasticity

1 / "Globalization is a highly complex interaction of forces producing integration and disintegration, cooperation and conflict, order and disorder (Harvey 1989; Giddens 1990; Robertson 1992; Barber 1995;). "The scale of global communication and migration has begun to brake down national identities" (Brahm 2010; Rheingold 1995).

of neurons of human brains at the young age, which is a needed quality for development. And, another quality that the PYD is based on is the relationship and the interaction between every individual with his surroundings (Silbereisen and Lerner, 2008). Briefly, PYD is an approach for youth development based on capitalizing on the youth assets without framing them as incomplete or flawed.

To be able to study one's lifestyle and make an assessment of it using PYD, there are guiding constructs to be observed and capitalized on. There are 15 PYD constructs, which are: promoting bonding, fostering resilience, spirituality, self determination, self efficacy, clear and positive identity, belief in the future, promoting social competence, emotional competence, cognitive competence, behavioral competence, moral competence, providing recognition for positive behavior, providing opportunities for pro-social involvement, and fostering pro-social norms (Catalano et al., 2004).

Results & Discussion

El Diwan was found to be the most suitable location due to several factors such as, the youth's and the community's needs that are not fulfilled, the lack of easily accessible entertainment, the lack of opportunities, and the confusion between the elders' attachment to the past and the youth ambitions for a better future. And, in terms of accessibility, El Diwan is in the center of Nasr El Nuba, which allows for the whole community to share the proposed project (Salama, 2017).

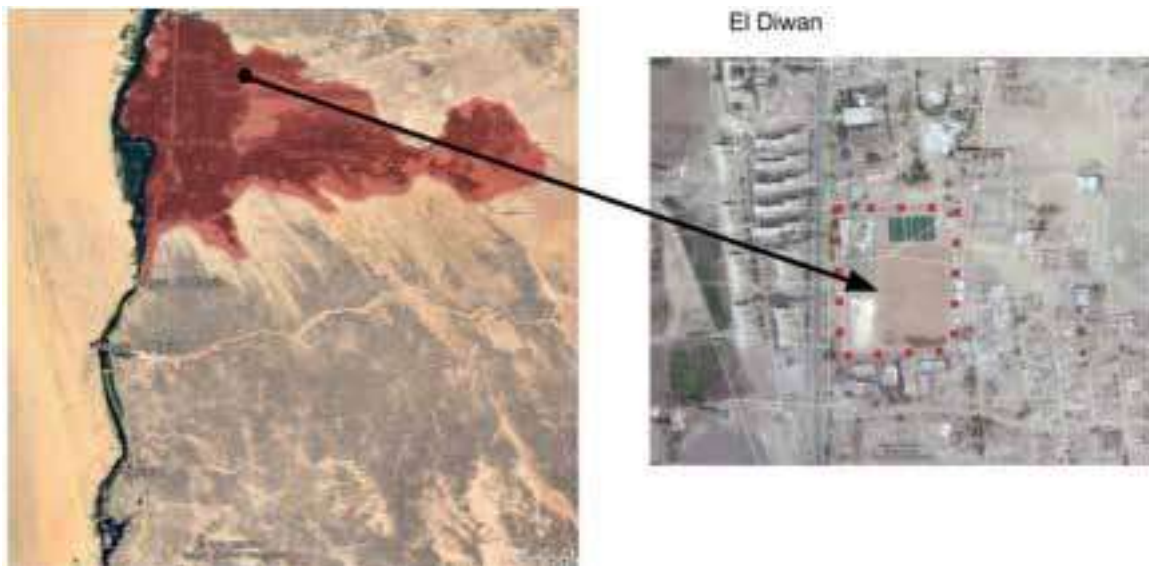


Figure 3 / Zoom-in Map (Google Earth) showing the chosen site of El Diwan, Egypt. 2018.

The interviews conducted ranged from interviews with the villages' elders, school children, workingwomen, non-working women, teenagers of both genders, Nubians who work in the field of tourism, as well as a random sample of Nubians who live in Cairo. Based on site visits and interviews, multiple social issues were observed in the community of Nasr El Nuba (see table 1). And, following the PYD approach, a link was made between some of the issues in the Nubian society and the corresponding issues of the Nubian youth there (tables 1 & 2 below). "...Social norms are dynamic and respond to the interaction between individual experiences and social responses (Bachrach, Hindin, and Thomson 2000); both experiences and social responses (changing the structure of incentives and disincentives to practice a certain behavior) contribute to and arise from changes in society" (Lindbeck 1997; Heuveline and Timberlake 2004 & Perelli-Harris and Bernardi 2015).

Based on the studied needs and interests of the prospective users, this project is designed to act as both a cultural and recreational space, where people have chances to learn and develop mainly through culture. Moreover, the recreational activities like swimming and football are a significant part of the project because they are actually needed and requested by the youth in El Diwan and Nasr El Nuba as a whole. The recreational activities would allow the youth to learn values and ethics, while putting their energy in a physical activity that benefits their body and soul. The sports program is intended to develop in them character building and ethics rather than getting swamped in competition violence. And, from another perspective, this recreational part could be an attraction point of the project to those who are only interested in sports due to the daily media propaganda (Salama, 2017).

In terms of social class issues that hinder cohabitation, the cultural activities could allow for having sort of a common goal in the activity that the users of different social classes would be sharing. Being involved in a cultural activity that originates from the very ancient times in Egypt would be an attraction to both Egyptians and foreigners or tourists. In terms of tourism, the Nubian culture is famous for its magical effect on those who visit any Nubian

community, as they do not only learn about the great history, but also they see the culture's modesty, colors, intricate details, as well as the friendly manners of the Nubians.

Table 1 / Summary of Issues in the Community of Nasr El Nuba, 2018

Social Issues	Youth Issues
Unemployment/Economy	Laziness
Cracked sense of Belonging	Loss of interest by youth & parents
Struggle with adaptation to changes	Lack of sense of Identity or directionality
Taboos	Poor integration of Females in certain activities

Table 2 / Applying PYD Constructs on the Community of Nasr El Nuba, 2018

Constructs to be Tackled		Strategy Appropriateness (Scale 1-5)		Domain			
				Community	School	Family	Media & Technology
Priority 1	Character	Skill Building	4	✓			✓
Priority 2	Resilience	Youth Engagement	5				✓
Priority 3	Connection	Healthy Relationships	5	✓		✓	
Priority 4	Self Efficacy	Belonging & Membership	4	✓		✓	✓
Priority 5	Belief in Future	Positive Norms, Expectations & Perceptions	5			✓	
		Safe Space	3	✓		✓	
		Youth Services	5	✓			✓

When visiting the village of El Diwan in Nasr El Nuba, the name was intriguing, and after asking multiple people during interviews, it was found that all of the villages' names in Nasr El Nuba were all the same old names of their villages that they were moved from. And, El Diwan was the center of power back then and it was known for the gatherings of people citing poetry and having intellectual discussions. Therefore, it was very inspiring to have this project to reflect on their past including the activities they used to do (Salama, 2017).

One of the interesting stories in the interviews was when the residents talked about what they used to do for entertainment. They mentioned how they used to create their own outdoor cinema in Nasr El Nuba by making their own projector using bed sheets. So, this could be reflected in the design of this project, where a cinema screen could be displayed over the façade of the theatre. Furthermore, the exterior design of the theatre could give the impression that the material is a fabric, which would help the brain to make connection with the space due to the familiarity (Salama, 2017).

"As neurological research has recently revealed, we have a surprising capacity to mirror the behavior of others, and even to unconsciously animate and mimic inanimate material constructions and objects through our imagination"(Pallasmaa, 2013). The project's theatre and cinema are cognitive tools, where the theatre serves as a self-expression space where characters are developed (see table 2). One scenario could be in the "mastaba",

where the youth will be listening to stories by elders while they are weaving, then going to the theatre and taking the stage to express their passion of any field or matter. Another scenario would be for the youth to go to the theatre to listen and watch their role models from the Nubian community and outsiders sharing their stories of success as well as failure, which could be inspiring to those youth who live in the enclosed society of Nasr El Nuba.

In light of the cohabitation discussion, high-rise buildings and vertical cities created a highly observable and increasing trend, which has its flaws and its merits. However, the flaws it created have resulted in an emotional and behavioral damage in humans. The verticality doesn't always allow for the simple social interaction that used to take place in the old days. The busy life of being in elevators, cars, and other types of machines have taken away the comfort of being in nature and feeling the earth. Thus, as shown in figure 5, this project design allows for cohabitation to take place mainly through expanding horizontally, which is originally how the Nubians used to build their houses in the old Nubia. One way of looking at how much change took place to the migrated group of Nubians is seen in figure 4 below. Figure 4 shows two completely different urban planning and configuration of houses of the Nubian community. The left side is the urban design of the new location (Nasr El Nuba) of the migrated group, while the right side is the urban design of one of the old Nubian settlements. As shown in figure 4 (a), the housing units that were given to the Nubian community in the relocation process were designed with a rigid modular grid, where both the interior and exterior experience of spaces were standardized and there was no consideration of their needs.

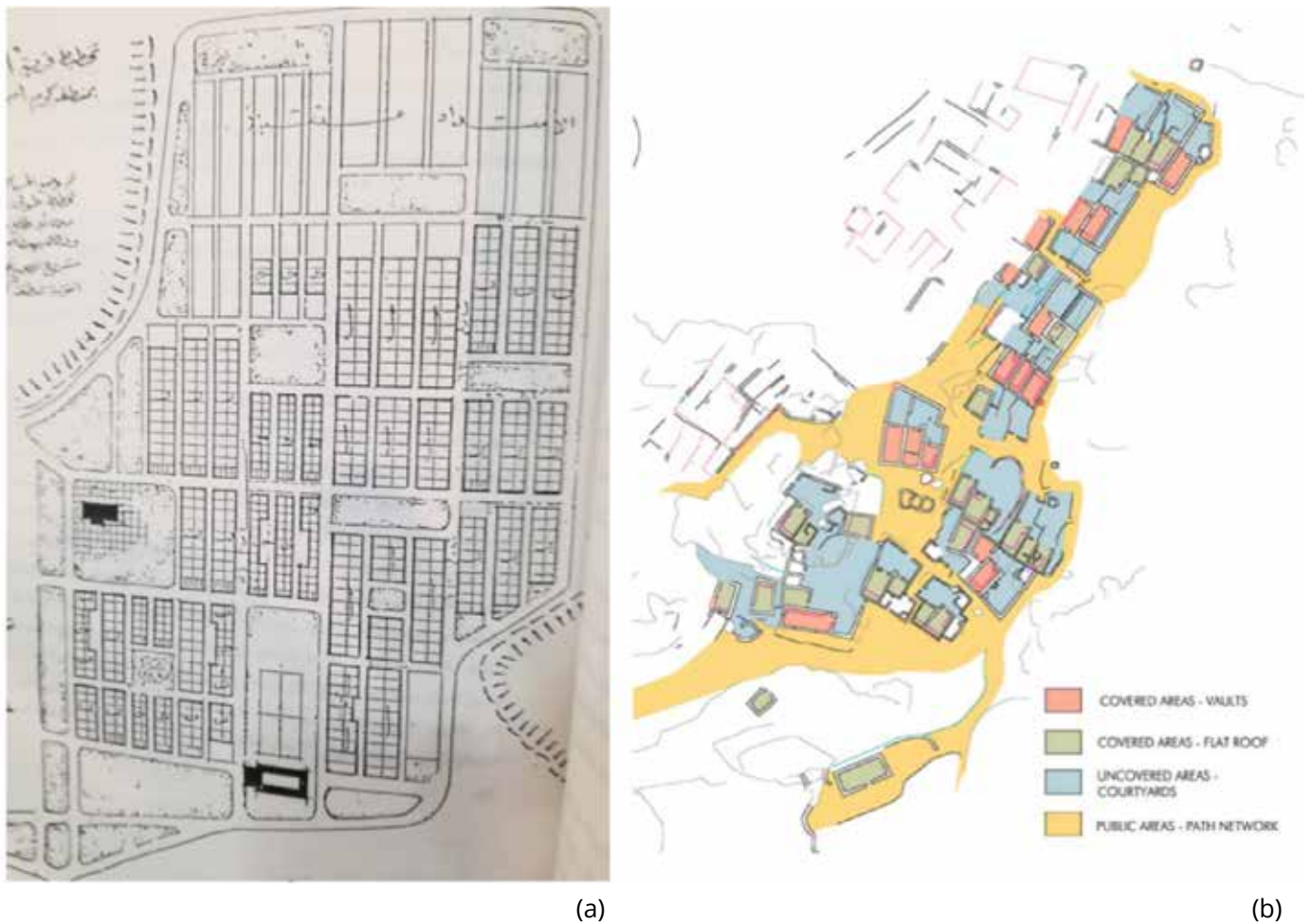


Figure 4 / (a) Urban Design of the Initial Phase of Nasr El Nuba (New Urban Communities Authority), (b) Urban Design of an Old Nubian Settlement (Zabrana, 2014).

The proposed project is designed with respect to the traditional buildings of the Nubian community, and one of the important aspects in their old houses was having courtyards. The courtyards in this project would serve the users in both re-living their traditional experience that was taken away from them due to the migration as well as feeling its environmental impact on their experience and journey of exploration in the project.

In light of following storytelling and narration philosophy, the following is one possible scenario of the story; the journey starts with the existing situation of imbalance and confusion, then the users see a shining opportunity so they get curious and take a step towards it. They start exploring the space so they roam around where they first walk through a path of their history and heritage all around them. Then, they find themselves arriving at a space

where there is an elder woman sitting there weaving, and reminiscing about the old days. Listening to that old woman, they get to have a glimpse of what their ancestors' life used to be. And in case they had prior knowledge of their heritage, then that woman was the reminder of their greatness and power. Seeing that woman, and more like her, still remembering and holding on to the memory of the old Nubian life and listening to how they survived horrible days and years in the process of migration where many children and newborns were dead due to the roughness of the situation, the youth listening would feel how they can survive anything if their grandparents have gone through all of that and they're still alive and able to tell the story (Salama, 2017).



Figure 5 / Sketch of Ground Floor of Hekayet EL Diwan Project, (2018). Hekayet El Diwan is the Arabic title I gave for this project. It translates to the story of El Diwan. The names has a double reference to the name of the village and to the function of "diwan" and its etymology. El diwan could be an administrative place or a collection of poems or books, and in modern times it occasionally refers to a place where people gather and have intellectual discussions.

Leaving that space with that image in their head to find themselves entering a virtual city that is composed of all the magnificent details of the beauty of the old Nubia. Seeing the beauty of their past and having the privilege to live it for a few moments, they are in a state of mesmerization, while then entering the next space to find their favorite celebrity, icon, or role model standing on a stage telling his/her story of struggle and success. Out of curiosity the users sit and listen, and following both the psychological and neurological patterns of imitation and modeling, they would compare themselves to that speaker. And, that comparison would be the first step for them to live the present and to think about their future. And when they go outdoors, they see an enormous stepped area overlooking a cinema screen displayed on the facade of the theatre to have outdoor gatherings like the old days. The story goes on with activities from the past and others from the modern-day, letting their origins to be the initiation of their future productions.

Conclusion

Storytelling has the strength of showing the past, the present, and a vision of a coming future. When architecture is created in a form of storytelling composed of visual and experiential spaces, it becomes capable of capturing the history of the place and giving an identity to the current space and its users. "Architecture forms a visual, spatial link between the past, present, and future, becoming a point in the timeline of a place and culture" (Wallace, 2007).

Human mind is the architectural site. People might physically lose a land, but mentally it might never be lost as long as it is part of their memory. The Nubians were moved from their land to a new one, where their culture was not engraved. Many of the Nubians could not stop thinking of going back to their old land thinking of it as their only life. The new land was only a new location, but it did not feel like their place. A place is defined by how it is created, experienced, and remembered. The sense of belonging transforms a location to a place.



Figure 6 / Mood board of Hekayet EL Diwan Project, 2017.

The proposed design acts as a revival of the life of the Nubian community, particularly in Nasr El Nuba, through a spatial recall. Understanding the term “tactics” as an art of arrangement, which is how the ancient Greek used it as an expression, led to the proposed design for the Nubian community in El Diwan and its surrounding neighborhoods. The simple arrangements of the spaces in this project are executed with respect to human needs, traditions, and behavior. “...The task of architecture extends beyond its material, functional, and measurable dimensions, and even beyond aesthetics, into the mental and existential sphere of life” (Pallasmaa, 2013).

The architectural elements and urban configuration used allow the users to live the Nubian experience that was left behind. The aim is not to make a replica of their old architecture or villages, but to approach an abstraction of its experience. For those who lived on the old site, the spaces designed will trigger their emotions of grief, and hopefully amusement and indulgence. For those who never saw the old Nubia, they could have an opportunity to live some of the stories of the old Nubia told by their grandparents. “The content and meaning of an architectural experience is not a given set of facts or elements, as it is a unique imaginative re-interpretation and re-creation of a situation by each individual. The experienced meanings of architecture are not primarily rational, ideational or verbalized meanings, as they arise through one’s sense of existence by means of embodied and unconscious projections, identifications and empathy” (Pallasmaa, 2013).

Finally, my vision is to create open-ended spaces that have the potential to evolve harmoniously, with a narrative structure that allows for the youth and the whole community to create their own story, and go through it, where the story doesn’t have a fixed ending or one moral (Salama, 2017). “This incompleteness of space, interior and exterior, permits the user to fill in the gaps with the act of performing different activities, a kind of liberation for the user by an un-prescribing, open-ended architecture...Walls aren’t wholly devoted to enclosing space but to create pauses in a larger journey” (Stockwell, 2013).

Acknowledgements

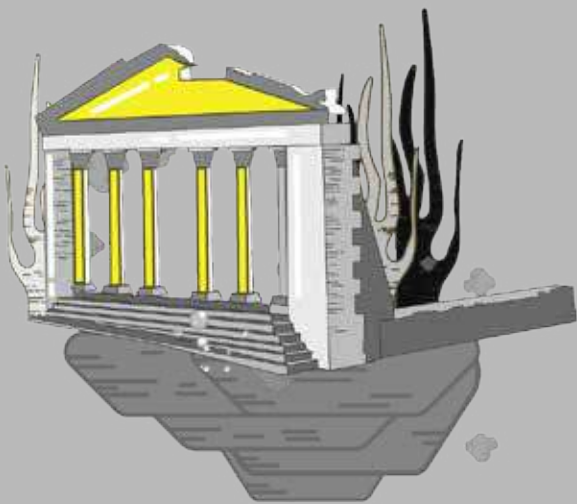
First of all, I thank God for everything; all of the blessings and the lessons learnt throughout my life.

Thank you Mom for everything and all what you have done for me. I wouldn't be able to achieve anything without your tremendous and continuous support. I am very blessed to have such an inspirational and dedicated person as a mother. Dad, I remember every lesson...you are my guide in any field. And, I know you are proud of me. Thank you both for believing in me. Mira, my "older-younger" sister and my partner in any plan...I love you Mira. I wouldn't survive or handle life without the three of you. And, of course my friends, who know themselves already, are the extra blessings I have in this life. Also, countless thanks to the incomparable professors who believed in me, and who continuously helped me in learning and experimenting. And, I would like to acknowledge the collaborations of my group, who were part of the initial stage of the research of our architecture senior projects, where PYD was the common approach we followed in each of our individual projects of year 2017-2018, AUC. My group members: Malak Seoudi, Raghda Ismael, Omar Bayoumy, Omar Assem, and Mariam Barakat. Finally, I hope you excuse me for not writing the best formal acknowledgment. I feel like words are limited, but my feelings of appreciation, admiration, and gratitude are infinite towards those I care about.

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[MEM/11]



MEMO POINTS

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abstract

In this research we examine the possibilities to create networks of special MEMO POINTS in cities and in landscapes. Our main goal is to involve members of society in developing a strong awareness forward the links between past and future. Designing the future (or defining the future of design) is a crucial element when doing research on human cohabiting. At sites influenced by historical legacy and special traces of the past, we are always challenged by the two extreme endpoints: the tabula rasa and the exact replication of the past. As practicing designers we have learned, that real design is always somewhere between these poles. To understand, and competently interpret the legacy of places we need both academic knowledge and the detailed feedback of users. For the relevant feedback, users need to be well informed about the legacy and the current problems of the involved site. In other words, we should use academic way and „bottom up“ methods simultaneously. This is called Participatory Action Research. To support PAR, we create a model for a network of smartly designed MEMO POINTS providing multimedia interfaces for data on the current site, and also a possibility for the users to give feedback with their comments, critics and suggestions. These feedbacks can be detected also by other users positioned at other MEMO POINTS. This network can create a multileveled communication between users, researchers, designers and politicians. These MEMO POINTS are set to key points of a city or landscape, providing not only information, but also a community place for meetings and for sharing experiences. These MEMO POINTS are designed for exhibiting material memories of the past (pictures, objects) and also digital interfaces. Digital reading and tangible objects can be beneficial also for disabled or young people to participate in creating the optimal future design.

keywords Urban Design, Participatory Action Research, Digital Networks, Sharing Knowledge, Bottom Up

Introduction

Connecting past, present and future is an eternal, basic human behavior that can occur in different fields of human culture. In the case of our study we focus on the social and design aspects of this continuity. There are infinite debates on the right proportion of taking into consideration these three time fields. Fundamental conservatives reject examining the potential changes for the future, while extreme futurists often ignore to understand their roots. Obviously the fruitful way is a carefully made compromise between the two extreme poles.

In design (product design, architecture, landscape architecture) there are different contexts for connecting past and future, depending on the current design exercise. In product design naturally there are more frequent shifts of paradigm than in larger scaled design. Since cities and landscapes have a bigger inertia, the shifts should be made in larger wave lengths: we should use several pragmatic research methods to figure out the optimal intervention to these environments. For this approach one should be very much aware about the structure of the current social-spatial situation. Sensitive researches and methods are needed to discover these structures in the past and the possible future shaping.

New generations are further from the past but luckily closer to the new digital tools those for obtaining information about the past. Therefore we try to use digital interfaces for connecting the several stakeholders in cohabiting. These digital interfaces should be combined with a smart product, architectural, landscape architectural design. We also try to imply social justice by using the philosophy of Design for All. We try to add our knowledge and experiences for shifting the old, deductive paradigm, where academic approaches considered themselves to be omnipotent, and ignored the rather complex pragmatic techniques.

Objectives

We have learned, that designing for places those have historical legacy is one of the most sensitive intellectual tasks. Since most of the design-sites have some sort of historical legacy, detailed historical research is involved in most of the cases. Our aim is to create special meeting places for the users of the landscapes and cities, where they can interactively take part of the possible transformations of the current sites.

Cohabiting means the common use of landscapes and city areas. In other words we should involve all possible stakeholders to the everyday use and what is also crucial: to involve them to the continuous shaping of the current sites. It means to activate all generations, and all kind of social groups to participate in the decisions concerning the affected places. The possible groups in other subdivision: researchers, designers from the academic side, all the user groups as non professional participant, and last but not least: the politicians as the representatives of the social power. Our aim is to call academics (researchers and designer) from their ivory tower out, to start an interactive collaboration with the everyday users as the professionals of personal involvement.

As a central problem we focus on the participation of people living with disabilities. Cohabiting naturally should include the evident presence of all possible social groups, people with disabilities among them. MEMO POINTS should be a sort of spatial structure, a wide spread network of communal places, where these people can equally participate in the social interactions. To fulfill this aim, we should apply the smart features of our digital age. Digital reading is one of the most important platforms to involve people with visual impairment and also children with a lack of practiced literacy.

As the core of our research we try to combine a complex design algorithm and up to date smart features to articulate the individual MEMO POINTS. The primary goal is to have a general approach that can adapt the concrete design solutions to the special environment. A MEMO POINT in the landscape obviously needs different shaping than one in a city environment. For this purpose we try to apply our knowledge about spontaneous processes and the "bottom up" approaches.

Our goal is not to produce precisely articulated design-sites but to describe the structure for the network of them. After a long period of research (doctoral and post doctoral) we try to implement the results on spontaneous processes and especially the human influence on them. As it can be learned from our references, carefully set frameworks inspire and activate spontaneous processes and activities to form a well functioning system.

Methodology

In this research methodology is the key element: the main idea is to describe a plan for the system, for the function of the concept. If it is carefully done, the shaping of the current MEMO POINT has a general guideline. If the guideline is generally valid, the concrete design can be derived from the genius loci. We try to popularize and apply a self-generating design approach, where the affected spatial design is derived from the complex background ("bottom up") instead of the pure academic knowledge. We try to support the pragmatic, inductive processes in opposition with the analytic, deductive approaches. One never should forget the long way that Ludwig Wittgenstein had completed from the analytic stage to the more reality-friendly pragmatic philosophy.

The pragmatic approach we can detect in Action Research. "In the landscape of social science, action research favors developing the connection between knowledge production and social change by creating partnerships between researchers, practitioners and a variety of client stakeholders. Action research seems in a position to develop a modest yet relevant contribution to combat the challenges of globalization, social exclusion and marginalization. It uses a whole range of approaches, including, for instance, participatory action research, cooperative inquiry and action learning." (Boog, Slagter and Zeelen, 2008: 15).

In our case the desired results and the methodology itself are necessarily combined; while the current research needs the active participation of the user groups, the functioning system is based on the continuous interaction of all stakeholders, of course the user groups among them. So it is a fractal-like system where the global pattern appears in the smaller scaled details.

The core of our methodology is Participatory Action Research (PAR). "This methodology combines theory, action and participation to initiate and promote transformation at the grassroots level where there are unresolved social, economic or political problems (Fals-Borda, 1987). Whereas people may define PAR differently, McIntyre (2008) has outlined the tenets that underlie the majority of PAR projects as: (a) a collective commitment to investigate an issue or problem, (b) a desire to engage in self- and collective-reflection to gain clarity about the issue under investigation, (c) a joint decision to engage in individual and/or collective action that leads to a useful solution that benefits the people involved, and (d) the building of alliances between researchers and participants in the planning, implementation, and dissemination of the research process." (Tukundane and Zeelen, 2015: 249);

PAR is a main tool of the new paradigm that supports the “bottom up” processes. It shifted the old pure academic paradigm to the new mixed paradigm. The former paradigm has been based on the conviction, that by only scientific methods, within the frames of academic approaches we can find valid solutions for complex human problems. This analytic-based, positivist thinking was very flourishing in the first decades of the 20th century. Ludwig Wittgenstein was one of the emblematic members of those thinkers, who believed in the force of analytic approaches. After several methodological failures he shifted to the pragmatic paradigm that is less precise in the analytic way, but more valid for the real practice.

In the research we should be aware that a very sensitive detail can be found in the “bottom up” approach: although academics can share the project field with the everyday users in the topics those can be described in the everyday language, it is not fruitful to pretend to be equal in the territory of science. The sensitive detail we can find in the fact, that the scientific approach should take into account the feedbacks of the non professional user groups. This hidden complexity is a crucial element of the PAR processes.

The design of the MEMO POINT should be natural and organic in a way as vernacular architecture and design are natural and organic. Less fashion combined with more pragmatism. “Vernacular architecture does not go through fashion cycles. It is nearly immutable, indeed, unimprovable, since it serves its purpose to perfection. As a rule, the origin of indigenous building forms and construction methods is lost in the distant past.” (Rudofsky, 1964: 16); For the design process we obviously need our academic knowledge that means we use the paradigms of our normal science. But we should be aware that none of the scientific paradigms cover the whole field of the concerned reality. “Normal science can be determined in part by the direct inspection of paradigms, a process that is often aided by but does not depend upon the formulation of rules and assumptions. Indeed, the existence of a paradigm need not even imply that any full set of rules exists.” (Kuhn, 1962: 44);

We should be also social-sensitive giving up the old paradigm of the classical consumer design. It can be very inviting if a spatial structure invokes the users to participate the design process. Professionals should try to use a vernacular-like creative language to involve common users to in the concept. “Many designers are no longer content to serve well-heeled clients in their search for aesthetic boundaries. Instead, they begin their careers as designers within the context of questioning the ever-widening divide between rich and poor. They become involved in social movements, support grassroots initiatives, and in a very simple and calm way attempt to contribute to the improvement of the world. In 2014, June H. Park published an instructed article about these tendencies in which he listed the »services« included under the heading of »Social Design«: Ecological Design and Green Design, Barrier-Free Design, Age-Friendly Design, Universal Design, Human Centered Design, Participatory Design and Co-Design, Design for the Third World, Environmental Design, Urban Design, Social Urban Design, and Social System Design.” (Stocker, 2017: 15);

At last but not least we refer to Edmund Husserl’s main idea when focusing to certain objects: we consider our project and the would be design products not as external items but we define them as the relation of the observer and the observed pattern. As Husserl himself, we implement the phenomenological approach at our study: valid and functioning design is not the result of some kind of ideal shaping, but it should be grown out from the current context of the city and landscape, as a result of the correspondence of the observer and observed.

Results

As a result of our research we have learned the evident benefits of combining different interests of the different stakeholders. MEMO POINT is a multifunction place; it provides an area for meeting of different social groups, it gives the possibility to get information about the history of the concerned area, and also let people to interactively add their suggestions to the common knowledge. These possibilities mean learning outside of schools for all generations and potential intervention into political decisions. “In a society which emphasizes teaching, children and students – and adults – become passive and unable to think or act for themselves. Creative, active individuals can only grow up in a society which emphasizes learning instead of teaching.” (Alexander, 1977: 100);

Lifelong learning is a very noble social idea; we could support this program by the complex articulation of MEMO POINTS. “For a long time, the concern of education was on the preparation of siblings, children and adolescents for adult life and it was studied in the science of pedagogy. Andragogy was developed from a perspective of lifelong learning, pushing forward several revolutionary notions. First and foremost, andragogy deals with adults who are considered to be independent and self-directed learners with their own aims, ambitions and frames of reference. Inspired by adult education, the general objectives of education were also expanded with the development of the ability of the learner to play unfamiliar social roles and to solve unknown problems, in addition to basic conditioning and training. Preparing children for adulthood, they were now taught how to learn for themselves in order to become self-directed lifelong learners in the future. Adult learning also expanded the realm of learning

outside the classroom by recognizing almost any situation in everyday life as a potential learning environment, developing the perspective from a lifelong trajectory to a life-wide activity." (Caris, 2016: 40);

As we have mentioned above, a self-generating system would be the most welcome feature in this research. "What is needed is a framework which is just enough defined so that people naturally tend to stop there; and so that curiosity naturally takes people there, and invites them to stay. Then, once community groups begin to gravitate toward this framework, there is a good chance that they will themselves, if they are permitted, create an environment which is appropriate to their activities." (Alexander, 1977: 350);

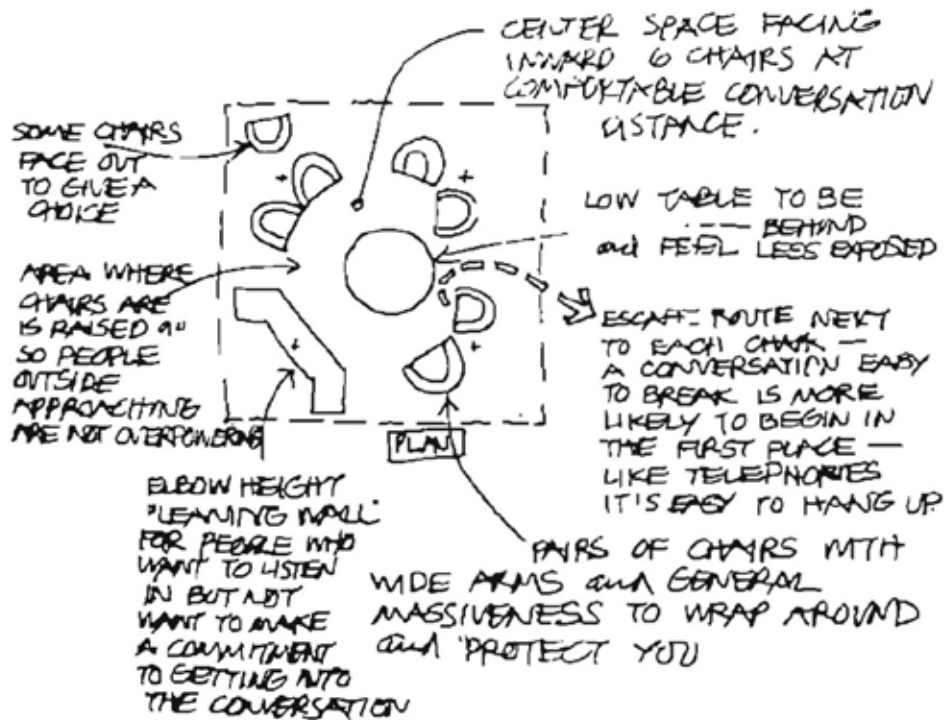


Figure 1. Sketch of Christopher Alexander (Alexander, 1977: 350)

The main attraction of MEMO POINTS should be the evident proof of utility: that one can see other people being involved in the special place. "Wherever there are people - in buildings, in neighborhoods, in city centers, in recreational areas, and so on - it is generally true that people and human activities attract other people. They gather with and move about with others and seek to place themselves near others. New activities begin in the vicinity of events that are already in progress." (Gehl, 1987: 25); We should provide the opportunity for users to shape the site at least partly. In case they build some details of these spatial compositions, they will use them with a genuine respect.



Figure 2. Open air furniture, KADK, Copenhagen, 2014 (Photo by Tibor Kecskés)

As important component of the concept we should build open, dynamic systems. People can be involved much more in situations those need their active participation. "...we saw that man's sense of space and distance is not static, that it has very little to do with the single viewpoint linear perspective developed by the Renaissance artists and still taught in most schools of art and architecture. Instead, man senses distance as other animals do. His perception of space is dynamic because it is related to action – what can be done in a given space—rather than what is seen by passive viewing." (Hall, 1966: 114);

Interactivity is a key element of our research: we should build up a network of MEMO POINTS, where the digital links make it possible to interact in difference places in real time. The users can share their experiences and also play games to each other even through thousand of kilometers. "The general failure to grasp the significance of the many elements that contribute to man's sense of space may be due to two mistaken notions: (1) that for every effect there is a single and identifiable cause; and (2) that man's boundary begins and ends with his skin. If we can rid ourselves of the need for a single explanation, and if we can think of man as surrounded by a series of expanding and contracting fields which provide information of many kinds, we shall begin to see him in an entirely different light." (Hall, 1966: 115);



Figure 3. Digital interface in open space (Available from: see List of Figures)

The MEMO POINT in the landscape naturally will be shaped in a different language than in an urban environment. The scale of the design the dimensions of the information interfaces should fit to the scale of the environment. The furniture and all the operation tools obviously should be carefully designed following the rules of ergonomics. The complex shaping of MEMO POINT comes from the smart digital interfaces, and also from the more traditional information, like large photos and exhibited objects. In our approach it is crucial to apply accessible interfaces for all kind of disabilities. They should be treated not as uncomfortable additional duties, but as the inspiring base for the whole design process.

The large screens, information boards can follow a new paradigm: instead of being a sort of installation of a given spatial design, they could become real, basic components the structures themselves. In this concept we gain a new design interpretation, and also give the effected tools a much more functional roll.

Our project is not a traditional design project but a research for creating the framework for the valid design in such complex environments as city and landscape. We can call this approach a secondary or meta design, as it is shaping the space for the traditional shaping.

Designers should behave more humble. The academic knowledge of them is very precise, very complex, but never as precise and complex as it is needed for the demand of eternally changing reality. "The vernacular, spontaneous builder owns the narrow path of his/her vernacular linguistic pragmatics as a mother tongue. The educated architect becomes acquainted with the general pragmatics of architecture only as an adult that leads to a strange deficit in the field of the mother tongue structure. As a consequence the official designer at most of the cases uses the architectural pragmatics with much less confidence than the amateur creator does it in his/her limited territory." (Kecskés, 2012: 9.Thesis);



Figure 4. Meeting point/Info point in the landscape, Skuleskogen National Park, Sweden, 2011 (Photo by Tibor Kecskés)



Figure 5. large-scaled screen as part of the architecture, Helsinki, Finland, 2018 (Photo by Tibor Kecskés)

Conclusion

Jan Gehl the outstanding figure of shaping new paradigms for the livable city has analyzed public spaces by the way we use them. "Greatly simplified, outdoor activities in public spaces can be divided into three categories, each of which places very different demands on the physical environment: necessary activities, optional activities, and social activities." (Gehl, 1987: 11); MEMO POINT is combining the two latter ones, by providing social meeting places for communication, learning and entertaining activities.

We must face to the fact that general changes can appear in society just in an organic way. Academics can make a large number of smart and valid conclusions, but the deep changes in mentality can come just organically, from the bottom up in the social stage. "That is perfectly true that there will be no turn for better until the people

awaken to the nature of the thing that has them in thrall, but this matter is not a matter for a thinker, it's a matter of something that must be grown." (Wright, 1957: video 40:00); Following the track of Wright's comment it seems clear, that we should base on educating the new generations and as much as possible shaping the paradigms of the older ones. Since this is the long term process, we obviously cannot wait until these evolutionary processes go through, so we should use design as compressed evolution. Smartly designed MEMO POINTS can instantly provide a social tool for this paradigmatic shift, and also facilitate the involved individuals to spread this meme.

We should apply PAR in two levels simultaneously: on the one hand we should invite the potential users to the design process to imply their experiences and suggestions concerning the subject. On the other hand the functioning system continuously provides the possibility for the users to give their feedbacks to the system. "Reading between the lines of form one unlocks an enchanting spatial metatext written without the layman creator knowledge! Unlike the layman, the trained architect is much too skilful to ensure that this metatext of underlying structures can appear between the lines of his creation. He covers the creative field seamlessly with his intention, as if writing even in the space between the lines. Fertile spontaneous architecture [...] though unwillingly, leaves in place the gaps of creation technique through which the complicated, underlying structures representing real creativity can flow in." (Kecskés, 2013: 55);

The MEMO POINTS has to be visible in a way of attracting users for participating in the interactive processes. For this it should be playfully designed for the targeted function. But at the same time it should be transparent design or transparent architecture as being evidently derived from the surrounding environment. For this we need sensitive design mentality that can adapt the tools for the concerned task. "In the field of product design and architecture well-organized spatial arrangements, careful proportions and smart ergonomics evoke the transparency of expression. Jørn Utzon, the world famous Danish architect's life work represents the case of a sensitive creator who can apply just the adequate design-language for transparent expression." (Kecskés, 2014: 95);

As a conclusion of a research of more than a decade we can state, that the "bottom up" method is a sine qua non of designing for human cohabiting that can also conclude to the organic coexistence of past, present and future.



Figure 6. Organic coexistence of past, present and future. Academy of Pop Culture, Leeuwarden, 2017 (Photo by Tibor Kecskés)

Our main conclusion is a double layered statement: on the one hand we obviously need the contribution of high quality architectural, product and graphic designers to create the individual sites. But on the other hand we should draw guidelines to them by the general, multidisciplinary studies. By these guidelines we can produce a "transparent language" of design that means a kind of shaping that organically fits to the environment. In other words: while the system is general and the implementation is individual.

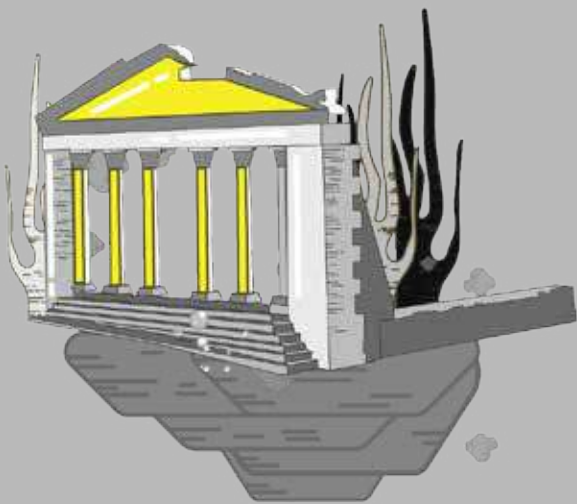
Acknowledgements

One point never defines directions. Lonely researcher is a pure oxymoron. We have made our research in a large academic environment and we also went on several field trips for pragmatic knowledge. Therefore we would like to thank the help of all our colleagues and the many participants of the field trips. We would like to express our special thanks to Prof. Jacques Zeelen for the personal discussion on Participatory Action Research. We are also very grateful to Albert van der Kooij, who introduced us to the unique educational system of Academy of Pop Culture in Leeuwarden that is an outstanding example for sensitive interdisciplinary approaches, connecting classical academic knowledge with the “bottom up” spontaneous creative forces. This Academy is also an excellent example for connecting the legacy of traditions and the latest trends in creative fields.

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[MEM/12]



Satellite City - The Social and Cultural Survival of Kosovo Albanians during the 90s

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abstract

For Kosovo Albanians, the abolition of Kosovo's autonomy in 1989 meant a ban on employment, education and information. Following the abolition, Albanians established parallel education and health care systems in their own private homes, funded from the voluntary 3% income tax, primarily paid by Diaspora Albanians. While incoming Serbs laid claim on the city, to the Albanians, their homes became synonymous of the city. For the Albanians in the 90s, everything urban cities and public institutions had to offer for all people shred into pieces and constrained into private homes, scattered around city suburbs. Houses and homes turned into schools, restaurants, promotional venues, offices, art galleries and hospitals, all at the same time. This exchange and fusion of the private with the public sphere, the open with the closed, of privacy and transparency, influenced housing typologies on the one hand, and the cultural mindset on the other. Public spaces were claimed or utilized by Albanians only in demonstrations against government injustice. Deprived of domestic media and information, Albanian families tuned into satellite broadcasts. Anyone could easily distinguish Albanian flats simply with satellite dishes or white round shapes hoisted on their balconies. The city itself turned into "a garden of white mushrooms". Since the 90s constitute a vibrant period of social and cultural movements, this "document" raises the question: what was the relationship between space and society during social mobilization and movement? In this paper, I shall attempt to answer this question by examining:

- 1. Transformation of public space with cultural manifestations – an underground (alternative) scene*
- 2. Art as a form of revolt and protest*
- 3. Aspects of social movement - including the 2-hour program broadcasted by the Radio-Television of Albania*
- 4. Spatial manifestation of parallelism in the city*
- 5. Houses as a metaphor for the city.*

keywords City, Culture, Social Movements, Demonstrations, Mobilization, Self-Organization

Introduction

Theorizing about social movements, especially in a context of author's livelihood and involvement, requires a degree of detachment from the examined actions and events, and not only. "Relations between those who are active in social and political movements and those who write about them have always been awkward. The awkwardness is bound to remain because ultimately, purposes of theory and of activism are different: whereas theory is the attempt to understand the world, activism is the attempt to change it." (Rootes, 1990). According to many authors, the city is the scene where social movements usually express themselves and take shape, or simply stated, "The city is the constitutive basis of social movements". "Social movements crystallize when people organize to jointly seek urban space and express their needs and demands" (Uitermark, forthcoming) aiming at realization of their rights. According to Saskia Sassen, "the city and especially the street, is the space where the powerless make history in ways that are impossible in rural areas. However, this does not mean that it is the only space, but of course it is critical". City revolts in England, neighborhood associations in Spain and the movement of young people in Zürich are just a few of these examples. This can also be observed in relation to Prishtina and other areas during the social and cultural movements of the 1990s in Kosovo. According to Castells, "All these movements have proposed a new relationship between space and society. And, they have all challenged existing cultural values and political institutions, refusing certain spatial forms, demanding public services and exploring new social understandings for the city." (Castells, 1993). This is exactly what happened in the city of Prishtina during the 1990s, when due to the exclusion of Albanians from public life and their mobilization through

the parallel system of peaceful resistance, the city turned into a different spatial stage for the two ethnicities - the public belonged to Serbs, as the private opened up to make room for the public life of Albanians. Spatial schemes of city movement, utilization and experience were different for the two ethnicities living in the same city. However, "although the process by which societies produce their cities is more visible in the case of revolt and spatial innovations, it is not limited to these extraordinary events. Every day, in every context, acting individually or collectively, people produce and reproduce the rules of their society and translate them into spatial expressions and institutional management, because society is structured around conflicting positions that define interests and alternative values, along with production of space and cities as well" (Castells, 1993). How urban social movements interact with urban forms and functions, how they are developed and what socio-spatial effects are left behind in their wake, are just some of the issues that preoccupy many researchers. According to Castells, "contemporary urban movements seem to be developing around three main themes, focusing on collective consumption or public infrastructure, cultural identity associated with and organized around a certain territory, as well as political mobilization in relation to the state" (Castells, 1993). It is interesting to note that Kosovo's social-cultural movements of the 1990s incorporated all these three themes. They originated in the first place as a response to the exclusion from institutional life and public services - schools, universities, media and other services - and the ban on Albanian language and culture in public institutions, and secondly in response to the end of the political self-rule of Albanians after the abolition of provincial autonomy and exclusion from decision-making institutions. In conclusion, "movements occur and develop not only in relation to their own societies, but also in relation to the global social system". The 90s in Kosovo are no exception, but display unique strata in terms of organization, survival, mobilization, self-organization and communication. For this reason, Melucci (1989) points out that social movements cannot be understood only by reviewing their manifested side (e.g. protests), but we must also take into account their latent side (daily life network) (Kerstin, 2014).

The house as a (parallel) city

After 1989, when Kosovo entered the classical occupation stage, Prishtina took the lead in reorganizing public life for Albanians. Denial of the right to use Albanian language in public institutions went hand in hand with the exclusion process. Public relations between Albanians and Serbs were dismantled, and Albanians created a parallel platform for organizing public life in the city. This is why, over these years, any development or events would acquire a dual meaning, depending on the identity group they identify or are intended for (Hoxha, 2006). The Kodra e Trimave (Hill of the Brave) neighborhood, long forgotten by the Socialist regime, and simultaneously the most ethnically homogeneous and least urbanized suburb, became home of the mobilization and development of a network of peaceful resistance. "This resistance spirit of the movement had its effects also in rural areas. Students organized through the Youth Parliament and Student Union initiated, in cooperation with Anton Çetta, a program of reconciliation of blood feuds in Kosovo, under the motto of unification of Albanians in their struggle for independence." (Assmund, 2002). On the other hand, according to some scholars, the Albanian parallel system of education rose as the embodiment of the peaceful and social movement, and constituted an argument used to prove the existence of an independent state of Kosovo (Kostovicova, 2005).

According to Clark, "while the regime of the time had established a monopoly on state structures, Kosovo Albanians opposed it through self-organization and their own activities. Parallel structures were probably the most stabilizing element at that time. Banned from all public buildings, the University with its 13 departments and seven colleges had to rely on 250 private buildings." (Clark, 2000). In this respect, these home-schools completely changed the spatial layering of the city of Prishtina, along with the typology of many buildings. Due to the necessity of adaptation and expansion of learning spaces, horizontal and vertical extensions of houses began to appear in the sense of urban pathologies, since they were predominantly illegal constructions. All houses were voluntarily put up for use by their owners. The Faculty of Civil Engineering and Architecture, where I studied during those years, moved to the Dragodan neighborhood (now Arberia) in the houses of Bahri Bajrami, Ilaz Krasniqi, Zeqir Gashi (Hajrullah, 1995). etc., while public facilities were spread around the center and the Kodra e Diellit (Sunny Hill) neighborhood. Solidarity was the most discerning feature of the Albanian society of that time. "Serbs tried to suffocate our society, but instead, we woke up." (Clark, 2000). On the other hand, the outer part belonged to the Serbs. Street names changed again, and the "Brotherhood-Union" heroes fled with Socialism. Serbian history and religion figures would take their place, bringing new monuments and landmarks to the city, as an expression of Cubrilovic's well-known logic articulated in his studies on Albanians, who through administrative obstruction should live under the impression that they are living on someone else's land." (Salihu, 2005; Hoxha, 2006) In daily life, public space was a transit zone, since the only time it was used by Albanians was during protests and demonstrations. At the time, all urban activism and resistance embraced and combined culture (painting, theater, music, performance arts) to track and address social issues and concerns (Kerstin, 2014). This gave rise to a new liberal spirit to the whole movement of the time, marking a kind of parallelism within the Albanian urban movement itself. While on the one hand there were young people imprisoned for painting slogans such as "Kosovo a Republic!" and for distributing popular mobilization platform posters, on the other hand, there were

other young people who reflected on these urban movements and celebrated them through creative slogans, their songs and cultural events, often saying much more about what Kosovo was going through. This was a great effort to become visible, present and heard beyond the local context, to break even stereotypes propagated by Serbian media at that time on what Albanians are and how they look.

Cafe culture

Culturally, Albanians survived the 90s thanks to cafés. The café was the Albanian urban hall, an oasis of hope, rebellion and new love for the country, the nation, our language, for ourselves and life. The Kurrizi, the string of Santeja cafés and Qafa were the new socio-cultural strongholds of Albanians of that time. The art of resistance, arts of an expelled generation, wrote its history not only in terms of communicating with the world, but also in bringing a new artistic order beyond aesthetics, a provocative and dialogue art. According to Maliqi, "This art of resistance starts questioning the meaning of art, adopting a critical attitude towards the "art of the founding father" and their merry-go-round and non-conflicting academy." (Shkerlzen, 1997). In this context, Sahatçiu stresses that "during this time, a sense of anti-academicism, as well as a new form and style of art preaching, were developed in a new stream of art exhibited in cafes and private galleries, such as "Koha", "Hani i 2 Robertëve", Dodona Gallery, etc. The notions of what constitutes art began to be questioned precisely in these kinds of spaces." (Vesa). The "Hani i 2 Robertëve" began as a desire to create an artistic expression space, as an alternative to the times, but it turned into a mission, hosting over 100 exhibitions during that time, as is emphasized by its owner, Fadil Dragaj (Dragaj, 2017). There, the 90s generation recognized and revealed itself. Had it not been for the "Hani", most of Kosovo's renowned artists might not have been around today. This is the generation of Mehmet Behluli, Sokol Beqiri, Zake Prelvukaj and Gani Gashi, whose works were burned together with the Hani before the end of the war. The Hani was the intersection of the artistic and diplomatic space. "Kosovo's information and diplomatic struggle with the world was conducted in the Hani" (Dragaj, 2017). The political, media and local and global personalities we find in Hani's memory of pictures and the notebook of war survivors, were the main actors of the state-building processes of Kosovo. One of the notes in the notebook of memories, written by a reporter of "The Guardian" states: "I've heard about underground hospitals and different underground movements, but I would have never thought there was such an amazing gallery underground" (Dragaj, 2017). The "Hani i 2 Robertëve" Gallery functioned as a self-financed space, maintaining itself through food and beverages, which were never more important than spiritual food. Beyond exhibiting art, an accordion would play Albanian songs over the years, and it would often host the classes and exams of the Art School students. On the other hand, the establishment in 1997 of the Dodona Gallery marked a new space of exchange and communication, trying to institutionalize new art movements and driving the public debate beyond current political frameworks. Maliqi stresses that "Kosovo art experienced its liberation at the Dodona" (Maliqi, 2017). In addition to exhibitions of contemporary artists and collective exhibitions, this year marked a pushover of borders through art as a communication platform against violence, and the opening of opportunities for new reconciliation debates. The "Dodona" Gallery in Prishtina and Belgrade Cultural Center for Decontamination, as "alternative institutions against the Milosevic regime", took the big step of implementing the "Përtej" (Beyond) exhibition of contemporary Albanian artists Sokol Beqiri, Maksut Vezgishi and Ilir Bajri (musician) in Belgrade, supported by the Open Society Foundation. "The aggravated circumstances in Belgrade and Prishtina made the project even more delicate and provocative" (AAVV, 2003). Was it though possible for such visible and equally "secret" spaces not to be targeted by the regime of the time? These actors were under the same intense pressure like the home-schools, whose professors and students were constantly harassed by the police. Alisa Maliqi, director of the "Dodona" gallery, remembers the frequent police checks and questions on its activities (Maliqi, 2017). On the other hand, Hani's owner Fadil Dragaj remembers his imprisonment in 1997, during the "Cartoon Salon" student exhibition, again due to the ironic "Kosovo Republic" slogan displayed in Albanian and Serbian, in Cyrillic script (Dragaj, 2017). Despite being released after one week due to intense public pressures, he would not evade their eyes, and on March 22, 1999, just two days before the NATO bombing, he was wounded in front of his café, while drinking coffee together with his artist friends, one of whom was the actress Ardiana Abdullahu, who lost her life that day. "Despite all the challenges and difficulties, there was a lot of love and goodwill among the Albanians," recalls Maliqi (Maliqi, 2017).

Satellite city

Deprived of domestic media and information, each Albanian family had bought a satellite dish, turning the city into a "white mushroom garden". One could easily distinguish Albanian flats against the city's skyline (Hoxha, 2017). Satellites "gave us the possibility, for the very first time, to watch the world beyond the 3 Serbian TV channels" (Demi, 2006). At the same time, Kosovo Albanians could also follow the two-hour program broadcast by the Radio Television of Albania, which provided an information space dedicated only to them. "Once a week, Kosovo newscasts and field recordings were sent to Albania for the 2 hour program." (Dragaj, 2017). The satellite feed offered Kosovo Albanians the opportunity to see and be seen. Beyond MTV, VIVA, EURONEWS and other TV

channels, video tapes were another substitute for the lack of cultural programs in Albanian language. On the other hand, besides rock music, that was embraced by the young generation of the time, other musical genres delved on highly engaging topics, addressing concerns over the circumstances of the time, when peaceful resistance had begun fading and the background echoed with voices about the creation of the Kosovo Liberation Army. One of these songs is "Don't fuck with Albanians" by Jericho Walls, a band "whose songs blasted out the rage and exploded in a kind of liberation". This band's songs make up a fantastic chronicle of the time, a different perception and conception of our life context, testing all the proclaimed political Albanian values of the last ten years. For the first time, a Kosovo generation renounces ascetic patience to expose its rebellion" (Salihu, 2005), with eyes set on the future. One could even call a rebellion the liberated image of Adelina Ismajli during the 1990s, which (Salihu, 2005) is a demonstration of the sovereignty over an awakened body, and at the same time a challenge and disconcerting provocation against the dominant ideology of "Albanian morality" (Salihu, 2005). I would dwell a bit at her song "Ushtrinë time do ta bëj - me Ibrahim Rugovën" (I'll build my army - with Ibrahim Rugova), for the symbolism of the words and the image it conveyed. I remember when at the "Show Fest" festival, at a time when Ibrahim Rugova, probably due to political reasons, could not muster the strength to publicly admit that the KLA existed, a female voice conveyed a message that was both free and encoded, both rebellious and sophisticated, ultimately as the expression of the needs and desires of a generation whose patience had already been spent. The song's message was originally carried through images - it begins with the singer in military outfit, symbolizing the tight ranks of the struggle for freedom, but ends up with her stripping off those clothes, in a liberating and victorious image of herself, her body and individual and collective freedom, not just as a reflection of the song's message, but more so as a revelation of an inter-Albanian liberation that had already been taking place unconsciously in gender, age and social relations in general, in the process of the socio-cultural movements for independence. Under these circumstances of great repression and clashes, Kosovo hip hop was born, a vibrant genre reigning to this day. To many, "Një ditë do të jetë më mirë" (One day it will be better) of the "Ritmi i Rrugës" (Street Rhythm), was a song of optimism in gray days. However, "in someone who was a teenager in Prishtina at the time, these memories of the 90s arouse mixed feelings. The despair of life under the apartheid system is offset by the nostalgia for the expansion of urban culture, which planted the seeds of what is today known as the very colorful and productive alternative scene of Prishtina." (Maliqi, 2016) According to the revolutionary interpretations of Hegel's phenomenology, "there can be no art in righteous societies". Art, as a revolt, is a movement that elevates and denies at the same time. "No artist can handle the truth," would say Nietzsche. That may be true, but no artist can do without the truth either" (Camus).

On the other hand, many young men interrupted their studies and went into exile, chased by the Yugoslav Army intending to draft them for the compulsory military service... how ironic!!! Some joined the KLA in the mountains. It was obvious that peaceful resistance was coming to an end, and this would be signed by the student demonstrations of 1 October 97. "Just for today" was the life slogan of Albanians, as the morrow was uncertain for everyone and war was already at the doorstep. "During the waiting days of mid-March 99, the city awoke to a campaign of a youth group. The famous NIKE catch phrase would come in handy to call on NATO troops for quicker intervention. "JUST DO IT", to close this dark chapter of the history of the 90s and the Albanians' struggle for freedom." (Hoxha, 2006).



NATO "just do it" !!!...
24 March '99 - 19:30

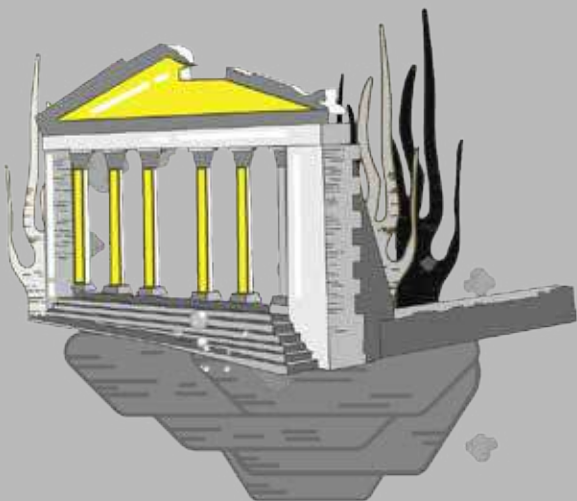
Conclusion

In Kosovo, the 1990s revealed numerous truths embodied in different platforms of the social and cultural movements, but they all shared the same ultimate goal. Perhaps, Kosovo Albanians experienced postmodernism in an unconscious manner, but this allowed them to survive in the most difficult times. "Otherwise, Postmodernism favors the margin over the center. However, it is obvious that thinking from the margins means facing resistance and tougher reactions against the "relativism" and "nihilism" of the basic approach, both symptoms of the rigid and defensive focus of the margins, which interiorize their aspirations by fighting against the center." (Salihu, 2005). The marginalized Albanians of those times live today in collective oblivion. Very little has been said about the 90s, both by domestic and foreign scholars. Very few bits of the 90s have been addressed by artistic and communication platforms. Today, even in the few papers that skim through the 90s, the cultural background that enabled the collective spiritual survival of the Albanians is overlooked. Dragaj says that this kind of deliberate denial or neglect is very dangerous, because if there is no "Hani" then there is no art and culture of the 90s. The former director of the "Dodona" gallery also complains about the disregard and oblivion of the generations that experienced the 90s. A research conducted with young artists revealed that the youth are not familiar with the cultural survival of these years and the actors that made it possible. As a specific period with various survival modes, it should be celebrated in institutionalized spaces of memory, legitimizing Kosovo's new history and making it visible and tangible for youth born after the 1990s, so that they may understand the effort and long road to independence and statehood. This generation of Albanians also brought about a revolution in the musical scene, distinguished by their individuality and particularity, and taking their music beyond pure entertainment, and using it as an opportunity to communicate and influence general audiences on major issues. In a nutshell, although it is often referred as the "lost generation", the 90s generation seems to be the last authentic liberals of Kosovo, pushing for a real participatory democracy for the common good. Some of them are still present on the public scene and act as the guardians of reason, progress and vision. Today, almost everything else is nothing but an illusion of participatory democracy through social media - which leads to anarchy. Finally, despite its contributions and merit for the social survival of Albanians, the University of Prishtina today suffers the most.

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[MEM/13]



Shape-Memory Cities. Through The Urban Archipelago In Contemporary Albania

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abstract

The paper is focused on a methodology carried out to approach landscape and urban design, on the base of a codified process, developed during my PhD research. The word shape-memory is usually attached to an alloy that "remembers" its original shape and that is able to adapt to changes. We can translate the same reasoning to certain Albanian towns and cities, looking for those historical islands, or urban facts, that each contemporary urban environment hide and overwrite. Given the real-estate turmoil of the last decades, the finding of a latent historical structure – made of edifices, squares, views, spaces, and blocks – can be crucial to keep working on the future development of Albania without loosening its contact with the past, which can be in continuity or opposition. But still well aware of it.

As Jan Neutelings pointed out, we need to find new metaphors to read those diffused cities that do not establish a recognizable relationship between the inside and outside, figure and ground, city and countryside. His metaphor of the patchwork, as well as that of the archipelago (Ungers' manifesto for Berlin) and many others, deflated the idea of a comprehensive large-scale design conducted by an isolated agent (architect, office, or institution). The proposed work will analyze eleven Albanian case studies discovering the archipelago of historical islands divided into landscape, architecture, infrastructure, urban spaces, to be the core of a pinpoint approach to urban design.

keywords Urban Form, Archipelago, Albania, Urban Metaphor

Introduction

The paper is focused on a methodology carried out to approach landscape and urban design, on the base of a codified process, developed during my PhD research at Università degli Studi Roma Tre and Politecnico di Bari "Identità e modelli italiani in Albania. La dimensione territoriale e urbana del progetto nel primo Novecento". Though addressing the Albanian urban environment back in the 30s and the 40s, the historical process of the urban form is crucial to understand how to deal with the contemporary spatial structure. Those towns, settlements, and cities that endured Italian interventions during the military occupation, acted as the scenario for the clash between an ottoman built environment and the first planned urban structure. Within these assumptions, the architectural languages are continually hybridized blending the western ones (Italy mostly) and the eastern ones, consisting of the Ottoman Empire first, and the Soviet bloc in the second half of the twentieth century. Studying such a manifold architectural culture allows us to discuss a series of questions concerning the idea of architectural identity, that of the spatial models, and the design process to intervene in such a territory with very different sensibilities.

Italian architectural culture had a high normative character and the solid Cartesian clarity of the Modernism, imposing that model in contexts in which urban design was still not employed. For example, consider the typology of the block with a courtyard, completely non-existent before the Italian designers used it in all the most mature projects, imagining a radical transformation of the perception of the labyrinthine space of the Ottoman city into a geometric one. Central Urban Planning Office (Ufficio per l'Edilizia e l'Urbanistica d'Albania) designed several projects, in few years, extending from architectural scale to regional planning. We will explore the consistency of an Italian way of planning, employing certain spatial archetypes, in a context that never experienced urban design before. Then we will draw our attention on the latent structure of the urban archipelago in contemporary cities considering how the built environment absorbed modernity.

Urban Archipelago

The word shape-memory is usually attached to an alloy that “remembers” its original shape and that is able to adapt to sudden changes. In this paper, we will translate the same interpretation to towns and cities, looking for those historical islands, or urban facts, that each contemporary urban environment hide and overwrite. Given the real-estate turmoil of the last decades in Albania, the finding of a latent historical structure – made of edifices, squares, views, spaces, and blocks – can be crucial to keep working on the future development of Albania without loosening its contact with the past. This relationship can be in continuity or opposition, but still well aware of the roots of urban facts of today.

The recognition of these singular morphological elements brings to light an archipelago of fragments, namely significant islands connected at a distance, consisting in a dispersed city within the city. Pivoting on this strong idea of rendering the archipelago of nodal points to construct a vision of the city to come, Oswald Mathias Ungers with Rem Koolhaas developed a seminal working methodology for the city of Berlin published in the 1977 manifesto (Hertweck and Marot, 2013). This process, after being verified and adapted, could be extended to other contexts. We could say that the purpose of these experiments on the city is to distinguish Places from Spaces, where the former feature the autonomous identity qualities of a closed spatial region, the latter is the field of possible relations. This position was clearly expressed in Merleau-Ponty's *Phenomenology of Perception*: “Space is not the setting (real or logical) in which things are arranged, but the means whereby the position of things becomes possible.

This means that instead of imagining it as a sort of ether in which all things float, or conceiving it abstractly as a characteristic that they have in common, we must think of it as the universal power enabling them to be connected” (Merleau-Ponty, 1945: 284). A Place, on the other hand, has stable and shared values, for example the architectural quality of a certain building or the singularity of a certain view. These representations therefore aim to render an invisible reality that could be symbolized and shared. The strength of the image of the archipelago let us consider the isolated and autonomous parts of the city as evidences of an incomplete form, able to accommodate many new compositions. This image has already been associated to some Albanian cities. Pier Vittorio Aureli conducted a research on Tirana, then collected in the volume *Tirana Metropolis*, in which the Albanian capital becomes the paradigm “[to] understand, imagine, distill, extract, and re-create the points of its latent intelligence” (Declerck et al., 2004: 21). The archipelago assumes the idea of “discrete concentration”, namely a representation of the manifold in which “the multiple is not dispersed, but is presented in its conceptual essence as an absolute, part and counter-part of a cohesive, recognizable whole, rather than the unitary fragment of multiplication that characterizes pluralism” (Declerck et al., 2004: 22). Only remaining in this hypothesis one can reject all the simplifications that lead to the idea of an urban design that is fixed and immutable, measured with a zenithal representation like those of the Modernism. Moreover, while Modernism shaped domestic space on the base of a universal understanding of society, in which the offer can easily meet an expected demand, contemporary society is much more fluid and most importantly in motion.

In these pages a “focused and open-ended” project is proposed on the model of *Tirana Metropolis*, in which the archipelago “can be seen as a city-form that permits short-term intervention and long-term sustainability, a form in which our contribution as architects can be both concrete and useful” (Declerck et al., 2004: 22-23). As Jan Neutelings pointed out (Pisano, 2018), we need to find new metaphors to read those cities that do not show a clear relationship between what is the inside and the outside, figure and background, city and countryside. These urban environments have non-homogeneous textures, showing green areas inside built systems in turn embedded in open fields, which the Dutch architect compared to the image of the patchwork. Also suggesting the need to identify the fragment as the problematic core for the city project. In this way, the hope is to shorten the distance between design and construction so that the fluctuating set of needs of an urban community is intercepted. Even in the Albanian case, given the real estate boom of the 90s, one cannot analyze the city in terms of spatial composition: since then, extensive neighborhoods have grown according to a parasitic attitude along the main transport routes. Thus the relations between the parts have become distant and mediated by infrastructure. His metaphor of the patchwork (Neutelings, 1990), as well as that of the archipelago (Ungers' manifesto for Berlin) (Hertweck and Marot, 2013) and many others, deflated the idea of a comprehensive large-scale design conducted by an isolated agent (architect, office, or institution). Identifying rather the single patch/island as the spatial unit to be designed individually. Very often these reference images are taken from biology, like the metaphor of the wax suggested by Peter Sloterdijk to work with a less deterministic gaze on informal settlements (Sloterdijk, 2003).

And this atomized approach is even more appropriate if we think about the other side of the construction process, that of the self-organized urbanization. Srdjan Weiss made it known under the name of balkanisation (Weiss, 2006) considering the way urban environments in the Balkans have grown (and some of them still grow) as a gathering of a cloud on individual initiatives having their own good as the focus of the action opposed to that of the public good. That said, the fragmentary approach seems to be employed at every level of design scenarios.

What is an urban island

The proposed work analyzes eleven Albanian case studies discovering the archipelago of historical islands divided into landscape, architecture, infrastructure, urban spaces, to be the core of a pinpoint approach to urban design. Even if the real estate pressure diminished the attractiveness of the landscape, we do not believe that the actual scenario of urbanized countryside would be still reversible. For this reasons, the community rejects and antagonizes a fixed long-term project. We rather suggest a methodology built on a system of localized interventions. And more specifically a number of tools that are flexible in their implementation to a certain degree. The project is like a new narration that takes place connecting what remains after the careful selection. Something similar to Cicero's "topographical system" described by Virilio. A method to carry on a discourse that involves the selection of a series of places that are linked at a distance in space and time. The parts of the speech are placed in a specific position so that one can easily retrace the logical path running through the geography of memory (Virilio, 1998).

The metaphor of the archipelago will let us focus on a map of design issues gathering islands and fragments of the modern Italian space in Albania, both built or not. The architecture and the ruins of historical buildings that shape the urban form, from the Romans to the Ottomans. And important geographical features for landscape design. All formally autonomous.

Before the diffusion of the atlas in 1570, the most important cartographic genre of the time was the isolario (the book of islands), an illustrated guide for sailors where every piece of land is contained within an infinite sea, even the largest ones. And here we find again the difference between space and place, between what is equivalent and what is peculiar (Farinelli, 2003: 10-11). The threshold between an autonomous element and the field that surrounds it is the intersection between the interior and exterior of the fragment, the contour that produces important physical consequences on the city. The border is therefore a sensitive part because it shares two different fields and activates, where the dialectic clash between public-private, architecture-landscape, material-immaterial happens. If we share the vision that a city is the sum of houses, monuments and roads, but also the "spatial projection of social relationships, it seems to be crossed, and at the same time structured, by the multiplicity of boundaries that separate profane from sacred, work from pleasure, public from private, men from women, family from all that is external to it" (Aymard, 1993: 126). In other words, drawing borders is an exercise that implies morphological and social aspects, discerned according to the ability to measure spatial consequences.



Figure 1 Comparative Size of Lakes and Islands (with) four maps, published by J.H. Colton, 1856

The process of identification and classification, here proposed to be a fertile way of preparing the designing phase over a spatial domain, not only involves buildings and built environment in general, but also those natural feature that have strong formal consequences on the city. One interesting collection of geographical objects composed on the same scale is the comparative tableau of lake and island, on the base of their size and form, formerly published in 1856 (Colton, 1856) (Fig 1). Due to iconic works published by important naturalists in that period, like John James Audubon's Birds of America, physical features entered the field of evolutionist theory. In that plate, it is as if an ornithologist applied the same analytic gaze of research on geographic entities, lakes and islands, on a unique scale, translating his methodology on a much larger scenario. That way of drawing a set of lakes from all over the world, must have caused a deeper understanding of water bodies on a global scale. Where the masses of more than one hundred and fifty lakes and islands of the Western and Eastern hemisphere gains finally their autonomy.

In contemporary Albanian cities, one can try to re-create the connection between the medieval layer, the one planned in the 20th century, and landscape. The aim is to render a partialised overview about issues concerning form, size and organization of cities. Those cities that are interrupted texts, overwritten by individual needs that in turn respond to global changes in the Albanian system. The collection of projects on which to reflect could start from these fundamental design topics, all of them with a reason to be strongly influent in the place where they are. What follows is a series of urban problems, with an underestimated or never activated potential (Fig 2). The material of the city was investigated and analysed as on an operating table, that tableau that Foucault identified as a necessary cognitive tool for all the sciences: "a tabula, that enables thought to operate upon the entities of our world, to put them in order, to divide them into classes, to group them according to names that designate their similarities and their differences - the table upon which, since the beginning of time, language has intersected space" (Foucault, 1970: XIX).

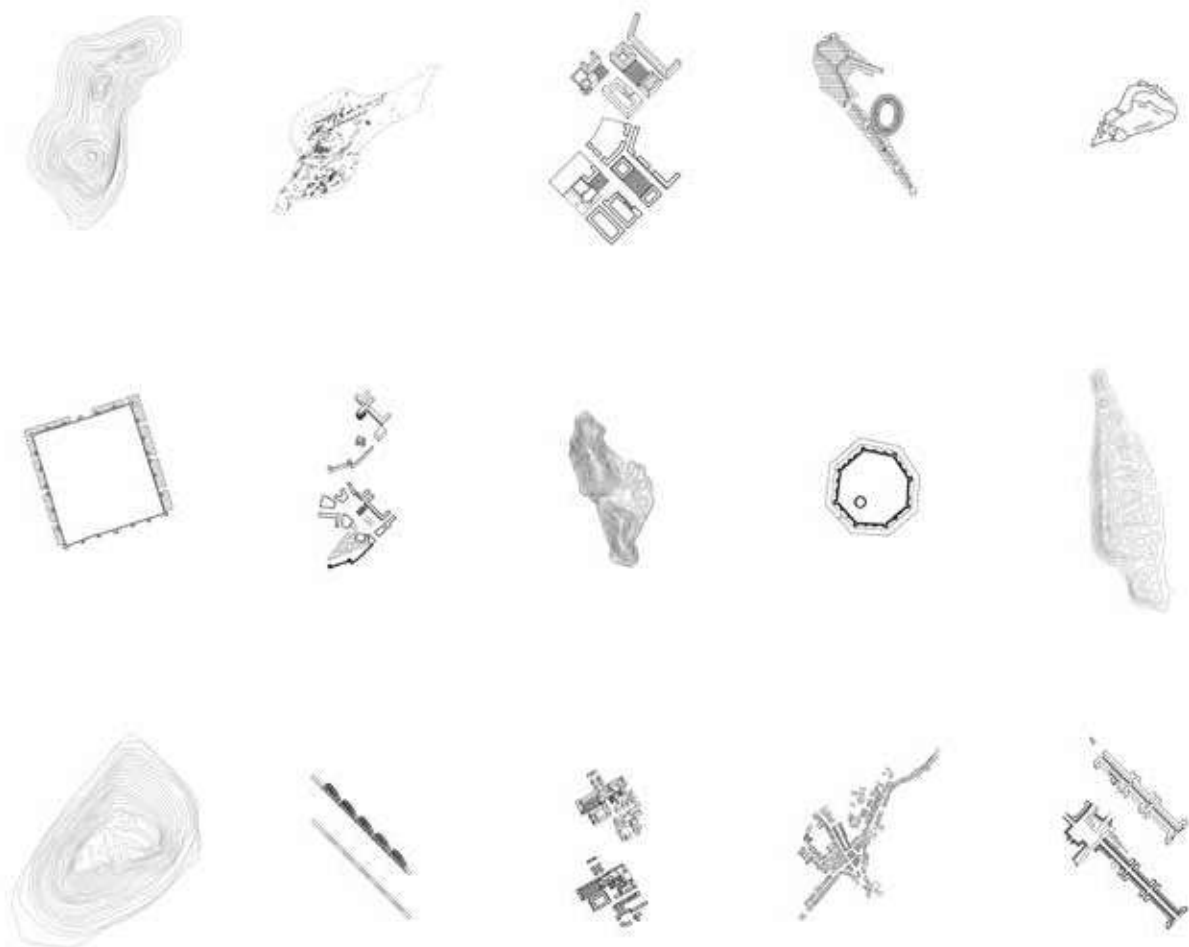


Figure 2 Partial taxonomy of the fifty urban islands, by the author

Conclusion: a route through the Albanian archipelago

What follows is an itinerary through Albanian archipelago, connecting some of the design issues that have been individually addressed to in the PhD thesis before mentioned. We will travel through Albania proceeding from North to South in a journey that will eventually lead to the metaphor of the shape-memory cities.

In the Albanian socialist period the public sector was privileged and the impact on the territory was unprecedented: large-scale transformations and land remediation works created a consistent discontinuity with the tradition of the Ottoman landscape. By contrast, the subdivision of land after the fall of socialism fragmented the agricultural texture of rural areas into small private pieces of land. Moreover, in the coastal areas and along the main traffic routes, agricultural land gradually disappeared into an urbanized countryside. This will completely reverse the original Ottoman landscape, made of open fields, in favour of the informal appropriation of land. Today agricultural fabric should be consolidated along with the logistics and small production centres in order to rebuild that sense of community that would defeat individualism. The condition of marginality in the countryside is widespread. On the outskirts of the cities, informality grew due to a state of bureaucratic suspension during the 1990s.

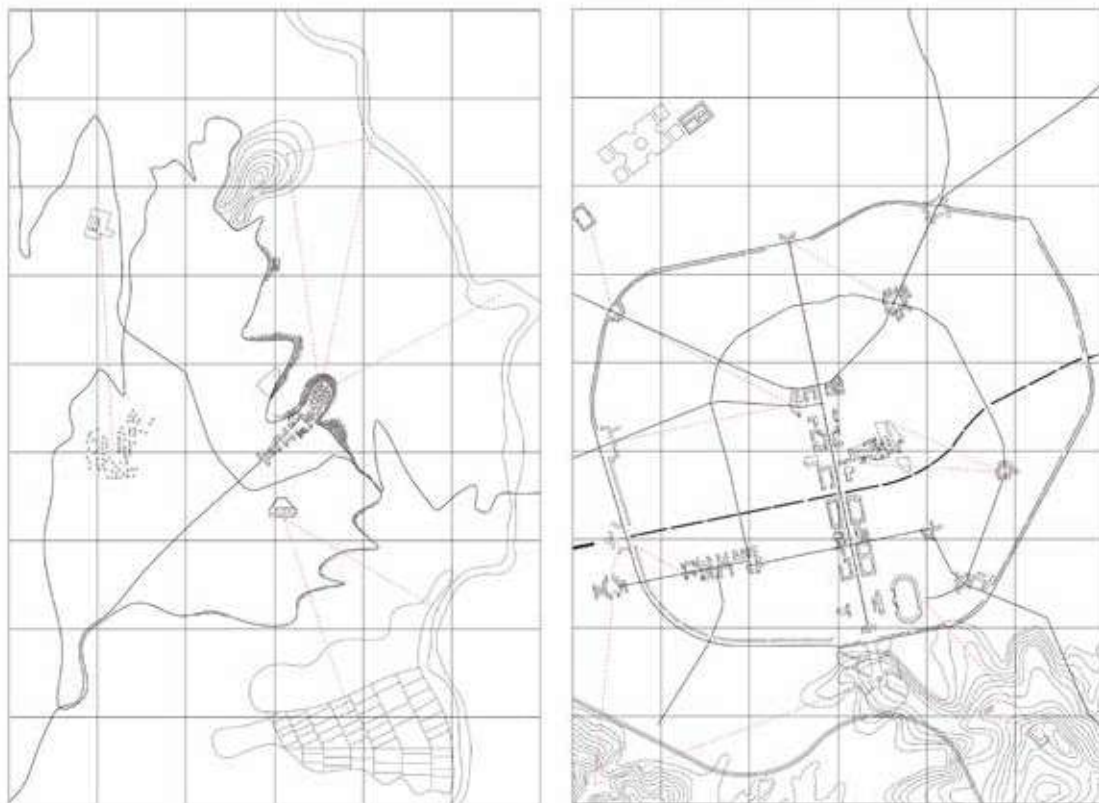


Figure 3 and 4 Representation of urban islands in Burrel (left) and Tirana (right), by the author

This also caused the reduction of drainage capacity in many contexts, eventually leading to frequent flooding. As an example, the whole plain ranging from Scutari to the town of Velipoje registers informal activity that increases the frequency with which it is completely submerged. While the debris brought downstream from the Bojana expands the coast near the delta, on the East man-related activities are causing rapid erosion phenomena. This issue should be addressed together with the reconnection of the river ecosystem with that of the Vilun swamp, interrupted by an urbanized island in Velipoje. The rural area suffers from the aforementioned fragmentation and requires consolidation of agricultural areas. Infrastructure should therefore become a multipurpose vector that would connect different environments. The metropolitan area of the capital concentrates almost one third of the national population. Tirana grows with a spontaneous process, prematurely interrupting any attempt to give a unified vision to the city. Therefore requires would be the perfect field of experimentation for an approach in terms of urban archipelago, with smaller and concentrated design tasks. Tirana is a city still in transition, dynamic, with a very recent urban history. All international traffic comes from Durrës, so that on the road that connects the capital to the main Albanian port, most of the country's production facilities have their plants and headquarters. The road has a nickname, "Durana", that expresses that condition of a continuous linear city with structural problems on which the government has been trying to work for some years. A crucial issue is that of industrial archaeology, dispersed in large centres as well as in smaller ones. In some cases, in Elbasan, for example, the industrial area could be more extensive than the urban area itself because it was designed on a national scale. Waiting for

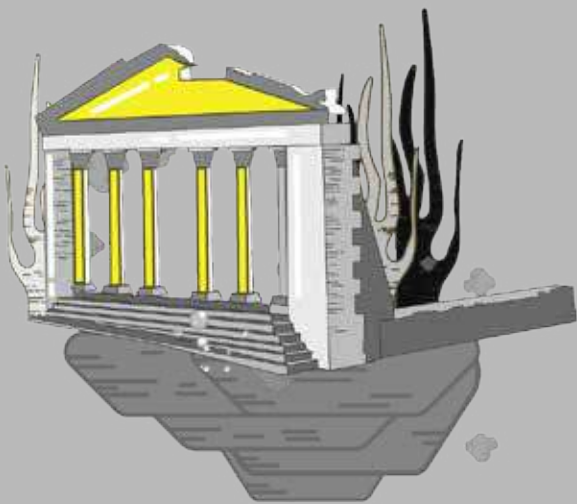
more concrete scenarios, the local population has begun to reuse it informally, with agricultural, residential and obviously criminal practices. While there is little scientific interest in industrial archaeology, bunkers and military architecture in general arouse greater public interest, as various recovery projects in Tirana and elsewhere demonstrate. Not always well designed. Concrete mushrooms are spread everywhere and let us think about the great bubble of war paranoia in which Albania was stuck under the dictatorship, armed against an enemy that didn't exist. One can breathe that climate of survival that Virilio describes in *Bunker Archeology*, where the bunker is a stele, a monolith, and the earth is no longer the safe refuge that man has learned to cultivate over the centuries. Going south, one follows the Vjosa valley, a long corridor between the mountains that directly reaches Greece. Entering a long winding corridor, with two high and close watersheds. The coastal sector that connects Valona to Saranda is commonly known as Riviera. The road runs along the bay of Valona to Orikum, then leaves the view of the sea while entering the valley of Dukat, between the ridges of the Rrëza e Kanalit to the west and the old river bed that flows by Oricum. Leaving the darkness of the Llogara National Park at an altitude of 1030 meters, the coastal landscape opens up from above like an epiphany. The mountain slopes become steep and barren, the road traced by the Genio Civile rapidly descends the slope, identifying scenic stops at every corner. Probably one of the most iconic views in Albania. Descending up to 200 meters, passing the dry river of Palasë, the road continues at the same altitude connecting the villages of Kondraq, Dhërmi and Ilias. Here we cross a deep rift made of red earth, the Gjipe Canyon. The road continues to Vuno, the artificial lake and Himarë and in the South the coast returns to be rocky. Finally, it takes up again through Piqeras, Lukovë and behind Mount Shëndëlli before arriving in Saranda. The Riviera condenses in 80km different stories and landscapes, made of singular natural and anthropic episodes. Having probably the greatest touristic potential of the whole country, the fragile balance between nature and settlements in the Riviera is at risk and should be urgently addressed at. What follows are two destinations of the route through the Albanian archipelago, in Burrel (Fig 3) and Tirana (Fig 4).

The metaphor of the "shape-memory" alloy suggests that the set of islands, namely the urban archipelago discussed before, could be intended and addressed at as a crystal structure that let the overall system change its shape. That is the normal evolution of an urban environment. But it has also a certain temperature, in our case a comprehensive design strategy targeting the archipelago, able to reveal the original consistence of a city that seems to be anonymous at first glance. In an optimistic perspective, it is not too late to work on spatial identities and historical layers: the abacus of fifty design issues presented in the thesis, and here discussed concerning their methodology, aims at providing only a partial set of case studies to be further developed with local institutions. Hoping that Albania could present itself as a laboratory where evolution is different from newness at all costs, and takes into account what is left behind.

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[MEM/14]



Atlantropa 2.0

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abstract

From the Strait of Gibraltar to Palestine and from the North of Europe crossing the Sahara Desert to more than the Equator it is located the new continent Atlantropa. Project of Herman Sörgel, dates back 1928.

A geographic scenario based on the new design of the Mediterranean's Straits as strategic points of hydroelectric energy power and mutation of the landscape. A social dystopia, defining the full western hegemony on Africa and Middle East by the use of new technologies.

After 100 years the study of the full vision it reveals a society such as the contemporary one, based on the speed, the climatic problem and the energy with different technologies, political pacts and planning choices. A vision that – connected obviously to the languages of every period – in a comparison 1:1 it can be highlighted how the strategies of the project of Herman Sörgel are today the modernity. Such as his proposal of clean energy system, proposed today by DESERTEC or the transcontinental connections, corresponding perfectly to the contemporary intentions to connect strongly Europe, Africa and Middle East through the same interventions like the extension of the Suez Canal, the tunnels to link Italy and MENA Regions and the bridge will connect Egypt and Saudi Arabia.

*Thus, "Atlantropa 2.0" demonstrate the contemporary meaning of that vision as a [de]constructed landscape in progress in terms of planning and purely territorial union, and it express a future concrete social utopia too, based on the co-habitation between European, African and Middle East cultures. In which, it should triumph into the cities of the Mediterranean's Straits a new social cohesion strategy based on <<the Mediterranean centrality avoiding to move the viewpoint or towards a north Europe-centred or towards a south Arab and Islamic-centre>> (Enzo Seviero, *Centralità del Mediterraneo, dalla Storia al Futuro*).*

keywords Mediterranean [CO]habitation, Nexus, Landscape, Energy, Social Cohesion

Introduction

1. Atlantropa : an anthropo-geographical utopian landscape

Looking to the complexity of the geographic scale, architecture and planning occupying the problems and experiments of formal structuring of large-scale architecture, whose activity is strictly tied to the problems of planning, where the city represents the whole transformation of the natural environment. Transformation, that being majestic, can "switch from one language to another, [...] [in which] the totality of signs made by man on the surface of things in a certain territory do not stop organizing finally as significant language of collective of the social group, of its ability to imagine¹". Ability that characterized in particular the first 30 years of the 20th century, which was theatre of geographic deconstruction of classical landscapes. A context, within the futuristic avant-garde movement became the protagonist, involving from the 1914 the architecture field that gave back often utopian visions for future places inspired by "fictional places, which fanatical readers try to identify without great success, other times deal with fictional places inspired to real places²" or, examples imposed by critical attitude of the status quo and by the courage of imagining a better world. Aspect, that let us in heritage from the Modern Movement.

Also, the etymological ambiguity of the term utopia, incorporates different scenarios into the utopic sphere: sometimes, without dividing what no longer can exist from what instead could exist, and whose common factor is the illusion; sometimes instead, saying a priori that utopia is a concept very complex which needs to be broken

up into many parts, as Ernst Bloch theorizes with the two genres of utopia: the abstracted and the concrete ones. Where the abstracted utopia tends to lose imagination and memory, while the concrete utopia is oriented to the real possibility: "thus determined imagination of the Utopian function is distinguished from mere fantasizing precisely by the fact that only the former has in its favors a Not-Yet-Being of an expectable kind, i.e., does not play around and get lost in an Empty-Possible, but psychologically anticipates a Real-Possible³".

Scenarios, that although, are deduced all by stories, research of imaginary models or aspirations for a new possible future, they are different each other according to the 'why of the vision' and the '[non]existence of the place itself'. In this way it is possible to distinguish the utopian scenarios in: 'Imaginary' ones, generating representations of places by myths; 'Ideal' ones, representing ideal model for places that never existed or that once existed; and 'Futuristic' ones, representing future vision exalting the technique, which became - in the modernity era - concrete ones be related to a existent places. Where the terrestrial geography is altered by great infrastructural system, such as: artificial invaded, power lines, hydroelectric installations, highways, railways, new cities, bridges, [de]constructed territories by overturning natural, geological and climate arrangements. Examples could be: the Zuiderzee project in Netherlands by Lely, dated back 1920; the Tennessee Valley Authority, dated back 1933, the Silan dams in Calabria (Southern Italy), dated back around 1930, or again Atlantropa project by Herman Sörgel, dated back to 1928.

Within this frame, subject of the study below is Atlantropa project which from the beginning was classified as an 'abstract' utopia, although it respects the boom of infrastructural projects of its time, which demonstrate that it was not a single phenomenon⁴, but an ambitious vision looking to a future for the development of the Old Continent, through the return of a possible 'reality', and in which Herman Sörgel believed strongly⁵.

Atlantropa is a project interesting the territorial union of Europe with Africa and Middle East through the planning of the Straits of the Mediterranean Sea. Where, on one hand it represents the dystopia of the western European hegemony on the countries around the Basin, and on the other hand it is an anthropo-geographic landscape, giving back a continental reality by transformations on the natural landscape shaping the terrestrial geography. Spaces always more historically built and which geography is continuously refunded by cultural experience "which is on the one hand conquest of new points and new dynamics of observation, of new systems of communication, of new strategies of desire of group and subject, of different meanings of which the figure load through the transformations of the conceptions of science, around nature and its use, substance and space⁶".

Objects

Complexities in motion

Moreover, the orientation to the possible reality became the guideline of the studies about Atlantropa, where the main goal is to clarify the complexity of the Sorgelian vision by making iconographic studies of project; analyzing its dystopic aspects; defining its contemporary meaning beside finally, making some reflections to re-think a future Mediterranean Continent: Atlantropa 2.0.

Methodology

1. Atlantropa , the future lie into the memory

Thus, in general to understand the present and to imagine the next becoming the Memory must be taken as principle research approach for knowing, and specially for knowing Atlantropa project. Which memories - after the death of the German architect in 1952, and the following closure of the Institute Atlantropa - are preserved today at the Herman Sörgels Archive of the Deutsches Museum of München (Figure 1). About more then 540 drawings and other hundreds documents, materials and many different studies about Atlantropa are narrowing the vision of the new Continent, for which engineers, artists and many architects imagined a part of the new Euro-African landscape.

Such as the architect Peter Behrens who designed the tall tower for the biggest dam crossing the Strait of Gibraltar as western door and landmark, beside the other eastern one designed by Döllgast Hans, and located along the extension of the Suez Canal, for those who would coming from both the Atlantic and Indian Oceans to Atlantropa Continent. Places, all interconnected each other composing a unique complex future vision, where the infrastructures linking the Mediterranean coastlines will connect also Berlin to Cape Town, London to Dakar, or again Milan to Cairo and going on to all the main cities center of the new Continent, increasing the European migration to the Middle East and to the South Africa. And where again, the dams resolving the energetic European

request will shape also the Mediterranean basin, activating a new economy based on the new agriculture lands beside the new touristic areas, bringing back the Mediterranean Sea to one of its prehistoric phase, according to Wells⁷ theories.



Figure 1

1 / Vittorio Gregotti, "Progetto di paesaggio" in "Il disegno del paesaggio italiano", Casabella 575-576, rivista internazionale di architettura, p.3, anno LV, Editor Elemond Periodici, Milano, Gennaio 1991.

2 / Umberto Eco, Storia delle terre e dei luoghi leggendari, Prima edizione digitale, Editor Bompiani, pp. 10-11, Ottobre 2013.

3 / Ruth Levitas, Educated Hope: Ernst Bloch on Abstract and Concrete Utopia, Utopian Studies, Vol.1, No.2, Editor Penn State University Press, p.15, 1990.

4 / Alexander Gall, Atlantropa: A technological vision of a United Europe. In Erik van der Vleuten and Arne Kaijser (eds.) Networking Europe: Transnational and the Shaping of Europe, 1850-2000, Sagamore Beach: Science History Publications, pp. 99-128, 2006.

5 / Philipp Nicolas Lehmann, "Infinite Power to Change the World: Hydroelectricity and Engineered Climate Change in the Atlantropa Project", American Historical Review, No. 121, pp. 73, 2016.

6 / Vittorio Gregotti, "Progetto di paesaggio" in "Il disegno del paesaggio italiano", Casabella 575-576, rivista internazionale di architettura, p.3, anno LV, Editore Elemond Periodici, Milano, Gennaio 1991.

7 / "The Mediterranean area was probably a large valley under the level of the sea, which [in turn] includes two inner seas cut off from the oceanic complex. The climate of this Mediterranean basin was perhaps cold temperate, and region of Sahara, to the south, was not a desert of burned rock and clown sand, but a country well irrigated and fertile. Between the sheets of ice to the north of the Alps and of the Mediterranean Sea to the south, a desolate desert was extended, whose climate changed from a rigidity to a light sweetness and then again rigid with the Fourth Glacial Era". Source: Outline of History, H.G. Wells (1919-20).

2. Atlantropa, the project

Thus, the realization of the new Continent can be defined as a process of morphological transformations that mainly affects the Mediterranean Sea and later the African Continent. A process activated by the closure of the Strait of Gibraltar isolating the basin from external flows, beside the closure of the Strait of Dardanelle to prevent the lowering of the Black Sea, and at the end by the opening of new inner Canals to sail the African Continent.



Figure 2

While the second phase interested Africa, which project focused on one hand, on making fertile the Sahel strip reducing the dimension of the desert, to let it become habitable for future migrations of Europeans; and on the other hand, it focused on the Chad and Congo regions, both interested by the creation of two inner African seas. The region of Congo specially, situated 500 meter above the sea level, was suitable to the building of a new basin of sweet water of 900.000 square kilometers of surface. A transformation, which would have been possible – according to Herman Sörgel and the engineer Bruno Siegart – by the building of a hydroelectric power station located at Leopoldville (today Kinshasa), and which would have produced about 176.000 megawatts of energy.

3. The inner dystopias of Atlantropa

But that's all can also generate huge consequences both natural and human, because two different dystopian aspects inner the future Sörgelian vision: the drying up of the Mediterranean Sea already studied and classified by many contemporary scholars as an ecological disaster⁹; and the colonization policy which Atlantropa is based on. Atlantropa, indeed, represent also a political scenario that in the opinion of Herman Sörgel, it will save Europe from its inevitable future going to another second world war, because the energy resources that Europe needs. An idea that he emphasized in a manifesto in which, he put beside each other two different realities for the future European countries: one it shows what will happen without making Atlantropa, otherwise a Europe that burn and explodes over the black and empty African continent, while the other one it shows how making Atlantropa it will generate a safe and fruitful continent, symbolically protected by a glass dome. Pushing so, to an idyllic reality for

the European Countries through the typical concept of pacifism of the 1930s, based on: convenience alliances and negotiation, with the only purpose of sharing the parts of the world supplying raw materials, cheap work, and resources, by making prosperous the European content. A concept of “peace” as a temporary condition, based on the consequent dystopian submission of lands and people¹⁰.

4. Modern and Contemporary landscapes in progress

Now after about 100 years, looking to Europe, Africa and Middle East in a continental point of view it reveals a contemporary society based on speed, climate and migration problems, new energy technologies, clean recourses, wars, political pacts and planning choices that – connected obviously to the languages of every period – it can be highlighted how the vision of Sörgel is today the modernity.

A reality where on one hand, the dream of Sörgel of a unified Europe was realized and “the meaning of Union for a durable peace between European nations was publicly identified with the Nobel Prize peace in 2012¹¹”. Even if – as Ricarda Vidal remains – the last ten years marked strongly the solidity of Europe moving backwards and risking destroying a work of union, centenary found on the cohabitation and endurance; and where, the critical aspect of this union today is the closing of the borders to the thousands of migrants¹² coming from Africa and Middle East. A scenario that provocatively it could say that it is part of the prophesies of Sörgel, who was theories that making walls between Europe, Africa and Middle East would have made Europe more vulnerable in terms of inner stability and in a political, economical and social comparison with the other big global powers.

And on the other hand, also the futuristic infrastructural projects of Sörgel to link territorially this geography is partially realized and partially in progress. Such as: the energetic one, dealt with by the German architect, aiming for a production of a totally clean energy where today is still hybrid, but for which it is expected to be reached the Sörgelian objective as the DESERT company¹³ is proposing with its clean energy network; the climatic one, about the Sub-Saharan Africa not finding today a solution increasing the migrations to Europe, while Sörgel, even if with a huge and extreme intervention, tried to deal with and to solve it; the urban and architectural one, interested Barcelona, Dubai and Abu Dhabi as experimental projects based on a creative [de]construction, reaching the maximum exaltation of the visions of the futuristic avant-garde of the 1930s; or again the infrastructural one, which corresponds perfectly to the contemporary intentions to connect territorially Europe, Africa and Middle East crossing the Straits of the Mediterranean Sea through the same interventions like: the realizations of the extension of the Suez Canal, the bridges along the Strait of Bosforo and the tunnel-bridge of Øresund under the sea, or again the project for the Bridge to cross the Strait of Messina, the project for the bridge will connect Egypt and Saudi Arabia or again the project to cross the Sicily Canal by a mixed system of bridge/tunnel/islands. An infrastructural scenario of the Mediterranean Sea, as link point of a biggest infrastructural system between the Trans-European-Transport-Network (TEN-T) and the Trans-African Highway (TAH) one.

Result

Atlantropa: the contemporary landscape in progress

By the end, the main result of this study is the demonstration that Atlantropa vision is a contemporary Euro-African landscape in progress, although still faded and fragmented.

And where the Sörgelian vision reflects an innovative approach to the landscape where ‘in motion’ and ‘network’ becomes the key words for making this antropo-geographic scenario. Which, it reminds us those cities, societies and landscapes will always be in constantly mutation. And that in each reality the man reiterates his capacity to react, shaping his world, a demiurge seeing in the man-nature relationship “a challenge and a response¹⁴”.

8 / Franco Farinelli, *Geografia introduzione ai modelli del mondo*, Editor Piccola Biblioteca Einaudi, p.99, Torino 2003.

9 / *Atlantropa, beside a morphological metamorphosis by the first reduction of sea level, it will increase the aridity in Africa and Asia, the creation of sand storm and the drop of the saltiness in the Atlantic oceans. And where again, the new emerged lands by the drying up of the Basin will be arid and unproductive, beside also the risk of the increasing of frozen surface and more frequent cold spells caused by the drop of saltines and a clear raising of the oceanic water.* Source: Arteaga C. C. (2014). *Atlantropa: el sueño utópico de construir la Atlántida. Atlantropa: The Utopian dream of building Atlantis. Al Qantir journal*, n.16.

10 / Like when in the early 20th century, France and Spain ruled parts of Marocco, Italy possessed Libya, Belgium took the region of Congo.

11 / Ricarda Vidal (2015) “Atlantropa: One of the Missed Opportunities of the Future”. In *Alternative Worlds. Blue-Sky Thinking since 1900*, Peter Lang AG, International Academic Publishers, pp. 45-46, Bern.

12 / Ricarda Vidal, Corlins Ingo (2015), *Alternative Worlds. Blue-Sky Thinking since 1900*, Peter Lang AG, International Academic Publishers, Bern.

13 / *Desertec Atlas*, p. 21. Source: <http://www.desertec.org/desertec-atlas>.

14 / Concept “challenge and response” of Arnold Toynbee, about ascent and decline of civilization.

Conclusion

Atlantropa 2.0: a new Concrete Utopia

By the end, the Mediterranean Sea is continuing to be the main actor of many historical and contemporary scenography, always keeping the meaning of sea between lands, cross-roads of people, cultures, languages, religions as maybe the most dynamic place of interaction between different societies. Stimulating the circulation of ideas, a place that - as Fernand Braudel remembers - has its own complexity, it is the starting point, it is junction, cradle of three different civilization often in conflict between them, but in the transformed this area in a unique context of extraordinary vitality.

Thus, within this frame, the study and a contemporary commenting about Atlantropa vision want to push on a return of the 'concrete utopia' concept as a creative approach to reflect about a future continental Euro-African future Atlantropa 2.0. As answer to the problems of the Mediterranean area, like: the energetic and climatic ones, the territorial deconstructions, and the immigration phenomena from Africa and Middle East to Europe. A scenario that in terms of purely territorial union it is reiterated to be in progress, and for which it is hoped a social utopia based on the [co]habitation of European, African and Middle East culture around "a Mediterranean Sea [which] is not afraid of the variety of races and colors, of the plurality of ways of speaking or praying God". A new cultural landscape, where it should triumph an equitable policy based on "the Mediterranean centrality avoiding to move the viewpoint or towards a north Europe-centred or towards a south Arab and Islamic-centred"¹⁵(Figure 3).

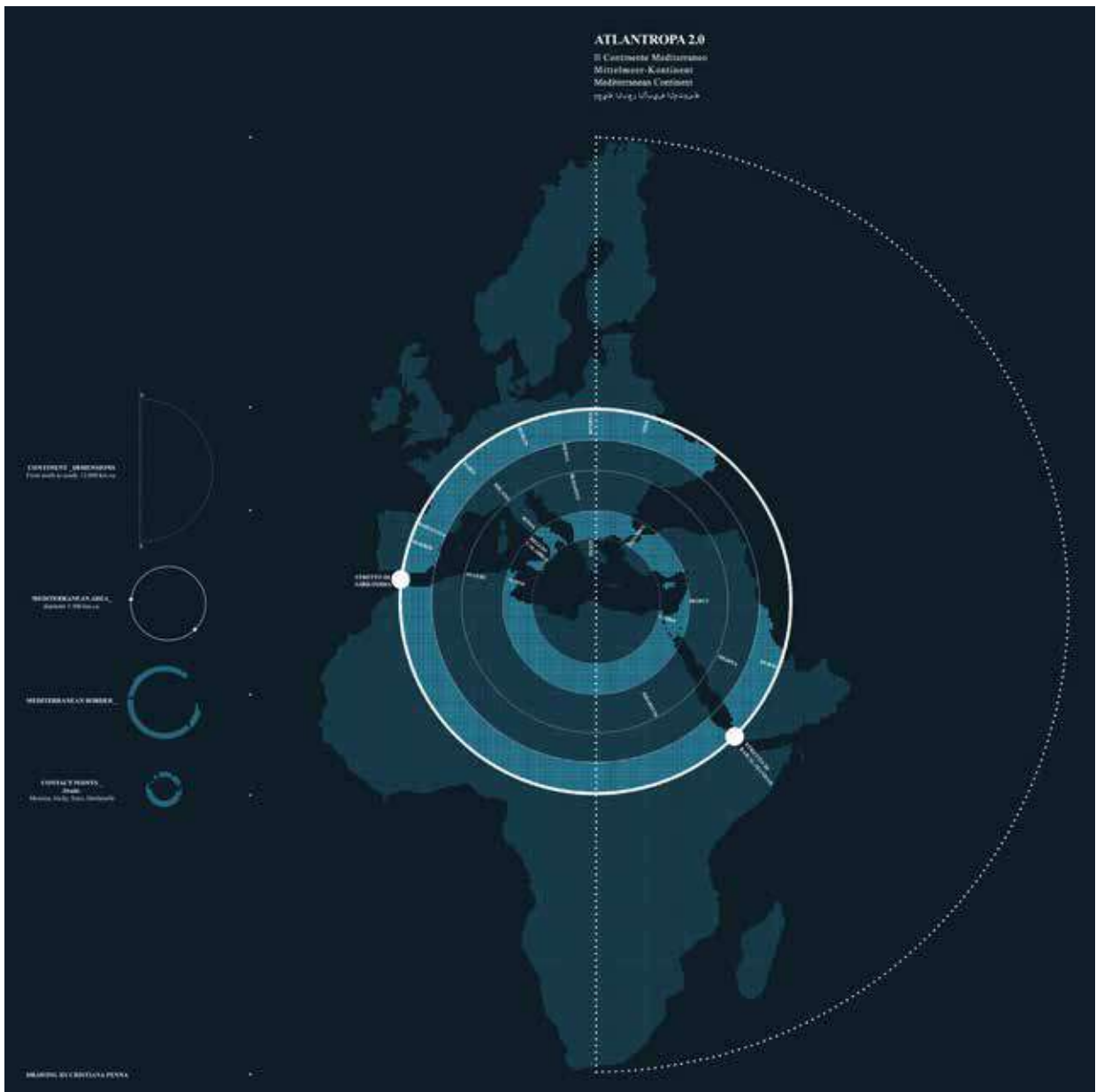


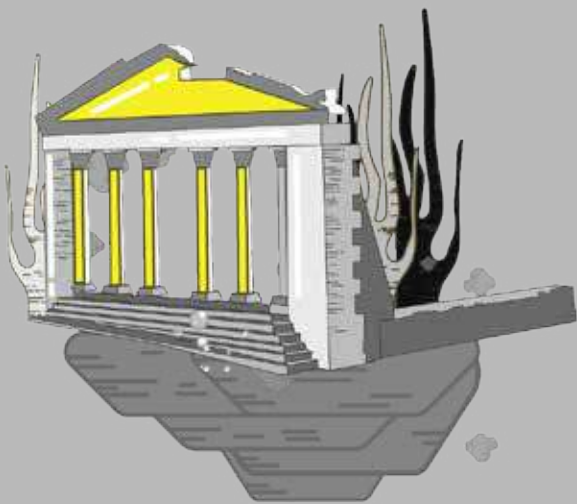
Figure 3 / A new concrete utopia.
"Utopia supports the world: give me a utopia and I will raise the world"¹⁶.

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[MEM/15]



ACCUMULATIONS

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abstract

Transforming the context through architecture is always a process of realization of a utopia. The natural process of building on other people's utopia it turns into the annihilation of the utopias of others, through destruction and reconstruction. Utopia generates other utopias and the structure of new systems of thought that make it possible to imagine new forms of life and consequently cities. I want to speak about a city without a center or a periphery, without any form of competition with other cities, stratified and heterogeneous, without commodity expressions, democratic and without a demiurge, without a predefined history and timeless.

The city grows within its own boundaries, it self-cannibalizes, the project of the single building has the strength to prefigure a global idea of the city. The whole city is involved. To design means to get a critical approach towards the context or, even better, to define what the context really is, without reducing it to the mere side scene or background.

I would like to overturn the common idea that sees history as something that imprisons the creative freedom, to assert the exact opposite: the history feel us free!

My essay aims to tell a thinking strategy through the accumulation, apparently incoherent, about thoughts, drawings and history. Accumulate on the surface, creating a thinking where, if you need, to go deep. Accumulation is the law of the natural growth of things. Accumulating means using what we have. The accumulation as a form of man-made growth linked to the history of the places, things and people. It is a way of developing the common world in many civilizations. Accumulate also contains the utopias of others. Utopia becomes so collective and inclusive. Utopia is not an island but becomes an archipelago where everyone can live.

keywords Accumulations, Utopia, History, Cities, Atlas, Hybrid Buildings, Structures, Lower and Upper Architecture

1. Dialogue on Utopia

With the end of ideologies seems to have vanished also utopia, taken away by societies and policies strictly connected to anti-ideological pragmatism, far away from visions of alternative societies and economies. In the western post-industrial world, utopia has been replaced by desire, which nourishes the capitalist society centered on the power of technology and science, which are exactly committed to the fulfillment of desires.

This does not mean giving up any kind of passion on utopia, on the idea of being able to change our world through the power of imagination; on the contrary we should act against the calculating pragmatic logic. Calculating can only record the present, through data, while imagination, even if rooted in the present, can envision the future or the possible futures.

The path for the fulfillment of utopia is neither linear nor immediately clear. In 1974 Italo Calvino in an essay entitled "Which Utopia" (AAVV, 1974) wrote "... this connotation of risk, of betting, as being hanging-by-a-thread, as struggling every day with an unexpected problem, everything that makes the pathos of the revolutions experienced day by day, is actually alien to any utopias - the written ones - which are provided a functioning mechanism in each of its wheels, self-sufficient, self-regulated, autoreproductive, unaware of the crises of each beginning and of an always possible end."

Utopia settles in a "non-place", far away from the world, which is perceived as the enemy to defeat, to change. In the non-place where only pure principles, without compromise, can exist, ready to clash with the world.

It is difficult, however, to prefigure the utopian societies or at least to provide some kind of models. Today we live in societies where recently the operative opposition to injustices has undergone an atrophy never experienced

before, where “the existing is unchangeable and the alternative is unrepresentable”. (Fusaro, 2014)

I would like first get rid of the simile, in my opinion banal, which describes the utopian architecture as “essentially impossible architecture”. Aldo Rossi in his introduction to Boullée’s work “Architecture. Essay on Art” (Boullée, 2005) wrote: “Loos and Le Corbusier are also architects who have built a lot, the second more than the first, but they are all in their unbuilt work, work that we can hardly define theoretical work in the traditional sense, because it is about a different kind of experience where an artist can be judged. Talking about an alleged utopia in artists like Boullée does not really mean much, as much controversial is also the meaning of the word utopia in architecture since we consider utopian projects the ones that, to be realized, encounter significant troubles in economic or sociological terms. It is therefore more a matter of complexity rather than of utopia. Especially in the architecture field where the difficulties to complete a work are always so many, even for the most modest works, to make their realization always problematic”. The realization of utopia is the true purpose of architecture in an intentional or unintentional way.

What image does mass culture have of utopia?

To find it out I looked for it in the only place that describes and represents the world: the web. For sure the internet is the place where you can see what most of the people think and share.

Here is what comes out browsing on the net for images related to the word “Utopia”.

The first image, out of 73,000,000 results, is a sign “utopia” standing out against a yellow background, where “Utopia” is the title of a British television series. As we could easily imagine, the media circus is king. Television is the place of representation of utopia as a different but familiar world, the center of an vision of a globalized, widespread and non-localized world.

The second image is exactly the opposite: a road sign indicating the direction to reach Utopia, 8.535 Km away. Utopia is an exact place within reach. Two images with opposite meanings, defining or not a place, but which do not represent utopia, they do not prefigure any place or city. Utopia has neither a form nor a structure, it is mostly elusive, we only know that it can exist and is far away.

If we switch to a general search (not only for images) something changes, here the first results are the definitions of utopia, one above all the one by the influential Treccani: “Utopia: The formulation of a political, social, religious structure that is not reflected in reality but that is suggested as an ideal and as a model; the term is sometimes taken with a highly restrictive value (a model that is not feasible, abstract), while sometimes it emphasizes its critical force versus existing situations and its positive ability to orientate forms of social renewal (in this sense utopia has been opposed to ideology)”.

Therefore no new prevailing idea, no new description yet.

Maybe utopia, the new utopian vision, the non-place is represented by social networks? Maybe the structure of these worlds is a realized utopia? They are open, democratic societies, at least formally, but let’s not get into this in-depth analysis, where exchange is immediate and where everyone is himself and his own representation, apparently without intermediaries or sovereigns. The mass is abandoning the physical city or rather wants to regain it, but it still has no form. There is quite a weird connection between the social network Facebook and the Republic of Plato: in both the maximum number of citizens or friends to form a functioning community is 5,000!

2. The empty space as place for Utopia

Utopia is a natural and constant ambition for modern architecture, rising from the desire to control the physical development of human settlements and the associated behavioral control or management.

In the Rem Koolhaas’ Melun-Sénart plan the control over the city growth is not delegated to architecture but to economy. This marks the end of utopia based on the idea that architecture, for its role, can design the city. “Today it would be no less naive, on the other hand, to believe that we can reasonably predict and control urban development, the built fabric: too many visions of this kind have proved unsuccessful for anyone to still believe in such architectural chimeras. The built space, the solid, is now uncontrollable, as a field of action of political, financial and cultural forces exposing it to a permanent process of transformation. It is not the same for the empty space: this is maybe the only field left where some certainty is still possible”. (Lucan, 1991).

Emptiness is the place of utopia. Still Koolhaas writes: “Where there is nothing, everything is possible. Where there is architecture, nothing else is possible.”(Op cit.)

The reconstruction of Berlin is a symptomatic example of the relationship between planning, history and economy. Before the fall of the wall, in 1989, Berlin was a divided and largely empty city, large spaces cutting through it showing the terrible lacerations of the bombings. The reunification was an opportunity to experiment, Berlin has always been a place of urban experimentation, a laboratory city. Rem Koolhaas, in his essay entitled “Clows”, recalls a seminar led by Oswald Mathias Ungers, who imagined to rebuild Berlin as a “green archipelago”, a Berlin the empty space was ruling and he even planned the destruction of those parts of the city he considered not worth saving.

It was 1985. Today we know that Berlin has been rebuilt on the plan of the city before the war, the empty spaces have been filled, the solid ones have exactly retraced the old layouts.

3. The good governance utopia

People participation to urban transformations seems to be the goal of a democratic idea of city administration, where transforming means first communicating, highly extending the participation and using various forms of communication and, of course, decision making.

Contemporary architecture, except for some minor field, does not seem interested in any form of participation, indeed, people's "participation" is perceived as an enemy, it is the ignorant mass colliding with the genius.

It is somehow true that the internet is providing us with some forms of democratic participation, but there is always the fear and the danger that the mass decides according to superficial and piloted opinions, not only, there is also the radical approach prefiguring the architect complete disappearance and death; through his death, architecture reaches its perfection and synchronization with the times. The objective is to imagine a self-built architecture, a controlled self-construction appropriate only for residential fabrics or public spaces.

The radical movements of the '70s, in their urban ideas, reached a right combination between the imposed city, the one designed by the architect, and a participated city, the one lived, used and transformed by the people. Their effort was to combine the two cities: Yona Friedmann designs a suspended structure, Archigram an instantaneous city, Isozaki a metabolic city, Cedric Price the Fun Palace, and so on. These are all formally well-identified models but can be modified through use.

Maybe for the development of the Western contemporary cities we need, first of all, to reposition the architect's role, to then rethink new ways of growth, related to forms of participation and to the classification of the new urban spaces to be transformed (which are always more often places to be recovered as factories, military barracks, airports, that is spaces strongly connected to the memory of the people).

4. An adjustable utopia

Functionalist architecture, post-modern architecture, deconstructivist architecture, minimalist architecture, etc ... these are all definitions classifying different operative ways, definitions that are often syntheses only taking into consideration the formal result of the architectural object.

I believe, instead, that in order to "evaluate" and "define" architecture, we must consider how the space and the architectural object is lived or used (in terms of consumption).

To use something implies an active action, it is a creative action, and it is precisely through this action that architecture finds its fulfillment. People (wrongly defined as "user" or "consumer") do not experience the architectural object uncritically but, they take over it, they conquer it. For this reason the architectural object should never be finished, it is always an unfinished architecture that gives up the aspiration to be a unique piece to be protected and safeguarded, indeed, the stronger the idea, the more the object is weak and adjustable.

"Only if Being can be conceived as adjustable, Being is not the absolute", are the words of Adorno (Adorno, 2004) defining the boundaries of being that in its own adjustability can embrace the rest, being a part of it.

5. Utopia and History

History, conceived as a chronological sequence, requires an understanding of the world according to a path of evolution and progress. This approach takes us consider the objects within a given historical period; we create definitions as precursor, anticipator, or late-something, the temporal position that places the work between a "before and after" defines the work itself.

In her exhibition scheme for the MASP in São Paulo in 1968 Lina Bo Bardi decided to place the paintings on transparent plexiglass panels distributed within the large exhibition space creating a dense sequence of works. This allows the observer to have a double idea of the work within history: a chronological, traditional one, winding through the exhibition space, while the other, flattening all the works on a large two-dimensional plane, shows us a unique vision all compressed on a two-dimensional plane. The whole history is flattened on a plane. Hence a new way of seeing the relationship between the works, the artists and the history, indeed the history of the works becomes unrecognizable, while the history of men is always clearer.

Imagine the city, its history, flattened on two dimensions. The city loses its hierarchies and its monumentality or rather "everything is monument", because everything has the same value. On the pedestal of history anything can happen to write another one, in fact, as Beniamino Servino (2014) says: "doing architecture is a process of rewriting about what we already have".

6. Utopian Structures

Getting rid of all the superfluous buildings of history and along with them its shape and skin, all that remains is the structure. The structure is a not iconic object, implementable and adjustable.

I'm not talking about the Megastructures and the great dimensions codified by Reyner Banham in the early sixties,

structures strongly connected to the network concept, not even about the work of Archigrams, Cedric Price, Isozaki etc ... where technology and structure are the main components for the development of the new city and the new way to live it. These were projects that saw the use of technology as a salvation, capable of fulfilling the desires of the mass utopias, projects of infinite cities arising from the repetition of highly technological minimum elements.

From these mass utopias, towards the end of the 60s, more particular utopias began to take shape, connected to specific areas; it is actually this dialogue with the territory, freed from the totalizing idea of networks, which creates particular utopias in relation to a community formed by a precise number of people. To function properly the community must have a closed number of people. The "Spatale Ville" project by Yona Friedman can be included in this field of research, where the structure is over the city, closely connected to the place, which is already a utopia leading to a paradox, but not only, it is a feasible utopia, as Friedman entitled his famous book.

My structures do not fly over the city, like the ones proposed by Yona Friedman, here the structure is designed as a superfluous element of the single building, the structure is closed, concluded and rooted with all its magnitude to the city.

The city grows on itself, on the roofs the structures are ready to be colonized, used by the communities. Aldo Rossi said "architecture is the primary element onto which life is grafted" (Rossi, 2009), a clear sign of optimism towards people and their ability to live together.

7. Accumulations

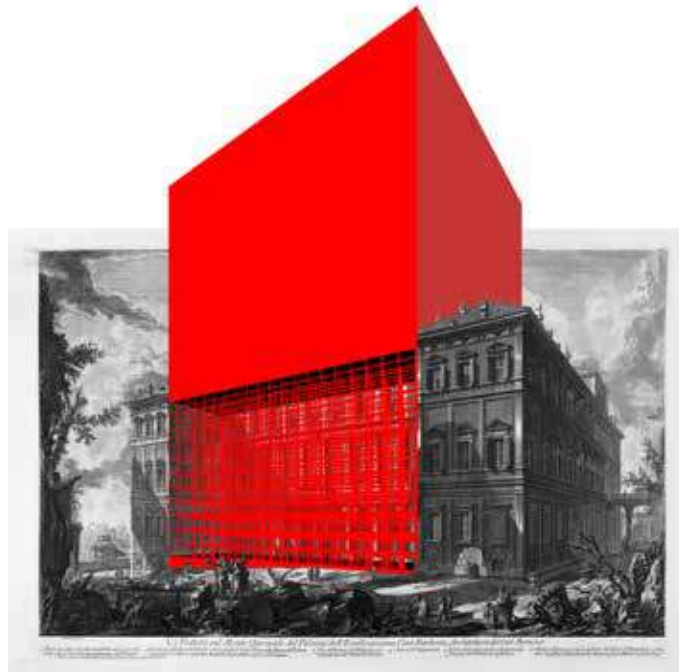


fig.1 (Architettura di Invenzione – Digital Collage – Carmelo Baglivo)

Transforming the context through architecture is always a process of realization of a utopia. Utopia in the sense of strongly believing in the possibility of changing the contingent reality replacing it with a new and shared one. It is a process that modifies the course of history and where utopia has, paradoxically, a place and a strategy. Utopia enforces its absolute principles above all human weaknesses as a consideration on identities and differences.

The natural process of building on other people's utopia it turns into the annihilation of the utopias of others, through destruction and reconstruction. Utopia generates other utopias and the structure of new systems of thought that make it possible to imagine new forms of life and consequently cities.

I want to speak about a city without a center or a periphery, without any form of competition with other cities, stratified and heterogeneous, without commodity expressions, democratic and without a demiurge, without a predefined history and timeless.

A city that achieves something new through operations of subtraction and addition of what already exists; the past has been rewritten, the present reinvented and the future rethought. Everything contains past, present and future. Everything is regulated by rewriting processes, writing again over things already written and already experienced.

The city grows within its own boundaries, it self-cannibalizes, the project of the single building has the strength to

prefigure a global idea of the city. The whole city is involved. To design means to get a critical approach towards the context or, even better, to define what the context really is, without reducing it to the mere side scene or background.

Architecture undertakes a collective appreciation, it addresses to the people without creating the gap between the creative and the user, eliminating the wonder effect often aroused by the works of contemporary architecture. We feel like we were very small and insignificant, forming a condescending mass with the need to emerge through large works. The economic crisis made us realize that the period of big works has come to an end, now we need human scale projects. The human scale is not only a dimensional parameter but a broader concept that involves all the architectural planning including participation, culture, history, collectivity. The wow effect towards the archistars' work can be replaced by the acknowledgment effect; to acknowledge what we have always had. Aldo Rossi imagines the city made up of architectures resulting by a rewriting process; the volumetric simplicity of the Carlo Felice theater stands out in the Genoa skyline, inside the image of an urban space, a square surrounded by inhabited facades. Rossi is not interested in the classical type of theater but in the fusion between the exterior and the interior. Everything is city, or better, everything is Analogous City (like in Aldo Rossi own definition). Analogous architecture as a result of rewriting existing urban parts.

I would like to overturn the common idea that sees history as something that imprisons the creative freedom, to assert the exact opposite: the history feel us free!

"Piranesi in his theoretical writings *Parere sull'Architettura* (1765) and *Ragionamento Apologetico* (1769) resumes the debate between ancient and modern to defend the position of the latter: it is not enough to admire and imitate the Greeks; must, after having studied them, find the courage and the strength to find out what corresponds to their own time. The great artist creates the new starting from the old, does not ignore the past, but favors the invention and creation." (Todorov, 2014) We are witnessing the end of the era of superstars and the beginning of recovery of values apparently consumed and abused it much alive, in companies that want to re-think their world and lifestyle.

The process of building is a violent processes that are against the natural process of accumulation. Accumulate seems to be an effective strategy to think less traumatic changes and less expensive. The Atlas of Aby Warburg as an explicit reference to express, through images, concepts and cultures.

My essay aims to tell a thinking strategy through the accumulation, apparently incoherent, about thoughts, drawings and history. Accumulate on the surface, creating a thinking where, if you need, to go deep.

Accumulation is the law of the natural growth of things; Things are piling up and transforming, destruction and reconstruction makes no sense and needs a high need for energy. Accumulating means using what we have. The accumulation as a form of man-made growth linked to the history of the places, things and people. It is a way of developing the common world in many civilizations.

What are the different forms of accumulation?

8. Informal Accumulation



fig.2 (Nuovi Approdi - Digital Collage - Carmelo Baglivo)

Such physical forms and shapes without such provisional physicality and objects. Accumulation could be an informal collection as unplanned use of a place, as temporary and creative occupation. Using a place means to build a memory and leave traces on it. Using a place means to re-think it, to make it personal, to occupy it. This goes beyond the concept of public space which we are commonly used to consider. That kind of public space identify itself with certain kind of program and typology strictly codified in which the community identify itself.

9. Lower architecture and upper architecture

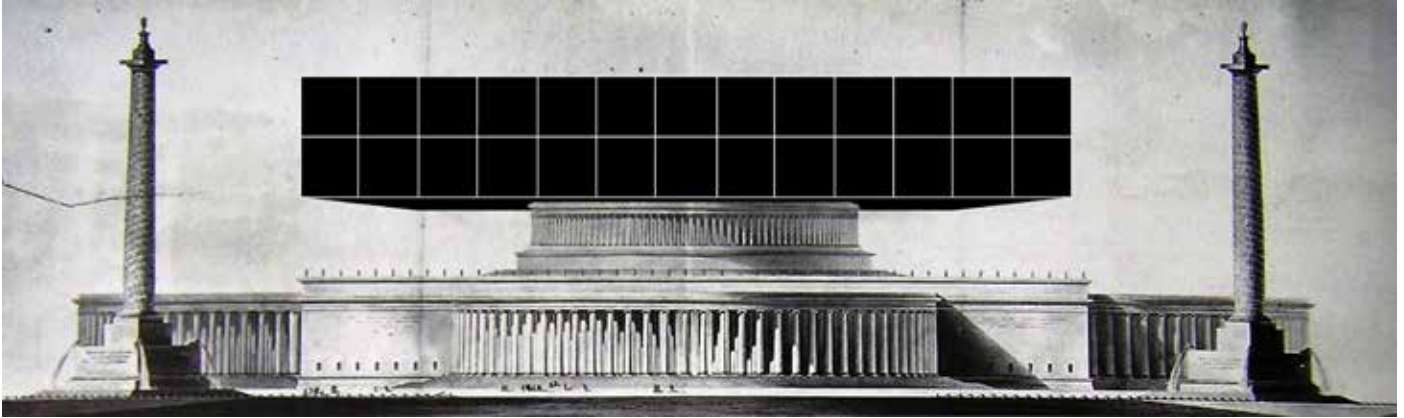


fig.3 (Capriccio – Su Boullée – Collage Digitale – Carmelo Baglivo)

Lower architecture is anchored to the tracks while upper one is free to express itself. Yona Friedman, in the Cite Spatial, designs a structure that covers parts of the city without touching the bottom. In my opinion, upper architecture is born from the lower one.

Accumulation as a planned strategy. Architecture as an unfinished work. Spaces are available for possible growths and transformations. The Fun Palace of Cedric Price place where everything can happen. So, everything can be created.

10. Accumulation as a stratification of ruins. Poetics of the fragment

Architecture has often used the ruin, or its metaphor, to question the discipline itself. In two very distant times and within societies in cultural ferment, ruins became the starting point for thinking about a new architecture: Piranesi through the ruin defines the foundations of modern architecture and its representation; Superstudio questions modernity through ruins.

So why not use the ruins as a priority to rethink doing architecture?

The ruin no longer seen as exclusive and closed place, where the sole purpose is to preserve it and show it to tourists. The ruins are not that part of the closed city, they belong to urban space and are a basic element for rethinking the city. Il Campus Martius by Piranesi is the juxtaposition of the ruins. The different building typologies are flanked to form the generic city without a planned urban space. The architectural object itself is at the same time full and empty. Campus Martius is like a contemporary city where the full of buildings must also contain public space. The public space, thus, loses its freedom and uniqueness to become a temporary occupation of a "private" place. The gorilla with "Radical Design" written on its chest that appeared on the cover of the issue #367 of Casabella in 1972 is now in a cage. We need its radicalism to find the strength to reconstruct the architectural philosophy starting right from ruins.

Superstudio's "Continuous Monument" is the building representing mass society and consumption, the dystopian project of a ruin brutally lying over the landscape or viceversa. Nature and artifice blur into each other to become confused. We can build on top of the Continuous Monument, so that it loses its purity and solitude to bring it back in the course of history. History that can transform and stratify. We can domesticate it in order to deform it. It is no longer infinite, it is no longer an endless landscape element. It becomes a measurable object. The Continuous Monument is nothing but the modern representation of ruins, it does not have any access nor any architectural frills, it is a whole with the landscape, it is actually the landscape. It does not have any interior, or at least is not represented, and the exterior is nothing but a volume with a square grid. The anti-modern and anti-consumerist object is a ruin. Maybe now rethink the ruins can bring architecture to ground zero, cleared of all accretions that have grown in recent years. The ruin or monument is part of the design and the design process is the operational instrument. Theory and practice, research and project. Stratifications, juxtapositions, and additions where the ruin is at the center of a place search process to identify new relationships and roles. Fragments of different cities and different buildings form new landscapes and scenery. The ruin is the raw material for new architectures that arise from the multiplication of the fragments and their juxtaposition.

The ruin is the place of the subtraction. Subtraction as a design tool used by contemporary art and to eliminate the superfluous. Removing is like adding. Maybe we can talk about new hybrid buildings several examples in history (let's see marcello theater). Layers of functions but especially stratification of types or re-inventions of types. The ruin has not an inside and an outside and it is an inhabited building. So the ruin becomes a building with its own internal structure. The ruin can be experienced not only be contemplated. Superstudio in the project "Salvataggio dei centri storici" ("Rescue of historical centers") marks the end of the monument as an untouchable object. As a work to be preserved, everything is in a design process. Society does not accept fetishes. The Coliseum is inhabited. Returning on the Colosseum of Superstudio we approach the monuments as "alive" and modifiable objects. Monuments no more untouchable. The places of the ruin are also the places of the empty space. Seemingly unformed and indefinite, Rome and Berlin had experienced, throughout their history, times in which empty spaces were more than the occupied ones. Rome after the Empire and Berlin after the Second World War. Two epochs very far apart, but crossed by empty spaces: Roman countryside and the No-man-land in Berlin. Sudden openings and changes of perspective. But marked by a common fate: fill the gaps.

10. Accumulation as a stratification of ruins. Poetics of the fragment

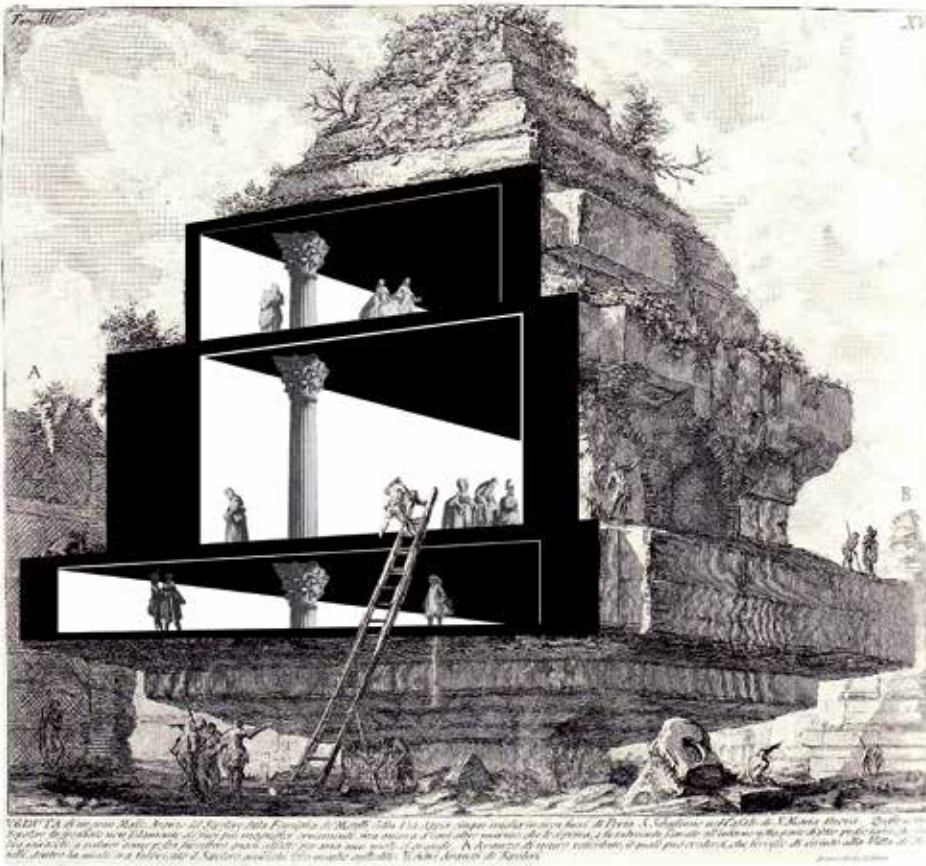


fig.4 (Rovina Abitata - Digital Collage - Carmelo Baglivo)

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11. Accumulation hybrid buildings

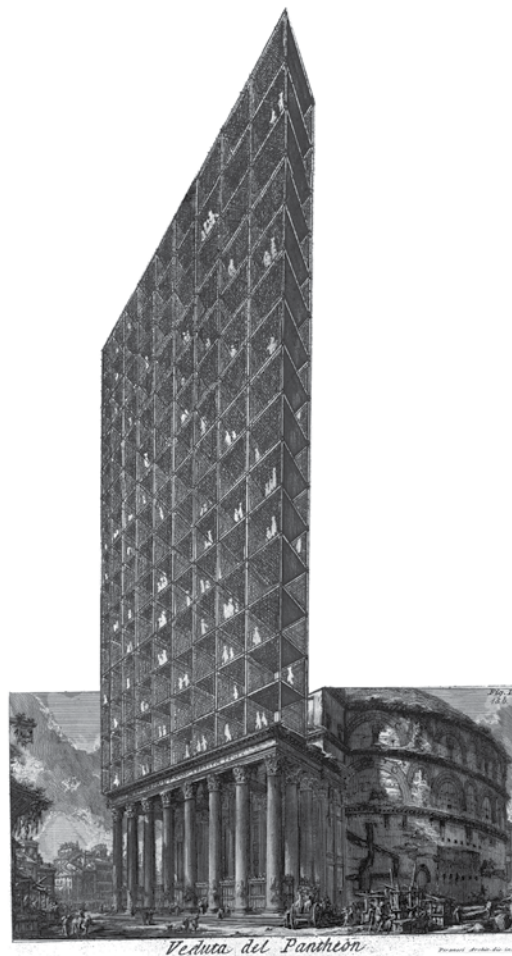


fig.5 (Innesto - Architettura di Invenzione - Digital Collage - Carmelo Baglivo)

Hybrid buildings are the result of a simultaneous coexistence of functional and formal autonomous typologies. Different architectural objects are made up in new configurations while keeping their identities alive. This attitude is radicalized in mega-structures projects and in the Metabolist architecture. Architecture positively thinks to include an entire city within a building and its unpredictable dynamics along with its victories and failures: Corviale in Rome is a notorious example: an unsolved building where the idea of the city never worked. The self-contained building has difficulty in surviving. It must contain functions capable of enlarging its target group, functions that have an extended value to the whole city. But a city building is not completed with primary functions related to market imperatives. It must contain features capable of expanding the target group, functions that have a value for the whole of city.

12. Accumulation and structures



fig.6 (Struttura e Madonna col Bambino – Architettura di Invenzione – Digital Collage – Carmelo Baglivo)

Structures as no-iconic buildings expanded, modified and waiting to be colonized. The building does not respond to the growth of the city but is expected to be transformed. Bare structures. The architecture reduced to its structural essence, naked. The structures that I design are firmly anchored to the ground or over existing buildings; structures representing the loss of the object through a bare, light and weak architecture. Living the illusion of a reset to think of a new aesthetic where the structure wants to be the zero degree of architecture, an archetypal structure, like a neutral field waiting to be inhabited and transformed through the action of possession. The form dissolution does not take place through the infinite expansion of the object, which thus loses its measurability, but it takes place baring the object to its structural essence with a non-figurative architectural language. Buildings resulting in a not-iconic city, stackable, organic, without history.

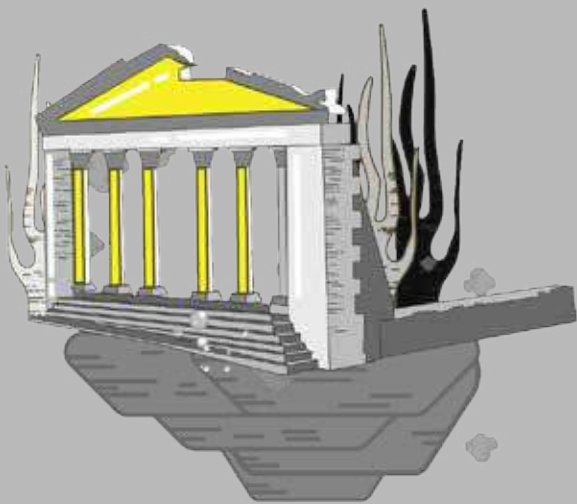
13. Conclusion

We can define the accumulation as the only form of growth that can contain and transform everything; Accumulate also contains the utopias of others. Utopia becomes so collective and inclusive. Utopia is not an island but becomes an archipelago where everyone can live. My architect is the anti archistar. Architecture has lost its political and social power and design only beautiful boxes. For political reasons, I mean the relationship closer to people and the sharing of territorial transformations. You can not design stand-alone monuments, fake public places that welcome people who no longer know the value – the meaning of public space. The architectural culture has to recover its strength and critical skills and to have again a leading role in the culture.

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[MEM/16]



Metamorphosis of a Papillon City

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abstract

The core problematique of this paper remains the idea of 'memory' and its relation with the contemporary design process. The notion of memory, in this paper, is being approached through the perplexing coexistence between past and present in the Mediterranean city. As noted in the conference's overview, "the topic has been widely discussed in the past [...]", however, most of the previous architectural endeavours were trapped into misleading dilemmas, such as "[...] the tabula rasa and the exact replication of the past". Unfortunately, the above extreme approaches often had severe repercussions for the city. This is particularly evident in the Mediterranean region. The vast majority of the Mediterranean cities trace back thousands of years and the operative aspect of the 'historical memory', within the design process, has preoccupied many generations of architects. One such example, of a city with centuries of history, is that of the coastal city of Lepanto (Nafpaktos), in south-west Greece.

Lepanto is one of the most telling examples of puzzling coexistence between the remnants of a 'glorious' past and the contemporary city. Therefore, casting the spotlight in this particular case we investigated certain aspects of the above problematique. Particularly, the scope of this study was to develop new research and design methodologies, in an attempt to challenge the prevailing notions of past and future in the Mediterranean city. Moving far from obsolete and misleading dichotomies, we approached the topic through a three consecutive design tactics that interact with the historical memory of the place. In so doing, we tried to test the extent up to which, memory and design can be coalesced and mobilize innovative ideas for the sustainable future of our cities.

keywords Memory, Design Tactics, History, Lepanto, Mediterranean city

Introduction

Adolf Loos gives a striking definition of architecture when he writes that, "If we were to come across a mound in the woods, six foot long by three foot wide, with the soil piled up in a pyramid, a sober mood would come over us and a voice inside us would say, 'There is someone buried here.' That is architecture." (Loos, 2002: 84). In the Greek language, there is a single word that describes both the monument and the grave, that is *mnimio* (μνημείο). The word derives from the Greek word *mnimi* (μνήμη), which means memory. Memory and architecture were always inextricably linked. However, around the 1980s, a particular interest in the discourses of memory arose in many fields, including architecture. Two pioneering figures of the memory studies are the French historian Pierre Nora and the British geographer David Lowenthal. In 1984, Nora published his 'Les Lieux de Mémoire' and since then almost every study on memory refers to his work (Nora, 1996). A year later, the first edition of Lowenthal's groundbreaking book, "The past is a foreign country", was released, enriching, the field of memory studies (Lowenthal, 1985).

In his highly influential work, Nora coined the term 'lieux de mémoire', which signifies an entity (either tangible or intangible) that embodies the will of people to remember (memory) and to record (history). This is an extremely interesting distinction between the two terms, which can be extended and very easily applied in the historic "urban" entities that can be defined, as the embodiments of peoples' will. In this regard, it would be assumed that most of the "historic urban entities" have no certain significance by themselves. It is people's will that signifies them, thus they can be perceived as reflections of what "we" want to attribute to them. Therefore, as will be

discussed in more detail below, practically anything – especially within the context of a global market driven economy – would potentially be a token of memory or a “monument”.

Lowenthal’s treatise, among other things, deals with the epistemological “problem” of history. Lowenthal, interestingly observes that the only irrefutable witness of past are the remnants that have survived up to now along with memory, which comprises an immaterial link to the past. The combination of these two elements (monuments and memory) generates history, which inevitably is written from the standpoint of the present. Lowenthal’s apt observation makes evident that in the built environment the notions of memory, history and heritage are inextricably intertwined. Therefore, it is almost impossible to speak about memory alone without touching upon the other two concepts. In another part of the same book, Lowenthal challenges the much-acclaimed educational aspect of conservation by examining “how it makes us aware of the past”, as well as our “response to such knowledge”. His insightful approach provides a great methodological tool for unlocking the notions of past, memory, history and heritage.

Since the above two seminal works, a large number of studies was produced concerning the concepts of memory, history and heritage. David Harvey in his article “The History of Heritage” (2008), adopts John Tunbridge’s and Gregory Ashworth’s (1996, 20) short definition of heritage as “a contemporary product shaped from history”. He then continues arguing that it is subjective, filtered and always with reference to the present. The above viewpoint and definition will also be adopted for this paper. It was through this prism that the following case study was seen and analysed.

Although the so-called ‘Memory Studies’ as a distinct discipline is rather new, the perplexing coexistence of past and present, especially within the urban realm, preoccupied many generations of scholars. Particularly in architecture and history of arts, since the 1790, when the first law of preservation ever defined following the French Revolution, the issue become more persistent (Koolhaas, 2004). During the 19th century the theoretical foundations of the concept of heritage and its protection, as token of beauty and memory, were developed. However, it was not until the 1960s that the initial theories formed a distinct discipline on the periphery of the architectural profession (Arrhenius, 2002). Yet, “its marginal position in the architectural discourse contrasts sharply with its impact on architectural practice”, as Thordis Arrhenius aptly notes (2002, 69). David Harvey also spotted this “tremendous impact” of heritage and its protection in the built environment. Through his Neo-Marxist lens, Harvey interprets the above phenomenon as the result of the “economic and cultural commodification” of heritage (Harvey, 2008 p.20). According to him, architectural conservation bears great responsibility for the formation of the contemporary urban and territorial conditions in most of the historic cities. These issues are quite evident in the Mediterranean context where most of the cities have traces of thousands of years of co-habitation.

Objectives

Having the above theoretical terrain as a starting point, the main objective of this paper is to speculate on the social role of architecture as an interpretive tool of the memory of a place through three consecutive design proposals. More precisely, it aims to instigate a discussion on the democratization of the urban memory, by the means of an architecture that is deeply rooted on the traces of its past.

At that point, it is worth acknowledging the impossibility of an objective stance towards memory. This is maybe one of the major limitations to take under consideration. But still, the democratization of both the memory and the human space is a goal worth striving for. As Edward Said aptly notes, “Memory and its representations touch very significantly upon questions of identity, of nationalism, of power and authority.” (Said, 2002: 242). Architecture, especially that which is being produced for places with many different historical layers, is inevitably one the strongest representations of memory. Bearing the above in mind, we will try to meet our objectives by experimenting with different architectural scenarios on a specific site.

Methodology

The methodology that was employed to examine the above problematique was case-study based. Particularly, the case study that facilitated our analysis is the coastal city of Nafpaktos, which is located in Western Greece. As already mentioned, the use of a specific site was deemed crucial for the deeper understanding of the nuances and particularities of such a complex topic. In this respect, the site that was chosen to investigate the possibility of architecture to act as an interpretive tool for the memory of a place, is the old Westgate of Nafpaktos’s medieval city. The reasons for choosing this specific site for our investigation will be discussed in more detail below.

The Case Study

The city of Nafpaktos is one of the most telling examples of perplexing coexistence between the remnants of a past and the contemporary city. Like many other Mediterranean cities, Nafpaktos has thousands of years of unobstructed habitation in the exact same spot (Karagianni, 1994). Recent archaeological excavations, within the boundaries of the contemporary town, revealed artefacts and human traces that date back to the 12th century BC. The obvious question that arises is how you deal with the rich memory of this living palimpsest? Although this question is impossible to be addressed in the following short paper, certain aspects of it will be investigated from an architectural point of view. Three design tactics will be present that challenge the existing relation between the past and future of such multi-layered cities. In the above three tactics, design is being informed by the traces of the past in an attempt to introduce a new design culture towards the places of memory. The city of Nafpaktos provided the field for these investigations.

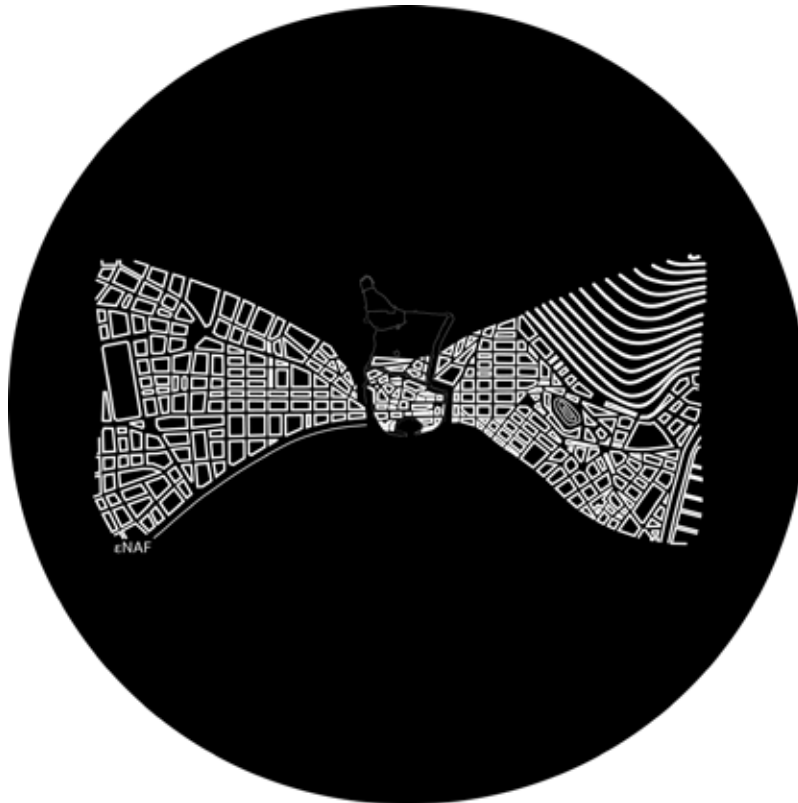


Figure 1. The Papillon City. Nafpaktos' city plan in a bow-tie shape.

Owing to the shape of its city-plan Nafpaktos was nick-named 'Papillon City' (fig.1). As will be discussed, this 'Papillon City' is the outcome of a peculiar synergy between its old fortress and the rugged coastal topography of the region. For centuries, the walled-city was effectively blocking one of the main passages from the hinterland of Central Greece to the Peloponnese and vice versa. Quite ironically though, the above *raison d'être* of the city since the ancient times, turned into a major setback of its modern era. After the WWII, in a world crying for 'development' and 'growth', the walls and the manifold historical layers were treated as an unbearable burden and an obstacle to progress.

The walled city of Nafpaktos is located along the southwest coastline of West Central Greece region at the prefecture of Aetolia-Acarnania. The region is one of the most mountainous in Greece, having some of the highest elevations in the country. Since the ancient times, this rough topography provided ideal conditions for well-fortified coastal cities like Nafpaktos. The city of Nafpaktos is located on the side of a steep hill and westwards of a major river of the region; the Mornos River. Given its strategic position on the west entrance of the Corinthian Gulf, Nafpaktos had always a key role in the control of the region. Thus, its stronghold became the bone of contention between rival powers since the ancient times. In order to grasp the complexity of the site that will be later analysed a brief timeline of its long history from the very early sources to the present day will be presented below.

According to Pausanias, the 12th century BC the Dorians arrived in the region, following the oracle of Delphi and they built their ships in order to invade Peloponnese (Karagianni, 1994). After the above action the city was named Nafpaktos (from Greek Naupaktos, from *naus* 'ship' + *-pēgnumi* 'build') (Karagianni, 1994). During the Peloponnesian wars (5th c. BC) the city fought in the side of Athens. In 191 BC the city became part of the Roman Empire and after

the division of the Empire (4th c. AD) Nafpaktos remained the Eastern Roman (Byzantine) territory. During the middle-Byzantine period Nafpaktos was upgraded into the capital of the fifth Theme (Byzantine district) from the 8th century till the 1204 AD (Marinou, 1985). According to a treaty, in 1204 AD the city was given to the Venetians, only to end up to the Byzantine Despot of Epirus Michael Aggelos Komnenos six years later (Marinou, 1985). In 1294 Nafpaktos was under the rule of the Frankish prince Philip I of Taranto, while a century later, in 1360, the Albanian Byzantine noble Gjin Bua Shpata was the new Lord of the region (Marinou, 1985). From the 15th until the 19th century AD, the city underwent two Venetian and two Ottoman periods (Venetians: 1st period, 1407 – 1499, 2nd period, 1687 – 1701. Ottomans: 1st period, 1499 – 1687, 2nd period, 1701 – 1829). Finally, from 1829 AD to the present day, the city is part of the modern Greek state.

In the western Europe, the name of the city became well-known because of one of the most important military events of the Renaissance; the 'Battle of Lepanto' that took place in 1571 (Konstam, 2003). One of the most appealing historic "gossips" of the above famous battle, is that the father of the Spanish letters and writer of Don Quixote, the novelist Miguel de Cervantes, took part in the battle of Lepanto, he was severely wounded and since then his left hand was rendered useless (Bloom, 2005).

All the aforementioned historic periods are reflected on the fortifications of the city, where a number of construction phases from the ancient times to the modern era can be observed (Mamaloukos, 2017). All the aforementioned rulers of Nafpaktos left their marks in the city's defensive infrastructure. Today, the fortified walls, all the way from its medieval port to the old acropolis on top of the hill, embrace the centre of the modern city of Nafpaktos. Additionally, four transverse walls subdivide the fortress in five zones. The fortress used to be accessible from the outside by four land gates and two sea gates, while inside the five zones were connected by four parallel cuts, one at each transverse wall. All the above gates have survived to the present day except one of the outer gates that was demolished probably at the end of 19th century along with some other, small, parts of the walls (Mamaloukos, 2017). At this point it is important to mention that the walls are the most significant monument of the city, although degraded and not properly preserved.

The urban core of the walled city today is concentrated within the two primer zones. The first zone, which is located near the seaside, is proved to have higher density including mainly commercial, leisure and touristic facilities, while the second one is a scarcely populated residential area. The upper part is divided in three zones that are uninhabited and have been declared archaeological site, supervised by the Ministry of Culture.

In the second half of the 19th century, the rapid changes that the industrial revolution brought to the European societies had an immediate effect on the old military infrastructure. Novel military tactics and technology rendered the medieval and early modern systems of fortification totally obsolete and useless. As a result, the vast majority of the European cities demolished their old fortifications for the shake of progress, development and better hygiene conditions. In Greece the European example was followed only in few cases, like in the city of Chalkida (Negreponte) where the impressive Venetian fortress completely vanished. In most of the Greek cities though, the fortresses were simply abandoned and neglected. In Nafpaktos, the only major loss of this period was the East Gate of the fortress and a bastion right next to it. The rest of the demolitions were minor cuts in of the city-walls in certain parts, in order for the new roads to pass through the city centre. When the first cars and long vehicles appeared in Nafpaktos, its city centre was totally unprepared to accommodate such a heavy activity. Later, the rapid growth of the population with its subsequent urban sprawl, suffocated due to the immense traffic congestion.

The development pattern that most of the Greek cities followed after the WWII appeared in Nafpaktos relatively late, around 1970s. At that point, a sudden and abrupt expansion took place that had an evident impact on the character of the old fortified city. Particularly, until the end of the 1970s Nafpaktos was a typical low-density small coastal town with the vast majority of its buildings no more than two storeys tall. In the early 1980s the Greek "polykatoikia" appeared in the city. A great number of old stone masonry buildings was demolished, both inside and outside the walled city, in order for the new concrete constructions to be build. Unfortunately, the vast majority of the new buildings were of low-quality profit driven architecture. As a result, the overall architectural quality of the city degraded.

"Design approaches, whereby the traces of the past inform the future of design"

As already mentioned, Nafpaktos followed a development pattern that is quite similar to that of the majority of the South-East Mediterranean coastal cities after WWII (Chorianopoulos et al, 2010). Owing to the rapid growth in tourist influx and housing demand, from the late 1970s until the mid 1990s, the city almost doubled. This disturbed both the natural and built environment of the city. As discussed above, the urban landscape was heavily effected, as the previous architectural stock of the city, both inside and outside the walls, was almost completely

replaced by predominantly hideous new constructions. The city expanded eastwards and westwards and the rugged topography imposed the formation of a bowtie shaped urban area. Nowadays, all traffic inevitably passes through the narrow historic core causing major traffic congestion. The 'natural' landscape was also heavily affected by the above frenziness of the tourism and construction industry. Especially, the landscape around of what was deemed as the most picturesque areas was completely appropriated by tourism developments. Places like the castle hill, the medieval port, the walled city and in general all areas adjacent to the walls faced an immense pressure by the aforescribed distorted pattern of growth.

A typical example of the above pattern is the area of the old Westgate of the walled city. Next to Nafpaktos's old gate lies one of the central roads and the main entrance to the city centre. The combination of the rough topography and the medieval city walls obstructed the passage and created a bottleneck point. On top of that, the ongoing pressure caused by the tourism development is significantly advancing against the historical and natural landscape. The unprecedented and uncontrolled sprawl of the city has utterly blocked the visual and the physical access to the city walls. Right next to the Westgate lies one of the very few green spaces of the city. This narrow green corridor is actually what was left from the old moat of the medieval fortress.

The visitors of the city, but most importantly the vast majority of the locals, are completely unaware of the existence of the above important space of memory. As already mentioned, the old moat is effectively hidden behind new structures, houses and scattered urban elements, like signs, lamp posts and trash bins. If the aforescribed pattern of development continue and prevail, it is a matter of time that above green stripe, as well as similar spots within the city, will completely vanish. In an attempt to prevent this and unleash the great potential of the above spaces, we proceeded with a design counterstrategy. The aim of this counterstrategy is to recover the lost memory and to redefine the existing unsustainable equilibrium between the past of the city and its future development. This materialized into three bold gesture that aimed to communicate the memory of the place to the people and help them comprehend the area as part of a greater sustainable system.

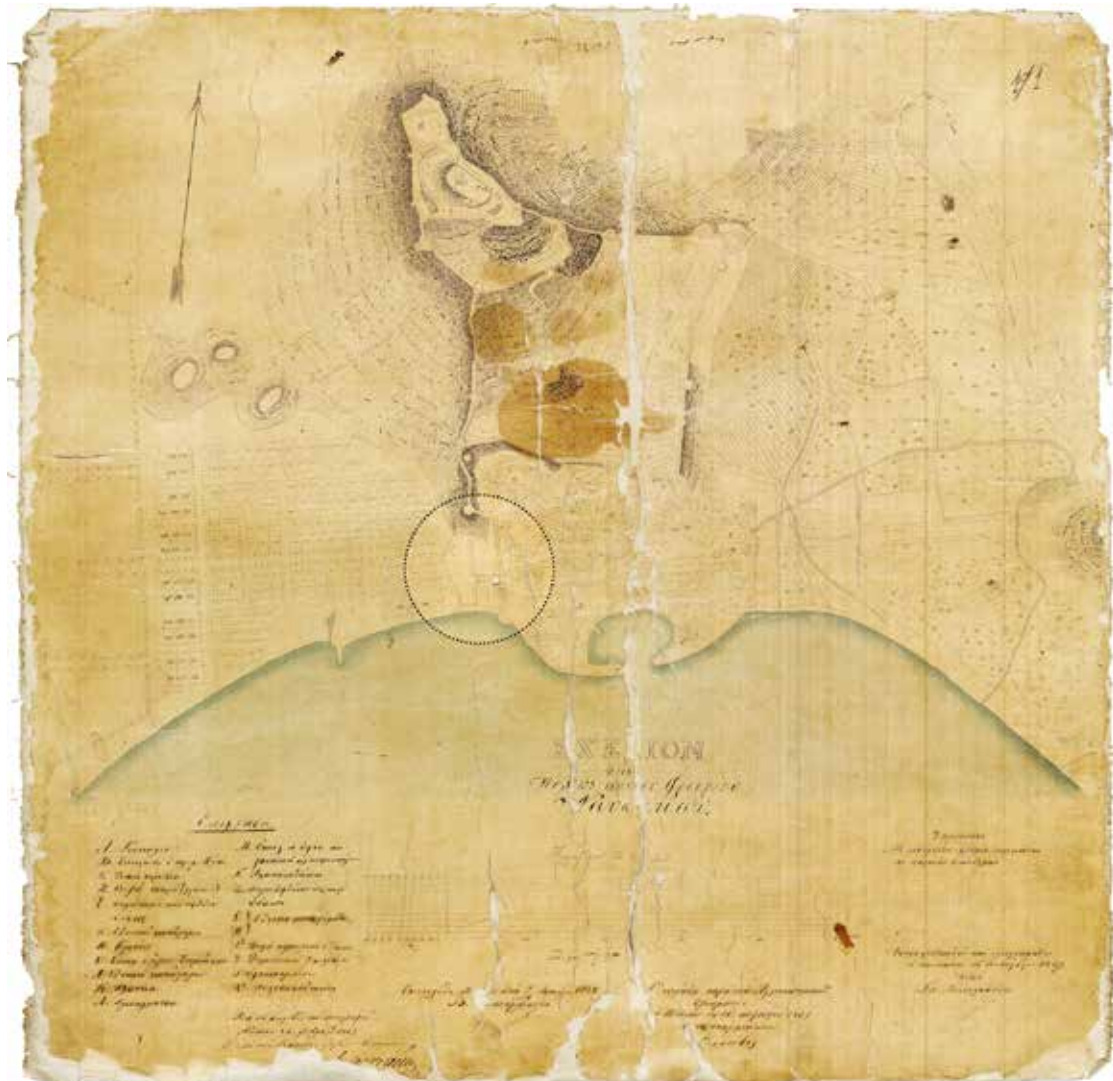
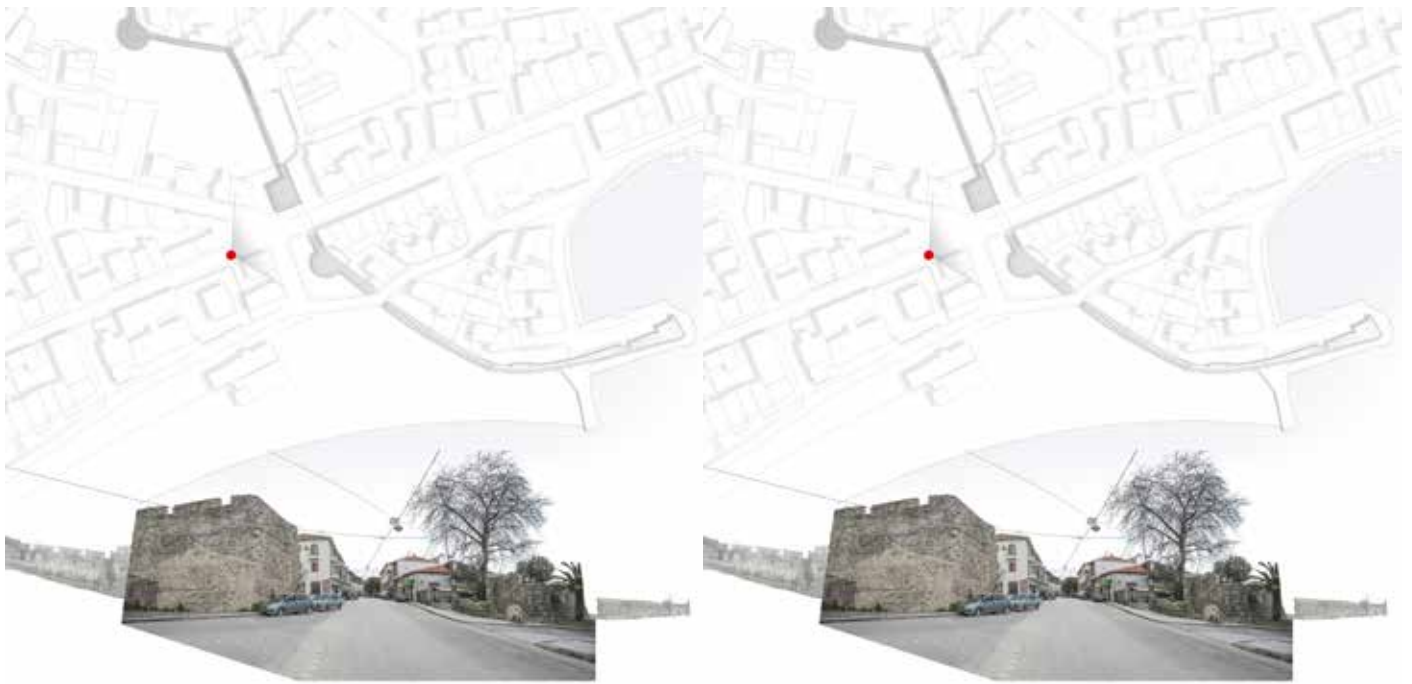


Figure 2. City plan of Nafpaktos from 1837. The West Gate is marked with a black circle (source: Greece's Ministry of Environment and Energy)

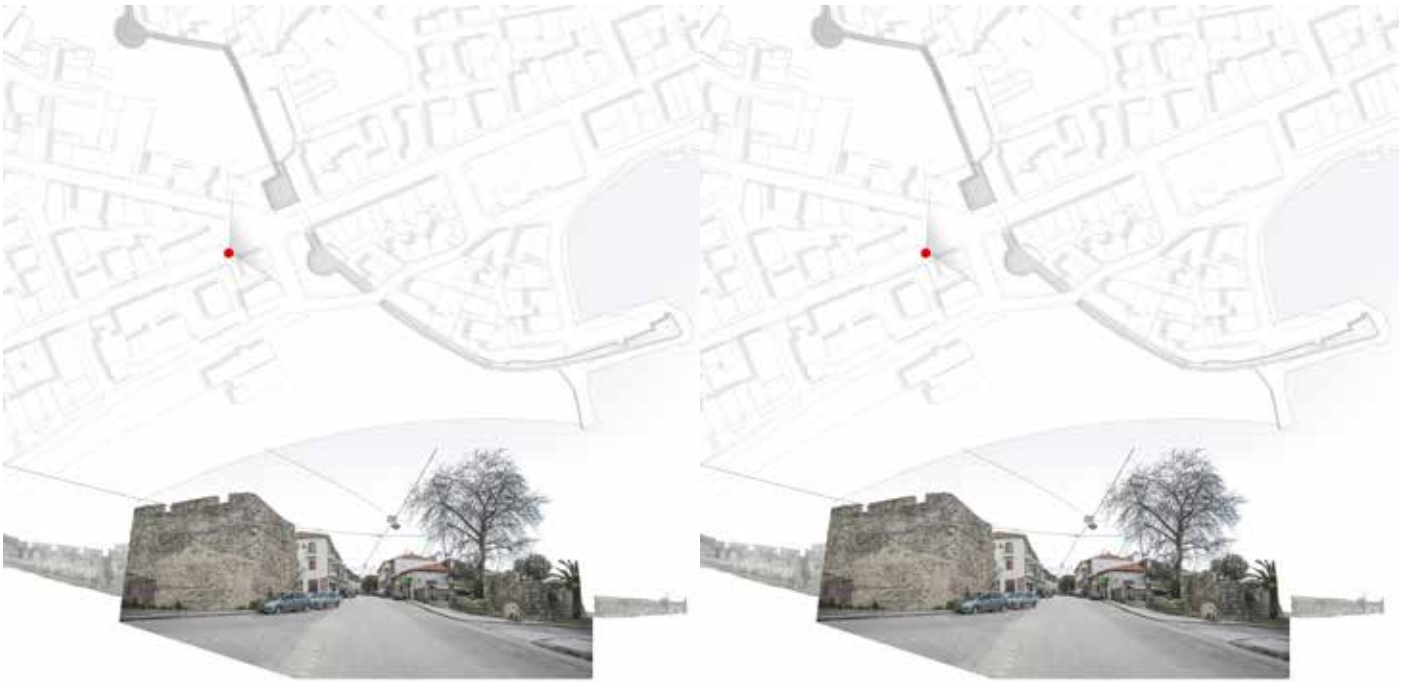


left / Figure 3. The Westgate of Nafpaktos from the west in its current condition.
right / Figure 4. First Design Strategy for the Westgate of Nafpaktos

For the development of the design tactics we conducted a thorough research about the site. We gathered all archival material (maps, engravings, old images etc) and an extensive mapping of the area was carried out (fig.2). The results of both the archival and field research were registered in a digital database in order to be easily accessible and facilitate our main goal. As already mentioned, the main goal was to examine the possibility of an architecture that sparks from the memory of the place and effectively communicate this memory to its contemporary users. In this regard, we proceeded with three distinct architectural proposals that also aim to redefine the existing relation between past and future (fig.3).

The primary aim of the first design approach was to recover the lost visual and physical connection between the people and the city walls (fig.4). The Westgate and the adjacent walls of the medieval city, had a key role in the everyday life of the Nafpaktos. Besides providing protection from the enemies and controlling the human and economic flows between the city and its hinterland, they also had a significant symbolic role. This is particularly evident in the Westgate of the city. Right above its outer door there is an old inscription engraved on a marble plaque written in Ottoman Turkish alphabet. The inscription explains that this Gate is part of a greater imperial project that was constructed according to the orders of the "Sultan of the Universe" Ahmed III (Petronotis, 1994: 241). Obviously, this small marble plaque turns immediately the Gate from a mere functional military element into a symbol of dominance and power. However, until very recently this once imperial project was completely hidden by a number of humble and abandoned adjacent constructions. Therefore, to recover this lost memory and bring it back to light we decided to employ a very simple yet highly critical design methodology; that of subtraction. We removed all visual nuisance that blocks the view to the walls, in order to regain firstly the lost visual contact. Then we eliminated all barriers between the people and the fortifications so as to allow the access as well as the physical contact with the monument. Particularly, as it can be seen in the plans and images of this first proposal, all urban elements, like signs, lamp posts, trash bins, were relocated. Additionally, the adjacent vegetation and infrastructure, such as cables, railings, etc, were completely removed to reveal the Gate and the walls and make them easily accessible.

The second approach aspired to establish a balance between the visible as well as hidden relics of the past and the contemporary city (fig.5). As it appears in the old city maps, from the 19th century until the present day, there are many elements hidden, buried under tons of soil and debris. All these elements were identified in old maps, paintings, engravings and images and provided the raw material of this design proposal. Particularly, in the city map of 1837 the moat of the fortress clearly appears in use, with all its needed defensive elements (fig. 2). One of the vital components was the old bridge that used to connect the Westgate of the city with the west suburb. Also, the walls of the contra-scarpa that used to define the west side of the moat appear in the above plan as well. Finally, from the above map until the present day the coastline has significantly changed. Year by year, as it shows in the various maps from the 19th and 20th century that we acquired, the shoreline keeps receding. These three actors of memory were selected to facilitate this second design strategy.



left / Figure 5. Second Design Strategy for the Westgate of Nafpaktos
 right / Figure 6. Third Design Strategy for the Westgate of Nafpaktos

In order for the above long forgotten elements to re-emerge and effectively interact with the contemporary city, great emphasis was given in the relation between soft and hard surfaces. Therefore, the boundaries between the streets, the pavements and the green spaces completely vanish and merge into a new pattern. As already mentioned, the design draws inspiration from elements that appear in old depictions of the place. Therefore, the new pattern breaks the hard layer of the contemporary city in order for the above lost features of the moat re-emerges. Apparently, the original level of the moat lies at least four meters below the modern asphalt road. Consequently, it is impossible for the above elements to physically reappear on site. However, their traces mark the surface of the city by breaking its existing hard layer. Thus, they are 'returning' in the everyday life of the city, although in an abstract two-dimensional way.

Finally, the third approach constitutes the most radical, but at the same time the most conservative of our proposals (fig.6). Here, there is an apparent effort to reveal the moat in its original three-dimensional state. The research that was conducted for the previous proposal, as well as the elements that were implicitly surfacing are becoming solid and explicit. In this regard, we proposed the demolition of four new structures that were built within the moat. Then, it is expected that the whole area of the medieval moat will be excavated and return in its original level. This bold gesture, would first and foremost reveal the original height of the medieval walls, half of which lie buried today. Secondly, the contra-scarpa and the bridge will be uncovered. Lastly, other elements will hopefully reveal, enriching the memory of the place.

Obviously, the benefits for the city, from this new schema, would be multiple. The educational aspects of such profound gesture are clearly invaluable. Also, the formation of an open green public space in the heart of the city is the side effect of the above gesture. Finally, the whole experience of the Westgate in original height and scale and the ability to be viewed from a proper distance offers a far better understanding and unleash the full potential of this important space of memory.

Conclusion

"The angel [of history] would like to stay, awaken the dead, and make whole what has been smashed. But a storm is blowing from Paradise [...] irresistibly propels him into the future to which his back is turned, while the pile of debris before him grows skyward. This storm is what we call progress." Walter Benjamin (1974: 257-258)

It is always important to keep in mind that the architectural and urban forms are the results of social, political and economic forces. As Benjamin's above quote from his thesis in history aptly illustrates, the storm of progress is impossible to be tamed. Therefore, it would be naïve to think or imagine that mere design strategies are capable of changing the existing socioeconomic patterns. However, as already mentioned above, the democratization of

memory and public space is struggle worth fighting for. Also, instigating fruitful and constructive debates for a more sustainable relation between the past, present and future of our cities, should remain a core responsibility of architects. Tourism and construction industry, like any other capitalist venture, has as a primary scope the extraction of revenue and the maximization of profit. In this process, memory is usually a collateral lose within the contemporary urban scape. Accordingly, the proposed design strategies are aiming to challenge the existing patterns of progress by introducing alternative, more memory friendly tropes of development.

In this regard, the first two proposal are trying to meet the above objective in a relatively mild fashion while the third approach turns the initial implicit character into a violently explicit gesture. This final bold gesture radically reinstates the historic landscape not as an abstract 'memory', but rather as a constructed cultural experience. Yet, the most important aspect of all three projects remains the production of architecture not through the predominant act of addition but with the reverse deed of subtracting, revealing and extracted from the lost 'memory'. Consequently, 'memory' emerges, not any more as a collateral damage, but as a key player and a vital architectural tool. In our particular case, the above acts of subtraction, paradoxically add to the city, new layers of memory. Thus, it enriches the memory of the place by leveraging historic landscape's cultural value. In so doing, we really hope to provoke a new way of thinking regarding the complex relation between the past and future of our cities.

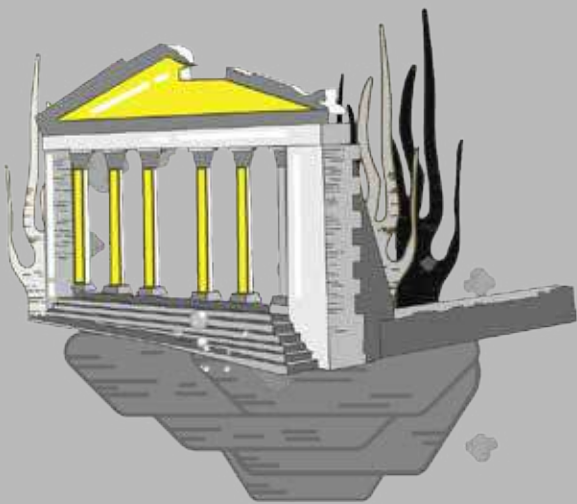
Acknowledgements

The above study was largely based on Michail Papavarnava's masters' thesis, with title "Nafpaktos. The urban evolution of a "Papillon City", that was submitted in 2011 at the University of York, in the UK. The initial observations of the above research were elaborated and enriched during the first phase of the research project 'εΝΑF'. The project is held by the Department of Architecture of the University of Patras under the supervision of Prof. Stavros Mamaloukos, whom we would like to thank for his advices and wholehearted support. The full title of the project is "Identification, Documentation & Proposals for the Enhancement & Protection of the Historic City of Lepanto". It was commissioned by the Municipality of Lepanto and was conducted under the aegis of Greece's Ministry of Culture as well as of the Regional Administration of Western Greece. At that point, we would like to extend our gratitude to all researchers and students that participated in the first phase of the 'εΝΑF' project. Particularly, we would like to thank the Architects, Dimitrios Anagnostopoulos, Kalliopi Sakelaropoulou and Grigorios Koutropoulos, for their valuable contribution in the project.

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[MEM/18]



Melancholia Cairo

The Fold within collective Memory

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abstract

"The more of these moments memory can contract into one, the firmer is the hold which it gives to us on matter."¹ Cairo is an urbanistic ideology that nurtured from its congestion, a byproduct of grandeurs and melancholies of metropolitan conditions; ecstatic without losing passion in its lust for cultural identity. The necessary premise to understand Cairo's contextual complexity is tracing within the implied urban essence rather than an explicit doctrine. Rapid growth movements in metropolitan Cairo denied the concept of margins as representations of collective space and place of dwelling, leading to an abandonment of these places physically and/or mentally; generating a fragmented plane unsolved in memory, time and space. "These spaces that are forgotten/foreign to the urban system are mentally exterior in the physical interior of the city."² Gravitating life along its banks, River Nile suspended, endures cataclysmic forces brought by the progression of time. It witnesses the serene and tragic, a spectator of the rise and fall of civilizations; a regional artifact coexisting in time and space.

MAGRA-AL-OUYON is an aqueduct construction in 1312, starting on the banks of the River Nile reaching Cairo Citadel. Like a parasite latching on to a host, it latches on to the River Nile feeding off its water, nurturing Cairo the growing organism it served as a connector. Helpless against the unforgiving clutches of time, it was rendered useless; morphing into a separator, like a sign interrupts a sentence, it interrupts Cairo's urban sentence. A strong hold of collective memories it lays suspended alongside the River Nile throughout time and space; an evident urban artifact.

MAGRA-AL-OUYON is polemical considering the fold between its mutating identity and its diverse interweaving fabrics. Leaking dependability and consistency of the superficiality that defines Cairo as a product of vague metamorphosis, thus, it manifests Cairo's collective memory as realities.

keywords[CO] Habitation, Margin Spaces, Time, Fold, Collective Memory

Introduction / Murmurs of a tenacious city

"Dwelling is not living in a house; it is a verb and the center of everything we do [...] It is the sense of belonging [...] any proper Structure would allow mortals to dwell."³

Cairo, the capital of Egypt, an enduring metropolis; dictated by powerful fluctuations which seem to have fragmented the city's encapsulating harmony thereby, undermining citizens' ability to dwell within their environment. These urban fragmentations can macrophage places despite their splendid past, reducing them to urban ruins as people forget the places' glamorous character whilst wrestling perturbations. Amidst unrest, some spaces may be deserted as the cities actual and communal interconnectivity tumbles. "The city is the instrument of impersonal life, the mold in which diversity and complexity of persons interests and tastes become available as social experience" (Sennett, 1976: 339)

Cairo is an urbanistic ideology that nurtured from its congestion, a byproduct of grandeurs and melancholies of metropolitan conditions; ecstatic without losing passion in its lust for cultural identity. The necessary premise to understand Cairo's contextual complexity is tracing within the implied urban essence rather than an explicit doctrine. Rapid growth movements in metropolitan Cairo denied the concept of margins as representations of collective space and place of dwelling, leading to an abandonment of these places physically and/or mentally; generating a fragmented plane unsolved in memory, time and space. Cairo is more than this, it is a territory in fluctuation, where the dismantlement caused progressions of punctual corrosion of artifacts and fabrics, where productive activities windup their functions, hindering habitants' ability to dwell within their surroundings as

tissues disappear and fragment. In this sense, the disposal areas assume more radical conditions than in the past. As the change concerning city growth determines a condition of fragmentation, which generates voids, interstitial and fractured spaces in the urban fabrics that remain unsolved.

These forgotten spaces cease to function and hesitant, they remain in a state of constant expectation, resulting in a complex "mosaic" of fragments. "These spaces that are forgotten/foreign to the urban system are mentally exterior in the physical interior of the city."⁴

It can be said that the recent forms of disposal areas have increased and consequently intensified the process of economic, social and urban disintegration to such a great extent that undermines and erodes not only the architectural artifacts, but also the soil, infrastructure and urban fabrics of the city. This stresses the necessity to keep and renew productive activities that resurrect these forgotten spaces.

Fluctuation could dramatically influence cities' typology and morphology owing to changes in inhabitants' feelings and behavior. Societies change more rapidly than the form of their built contexts ever could change, creating forms of revolts against preformed environments; these revolts are the protagonists of the urban mutation phenomenon. Consequently, people abandon the places they cannot belong to, despite their memory as collective spaces where ample interaction once materialized. Eventually, these places lose their identity to emptiness; turning to forgotten spaces resembling a threshold between the past and the future where urban and social segregation ensue.

The metropolitan Cairo has transformed into an acidic fragmented territory hosted by surveillance and anonymity as a certain condition of consciousness. In a silent scenography only monuments and dwellers remain. "But the question of the fragment in architecture is very important since its possible that only ruins express a fact completely. [...] I am thinking of a unity, or a system, made solely of reassembled fragments. Perhaps only a great popular movement can give us the sense of an overall design; today we are forced to stop ourselves at certain things. I am convinced, however that architecture is totality, as a comprehensive project, as an overall framework is certainly more important and in the final analysis, more beautiful. But it happens that historical obstacles – in every way parallel to psychological blocks or symptoms – hinder reconstruction. As a result, I believe that there can be no true compensation, and that maybe the only thing possible is the addition that is somewhere between logic and biography."⁵

Accordingly, the context of interest is "SEARCHING FOR THE OBSCURED".



Figure 01 / MAGRA AL AUYON

The main objective of the research is to reflect on these forgotten artifacts, which can be seen as omissions, but also as promises, potentials and possibilities of great expectations. As these elements are associated with a strong sense of opportunity, where the concepts of "REUSE, RELOCATE, REGENERATE, RESTRUCTURE and RECYCLE" become the key-elements of urban regeneration. These strategies nurture a strong productive identity together with reviving historical memories, to weave the complexity of urban structures in Cairo. Nonetheless, MAGRA AL OUYON could be genuine area for interventions, not only on a morphological level, but also with regards to socio-

spatial organization. This enables people to utilize their capabilities and reinvent new identities in relation to their places of dwelling. Such metamorphosis can propel a process of urban regeneration and reuse methodology of urban spaces to stitch torn cities up. In addition to reforming relationships within a city's complex structure to cultivate a shared spatial sense, fight segregation and reinvent a new urban identity.

The origin of the future

Gravitating life along its banks, River Nile suspended, endures cataclysmic forces brought by the progression of time. It witnesses the serene and tragic, a spectator of the rise and fall of civilizations; a regional artifact coexisting in time and space. MAGRA AL OUYON is an aqueduct construction by Sultan Al-Nasser in 1312, starting on the banks of the River Nile reaching Cairo Citadel. Like a parasite latching on to a host, it latches on to the River Nile feeding off its water, nurturing Cairo the growing organism it served as a connector. Helpless against the unforgiving clutches of time, it was rendered useless; morphing into a separator, like a sign interrupts a sentence, it interrupts Cairo's urban sentence. A strong hold of collective memories it lays suspended alongside the River Nile throughout time and space; an evident urban artifact.

<<Sultan Al-Ghuri, who is remembered today mostly for his eponymous wikala and his magnificent palace, was a keen city planner and environmentalist, intent on adorning Cairo with fine buildings, but also with many gardens and green spaces. Around 1503, he turned his attention to the large square situated beneath the Citadel (the Hippodrome or Maydan), which had served as sporting grounds to his predecessors. He raised the enclosing wall and encouraged the construction of palaces, belvederes, pavilions (maq'ads) and covered platforms (dikkas). Two large gates were chained and bolted at night to ensure the security of the area. In 1509, the sultan decided to add a proper garden to the square. To water this abundance of greenery, the sultan took drastic measures. He decided to pull down the aqueduct of Old Cairo and build it anew. The engineers elected to place its starting point around what is today Fumm Al-Khalig (the mouth of the canal), from which Al-Khalig Al-Misri also originated. The base of a massive hexagonal intake tower, Burg Al-Saqia, was occupied by a large cistern connected to the Nile; six waterwheels pulled by oxen caused the water to rise in a channel resting on a series of pointed arches. These were supported by tall piers of masonry directed eastward, following the same trajectory as the old aqueduct built by Sultan Al-Nasser. The structure reached Salaheddin's wall then veered towards the north-west, completing its course at the Hippodrome and the Citadel. The new 3,405m-long aqueduct, of which 2,155m had been reconstructed by Al-Ghuri, was completed between May 1507 and October 1508.

The aqueduct was repaired in 1727 by Abdi Bek; Napoleon had many of the arches filled and converted into a wall. Finally, in 1810, Mohamed Ali ordered its renovation and a branch was added to service the Southern Cemetery, which ended just near the mosque of Al-Imam Al-Shaf'i. The aqueduct remained in use until 1827, when a modern water system was introduced⁶>> The idea lingers between metaphysics and realism. From this threshold, the story begins of our artifact MAGRA AL OUYON, where difficulties and opinions through different perceptions appear with relation between verification and uncertainty. As Nietzsche claims, << becoming silent before beauty is an intense waiting [...] but the feeling of calm, wellbeing and the liberation from tension that is in beauty. >>

Contemporary development is riddled with uncertainty and crevasses. "The metropolitan space transcends all the old boundaries, rushing along the lines of its movement. But then behold, the contradiction! On the one hand the essence of the metropolis is extended in a space as a prior form; on the other hand, this is constantly contradicted by the gravity of the bodies" (Cacciari, 2002). Stephen Jay Gould states the distinction in natural ecological systems between two kinds of edge: Limits and Margins. The limit is an edge where things come to end and organism's entropy omnipresence; while margins [borders] are spaces where different actors interact. "At borders, organisms become more interactive, due to the meeting of different species or physical conditions; for instance, where the shoreline of a lake meets solid land is an active zone of exchange where organisms find and feed off other organisms."

1 / Bergson, Henri. 1896. *Matter and Memory*, translated by Nancy Margaret Paul and W. Scott Palmer. Dover Publications, Inc, 2004, New York. 339 pp.

2 / Patrick Barron, Manuela Mariani (by), *ProTerrain Vague: Interstices at the Edge of the Pale*, Editor Routledge, p. 26, 2013

3 / Martin Heidegger, "Building, Dwelling, Thinking", in *Rethinking Architecture: A reader in Cultural Theory*, Editor Routledge, London, pp.95-96, 2005.

4 / Patrick Barron, Manuela Mariani (by), *ProTerrain Vague: Interstices at the Edge of the Pale*, Editor Routledge, p. 26, 2013

5 / Aldo Rossi, *A Scientific Autobiography*, Editor MIT Press Cambridge, Massachusetts, and London, England, p. 8, 1981.

6 / Richard Sennett, "The Open City", in *The Post-Urban World: Emergent Transformation of Cities and Regions in the Innovative Global Economy*, Editor Routledge, p. 101, 2017.

7 / Richard Sennett, "The Open City", in *The Post-Urban World: Emergent Transformation of Cities and Regions in the Innovative Global Economy*, Editor Routledge, p. 101, 2017.

MAGRA AL OUYON is an urban artifact that marks itself strongly as an urban sign in the metropolitan city of Cairo not only as an urban structure but, also metaphorically through epiphanies of relations and metonymies that confine the fragmented fabrics. It is an interlude of time carrying a strong sense of the subconscious belonging for both urban and social identities.

"The moment is the point in time and space in which freedom goes from possibility to reality, from being a potential to being actual." (Rocca, 2015: 356)

MAGRA AL OUYON is an artifact defined as a limit between two different fabrics [formal and informal] as a significant separator losing its original intention, generating a left space of no man's land which can be seen as omissions, but also as promises, potentials and possibilities full of expectations.

As these spaces are associated with a strong sense of opportunity, where concepts of "memory, time and space" become key-elements of urban regeneration. This constitution of concepts could nurture a strong productive identity together with reviving historical memories, to weave the complexity of urban structures in Cairo. Nonetheless, These artifacts could be genuine spaces for interventions, not only on a morphological level, but also with regards to socio-spatial organization. "They are places made by and through participation. In terms of time's context." (Sennett, 2005:96)

As Leibniz shows in the relational definition of space: it is an order of coexisting things "Ordre des Coexistences". Spaces are not substance that endures in itself but rather it's a strong bond in-between element. MARGRA AL AYOUN is not only arranging elements that exist in the same time but more than this, it is an order of the coexisting actors in the urban scene.

Objectives / Exhibiting the obscured

A double gaze provides a clearer perception of the grander fold beforehand.

Firstly, a metaphysical gaze echoing beyond time and space; MAGRA AL OUYON an actor suspended in an oblivious theatre, it takes up the role of a manifesto of collective essentials; portrayed as an identity born through the collision of internal and external structures that surround, and dressed in a costume fabricated out of the creases within matter; as the enactment plays out, a motivated spirit, it consistently morphs by bumping into a multiplicity of structures and matters folding infinitely. Now a ruin, a physical structure able to endure the cruelty of time, it sustained history within its form, serving as a strong hold for collective memories constantly fluctuating "At this point, we might discuss what our idea of the building is, our most general memory of it as a product of the collective, and what relationship it affords us with this collective." (Rossi, 1982: 29).

Secondly, through a realist gaze, one notices the provoking of a structure's intended matrix, expanding the frame through the flow of types generated by a multiplex of ideological, religious or practical demands that mark historical moments of a culture. Hinting at the array of functions that a structure can host/represent independent of form and initial intention; however, it is the form that constitutes our experience and structures the city. An epitome of the union between past and future that resembles an individual's memory flow; ingrained with sentiments and capable of manifesting an abundance of emotions; it is thus, embedded with the potentialities of an urban artifact "In particular, one is struck by the multiplicity of functions that a building of this type can contain overtime and how these functions are entirely independent of the form, at the same time, it is precisely the form that impresses us, we live it and experience it as in turn it structures the city." (Rossi, 1982: 29).

Maurice Halbwachs claimed, "A society first of all needs to find landmarks" (Halbwachs, 1941: 222). Blessed by Mnemosyne to recover memory through the perseverance of artifacts, architecture becomes a temple where Mnemosyne is worshipped, a plane of reference where memory flows as a stream of consciousness into the divine architectural well.

As a reference The Via Dolorosa provides an elaborate illustration of the aforementioned dual gazes. Due to its metaphysical origin: as a witness of a biblical event, afterwards, coming into being as a physical mark that planted itself deeply within the roots of Jerusalem where life is drawn upon to embrace an agglomeration of functions over the decades and as a result, according it as an urban monument.

Via Dolorosa [Way of the Cross]

In accordance with Christian theology, Via Dolorosa (Way of the Cross) witnessed the collective trauma of Christ's agony; it is a route running from east to west of Jerusalem's Old City, starting at Antonia Fortress where he was deemed guilty and progressing onto his journey carrying the cross to the Hill of Golgotha where he was crucified. It features fourteen stations that recall biblical scriptures narrating the final hours of Christ's life, with the final

five stations residing within the Church of the Holy Sepulcher. Jerusalem Foundation restored the Via Dolorosa in 2000, by intervening on the route's lighting, architectural highlights and refurbishment.



Figure 02 / VIA DOLOROSA

Via Dolorosa being an urban shrine with the series of fourteen stations; it acts as a series of spatial joints that weave history into present time; people witness another aspect serving this reconstruction of memory through the repetition of ritual practices and traditions. It is a declaration of the fold; where collective memory as a material constructs folds into the human's social drive resulting in a colonization of memory.

Similar to language, a collective knowledge is established based on the difference of signs: the system of difference that articulates between monuments and buildings composes the city's collective image. MAGRA AL OUYON a monument decaying in its current state, stripped of functional obligations, it produces an interruption in the urban sentence of Cairo.

Methodology / The fold of dwelling

The ethos is to understand the inextricable structure of MAGRA AL OUYON, as an element suspended in time searching for the interlude to intersperse the liminal place [limits] and transcend its rhetorical memories and express the omnipotence that continuously connote substantiate existence. It is acting as a strong limit waiting to be transformed to a marginal space.

Thereby, the framework will focus on the recognition of this urban phenomenon through memory, time and space as analogies that define this urban artifact and bring back its identity. The main idea is to link between the three concepts to unravel the complexity within the urban sign. MAGRA AL OUYON will be considered as an artifact on three dimensions:

1. Identification [Memory]: Spirit of a monument.

It is an artifact that narrates as a storyteller the relation with the past and future, with its symbolic and metaphorical meaning defining its spirit. It entails the significance between the paralyzed value structures that has to deal with the permanence of the form in relation to the lost tales of its origin.

2. Transformation [Time]: Morphosis beyond time.

Understanding the transformation of this element in the city fabrics to emphasize the logic of connection with the temporal moment and the spatial organization. The contemporary urban space is not linear anymore, however is located and interrupted by several interludes where spatial experience could dwell within this space. Such an understanding linked both space and time with relation to memory to generate the collective concept of experience.

3. Definition [Space]: Metaphysics of the margin.

This space articulates both comparison and distinction on both urban and social fabrics. By transforming the static perception of MAGRA AL AUYON as a strong element of separation to a more dynamic condition where urban and social cohesion could be intertwined in the new marginal space.

These three paradigmatic dimensions are considered part of the urban phenomenology that hypothesized how this significant element connotes an essential characteristic, which can surge the complexity of the city. Thereby, it is essential to comprehend the complexity of this structure even though it recognized as a minuscule part of the city, nevertheless impactful, it thrusts strongly against the entire structure of the urban fabrics.

The objective is creating an architectural paradigm inaugurated by the continual reconstruction of memories; a glimmering glimpse that retains fragments of a past time and establishes monuments that insure historical continuity; by that, conveying a sense of nostalgia, awakening an archaic order lost to the city and bestowing upon memory a prestige.

MAGRA AL OUYON is polemical considering the fold between its mutating identity and diverse interweaving fabrics. Leaking dependability and consistency of the superficiality that defines Cairo as a product of vague metamorphosis, thus, it manifests Cairo's collective memory as realities.

Berlin Wall serves as a reference plane to illustrate objectives in architectural and urban terms:



Figure 03 / BERLIN'S EAST SIDE GALLERY AND GEDENKSTÄTTE BERLINER MAUER

Originally an element of separation that separated west and east Berlin, whereupon the western dwellers could feel the geopolitical division and eastern inhabitants were kept at bay by enforced barriers acting as a sword slashing the city's continuum. However nowadays as a relic of the past it is a preserved monument that is carved as part of the city's identity.

The premise of preservation was founded upon mimicking an exhibitionist effect where elements co-existed. Naming a few, include the dissected border at the Bernauer Strasse: a monument of the past and a newly proposed memorial that serves as a script where the spirit of the age comments on the past. The monument is preserved and restored to its original state as a relic of the past. The memorial designed by Kohlhoff and Kohloff in 1994 serves as a theatre that exhibits contemporary artistic expression unfolding its cultural incorporating effect and defiance to the spirit embedded within the site. Existing along side, is the East Side Gallery: an open air gallery where art as reflection on time was exhibited, The Cemetery of invalid that highlighted the Hinter-land wall penetrated by multiple holes narrating the story of ship wrecked by time's cruel tempest.

Suspended as a monument that emanates an image of remembrance of its once established terror. The aim was not a mere projection of memory, rather awakening a contradiction and encompassing the void's envisioned future promises to the wavering spirits of the past. "The remains of the Wall as a monument of contemporary history have lost, for time being, their function as 'sites of dispute' and might now become 'sites of memory' [...] It allows one to make a difference between consensual and dissensual situations and to accept a monument's capacity to create dissensus – or to make it visible – as a positive quality, a social value." (G. Dolff-Bonekamper, 2002: 247).

Results / The fold manifesto

Life vested within the brute materialization of MAGRA AL OUYON is sprung by a continuum of variation due to its perpetual flow and constant metamorphosis from one state to another. Approaching it as an element of deterritorialization that morphs into a magnet of reterritorialization, generates a plane of immanence attracting the collective nostalgia and a sense of unity "[...] it is a plane of immanence that constitutes the absolute ground of philosophy, its earth or deterritorialization, the foundation on which it creates its concepts" (Deleuze and Guattari, 1994: 41); through revival of the protagonist's continuous active presence, this constitutes the construction of a linear story that can roam through a variety of spaces, creating a sequence of time images that give the user moving through sheets of the past a glimpse of the virtual whole of time, mimicking the suspense of strategic film directing where different layers of the past are deployed to coexist and influence the present "On the other hand Deleuze observed the existence of time-images that also capture the virtual existence of duration directly, but do so by focusing on the moment in the present when time splits." (Sutton, 2008: 94).

Simultaneously, through utilizing the ontological and epistemological magnitude of sensory experience, by focusing on another aspect of the fold where the optic and haptic entwine. The sense of space is inscribed by sensory experience, preserved by the memory of experience and through active bodily involvement does experience become deeply rooted within the soil of our memory "Rather, it is the 'echo' of this movement, stored deep within our bodies as sensuous memory. Schmarsow labeled this echo a "sensory residue"; the corporeal memory of our movement through space. This, for Schmarsow, is what makes our experience of space possible, and also, ultimately, what makes architecture meaningful." (Paiva, 2017: 88).

By adopting the three paradigmatic dimensions; MAGRA AL OUYON is exhibited due to the interweavement of an infinitely diverse set of ideas and matter: both temporal and spatial. Starting by way of revitalization its monumental identification through user interaction; the resurrected rekindles as the eternal flames of Mount Chimaera. Secondly, transformation as an urban tactic adds MAGRA AL OUYON's inner network to the prime matrix of networks that constitute Cairo's fabric: as a plug in part in a grandiose machine. Finally, its spatial definition becomes that of a space that insures the spirit of the collective across time by transitioning from a margin of deterritorialization into a focal point of reterritorialization: a locus solus.

"How can spatial memories find their places where everything changed, where there are no more vestiges or landmarks?" (Halbwachs, 1941: 222).

Conclusion

Through a deconstructive mechanism exposing the unfamiliar lurking within the familiar "Deconstructivist architects, however, discover and locate 'inherent dilemmas within buildings'⁸" (Mitrovi, 2011: 162) A fluctuating nature of identity emerges; due to the diversity of collective perceptions, MAGRA AL OUYON derives its different modes of identity through the multiplicity of gazes; through different perceptions that unfold the fold only to initiate new folds pressed on the internal structures constituting it as an urban artifact, ceaselessly varying its external relational constructs, where its engendered plane of immanence relentlessly folds and braids the internal and external threads imposed on/through the plane, acting as a cohesive that links the structures constituting the whole; it remains open; through the phenomena of supplementation it continually mutates "The universality of the supplement means that, potentially, any structural relation is bound to shift as additions are made to the 'original' structure" (Richards, Malcolm K. 2008: 23).

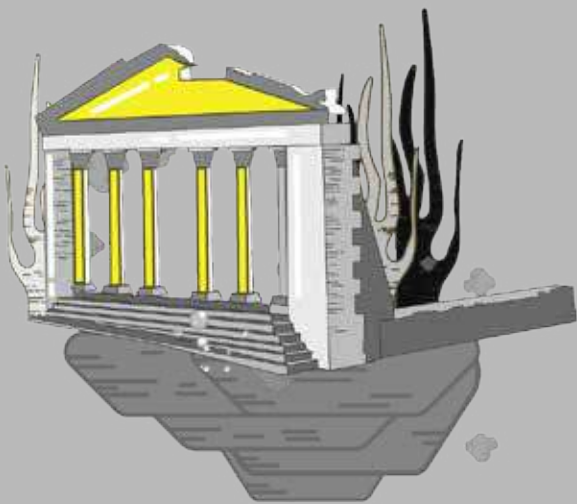
MAGRA AL OUYON a ruin, suspended along its plane of immanence in oblivion, progresses beyond time and is subjected to an eternity of folds "Every movement passes through the whole of the plane by immediately turning back on and folding itself and also by folding other movements or allowing itself to be folded by them, giving rise to retroactions, connections, and proliferations in the fractalization of this infinitely folded up infinity (variable curvature of the plane)." (Deleuze and Guattari, 1994: 38-39) Analogous to Albert Durer's *Melancholia*, 1514, it is a portrayal of an intellectual anxiety highlighting the marriage between geometry and emotions that gives birth to a fold of intellectualized melancholy and humanized geometry.

Henceforth, *Melancholia Cairo*.

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[MEM/19]



Ambiguous memorial landscapes in post-socialist societies. The case of Tirana's Pyramid

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abstract

In Tirana, the so-called Pyramid is a memorial landscape that was meant to commemorate the former socialist leader Enver Hoxha. It was opened in 1988, 3 years after the death of Hoxha. The Pyramid's function ceased in 1991 with the change of system. The Pyramid has become a landmark building in Tirana, and has been recurrently discussed, but never refunctionalized. It is in decay. This paper explores the Pyramid since 1991. Theoretically, the Pyramid is approached as a text and as an arena. The study shows that it is arduous to generate clear answers on the survival of the Pyramid, it has been subject to a series of complex, overlapping discourses around architecture and urban design, politics, history, memory and identity. In two surveys, on the street and online, 283 people gave their opinions on the Pyramid. A clear majority indicated that their attachment to the Pyramid is not very strong but did express opinions in favour of redevelopment of the Pyramid. The paper concludes with pointers for adding elements of memorial landscape to the development of the Pyramid.

keywords Memorial Landscape, Memory, Identity, Icon, Urban Development

Preface

On 27 March 2018, while the authors were working on the present paper, the Municipality of Tirana and the Albanian-American Development Fund signed a cooperation agreement for turning Tirana's Pyramid into a big multi-functional centre for youth, focused on digital education, art and culture. A public presentation of the plans was in May 2018. We continued to work with our paper on the inertia regarding the Pyramid for two reasons. First, there have been quite a few plans after 1991 about a new use of the Pyramid, but these plans have not been implemented. It cannot be taken for granted that this new redevelopment plan will succeed. Second, also if the now foreseen development will be implemented, the question about the past inertia remains valid. The question whether the Pyramid can still have a function as a memorial landscape remains relevant too.

1. Introduction

Throughout Central and Eastern Europe (CEE) the change from socialism to market economies and democracy in the early 1990's, was marked by an immediate and public rejection of socialism. The new model was the 'West' and most CEE countries regarded a dismissal of socialism and a 'return to Europe' as different sides of the same coin (Light and Young, 2015). All countries that had socialist regimes in CEE, have their architectural, planning and landscape legacy of the communist period. This legacy includes big objects; icons, with high symbolic significance (Czepczyński, 2010). After the change of system, the Berlin Wall was pulled down, everywhere in CEE statues were removed, streets were renamed, etc., to do away with artefacts and memorials from the past that did not fit into a new identity that post-socialist societies were creating. Most artefacts that have been built during the socialist period have been kept of course (Lisiak, 2009) and received new functions; indeed, many buildings with a public function could be adjusted to the new system. "The same time, very pragmatically, only a few iconic constructions and buildings were mimetically communist enough to be destroyed, in course of cultural landscape cleanings in post-communist Europe" says Czepczyński (2010, 73). And some of these mimetically communist buildings were just too complicated and/or disputed to be destructed. Perhaps the most dramatic example is the Casa Popolori in Bucharest – which is a hated symbol of the Ceausescu social period (Light and Young, 2013). Other icons were

outside cities and did not bother too much and were just left; Sofia's abandoned Buzludzha Monument is an example (Valiavicharska, 2014).

The built landscapes of capital cities are held to be important in the construction of political identities, especially during times of crisis and/or rapid political change (Light and Young, 2013; Diener and Hagen, 2013). In Tirana, the so-called Pyramid, a memorial landscape to commemorate the former dictator Enver Hoxha has survived all public and political discussions, albeit that the structure is now in a rather poor state. The Pyramid is an unusual surviving socialist structure, hampering the creation of an urban landscape that reflects and projects a new European capital identity – and that is what consecutive governments have been working on (Nientied and Aliaj, 2018). In Bulgaria, the empty building of the Mausoleum of Georgi Dimitrov, the secretary of the Comintern and the head of the Bulgarian state for the first several years of socialist government, was successfully demolished, in August 1999 (Valiavicharska, 2014). But its counterpart in Tirana survived till the present day.



Figure 1. The Pyramid in 2013. Source: <http://illyriapress.com/a-pyramids-life/>

The Pyramid has a set of features that - in combination - are rather particular. It has a remarkable shape (see Figure 1). It has functioned only a few years as a memorial landscape honouring Hoxha; it was opened in 1988, not long before the change of system. It is big but unlike the Casa Popului in Bucharest, not colossal. The Pyramid is in the heart of the city; the 17.000 m² land of the memorial landscape is valuable. And, popular demands for preserving the Pyramid have been modest. In other words, there seem to be no major motives for keeping the Pyramid. But the Pyramid is still there. In this paper we explore why the Pyramid has never been refunctioned. The Pyramid has been discussed in political circles and in academe too, and architects, planners and commentators in the media have shed their light on the phenomenon of the Pyramid. This discussion will be reviewed. Additionally, citizens in the street and online have been asked for their opinions.

2. Ambiguous socialist icons

The approach to the Pyramid will be from the angle of memorial landscape and urban identity and is informed by Dwyer and Alderman (2008), Light and Young (2013), Lisiak (2009) and Nientied and Aliaj (2018). The Pyramid may have lost its intended significance as a memorial landscape rather quickly (starting in 1991), still the Pyramid has been a very visible symbol of the socialist period. Indeed, the building is unique and cannot be overlooked.

Memorials are important symbols, expressing a version of history and casting legitimacy upon it too (Dwyer, and Alderman, 2009, 167). Memorials, be it buildings, statues, street names or landscapes, affect citizens' everyday life. They make the past tangible and familiar. Memorials are also a representation of power – the political elite decides what is worth remembering. Memorials are part of identity formation, symbols of historical constructions that are constantly being reconstituted according to a presentist agenda (Osborne, 2001), i.e. viewing the past with a somewhat limited to present-day set of attitudes and beliefs. Place identity develops according to these lines too (Nientied, 2018). Big monuments or memorial landscapes clearly can serve as highly visible markers of change.

Colomb (2011, cf. Light and Young, 2013; Begić & Mraović, 2014) suggests that in post-socialist cities, the nature of the reshaping of the landscapes has been influenced by several overlapping discourses around architecture and urban design, politics, history, memory and identity and the changing political economy. Re-shaping of landscapes is complex and is usually contested. Lisiak (2009) points out that in Central European cities memories and material histories of socialist regimes remain particularly difficult to address and incorporate into the new democratic present. The remnants of the socialist past such as prefabricated apartment blocks exist side by side with modern office buildings and brand-new war memorials, thus, creating a fragmented as well as aesthetically and historically diverse urban landscape (Lisiak, 2009, 449). In many CEE cities, 'city-texts' have been constantly reimagined and rewritten and where the same buildings or squares play diametrically different roles under various political regimes (ibid.). By given new functions, the structure remains, but identity changes and memories vanish.

Dwyer and Alderman's (2008) give three main approaches - metaphors - to studying memorial landscapes: as text, as arena and as performance. The memorial landscape as text means analysing the landscape as a symbolic system that is written and rewritten, read and erased by 'authors' and 'readers' within their own specific socio-spatial context. In this view, landscape is not imbued with meaning once and for all, but meaning is produced and revised, in a dynamic 'rewriting' process. The memorial landscape as arena refers to the politicized nature of collective memory – the arena referring to the political struggles and debates that revolve around the representation of the past through the landscape. The memorial landscape as performance directs attention to the ways in which the memorial landscape serves as a stage, literally and figuratively, for a wide range of performances. Memorial landscape can be constituted, shaped, and made important through the performance and display of collective memories – think of national parades and of re-enactments of historical battles. Performance can also be the commercial exploitation of the memorial landscape, to cover costs, develop or make profits. In our study of the Pyramid, the first two metaphors of text and arena are relevant. The Pyramid was only for a short period a stage for the purpose for which it was built, a memorial in honour of Enver Hoxha. In that sense, performance is not applicable since 1991, the activities in and around the Pyramid were not a stage for strengthening the memory of Hoxha.

3. The Pyramid memorial landscape

3.1 The Pyramid as text

Plot and the institutions involved

In 1988 the Enver Hoxha Museum was opened in Tirana as a memorial landscape and museum of the legacy of Enver Hoxha, the long-time leader of socialist Albania who died in 1985. The museum had a very remarkable form in a country which did not have many architectural icons.¹ Communism ended in Albania in 1991 and from 1991 on there was little interest in a museum celebrating the life of a former dictator. The building was renamed the 'Pyramid of Tirana', and was in the years following the change of system, left for later to be dealt with. So, the plot (of the movie in the making, so to speak) of the memorial was completely changed in 1991, with the transformation of a very closed socialist system to a market and democratic political system. The intended symbolic meaning of the memorial transformed as Albania entered the new era. From a top-down image of 'the beloved leader' to be remembered and to be given a very special memorial on a prime location, the general mindset changed to 'former dictator' and 'waste of funds'. It could not be conceived in 1985, when plans were made for the Mausoleum, that collective memory and identity formation would have such short expiration date. The first ten years of the transformation in Albania were very difficult. Albania had been more closed than other CEE countries (one may see it as the North Korea of Europe), and building new institutions and democracy were difficult tasks during the first decade after 1991 in a context with minimal state authority and at times anarchistic situations. In these circumstances, decisions about a new status for the Pyramid area were not a priority. While most buildings were re-functionalised, the Pyramid was not. The (weak) government's priorities were to get basic political, bureaucratic and market institutions working, not to be concerned with a former mausoleum.

¹ / See Iacono and Këlliçi (2016) for more details on the history of the Pyramid.

The spatial context and connections to the environment

The location of the Pyramid is in the city centre, off Bulevardi Dëshmoret e Kombit, the main central north-south axis. It is close to ministries, major hotels, the office of the prime minister, embassies and new commercial developments. Over time, the Pyramid area developed into an eyesore in the environment. It is currently in a dilapidated state, and just some cosmetic improvements have been made in 2017. The parcel of the Pyramid and surrounding park is 17.000 m² and has a substantial value. The Pyramid is like an abandoned structure still in place, on expensive ground, next to government buildings in the city centre. As a public space, it is clearly 'under-managed' resulting in neglect and degradation (Pojani & Maci, 2015).

Activities and commerce

The Pyramid has been used on an ad-hoc basis for various purposes. The building has served as an exhibition hall, as a night club, as a conference centre. A TV broadcasting station has been occupying the office buildings of the Pyramid till the present day. During the Kosovo War, the Pyramid even served as a temporary NATO base, and during the last few years, it has been used occasionally for exhibitions and gatherings.

The Pyramid now attracts other activities: young people climb the Pyramid (see Figure 2). The structure was enlisted on the website of Dark Tourism, that says "Time required: not long, maybe 15 minutes or so to walk around it to view the structure from all angles, and maybe even climb to the top. Most normal tourists and locals alike spend no more than a few seconds glancing at it, shaking their heads, or ignore it altogether."²



Figure 2. The Pyramid, September 2015. (Photo: Eranda Janku)

Visitors experiences

Dark Tourism's website is a first experience. The building is not open to the public any more, but hosted several occasions in the past, from exhibitions to book fairs. The inside of the building is not associated any more with communism and does not remind the visitor, also because of the peculiar shape - of the mausoleum of Enver Hoxha. Visitors who have been inside the Pyramid at various occasions and in different times, all agree (including the authors of this article) that the pyramid is an unusual building and that it leaves an impression. A video was posted in 2016 on the inside of the Pyramid³.

Authors and ambiguous texts

There is no lack of opinions and viewpoints of the Pyramid. Especially after the 2011 plans to demolish the Pyramid and build a new parliament on the spot, it was a hot topic for debate. This debate was on politics rather than the preservation of socialist heritage, i.e. the meaning of the Pyramid in the urban landscape. Viewpoints include the following.

Fuga (2014) claims that the Pyramid does not represent nor symbolize the communist period or the communist leader. He argues that the huge construction, after it was built, served as a museum only for 3 years. It was never associated with the objects inside. During the late 1980's the people of Tirana were observing how the government was preparing to leave the ideology, and how, during the then severe economic crisis, the government still had money to waste on such a colossal infrastructure. The Pyramid should not be considered as cultural heritage from the past, Fuga (2014) further states, since there is no memory inside the Pyramid itself - the Pyramid has no relation with dictatorship. He concludes that the Pyramid is a space for re-development. It is a discourse over the land on which the object is built, the object itself has little or no meaning, Fuga claims.

Domus authors Stefa and Cantoni (2011) wrote after the announcement of the Berisha government (in power during two terms before in 2013 the socialist party of Rama government took over) that the Pyramid would be destroyed and replaced by a new Parliament; "In this sense, the pyramid becomes an innocent victim (the target) of a political decision, which somehow failed to see the mass of concrete and glass as the physical image of a constantly changing people. It is as if the narcissist power that generated it to exalt the figure of a man and celebrate his memory were raising its head again, decades later, in an attempt to bulldoze what has today become a receptacle of shared values, a place that belongs to the Albanian people without them being the owners.", and "Re-enacting the functions and significance, contemporary Albanian society, therefore, proved to have metabolized its own history, conscious of the dominating complexity of this process, but even more aware of the impossibility of building a future that did not have a past."

After a brief account of what the Pyramid meant in the daily life of Albanian citizens, commentator Iva Gjoni wrote a small nice piece in 2013 in the *Illiria* "In the 90's, the pyramid was attacked by little scoundrels in rags, some were gypsies that climbed to the top and slid to the bottom on the slanted walls. All the pictures of the dictator, together with the clips on the TV screens, were tossed into an old storage facility. The pyramid's belly was emptied. Outside, in the fancy gardens positioned between marble stairs and fences, a new tradition was begun: hanging out. The youth crowded the marbled steps — girls just emerging from communism, boys wearing tight blue jeans (brought as gifts from the West or bought at the new market that sold used Western clothes). That was it. The pyramid had become a meeting place... The pyramid now symbolized nothingness, some kind of life that had nothing to do with death any longer."⁴ The term 'nothingness' was seen by Gjoni in relation to the original intention of the Pyramid, as a mausoleum of Enver Hoxha.

Dyca (2011, 7), then student, writes: "As the debate about the Pyramid proceeds, one can't help but start considering the Pyramid as a symbol of what it represents for the Albanian society today, rather than as just decayed, dysfunctional and distasteful". Student Myhrberg (2011, 54-55) claims that the comprehension of communist heritage changes, that there is a tendency to appreciate it in a different, less rejecting manner. One of her informant's points at the lack of self-analyzation or self-criticism in the Albanian society over the communist period. The generation born after 1991, grew up in a period in which Albania wanted to forget the painful communist period, and has therefor limited understanding of what happened and what the significance and history of the Pyramid were. Glass (2011) collected at the time of the debate regarding whether the Pyramid should be demolished for a new parliament, several conflicting opinions. Politics, heritage, identity and other themes, are all mixed up during the discussions.

In 2014, the Albanian Ministry of Culture in collaboration with Polis University⁵, organized in the framework of the Tirana Architecture Week an open international design competition to receive concepts / project ideas from students and young architects for the Pyramid square in 2014. The goal of the competition was according to the brief 'to provide a strategy for harmonizing the layers of history into an actively functioning, attractive and distinctly contemporary space by re-envisioning the Pyramid Square as a part of an active system within the city'. And, 'The international competition for Pyramid Square is also part of the strategy of the Ministry of Culture to re-activate the ghost spaces of the communist past.' A winner was announced, but the proposal was not followed

2 / www.dark-tourism.com/index.php/15-countries/individual-chapters/89-hoxha-pyramid-tirana-albania#b

3 / www.youtube.com/watch?v=JVkUbrP7i-M

4 / illyriapress.com/a-pyramids-life/

5 / See the special issue of *Forum A+P*, [://issuu.com/polisuniversity/docs/forum_a_p_vol_08](http://issuu.com/polisuniversity/docs/forum_a_p_vol_08)

up. It was aimed as an activity to open a debate about the Pyramid, and raise awareness for both, society and government, that it is time to take a decision about the future of the Pyramid, in order not to ignore it further.

Isto (2016, 26) suggests that the current rhetoric and projects of the prime minister Edi Rama and Tirana's mayor has been one of renewal: his reforms since entering office are collectively referred to under the broad concept of Rilindja" or 'Re-naissance' with, according to Isto, no understanding of history, since everything must be 'new'. The mayor of Tirana calls for 'memory', but the designs of memorials do not stimulate memory. During the last two years, more debates followed about prime minister Rama's preference for modernist design. Lately, a debate developed around the intention to destroy the old theatre of Tirana and build a new one. In these debates, politics, planning, architecture, culture, memory and identity are all mixed up.

3.2 The Pyramid as arena

The Pyramid has been subject of (political) discussions, that did not reach a conclusion of what should be done with the Pyramid - to demolish or improve and redevelop it. More accurately: conclusions were reached but these conclusions have never been effectuated in practice. Various proposals have been made to adapt the building to present needs. The first idea was to turn the Pyramid into an opera. In 2005 the then Berisha government proposed to turn the Pyramid into a national library, but a year later the same government stated that the Pyramid was meant to be developed into International Cultural Centre Pjeter Arbunori, named after the late parliamentary speaker and political prisoner who died that year. In 2008 Berisha's government changed its mind again and asked the Ministry of Culture to transform the building into a pantheon that would host a theatre, a music auditorium, an art gallery, an underground library and a youth centre.

In 2009 the Pyramid was declared a cultural monument. In some countries, the status of 'monument' has consequences - the owner may have to restore the building, the building should be kept in its original form, and the use of the building needs local government permission. In Albanian society however, the monument status is not that serious.



Figure 3 Pyramid entrance, March 2018 (photo: Peter Nientied)

In 2011 there was much discussion again about the possibility suggested by the Berisha's Democratic Party government to demolish the structure and use the land for a new parliament building. There were people who opposed the demolition and submitted a petition, signed by 6100 people. The opponents came from circles of

architects and historians, and from other parties. Their main point was that it was not correct to erase the country's recent past.

Shtylla (2014) discussed the proposal to demolish the Pyramid and use the land for a new parliament. He claims that the initial intention (a memorial) and the shape explain why all projects that aimed to transform the interior into offices, theatre, library, or exposition area, never worked. The Pyramid was created as a memorial, and it cannot change its character. For Shtylla (2014), the Pyramid is a symbol of the communist ideology and built in the past as a memorial of the regime. Shtylla suggests that it should be demolished and the new symbol of a parliament as a house of democracy be built.

Early 2017 an event was organized in the Pyramid around the question of its future use. The building was cosmetically improved, and an interesting exhibition was opened that featured various architectural and urban projects and strategies by two architecture schools of Italy. Tirana Mayor Erion Veliaj announced in June 2017 intentions to transform the Pyramid into an International Cultural Centre, an art centre promoting young artists⁶. The structure and the land of the Pyramid is owned by the government and the Pyramid is since 2016 under municipal jurisdiction. This makes decision making about the Pyramid easier, since decisions no longer need to be taken by the national government and in the national parliament, but now fall under the responsibility of Mayor. After the elections of 2017, the socialist government obtained a majority at both national and municipal levels. Mayor of Tirana Erion Veliaj served as Minister of Social Welfare and Youth in Edi Rama's cabinet from 2015-2017. If Veliaj and Rama agree on a new option, developments can take place; as mentioned in the preface, in March 2018 a new plan was announced, and in May 2018 shown, turning Tirana's Pyramid into a big multi-functional centre for youth, focused in digital education, art and culture. Architectural office MRDV put the plans for the initial design one day after the May 2018 presentation on their website⁷.

4. Conclusion so far

Diener and Hagen (2013) discuss three main themes of scholarly and popular discourses on the transition from socialist to post-socialist urban identities. The first theme is 'active forgetting and selective remembrance'. The demolition of socialist icons is an example of this. The persistence of the Pyramid shows that policies of active forgetting have not been applied. Selective remembrance was that the name of the structure was changed into the Pyramid soon after 1991. The second theme of ambiguous spaces and banal practices is relevant for Tirana's case of the Pyramid. Diener and Hagen (2013, 503) write "... other socialist relics permeate the urban landscape, but their ideological foundations are largely forgotten amid the banal routines of everyday life and localized identities." In other words, in everyday life, people tend to forget what the origin of monuments or memorial landscapes was, and, as time passes, the intended meaning of memorials ceases to exist. This happened, the Pyramid became a place for the youth for hanging out. The third theme of Diener and Hagen (2013) is globalized identities and cultural hybridities. Post-socialist urbanism has featured efforts to reconcile traditional notions of local and national identity with new customs of regional and global integration. Cities were to become attractive places for foreign investment. This theme is also clearly visible in Tirana, and that renders it surprising that the land of the Pyramid memorial landscape has never been exploited.

We have clarified that for over 25 years no decision has been reached about the Pyramid's development that led to more than temporary use (except the TV channel occupying the office part of the building). The conclusion is also that no simple answer can be given to the question of the surviving socialist icon. During interviews conducted with various informed people, a wide range of accounts and opinions were given. These interviews confirmed to the researchers the observation of Coulomb (2011); also, in Tirana the debate on the Pyramid is influenced by several overlapping discourses around architecture and urban design, politics, history, memory and identity and the changing political economy. Albania's governments, like other CEE governments, have not been very sensitive to Albania's history in the 20th Century - erasing the communist past was a leading practice. Only recently, the past of Albania has been appreciated again (Isto, 2017) but some claim that this is for tourism rather than the genuine recognition of the country's socialist period. What people on the street, Tirana's citizens, think and feel about the Pyramid, is not very clear as yet. Iacono and Këlliçi (2016) conducted in the period December 2013-February 2014 a survey, partly online and partly face to face, among 360 respondents. The results show that in that period over 75% of the respondents were against the demolition of the Pyramid and that more than 75% of the respondents older than 60 years, feel attached (45% even 'very attached') to the Pyramid (61% for the whole group of respondents). Older people tend to associate the Pyramid to Enver Hoxha and younger people to the city of Tirana in general. The researchers don't explain why the attachment (which is a positive emotion) among senior citizens is high, while the sentiments regarding the socialist period are mostly negative.

6 / *Albania Daily News*, 30-6-2017

7 / See: www.mrdv.nl/en/projects/tirana-pyramid

It was decided to conduct a survey with a short questionnaire, asking opinions from people on the street, next to the Pyramid and after that, inviting respondents through social media. To select questions to be asked, we scrutinized our examination of the Pyramid, and came to the following points.

1. First, the Pyramid has hardly been seen in Albania as a part of the identity of the former regime, because soon after the opening the system changed, Also, the structure was so different, very unlike the modernist buildings that were typical for the communist period. It has been more of an eccentricity than a memorial icon and space. Everyday life goes on and the memory of the Pyramid wanes, the Pyramid is mostly a remarkable object in the city; a landmark to be renewed to some, an idle eyesore to many.
2. Second, governments have discussed and quarrelled, have developed ideas, but Democrats nor Socialists could reach a conclusion that was effectuated. The Pyramid has been a theme for political quarrels, promises, design competitions without follow-up. The result of the long-drawn-out discussion may be that citizens don't seem to care very much anymore – as life goes on and politics are not effective.
3. A third point is that the structure is in a bad shape, and temporary use has become impracticable.

5. Survey results

To put these conclusions to the test of Tirana's citizen' opinions, a survey was conducted during March 2018. First a face-to-face survey was done, followed by an on-line survey. We opted for a 4-point Likert scale, to stimulate respondents to choose colour. Table 1 below shows the answers to the questions per age group for the face-to-face survey.

*Table 1: Average score per age group on survey statements, street survey.
Explanation: Fully agree=1, Agree a bit=2, Disagree a bit=3, Fully disagree=4*

Face-to-face survey (n=100) Question	18-25 y (n=41)	26-40 y (n=28)	41-60 y. (n=18)	61> y. (n=13)	Average
5 The Pyramid is an important symbol for Albania	1.7	1.7	1.9	1.9	1.8
6 The Pyramid reminds me of former leader Enver Hoxha	2.7	2.4	1.6	1.5	2.2
7 I feel attached to the Pyramid, it should be kept	2.9	2.9	3.3	3.7	3.0
8 The Pyramid should be replaced by commercial use (offices, housing, hotel, etc., at the cost of congestion)	1.2	1.3	1.3	1.3	1.2
9 The Pyramid should be improved and turned into a park (at public cost)	1.3	1.4	1.4	1.2	1.3
10 The Pyramid should be improved and serve as a touristic attraction	1.4	1.3	1.6	1.1	1.3
11 The Pyramid and the Pyramid Square should be sold to the highest bidder	2.9	3.1	3.0	3.0	3.0
12 Politicians talk for 25 years about the Pyramid and nothing happened. It will take years before something happens	1.5	1.7	1.0	1.7	1.5

The number of respondents of the face-to-face survey was limited to 100, and therefore no statistical elaboration of results has been carried out. In practice, 135 people have been addressed to come to 100 valid questionnaires – 35 people did not want to co-operate since they were busy or not interested, the percentage of non-replies increased with age. The number of people that responded 'don't know' to Q12 was high, 35 out of 100 were missing values. Therefore, the answers to this question have a limited significance.

After the survey on the street, the survey was put on-line and via networks offered to interested people. 183 responses were processed. The online survey has, compared to the face-to-face street survey, a bias towards the 26-40 years old group. The number of responses from 61> years was just 1, this has not been stated in the table (but included for the calculation of the averages). In the online survey, the number of missing values on Q12 was lower, 31 (17%, against 35% in the street survey), but still noteworthy. The results of the on-line survey are presented in Table 2 below.

The figures in the online survey appear to be a bit more outspoken, perhaps because this survey was on voluntary basis and only people with an interest in the future of the Pyramid did the survey. Since the two surveys have inherent limitations in terms of representation, no T-tests on averages are calculated, or other firm conclusions regarding differences between the street survey and the online survey are drawn.

Table 2: Average score per age group on survey statements, on-line survey.
 Explanation: Fully agree=1, Agree a bit=2, Disagree a bit=3, Fully disagree=4

On-line survey (n=183) Question	18-25 y (n=67)	26-40 y (n=99)	41-60 y. (n=16)	61> y. (n=1)	Average
5 The Pyramid is an important symbol for Albania	1,5	1,2	1,6		1,3
6 The Pyramid reminds me of former leader Enver Hoxha	2,6	2,4	1,8		2,4
7 I feel attached to the Pyramid, it should be kept	2,6	1,9	2,1		2,1
8 The Pyramid should be replaced by commercial use (offices, housing, hotel, etc., at the cost of congestion)	1,1	1,2	1,3		1,2
9 The Pyramid should be improved and turned into a park (at public cost)	1,2	1,3	1,1		1,2
10 The Pyramid should be improved and serve as a touristic attraction	1,2	1,3	1,1		1,2
11 The Pyramid and the Pyramid Square should be sold to the highest bidder	3,7	3,6	3,0		3,6
12 Politicians talk for 25 years about the Pyramid and nothing happened. It will take years before something happens	2,3	2,1	1,9		2,2

The broad tendencies in the two tables are in our view comparable and can be summarized as follows.

- Respondents think that the Pyramid is a quite important symbol for Albania (Q5), but at the same time, on average, the answers to the question on attachment (Q7) show lower averages, especially in the street survey. The public will not cry so to speak if the government decides to demolish the Pyramid. Note the difference between the street survey and the online survey – online respondents showed more attachment, and this is seen as an indication of the bias in the sample.
- The answers to questions 8, 9, and 10 signify that the public thinks that something should be done with the Pyramid. Scores on these questions tend to be ‘fully agree’. They are interpreted as ‘away from’ rather than ‘towards’ responses: the public is not very outspoken regarding what must be done with the Pyramid area (differences between the answers to questions 8, 9, and 10 are limited, while these questions give quite different options), but they agree that something should be done.
- The respondents also think that the Pyramid area should not be sold to a highest bidder.

Differences in answers between men and women was minimal and the same holds for educational level and length of residence. Remarkable is that this survey comes to somewhat dissimilar results than the those in study of Iacono and Kelliçi (2016) done late 2013-early 2014. In that study results showed that people felt attached to the Pyramid and were against demolition. Our survey comes to other less outspoken results. Perhaps 4 more years of seeing the Pyramid getting further dilapidated, changes the minds of people.

With regards to the conclusions drawn in section 4, we submit the following comments.

First, the scores on Q6, whether the Pyramid reminds people of the former leader Enver Hoxha, were a bit below the average of 2,5. We can conclude that the people have a certain association of the Pyramid with the former regime (when asked), but not very strong feelings. Second, the respondents in our surveys do care about the Pyramid, and express that something should be done with the Pyramid. The answers tend to point out that what will be done is less important than improving the Pyramid and turn it from a blot on the landscape, into a fit to be seen building. Our third point was that the structure is in a bad shape, and temporary use has become impracticable. Since this is a technical issue, no question on this point was asked to the public. It can be concluded that cosmetic improvements are not good enough, the respondents in our surveys express quite strongly that the Pyramid area needs new development.

6. The Pyramid and a memorial landscape

In 2017, prime minister Edi Rama opened a new main square of Tirana, that should serve as a national symbol, linking past, present and future (Nientied and Aliaj, 2018). Most citizens of Tirana would agree that the new modern square does not give a stimulus to reflect on the past. Various authors on post-socialist cities have described that in many CEE countries the attitude towards the socialist past development gradually changes from rejection to a more ambiguous attitude and call for a re-appraisal of monuments and memorial landscapes. Begić & Mraović (2014, 34) suggest “By their mere presence they [socialist monuments] constantly remind of the

historic fact that a different social order once existed and make palpable the possibility of an alternative social organization. To symbolically erase that past, one would have to either erase or otherwise mute the symbolism that these structures carry. Alternatively, one could incorporate these monuments as markers of a period that has now passed but that still represents a part of one's personal history as well the history of one's nation, however undesirable or unappealing it may seem." Czepczyński (2010, 77) argues in a similar fashion that "The attitude towards post-socialist landscapes mirrors precedent humiliations and dictatorships, as well as present acceptance and reconciliation with own history and can be seen as explicit indicator of political and cultural transformations." Trying to wipe out the socialist part because it was an inconvenient period that society does not want to be remembered of, does not lead to the much needed 21st Century skills such as analysis and reflection, but leads to accepting a lack of taking responsibility for the past and not seeing the lessons that should be learned for present day and the future.

The Pyramid can function as a 'vehicle of memory' (Young and Light, 2015) and can tell the story of the oppression, human rights abuses and suffering inflicted by the Party. It can also play a role for visitors - international and especially domestic tourists- and educational formation. Younger people can ask the uncomfortable question how it is possible that that everybody seems to be a victim of the past socialist system and apparently nobody was responsible, except for Enver Hoxha, whose memorial visitors stand in front of. An element of post-socialist societies address to past injustices, is developing a narrative of the socialist past.

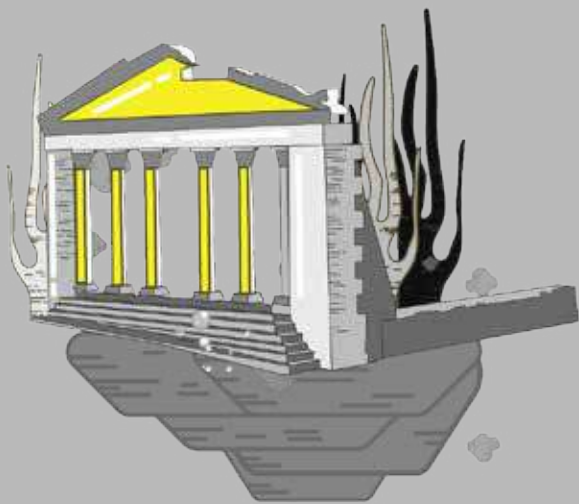
The public is not very attached to the Pyramid but wants something to be done. Currently, plans are being made to refunction the Pyramid. Based on the line of thought explained above, we submit that a small but significant part of these new plans could be to develop the Pyramid area as a memorial landscape - to create a memory of the socialist past, what happened during that period which lessons can be learned from that period. The Pyramid area as a memorial landscape could be well combined with a new function. A narrative to be developed could be that this building is refunctioned to youth and 21st Century skills like creativity, arts, critical thinking, etc., as an answer to the past socialist period in which the Pyramid area was, at huge cost, for the memory of a leader who tried to stop people from critical thinking and creative expression. Developing landscape identity that stimulates citizens and visitors to reflect on the past and look to the future, is far from easy, and requires a transdisciplinary approach and public participation and the integration of multiple methodological toolboxes, combining quantitative and qualitative research methods, for a better understanding of underlying processes (cf. Ramos et al., 2016). The Pyramid, irrespective of the future function of the building, can be a memorial landscape. Indeed, whatever the outcome of the current initiative to create a big modern multi-functional facility for digital education, art and culture - it is worth considering that the genesis of the Pyramid and the socialist period that governments have tried to actively forget, should receive adequate attention. In that way, past, present and future, will be aligned.

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[MEM/20]



Japan After The Bubble. What Has Remained Of The Metabolist Epic In The Post-Crisis Age?

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abstract

There was a time in Japan when economic growth seemed unending, ideas were spreading at incredible pace and urban-natural territories and resources were considered endless and thus fully exploited.

That euphoria, rising as a creative reaction from the radioactive ashes of the nuclear defeat in the Second World War, brought the "children of war" generation to think of a new environment and bring Japan into a brighter future of megalopolises and a renovated human society based on a comparison with the fluid dynamics of biology. Men of their time, in 1960, Kiyonori Kikutake, Fumihiko Maki, Masato Otaka, Takashi Asada and Noburu Kawazoe, guided by Kenzo Tange and sided by Arata Isozaki created the Metabolist Movement, the Japanese answer to the early post-modernist reactions that brought to the creation of the Team 10. Their ideas and realizations not only deeply influenced Japanese society as a whole but also brought Japanese architecture at the center of the world stage. More than fifty years have passed since those days and Japan is quite a different country: older, richer overall though with the awareness of a poorer future expectancy for the fewer younger generations. The economic bubble has exploded at the peak of Japan 1980s' hubris and bared the truth of that exciting growth. As a consequence, also the attentiveness for the environment increased as well as nowadays Japanese people know the damages made to their country from decades of territory exploitation.

What has remained of the Metabolist ideas today? How these ideas evolved to be adapted in a drastically mutated society? A new generation of architects has risen from the economical ashes of the bubble. A generation grown in a post-modern age, deprived of great universal solutions to the big tasks but not without ideas. Can we call them the heirs of Metabolism?

keywords Japanese Architecture, Metabolism, Ageing Society, New Avant-gardes, Urban regeneration

Introduction

"During the 1960s Metabolism developed within a wider national urban strategy that was proposing huge systems of living environment but today the whole system is going down as the population and society itself is shrinking, hence the younger generation is more concerned and interested in renovation and recycling of the existing spaces. Nevertheless, I feel that even in such a shrinking situation, we could pave way for new themes, find new questions, and have a new approach for redesign, so we should still be very creative and propose some positive way to make a better living environment for our future."

(Scaroni, 2017: 188)

In this recent interview, Sou Fujimoto resumes a complex canvas that involves more than fifty years of Japanese society, architecture, urban and social evolutions. Metabolism architects left an indelible heritage in terms of ideas, proposals, few realizations and many projects that helped shaping the idea of Japan as the "land of the possible future" within the world postwar imagery. Metabolism movement is widely known in Japan and since 2011 the main characters of that era benefitted of a renewed wave of interest and study. Anyhow for many decades after the Osaka 1970 Expo (milestone for the Metabolism), the group was mostly ignored while not harshly criticized for its ideas. (Ito, 2007: 101) The rise of interest on Metabolism, restarted after the 2011 great exhibition at the Mori Museum in Tokyo for the 50 years foundation anniversary¹, somehow forced the younger generations of Japanese architects to deal with such neglected heritage. Fifty years after the beginning of the revolution of this last avant-garde, Japan is an aged archipelago with more than two decades of economic stagnation and identity crisis. Within

this dispirited context the new generation of Japanese designers work and mediate on a post-modern and anti-utopian reality that generated two different urban impulses: a never-ending shift of the population towards the big urban centers (Hasegawa, Kakiuchi, 1979: 47) and a more recent trend of countryside repopulation thanks to innovative government policies. (Yagi, 2014)

This paper will make a comparison between these two different periods of Japanese history and analyze from both the social and architectural points of view how the newer generation of Japanese designers has been able to answer to the requests of an ever-changing complex society and eventually readapt the many revolutionary instances brought on by the 1960s Avant-gardes to a contemporary context. In order to offer a more comparable system of analysis, the two historical periods/groups are here analyzed through the lenses of three main social and design themes: Environment, Technology, and Inhabiting. A recent exhibition held in Rome in 2017, namely "Invisible Architecture"² faced such analysis with the same premises but on a wider scope. This paper seeks to further develop such topic while focusing on what unites and, even more importantly, divides these two generations. For this reason, and with particular mention to the contemporary architects, the projects were chosen as examples of what were and are the social needs for the two periods taken into consideration. Such needs have changed with time and the answers are thus different. Therefore the projects offer a deliberately partial but sufficiently varied background. Likewise, we did not want to provide an exhaustive view of the Japanese scene, preferring instead to choose architects less representative of the current international mainstream and more locally based.

A look at the (recent) past

The avant-gardes of the first decades of the 20th century had redefined the themes of the applied arts through the newest discoveries, both technological and philosophical, in an era permeated by the strong energies and tensions that had later brought to the two great world conflicts. The message that the first avant-gardes left was partially regained in the period of great optimism and great technological revolution of the early 1960s. In the Western world and in Japan many groups of artists, philosophers and politicians were formed to try to revolutionize their respective societies at a time when great events would become more and more common legacy for all the citizens of the free world. (Kurokawa, 1967: 255)

In the architectural field, after the rationalist experience of CIAM's, the adventure of Team 10 was born with some difficulties in the late '50s, with people like Paul Virilio, Yona Friedman, Alison and Peter Smithson, Giancarlo de Carlo. Shortly after, in the Japan of 1960, a group of young architects, writers and theorists largely connected to Kenzo Tange, created the Metabolism movement with the self-produced booklet "Metabolism: The proposals for a new urbanism". (Metabolism, 1960) The themes of the social and cultural debate of the time led to design propositions focused on the commitment to the use of the most advanced technology, the infrastructural approach centered on a social revolution, the hypothesized use of modular technologies, the mobility through environment and space, the mega-structure, the introduction of topics such as nomadism and the resulting idea of capsules able to accommodate a growing mass population. (Kurokawa, 1997: 37) Last but not least, the importance for this new culture to search for identification in magazines, documentaries and TV in order to spread the ideas among masses of images consumers. (Nango, 2011: 263)

In Japan, the Metabolists, after a more self-promotional initial phase, succeeded in getting out of the underground contexts to become part of the Japanese urban establishment, trying to seize the opportunity to realize their great visions. In the late 1960s and early 1970s, the more strictly theoretical and avant-garde momentum began to fade. The Metabolists found their consecration with the massive participation in the Osaka Expo of 1970 when they achieved success with the realization of their experimental design possibilities. At the end of the 1970s, almost no architect of the Japanese (or world) avant-gardes was still really anchored to the research from which they had started. Perhaps, among the Metabolists, only Fumihiko Maki continued, in the following decades, his experience in his personal interpretation of the original Metabolist ideas through the project of Hillside Terrace in Tokyo, carried out from the 1970s up to the present day. (Maki, 1979: 92)

ENVIRONMENT (or the early steps to understand ecological issues)

The ideas of ecology, environmental protection and peaceful coexistence between man and nature in the mid-1960s were still under development. The strong passion that moved the first organized ecological movements tried to oppose the total disregard for environmental sustainability that was established in the industrialized societies rising in the period of strong development followed in the aftermath of the Second World War. In Japan, the Metabolists had a wide range of opportunities to design and concretely realize their ideas on a large scale. Through sizeable infrastructural projects, the Metabolists have managed to directly, even though partially, influence the development of a country that has seen daring achievements in the 1960s and early 90s, such as the Shinkansen, the Akashi bridge and the Seikan submarine tunnel, all record results in their respective categories.

Their work influence can be also reflected in the development of the huge urban continuous infrastructure born along the linear megalopolis of Tokaido, a mobility corridor connecting Tokyo-Nagoya-Kyoto-Osaka. (Pernice, 2013) Through their projects, Metabolists displayed their choice for a pragmatic approach to the environment, oriented to use the land as an exploitable resource in order to achieve better social and economic development. Ultimately, the Metabolism approach to the environment was less attentive to conservation and respect for nature, and tighter to rethink natural space and to recreate artificial territories for the benefit of people and modern development. (Schalk, 2014: 293) A first example of this approach can be found in the seminal *The Marine City* of 1959 by Masato Otaka that was directly related to the national debate on the scarcity of land developed after the start of the post-war demographic boom. This project sought to respond to the need to find a different model of urban growth that could follow the continuous and rapid transformation of society. The method proposed by Otaka is driven by its intent to find a connection between architecture and technology in order to propose a new model of city built on artificial land on the shores of the bay of Tokyo. (Kuan, 2013: 197) Another project conceived as a solution to an environmental problem is Kisho Kurokawa's *Agricultural City* of 1960. (Fig.1) It was born as a reaction to the devastation suffered by Kanie, the architect's hometown, by a typhoon in 1959. Kurokawa here proposed to overcome the model of traditional agricultural production, developing a model of free expansion. The city develops on two levels, the lower one where the production and the vehicular movement are concentrated, and the upper one, 4 meters from the ground, consisting of a horizontal grid with square modules containing pedestrian paths as well as houses and services. Each grid unit is composed of 500 square meters and each village has about 2,000 inhabitants. Further units can be joined to the previous expansion system in a theoretically infinite way. (Mori Art Museum, 2011: 58)

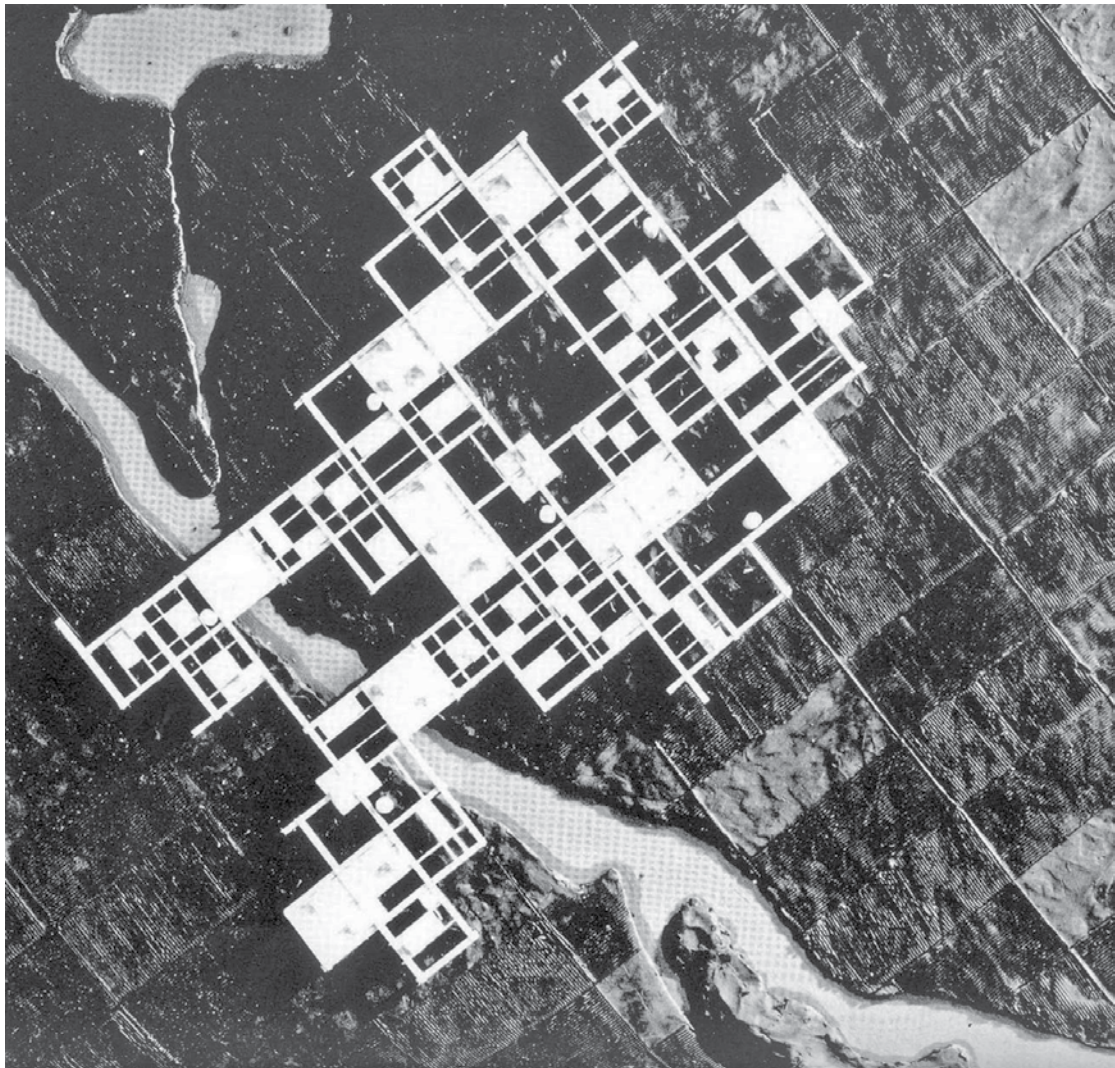


Fig.1_Agricultural City (1959) by Kisho Kurokawa

1 / The exhibition "*Metabolism. The city of the future*" was held in the Mori Art Museum in Tokyo between 25th September 2011 and 3rd January 2012 and curated by Nanjo Fumio, Maeda Naotake, Kataoka Mami and Tagomori Miho.

2 / The exhibition "*Invisible Architecture. Italian and Japanese Architectural Movements in the 1960s and 1970s and Contemporary Debate*" was held in the Bilotti Museum in Rome between 18th January and 27th March 2017 and curated by Rita Elvira Adamo with the theoretical support of the authors of this article.

TECHNOLOGY (or the possible future that has never been accomplished)

The 1960s were probably the decade in which the world technological progress seemed to be relentless, and would have led the overall society towards infinite possible goals. This common optimistic feeling, supported by the extraordinary conquests of space (1961) and Moon (1969), has encouraged also the architects of Japan to think big, thanks to some intuitions that have been theorized by avant-garde groups. Research on modular structures, in particular, had allowed the Metabolists to develop both theoretical and practical experimentation for the construction of potentially infinite size buildings in their spatial expansion. Kenzo Tange and his team, Arata Isozaki included, conceived the Tokyo Plan in 1960, the first big fresco on the enormous possibilities that the technologies of the Japanese economic boom could allow. (Mori Art Museum, 2011: 63) Large bridges over Tokyo Bay, modular structures and a new world would have brutally transformed the traditional city. Another invention at the time was the structural "central core", mainframe of Metabolist experimentation on mega-structures and was adopted in several projects including the Nakagin Capsule Tower by Kisho Kurokawa (1972) and the Shizuoka Press and Broadcasting Center by Kenzo Tange (1967), both in Tokyo. (Mori Art Museum, 2011: 72) Another example of Metabolist technological experimentation can be found in Kiyonori Kikutake's Marine City (1958) and Unabara Ocean City (1960) proposals. (Fig.2) Key words behind these projects were the Artificial Ground, Self Sufficiency, Self Propagation, Modularity and Mega Structures. However, the realization of the optimistic fresco of the 1960s did not occur, interrupted by the first energy crisis of the following decade. (Mori Art Museum, 2011: 49) The 1970 Osaka Expo was the stage to summon all the most technologically advanced and futuristic ideas of the group and proved to be the Swan song for the Metabolist Golden Age.

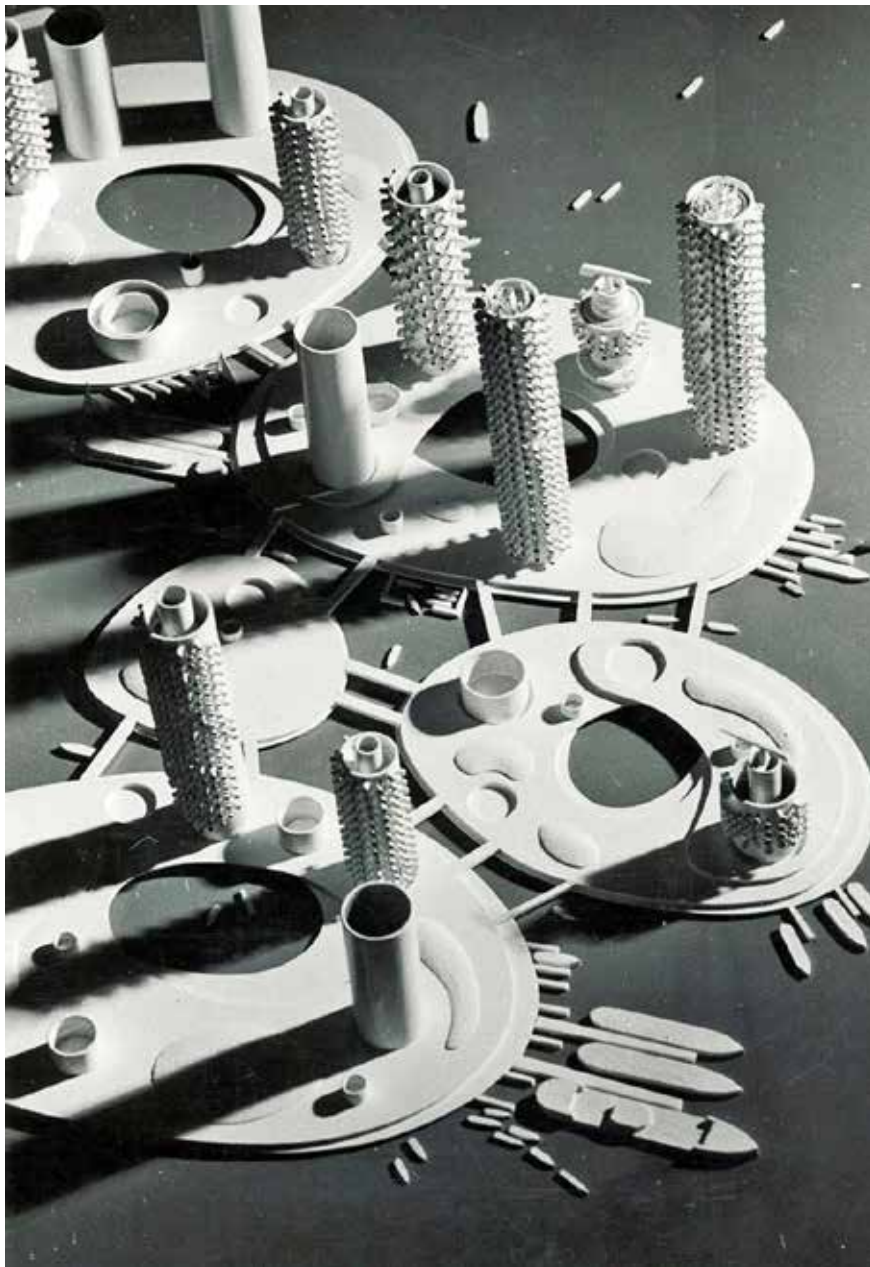


Fig.2_Marine City (1958) by Kiyonori Kikutake

INHABITING (or the dramatic evolution of the concept of living in the 1960s)

The housing demand in the aftermath of Second World War in Japan was dramatically influenced by its baby boom, by the rapid economic recovery and by the change of the family concept emerged with the large urban centers' growth that undermined the traditional enlarged family. (Tanaka, 1973) The modernist design proposals started from Le Corbusier research with the Unité d'Habitation, spread quickly and led to a radical change in the home concept and its social implications. Mass housing demand spread in the country, the size of the houses and individual spaces changed according to newer normative standards and the use of furnishing became more standardized. On the other hand, single-family housing gave to young designers ever more opportunities to experience the latest trends and technological options with fewer restrictions. (Pernice, 2006: 257)

Among the Metabolists, the most common keywords in the theoretical field became "Artificial Soil", "Capsule house" and "prefabrication". (Schalk, 2014: 292) Metabolists began to experiment in practice the inhabiting new findings especially through the works of Fumihiko Maki, Masato Otaka and Kisho Kurokawa as in the case of his Nakagin Capsule Tower in Tokyo (1972), a realized prototype displaying a constantly evolving society of tomorrow, just like it was envisioned in those revolutionary years. Probably the most famous work by Kurokawa, the Nakagin became the prototype of all existing capsule units, later evolved in the current Japanese typologies known as capsule hotels. The structure is composed of two vertical core elements containing movement functions and services; the living capsules are inserted into these vertical elements, a plug-in system allowing the theoretical movability of the capsules for a new nomadic style of living. (Kurokawa, 1997: 35) Among other seminal examples there is the Sky House (1958) of Kiyonori Kikutake in Tokyo. Kikutake's own house contains many of the motifs of his following design research. Inspired in structural and flexibility terms from the Japanese traditional architecture, this project allowed him to experiment and accomplish the practical use of the concepts of Ka (creation of a vision through social needs), Kata (prototype realized from technological application) and Katachi (pursue of a beautiful form). Kikutake used a movable system (baptized *movenettes*) of furniture to organize the central main space of the house. (Kikutake, 2009: 20) Finally, with the Sakaide Artificial Ground project (1969), Masato Otaka created a housing complex on an "artificial ground" made by a concrete platform raised 6.9 meters above the street level. Above the platforms Otaka positioned social housing complexes, while below there were parking and shops. (Fig.3) Otaka's decision to use reinforced concrete was seen as an essential part of his research to create an artificial nature. This project was the first realized example of the earlier urban theories on the artificial ground developed together with Maki years before. (Mori Art Museum, 2011: 136)



Fig.3_Sakaide Artificial Ground (1969) by Masato Otaka

New challenges and ancient needs

Among the proposals that were criticized already in the 1980s there was the whole Metabolism Movement, considered outdated by their very successors. Criticisms came from Kengo Kuma (Kuma, 2012), Toyo Ito (Ouroussoff, 2009) and by some protagonists of that golden age period like Arata Isozaki (Isozaki, 2011: 25). The last phase of the economic bubble era introduced those innovative architects like Yoshio Taniguchi, Shigeru Ban, Jun Aoki, SANAA, Kuma and many others that gradually became part of the more large and multifaceted scenery of the international archistars and offered an idea of Japan as a reinvigorated main center of design propulsion despite the incoming crisis.

In the same way as the post war period signaled a deep identity crisis for Japanese people, the 21st century presents a scenario of similar loss of cohesion among the newest generations. Strong continued financial stagnation worsened by a newer blow in 2008, falling birthrate, and most important of all, the 2011 Tohoku multiple disaster brought the whole country to reconsider the main pillars of its previous national miracle and disclosed the bill of the excesses of the Japanese fragile self empowerment developed during the economic bubble period and partially even beyond that period. (Matanle, 2013: 70)

The current complex scenery presents a plurality of architectural themes that are difficult to be resumed according to trends and movements. The variety of subjects, compared to a general decline of hierarchies, led to the rise of designers focused on diverse aims that reflect the current scenery of a globalized and culturally hectic world. Annual erosion of economic balance has led to new methods of resource management. The most various forms of collaboration are expanding. In contemporary practice, there is the lack of strong "political" attitude that focuses on changing the whole society through sheer architectural design. (Bognar, 2009) The question of the dimensional scale is essential, since the great infrastructures conceived by the architects of Metabolism - which should have reimagined the environment and the inhabited space - remain today only a utopia, far from the aspirations of contemporary designers. (Kuma, 2012) The focus is growing on interpersonal relationships, communities and perceptual elements, which are realizable through very limited resources and original design devices. While, on the one hand, this "soft" approach is due to the lack of resources and opportunities created by the crisis and continuous recessions, over time it has become the new stylistic code for an entire generation of architects and the political implementation of a real environmental sustainability. (Japan Society, 2014)

Let's see then how this new generation of Japanese architects is dealing with this new fragmented and complex world.

ENVIRONMENT (a humbler understanding of the environment)

Differently from the 1960s, today there is a wide and generalized interest towards environmental sustainability matters. Frequently translated through technical terminology, regulatory requirements or fashion trends, the current idea of sustainability often misses the broader ecological implications that should arise from a consideration on the environment, especially in deeply anthropized habitats such as the cities. Young Japanese architects proved their ability to understand the deepest and relational aspects of environment - whether urban or natural - better than their predecessors, by interpreting the newer social and cultural context, involving the customers in a new dynamic way, and finding well-balanced solutions. Their own work is perceived as the attempt to help the environmental context to find suitable answers and best express its potential. This accomplishment was possible only by leaving oneself ego at the door and abandoning demiurge ambitions defined by the architectural profession during the 20th century. (Mull, 2016)

In this context Japan gave birth to a generation of new designers with a mature understanding of the environment, able to re-invent answers to each individual case, and not to simply apply predetermined regulations and solutions. As a result, solutions are varied and it's impossible to reduce them into a limited number of types. We can recall, as key words, concepts like "openness" (Nishizawa, Tsukamoto, 2007), "sustainability", "recycling" and "flexibility". Among some examples, the Wooden House (2008) of Sou Fujimoto in Kumamoto is built entirely with wood: columns, beams, foundations, exterior and interior walls, ceilings, floors, furniture, stairs and windows. The idea behind is to take advantage of the flexibility of the material in order to create simple and almost "primordial" spaces in perfect harmony with the surrounding environment. (Hildner, 2011: 59) Weekend House in Sengataki (2012) by o+h is a small weekend house project located in the woods nearby Karuizawa. The first floor slightly slopes along the ground. It opens up to the green providing a space under a tree. The second floor is a big attic filled up by sunlight through many windows. The roof is made of four steel plates. Each plate is naturally warped by gravity, and all four plates support each other to become strong enough as a structure. The roof has been conceived constructed by shipbuilding techniques. (o+h, 2009-12) Detached House in the Garden in Chiba (2014) by Kentaro Yamazaki offers the feeling to live immersed in nature. It evokes the perception of strolling in the yard while doing ordinary tasks such as cooking, reading, or taking a bath. The architect proposes a long-span housing, formed by five elements, each one slightly shifted in alignment from the following. Each element contains a function like

kitchen, washroom, dining room, working space, and so on and the connecting spaces remain open to provide a view on the exterior environment. Hence there are no defined functional boundaries. (Yamazaki, 2014) Hokusui Nursery School in Chiba (2014) again from Yamazaki is planned to accommodate sixty pupils. The main concept for this project lies in an idea: "a nursery school is a large house." (Fig.4) Surrounded by mountains and forest, the southern area of the site rests on a gentle slope. One unique feature of this "large house" is that different ages children share the same space and can interact with each other in the wide one-room ambient. (Yamazaki, 2014)



Fig.4_Hokusui Nursery School in Chiba (2014) by Kentaro Yamazaki

TECHNOLOGY (or the use - and not abuse - of innovations in design)

In the common imagination, Japan is the peak country for high technology application on life. Actually, this country comprises a perfect synergy of innovation and tradition that makes it unique and highly competitive, even in a period of widespread economic crisis.

As regards with technology, Japanese firms seem to follow a path that is typical of the latest generations of worldwide designers. Industrial technologies in the field of construction are more and more easily accessible and Japan has always been a leader in this realm. Of great importance is the return of interest from the designers towards building techniques that bring them in direct contact with the construction site. (Kuma, 2013) By modifying processes and designing new products, and in some cases directly working on them, the designers seem to be again the main actors in the entire manufacturing cycle. This new "standardization" approach in the use of building technologies, the discovery and project of new techniques and solutions are also supported by the large-scale deployment of digital technologies and the so-called making and manufacturing processes that permit to design and produce high-complexity pieces at the lowest prices rediscovering Metabolist appeal not only in Japan. (Russel, 2009) Among some keywords we can recall "dynamic circulation" and "context respect".

Dig in the Sky House in Osaka (2011) by Alphaville Architects is a residence complex composed of three volumes, divided by two courtyards, and built on a narrow urban site. (Fig.5) The house is designed following the concept of a three-dimensional continuous circulation system connecting different functions. Inspired by the idea of movement, a part of the building is elevated above the ground to create a covered intermediate zone stretching the circulation between the city and the private spaces. (Alphaville, 2011)



Fig.5_Dig in the Sky House in Osaka (2011) by Alphaville

Urban Prem Minami Aoyama Building in Tokyo (2008) by Yuko Nagayama and Associates is a tenant building locked in a residential neighborhood facing a narrow street one block away from Aoyama Avenue, hence stand in far contrast to a number of tall buildings nearby. The shape of the building is bent skywards, like a belly being stuck out forward. The design of two slit patterned windows that opens on each level renders the real scale of the building unclear. Following the idea of “abstraction” the architect aims to design a new means for the encounter between architecture and people. (Nagayama, 2008)

INHABITING (or, a new way in settling)

The “housing” function of architecture in all its forms has deeply felt the effect of many changes in the last decades. In the current economic and social uncertainties the tendency to see the house as a continuously changing relational space and a part of a broader system involving the entire city has widened. This idea of a more open house could be found in the 1990s, when several micro urban phenomena in Japan disseminated a more “nomadic” sense of urban living in line with the issues conceived by the radical avant-gardes. (Shelton, 1999) The extensive use of on-line services – such as e-banking, e-commerce and so on - is also converting the house in a place where its domestic dimension is increasingly confused with the community’s collective and public life and ends up shaping the whole complex of the interaction between people and spaces. The co-working is possible thanks to the ease of access and use of digital equipment, and this makes realistic the idea of moving our office with us. The phenomenon of house sharing, relatively new in Japan, is slowly transforming the house from refuge to new public space, a place to hold meetings and events. (Sugata Research, 2014) The theme of the window, particularly awkward in Japan where windows are traditionally equipped with a shielded structure, is becoming more and more open outwards and customized with decorative elements. This new style establishes new visual relationships with people passing by. These new forms of nomadism, related to the life-style and mainly influenced by the development of the new technologies, are constantly changing. (Pernice, 2014) That’s why the question of how architecture can answer to potential future needs and scenarios remains open.

Slice of the City in Hyogo (2012) by Alphaville Architects is a residential project located in a suburban area, defined by buildings of similar sizes. As a main ordering gesture, the building is split in two parts by a narrow void, bringing sufficient environmental stimuli such as daylight, ventilation and cityscape, into the space. The slice also organizes the different functions of the architecture, creating intimate and collective areas connected through bridge-shaped staircases of changing orientations. Therefore, with the effect of these 3-dimensional passages, the slice acts as a compressed interstitial space, triggering diverse spatial relationships between humans, architecture, street, nature and environment. (Alphaville, 2012) House NA in Tokyo (2011) by Sou Fujimoto is a three storeys house subdivided into many staggered platforms. (Fig.6) The few walls that do exist are mostly glass, making certain spaces secure without adding privacy. The house can be considered a large single-room, and, if each floor is understood as rooms, it can equally be said that the house is a mansion of multifarious rooms. Elements from furniture come together to collectively form scale of rooms, and further unto those of dwellings, of which renders the city. (Adamo, Lippa, Scaroni, 2017: 106)



Fig.6_House NA in Tokyo (2011) by Sou Fujimoto

The Bright Window in Tokyo (2016) by Yuko Nagayama and Associates is a building comprised of two types of walls: one wall with floor-to-ceiling windows vertically loaded into a thin steel frame and a concrete wall inset with smaller square windows. The floor-to-ceiling windows act as the rear wall while the street-facing concrete wall acts as the façade and carries most of the weight of the building. These bright windows in Daikanyama district give the building a more inviting feel, which bridges the gap between the commercial and residential areas that host it. (Nagayama, 2016) Double Helix House in Tokyo (2012) by o+h architects has a simple configuration: a square white core of rooms with a long narrow corridor winding around it. The corridor widens or levels off in places to form a gallery or a small library. Two stairways, interior and exterior, twist around the house in an endless loop. The architects wanted to create a residence where each discrete scene of daily life feels connected to others in a linked array. The interior spaces form a chain of experiences, starting from the neighborhood outside. (o+h, 2011) In the project of the Unfinished House in Chiba (2014) by Yamazaki Kentaro Design Workshop the first question to be solved was the arrangement of space (always an important issue since the general lack of space in Japan) and the second was to understand how the family would have settle in the house. The construction of the building is made by arranging 4 boxes, each divided into 2 layers around a central space which acts as the family hub of the home and finally adopting the clients as co-creators rather than recipient of the work. (Yamazaki, 2014)

Conclusions

In this paper we have seen how contemporary Japanese architects are rediscovering themes such as urban regeneration, co-habitation and sustainability, concepts previously considered unnecessary luxuries in a country where economic growth seemed endless. The application field is now both the linear metropolis systems of the Tokaido, and some of the formerly abandoned rural villages far from main cities. (Yagi, 2014) A smart use of new design and construction technologies offers a variety of design outcomes previously unimaginable. These technologies are now no longer serving a great urban utopia or social engineering avant-gardes, but rather an ever more rarefied and minimal context and themes like continuous regeneration, improvement of the individuals living conditions, technological experimentation in small contexts such as pavilions, schools, co-working offices and smaller homes. The results of this research show how the comparison between the two generations that at first sight could seem consequential, actually showed how the two groups have little or nothing in common from the formal point of view, the objectives or the motivations.

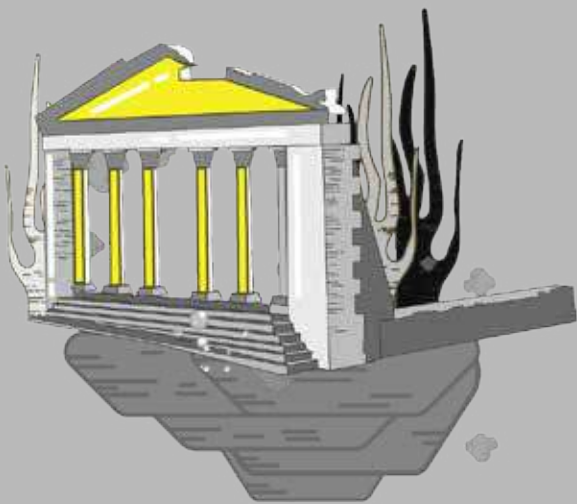
The Metabolists have been rediscovered by this newer generation of architects but at the same time they are only considered a medium to study a long gone era. These young architects are different from the in-between generation that could afford to harshly criticize the Metabolists because they shared a similar society and comparable economic condition. Japan is now heading toward a small but in no way less important shift than the one developed during the 1960s and also 1980s. A change certainly less resounding and away from the spotlight yet an important revolution that shows how Japan still has much to offer in the contemporary architecture research world.

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[MEM/21]



Designing on Contested Memories

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abstract

Memory is a highly complex and multifarious concept. This is evident in most historical places, where several layers co-habit overlapping meanings. In this context, we deem essential to critically analyze and reflect on how contemporary architects address the notion of memory. Accordingly, this paper aims to examine a particular case, which is the architectural intervention of Alvaro Siza and Juan Domingo Santos in the Alhambra.

The Alhambra is a fortress and a set of palaces in the South of Spain, at the city of Granada. Being a very significant World Heritage Site, the current monument is the consequence of multiple layers added by different cultures. Built by the Arabs as a fortress and palace, it was later modified by the Catholics. Obviously, the Alhambra is a site where memory is the main protagonist. As such, memory remains a key factor for any architectural intervention. This is quite clear in the project 'New Gate of the Alhambra', designed in 2010 by Siza and Domingo Santos.

Through several and diverse sketches, texts and design strategies, Siza examined and reinterpreted the different layers that co-habit in the Alhambra, in order to create a new strata for the future; a new gate. Hence, the architectural intervention aptly illustrates how the past is used to inform the future. The goal of this paper is to develop a critical reading of Siza's design approach towards memory through the analysis of his design intervention. Particularly, we will focus on the tactics employed by the architects to interpret the past and the way they use it to inform their design. Finally, we will reflect on how contemporary designers must be cautious when dealing with multilayered sites, for memory tends to be linked with certain narratives. Architects must carefully question what is the message that the user will receive.

keywords Alhambra, Siza, Narratives, Contemporary Design, Critical Theory

1. Introduction and methodology

"Lieux de mémoire are simple and ambiguous, natural and artificial, at once immediately available in concrete sensual experience and susceptible to the most abstract elaboration. (...) Lieux de mémoire are created by a play of memory and history, an interaction of two factors that results in their reciprocal overdetermination."
Pierre Nora (Nora, 1989: 7)

Memory is a highly complex and abstract concept. It has many readings and interpretations. It is malleable. Hence, to deal with the memory of a place is not to read an objective truth. It is necessary to delve deeper in order to comprehend the multiple and often contradicting stories of the place. As Nora argues, memory is "susceptible to the most abstract elaboration" (Nora, 1989: 7). In the interaction between memory and history, certain narratives are usually emphasized, shaping the way we perceive a place. For architects, it is inevitable that they will encounter such places at some point of their career. But new architectural interventions can be really powerful. They can transmit messages related to the past. Messages that will remain for the future. As such, any architectural intervention in a 'place of memory' should be very carefully approached. Architects must be cautious of the lens they use to interpret such places, as their decisions could entail enormous repercussions both for the place and the society. For as Nora states, the memory of a place can be vulnerable to elaboration and constructions. In this regard, architects have a strong responsibility when interpreting the history and memory of a 'locus'.

This article investigates the procedures and interpretive tools employed by contemporary architects when dealing with complex 'places of memory'. Particularly, it critically interrogates the strengths and weaknesses of a

particular design strategy of two really important architects in a complex and demanding historic site. Inevitably, the methodology that was employed will be case study based.

The architectural intervention that facilitated this research is situated in the Alhambra (Granada, Spain) and the project that will be analyzed below was designed by Alvaro Siza in 2010, in collaboration with Juan Domingo Santos. Although it has not been built yet, the above case provides an excellent opportunity to test and briefly access the above problematique. On the one hand, Alhambra, being Islamic heritage in a European soil and particularly in predominantly Catholic country, provides the 'ideal' place of memory. On the other hand, Alvaro Siza, being one of the most relevant contemporary architects (Pritzker Prize Laureate 1992), offers a rich field for investigation.

Hence, his paper is divided in two parts. The first is an overview of the Alhambra's complex history, which demonstrates the complexities and nuances of its multifaceted context. This brief introduction is fundamental in order to understand Siza's stance towards memory, which will be analyzed in the second part.

2. The Alhambra

The Alhambra was built as a military fortress by the Arabs during the Nasrid period of Al-Andalus, in the 13th Century. This fortification and its palaces played a significant role throughout the wars of the middle ages, where Catholics and Arabs fought each other in the Iberian Peninsula. The Alhambra was simultaneously a powerful symbol for the Nasrid population of Granada and a functional structure to protect the city. After the Christian conquest of Granada, the important cultural value of this architectural complex was immediately understood by the Catholic kings, who reigned over the region. They decided not to demolish it. Actually, the Christians built a palace as a symbol of victory and conquest over the Islamic culture. This was the Carlos V Palace, an intervention made in the Alhambra in 1527. This exemplified a genuine respect and intrigue for the Islamic civilization, but also a desire to appropriate and erase traces of the non-Christian enemy. However, this period was only the beginning of a long and complex relationship between the two cultures.

The Alhambra remained as a symbol of victory over the centuries. However, as time went on, interest in Spain's Islamic heritage slowly waned. During the 18th Century, Spanish scholars began to document, compile and analyze those periods and works that were considered relevant to Spanish history of art and architecture. It is the case of Antonio Ponz, whose book 'el viaje de España', printed between 1772 and 1792, documented monuments as an inventory. He also offered advice in how to preserve that artistic heritage that he found. In this period, while Christian and Roman art was used to define the Spanish character, Arab cultures were outright rejected as vulgar and irrelevant. As the Spanish scholar Juan Calatrava Escobar explains, when Arabs are mentioned in these books, they are described as those who demolished the splendid Roman vestiges, as well as the designers of narrow and suffocating cities (Calatrava Escobar, 2003). It is then interesting to see how local scholars were not interested any more in the values of this past culture. Ponz rejects the Arabic times as an obscure period of Spanish history.



Figure 1. A court in *The Alhambra in the Time of the Moors*, Edwin Lord

However, romantic travelers from Northern Europe went to the Iberian Peninsula to discover the remnants of the 'orient' in its Moorish mosques and palaces. Juan Calatrava Escobar exposes how these English and French travelers discovered a close 'Orient' inside Europe, so they depicted the Alhambra, along with other Arabic sites, through an emotional filter. It is the case of British painters such as H. Swinburne, James Cavannah Musphy and David Roberts; as well as the French Chateaubriand, Gautier, Girault de Prangey, Baron Taylor and Gustave Doré. All of them, stands Calatrava Escobar, contributed to the consolidation of a specifically romantic view of the Alhambra (Calatrava Escobar, 2013). The interest of the French and British travelers compelled the Spanish scholars to revisit their initial stance towards the Islamic heritage. The new meaning bestowed by these travelers upon the Alhambra evidently affected the previous relation with the Spanish identity.¹

As part of the orientalist fascination of the era, the site was seen as an exotic relic of a legendary past. This moment is crucial as it played a significant role in the shaping of the contemporary stance towards the Alhambra. The romantic view of this Arabic monument still frames the way it is understood today. Romantic travelers, together with Spanish romanticist writers, conjured images of the palace as a setting for legends and fantasies. The idea of beauty was inevitably linked to this site. These powerful narratives celebrated the Alhambra as an aesthetic subject. As the Spanish scholar Ignacio Henares Cuellar states², from this moment, the Alhambra has been inextricably associated to notions of beauty. Particularly, he explains that any portrayal of the Alhambra today will still maintain a constant predicate: the idea of the beauty of the Alhambra, the notion of the 'universal beauty'.

This idea requires a detachment between the subject, the Alhambra, and its historical context so an ideal notion of beauty can be established. This was beginning of a process of interpretation that would progressively separate the physical site from its true history. Beyond the literature of the romantic authors, another major step in Western appreciation of the Alhambra can be credited to the work and research made by Owen Jones (Goury, Jones, 1842). His book is an illustration of how Islamic heritage was detached from the physical artifact of the Alhambra. His detailed and striking drawings of the Alhambra's ornamentation reinforced the novelty and power of the site as an aesthetic subject. By illustrating the ornamentation without regard to its cultural meaning, the British architect bluntly decontextualized the forms, patterns, and colors for a Western audience.

Therefore, the decontextualization of the Alhambra's artifacts, elements and spaces was a crucial step in the process of detaching the building from its history. By leaving out any reference to its historical, cultural and social context, these scholars managed to begin a process of historical erasure, where evidence and discussion of the past was overlooked in favor of presenting the Alhambra as the ideal image of Arabic architecture. More interesting, Miralles points out, this narrative was adopted by Spanish intellectuals. They interiorized these ideas and expressed them in their literature. Actually, this was, paradoxically, a progressist exercise. It was an act of protest made by progressive and liberal authors. They criticized the wealthy class of Spanish society, as this had followed French habits and, therefore, was not enough Spanish. Hence, the novels about bandits, the musical Zarzuela or the passion for flamenco became acts of reaction against those in power. Hence, this interpretation of the Alhambra was swiftly and conveniently assumed by Spanish intellectuals. The appreciation of the artifact and the erasure of its Islamic history offered a way to absorb the site as an integral landmark of Spanish identity without confronting the complex history of its cultural and religious origins. And so, these esoteric, formal analyses continued for many years. This take on the Alhambra offered Spanish society a tool to avoid the fraught and complex history that underlies the site. The selective representations of the Alhambra remain unresolved in Spanish society, and the erasure of this history has also begun to pose other subtler, and in some ways more difficult, questions. If one looks at Spain's national identity, the romantic and orientalist perspective has left an indelible impact on foreigners' perceptions of Spain and on the Spanish themselves.

More recently, with the advent of mass tourism, the monument has become a UNESCO World Heritage Site in 1984. In this context, the Alhambra has become increasingly exploited as a tourist attraction and as a consumer product. Once again, the idea of the Alhambra as a site of 'universal' beauty has been exploited to draw in millions of visitors. Tourists from around the world come in order to experience legendary beauty of the Alhambra, whose aesthetic values can be appreciated by any visitor, no matter their culture, background or knowledge. Even today, the Alhambra's history continues to take a back seat to the aesthetic experience of the building, as brochures and advertisements present images of a place that are hardly distinct from those early romantic travelers of the 18th and 19th centuries.

1 / The Spanish historian Xavier Andreu Miralles wrote the book "El Descubrimiento De España : Mito Romántico E Identidad Nacional" (Andreu Miralles, 2016), where he states that the orientalist view that French and British travelers brought to Spain highly influenced the Spanish intellectuals. Andreu Miralles problematizes this fact, explaining how this provoked an inner orientalism in Spanish identity. Many stereotypes were linked to the Spanish character, surviving until today and causing the pejorative perception of Spain, both in the country and abroad.

2 / In his article "Alhambra, sentida y representada" (Henares Cuellar, 2013), this author makes a whole review of how the Alhambra has been interpreted as an aesthetic object, narrating the different periods of this idea. Henares Cuellar is a Spanish scholar, tenure professor at the University of Granada (Spain) and specialized on history of art.

3. Interpretative tools

The narratives presented in the above review serve as a framework to contextualize the project developed by Alvaro Siza and Juan Domingo Santos. The new intervention takes place in the last stage of interpretation of the Alhambra, as presented in the previous review. Therefore, this project deals with both, the history of the monuments and the current function as a touristic attraction.



Figure 2. *New Gate of the Alhambra, Juan Domingo Santos, Alvaro Siza*

The project New Gate of the Alhambra, designed by the Portuguese architect Álvaro Siza Vieira (Oporto, 1933) and the Spanish Juan Domingo Santos (Granada, 1961), won the 2010 International Competition for New Visitor Access to the Monument. The competition was held by the Council of the Alhambra & Generalife, Granada, in order to address the problem caused by the immense increase of visitors over the last few decades. As already mentioned, the Alhambra is one of the most eminent World Heritage Sites in Europe. It receives approximately 2 million visitors per year, a number that put excessive pressure to its existing infrastructure. In this regard the Council of the Alhambra & Generalife, which serves the needs of protection and conservation of the monument, decided to create a new visitor's center capable to absorb the increasing number of tourists. Although Siza and Domingo Santos were commissioned the New Visitors Centre, several political problems has caused significant delay and has jeopardized the actual implementation of the project.

The winning intervention has several aspects that can be analyzed from an architectural point of view. The project actually exposes many of the features of Siza's architecture and his characteristic way of 'playing' with the space. In his collaboration with the Spanish architect Juan Domingo Santos, Siza designs a new entrance where a sequence of patios presents a game of lights and shadows, of solids and voids. Partially buried on the ground, the project has different levels where the user is driven through a complex itinerary. A game of walls and volumes shapes the different experiences that stimulate the senses of the visitors.

At the same time, it is important to mention how the renders, prepared for the competition, illustrated the project. In those images appears that the main protagonist is not so much the building itself, but rather the iconic 'natural' landscape of the Alhambra hill (local vegetation and steep terrain). The idea of landscape as a main element is strongly present also in the design of the project. The architects intentionally tried to expand the understanding of this site including its surrounding. They read the Alhambra as part of a broader territorial context. Hence, they do not see this construction as an imposition on the landscape but rather as the synchronization of both realities. As it will be analyzed below, this was one of the design strategies used by Alvaro Siza and Juan Domingo Santos in their new intervention.

After a thorough investigation of the project, three distinct strategies were identified that are characteristic of the architects' stance towards the history and the memory of the place. The first one was recognized in the treatment of Alhambra's iconic landscape and its relation with the new building. The second, although appears to be rather conventional, it is actually one of the key strategies employed by the architect in his attempt to 'unlock' Alhambra and its past. Siza's extensive series of sketches and analysis drawings are quite revealing of his approach and understanding. Finally, the third tactic is quite evident in the architecture of the new building, where the architects materialized their initial interpretations into a solid and explicit design proposal.

Regarding the first interpretative tool, Siza and Domingo Santos make clear their intentions to add a new layer to the contemporary reading of the Alhambra. The project is both about landscape and territory. Instead of isolating the monument from its context, they intend to open up the Alhambra as part of a broader cultural and natural

setting. Considering the problematique that concerns this paper, the addition of the landscape as a layer of this heritage can be understood as a tool to better comprehend the memory of the place. The Alhambra can no longer be seen as a solitary monument, but instead as situated in a dialogue with its surrounding territory.

The topography of the site plays a fundamental role in determining the composition of the citadel. Situated at the top of the mountain, its existence is a consequence the topography. It is an integral part of the popular imaginary of Granada. This is a new understanding of heritage that requires deeper consideration of the complex context that forms the architecture's background. Nevertheless, we shall examine further facets of the project in order to unravel how these architects employ other instruments to interpret the past.

The second tool of interpretation developed by Alvaro Siza in this particular project are his drawings, where he analyzes the Alhambra through his own lenses. These sketches expose Siza's understanding of this reality. Siza published numerous drawings. However, in this paper only two of them will be examined; namely, that of "the tower of the princess" and the "details of the Alhambra"³. As will be discussed, those two sketched aptly illustrate the architect's efforts and stance towards the Alhambra's past.



Figure 3. Tower of the princesses, Alvaro Siza

At first glance, the sketch "the tower of the princesses" seems to be just another representation of the place. Siza draws one of the Arab towers of the Alhambra together with the vegetation and the water system. This particular reading of the physical context expresses a harmonious coexistence between architecture, infrastructure and the 'nature'. The chosen mean of representation allows the viewer to identify the 'key' qualities of the space. Additionally, Siza seems quite persistent in his attempt to link the 'natural' landscape with the build heritage. However, a crucial question arises. Why Siza choses to sketch this particular tower and one of the many others of the stronghold? Apparently, the Alhambra has many towers that could be drawn and convey the exact same spatial qualities. However, there is something else that makes this one so special. Siza's decision is far from being random, as the tower he chose to depict is not an ordinary one. It is the Tower of the Princess, which through the time was charged with the heavy load of oral narratives and local traditions. One of these legendary stories were

3 / In 2015, Álvaro Siza decided to do an exhibition where he could expose all the sketches he drew during the design process of the Project 'new gate of the Alhambra'. Many drawings were made in a first analysis of the historical site, while others show the design proposed. This exhibition took place in Granada (Spain), Berlin (Germany) and Toronto (Canada) during the year 2016.

reproduced by Washington Irving in his book 'Tales of the Alhambra' (1832). The 'Legend of the three beautiful princesses' is a story that perfectly expresses the romanticist and orientalist reading of the Alhambra made by many authors. This Arabic architecture is seen as the gorgeous and exquisite background for those stories where the Arabs were depicted in an orientalist way. The 'Legend of the three beautiful princesses' is not a historical text but a fable, a myth. Therefore, it is all about the fantasy. It is pure imagination. Therefore, although we acknowledge the sketch as part of the architect's efforts to understand the place, still we cannot avoid to think that Siza's decision to draw this tower was not random. Hence, in an indirect way the architect is reproducing Irving's romantic legends.

The sketch transmits an atmosphere of imagination, of fantasy. It is not a detailed or accurate representation of the context. Instead, it gives the viewer the sense of observing a magical place. Actually, the building itself is not clearly drawn but it seems to be part of something else, a broader composition. Hence, the representation of the tower does talk about the physical environment but interprets it as something mystical. In this sense, Siza's interpretation of the past of the Alhambra is highly influenced by the romantic narratives. This tactic employed by the architect, meaning his attempt to look in the past in order to inform his future design, is not new. Many generations of architects before him did exactly the same. What fundamentally changes, though, are the sources into which the architect delves, as well as their 'translation' into spatial conditions. In our case, Siza appears very keen on the latter, while the former seems to be rather problematic. The reasons are not entirely because of the architect's incapability of critically assessing the sources, but primarily because of deeply embedded notions and narratives that were constructed and prevailed over the years, as already seen in the first part of the present paper. In this regard, Siza's first sketch is quite revealing of the influence that the predominant narratives about the place exert to contemporary scholars. It is an eloquent example of how hard is for architects to escape the established histories of those who interpreted the site before them.

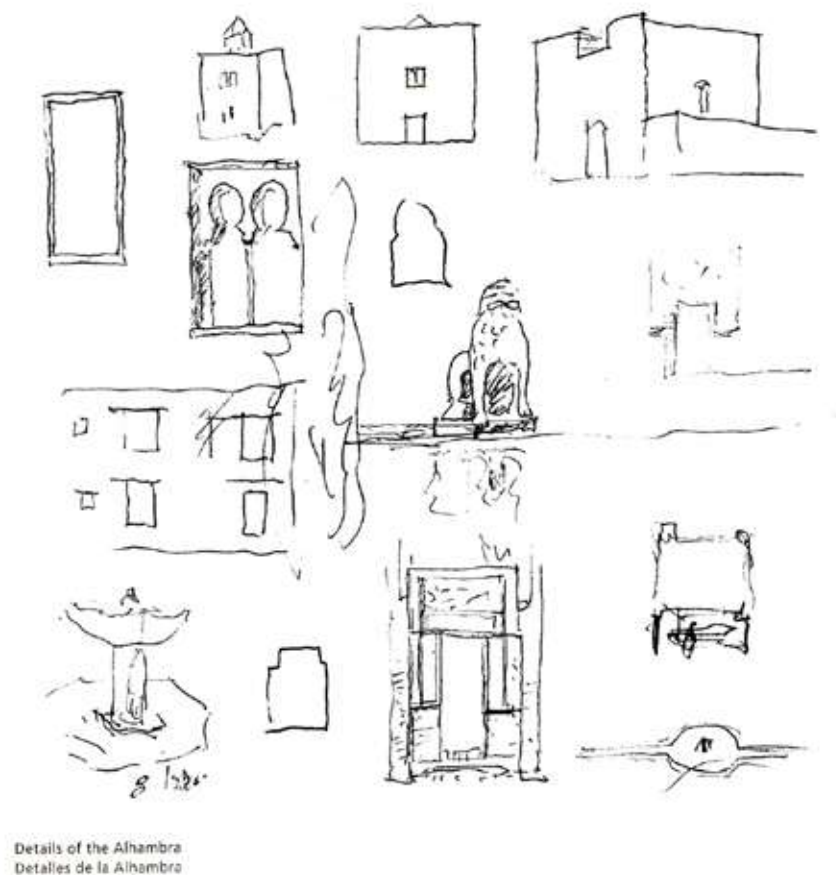


Figure 4. Details of the Alhambra, Alvaro Siza

The second sketch by Siza that will be analyzed, the "details of the Alhambra", is an apt illustration of how the Alhambra can be decontextualized from its history. As Siza makes clear in the title, these drawings are details of the Alhambra. The isolation of these details from their environment is not casual. It is neither the first one done. As mention before, Owen Jones's book focused on the analysis of the ornamentation. However, this is analyzed as an isolated element. It is the detail what matters, not the context. In his sketches, Siza separates again

these details from their context. These elements are decontextualized and valued as independent objects. They are parts with no total. These details are valued by themselves, with no reference to where they belong, who made them or why they are as they are. They are completely detached from their context and, consequently, from their history and memory. Additionally, the selection of details shown and the way they are exhibited gives fundamental clues to understand how Siza perceives this architecture. He draws some elements that are in the common imaginary of what is Arabic architecture, such as the fountain and the water canal. He also depicts one of the sculptures of the famous court of the lions and a window with clearly Arabic arcs. These first studies of certain spaces and elements of the Alhambra that Siza conducted while preparing the new project are quite telling. Both elements that he distinguished and decided to study, as well as the technic that he used, provide a great insight in Siza's design methodology. Obviously Siza did not draw these sketches in the same way that Owen Jones or other previous artists did, but he did not escape their spell. Apparently, he is focusing in the most popular and displayed elements of Nasrid architecture. They are actually part of the mainstream idea of what Arabic architecture is. They are very symbolic image of an aesthetic that has been used to admire this building. As the Alhambra has been detached from its past, any person who thinks about this monument will have these details in mind. Those events that made the Alhambra are not relevant for those who admire this monument. These details are. They are ornamentation, but they are also the elements that give the Alhambra that magic that everyone gets captured by. Therefore, the fact that Siza is choosing to study and depict only those elements reveals a difficulty to think and act outside the stereotypical image of the Alhambra.

As a third design tactic, Siza's above studies on the place and its memory were later reflected on the architectural design. Hence, it is also fundamental to look at the project itself to see how the past of this monument influenced its own future. In this regard, there is a space that notably illustrates the attitude of the architects towards the place and its memory. In this case, there are clear design strategies that focus on the interpretation of the past. However, again, we might question how are these interpretations developed and which narratives they reproduce; which of the layers that co-habit here are considered for the design; and which message is being replicated for the future. In order to answer these questions, there is a space that best illustrate the architects' attitude. This is considered the main space of the project, both because of its use and its symbolism; this is the so called 'impluvium courtyard'.



Figure 5. Court of the Myrtles, Alhambra



Figure 6. *New Gate of the Alhambra*, Juan Domingo Santos, Alvaro Siza

The render 'impluvium courtyard' is clear example of how these architects reinterpret the existing architecture previously analyzed through sketches and texts. Although the patio does not appear in the previous drawings, we can see how the interpretations made through the sketches are reproduced in this patio. Specifically, the use of isolated elements and their reproduction in the contemporary design clearly reflects the decontextualization already seen in the sketch 'details of the Alhambra'.

This space seems to be designed as the main character of the project. It is the transitional space through which all visitors have to pass by. Additionally, it has a main role in the plan, as it configures the adjacent spaces. To understand this courtyard, it is necessary to look at the existing Court of the Myrtles in one of the palaces of the Alhambra. Observing both together is clear how the architects have used the existing courtyard as a reference in their process of design for the new space proposed. There are elements that have been directly taken from the former and reinterpreted in the second. The pool as the main actor of the space; the rectangular geometry of the principle elements; the view of the sky; the reflection of the architecture into the water; etc. This is a direct copy of spatial features. At the same time, some elements are directly duplicated, such as the water canal. This was very important in Arabic architecture, as it used to be employed to water the different plants and pools in the gardens and courtyards. The canal depicted in the render is a clear reproduction of this Arabic system. The past is used for the future design. However, this copy should be critically examined. On the one hand, this water canal is merely symbolic in the new intervention. Its function was crucial in Hispano-Arabic gardens, as it necessary for the infrastructural water system. However, nowadays, the water infrastructure is solved through new engineer solutions. Hence, this canal is not reinterpreted through its function but as a useless icon that refers to the architecture of the Alhambra. On the other hand, this element was already examined and reinterpreted by Siza in his sketch 'details of the Alhambra'. As it has been previously explained, this analysis of the place using details was a decontextualization of these elements from their context. In this sense, the use of this element in the contemporary design is problematic, as it seems to be a naive reinterpretation that decontextualizes this object. Again, it is valued by its aesthetic and reinterpreted in the same way. This courtyard then shows a reinterpretation of the architecture of the Alhambra made by the architects, who have used the past to inform their design, in an attempt to recover the memory of the place. However, this copy and reinterpretation seems to be superficial. It is mimicry. It is not a critical exercise, but a reproduction of a learnt interpretation. Modernist language seems to be used as a universalized agent of translation. As it is a generic reinterpretation of the courtyard, this mimicry seems to clean and anesthetize the Alhambra.

4. Conclusions

From the analysis of the different instruments used by architects to read the past, we can extract certain conclusions. Firstly, these architects intentionally claim the need to read the existing architecture and its context, trying to include its past on the future intervention. The new intervention is connected to the previous historical strata, being understood as another piece of a complex puzzle. The many interpretative instruments used, as well as the project's features, clearly illustrate the relevance given to the past when designing for the future. Particularly, Siza and Domingo Santos develop their own methodology to deal with the complex history and memory of the Alhambra. They managed to avoid previous rather superficial architectural attempts to link the past with the future via historicism or excessive formalism. However, Siza and Domingo Santos also evade the use of easy and shallow strategies. Instead, they painstakingly try to go deeper. They managed to open a dialogue between past and future. Instead of reproducing formal elements, these designers try to bring to the present those qualities of the existing spaces, in an attempt to really comprehend how the Arabs used water, light, solids

and voids, etc. in their architecture. Hence, they have developed their own way to reproduce these qualities in contemporary architecture. In this sense, they managed to read the space, linking past and future. At the same time, they have broadened the limits of understanding of this monument, including the landscape as part of the historical site. Therefore, they have added new layers to be analyzed when examining such a place. As it has been mentioned before, we can consequently see three main design tactics: consider the context and landscape where the monument is; do critical and interpretative sketches to develop a personal and deeper understanding of the historical place; and reinterpret the elements examined and interpreted during previous analysis, reproducing a contemporary version of them. This last exercise is key in the construction of a new layer that will cohabit with the past and memory of the building, as it opens a dialogue between past and future. In this respect, the interpretative instruments employed by these architects are an interesting contribution to the discipline.

However, we might question in which direction are these design instruments being used. In an interview, Alvaro Siza said “[the Alhambra] is not about memory, it is about reality” (Maluenda, 2015). This quote obliges us to make a deeper reflection on how this designer is looking at the Alhambra. Although Siza considers the past of the Alhambra in his drawings and project, in this statement he seems not to care about the memory of this place. This quote actually reminds those mainstream narratives that negate the history and memory of this monument, seeing it as an aesthetic artifact. We might inquire then how his perception of the place can be influenced by those previous interpretations. As painters and writers did before, Siza seems to be falling into the trap of romanticizing this Arabic heritage. This can also be seen in the implementation of the several interpretative tools. The problem is that the gesture these architects did when linking the past and the future seems to be more complex than they thought. It entails certain consequences, both social and anthropological. But the architects’ lack of awareness made their work susceptible to the previous narratives. Consequently, the diverse layers that cohabit in the Alhambra were just exposed, not critically analyzed. Hence, Siza and Domingo Santos have not sent a critical message towards the future. On the contrary, unconsciously, they are helping this narrative to be reproduced, together with the social repercussions that it entails.

Finally, it is crucial to acknowledge the value of Siza and Domingo Santos’s efforts to to open a dialogue between past and future in their intervention. In so doing, as already explained, they employed several interpretative tools to read the historical site through their own lenses. It appears though that this was not enough due to the afore described complex historic and identity issues of the Alhambra. Although architects are not anthropologists or sociologists, they should be more cautious and explore these disciplines in order to better comprehend the nuances of a historical place. Designers should be aware of the enormous role of their interventions in how society understands these places. In this regard, the anthropological discourses that question and examine narratives linked to historical places should be considered. Particularly, architects should continue to develop design strategies to address the notion of memory from this perspective. Memory has an immense impact into how a society looks at herself, helping to define its identity. Hence, any architect intervening in such a place should be careful and aware of the power of her message. Contemporary designers should be conscious that, as Nora states, memory is “susceptible to the most abstract elaboration”. (Nora, 1989: 7)

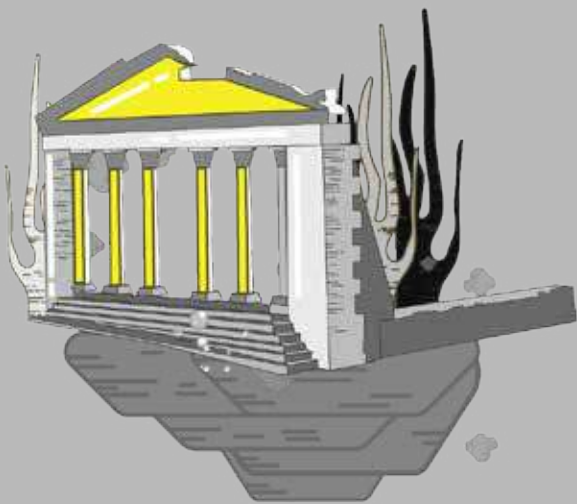
5. Acknowledgements

This article is the result of a previous research project that took place, in the form of a master thesis, at the Harvard Graduate School of Design during the academic year 2016-17. Therefore, we want to thank those professors who guided us in this process, making it possible. Particularly, we are very grateful to professors Sibel Bozdogan, Michael Herzfeld, Michael Hays, Susan Snyder and George Thomas.

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[MEM/22]



Memory And Reeneration Through Segregation: The Heritage Preservation In Lijiao Village In The City

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abstract

Villages in the city (VICs) have become a crucial topic within Chinese urban studies, spatially exposing the contradictions between fast urbanization processes and former rural communities. Beside the social implications of these areas encapsulated in metropolitan cityscapes, their redevelopment into future gated residential communities poses a series of questions about local socio-spatial practices put in transition. For instance their overcrowded built environment, absorbing historical stratifications, is under extreme pressures facing "pro-growth" municipal urban planning visions. Lijiao village represents in Guangzhou a crucial case study to illustrate how local listed cultural heritage could confront tested tabula rasa approaches, redefining the processes embedded in these kind of regeneration projects. The paper aims to demonstrate how the presence of historical relics, permitted the activation of a series of processes diverging from the neoliberal strategies applied by Chinese urban planning bureaucracy, questioning alternative methodologies which had to re-scale actions and cooperate with local consistency. On one side the creation of lists of buildings under preservation activated the compact intervention of institutions and experts, determining rules affecting the negotiation through legitimated procedures. On the other the intervention of the private investor, seeking an efficient quantity distribution over the demolished village, perceived local memory a tangible obstacle opposing the development. Their contraposition promoted formalized spatial boundaries instead of integrating differences. Segregating cultural heritage from its local morphology, cleaning up history, therefore appears as the spatial compromise to safeguard relics elsewhere forcibly demolished or indifferently relocated. Preservation tactics and new urban development, stays one next to the other without considering the collective memory built over centuries of local practices. The spatial codification to promote development, seems the only way to surpass the contradictions of thirty years of fast urban development.

keywords Heritage, Preservation, Urban Villages, Urban Planning, China

Introduction

Chinese rapid urbanization has strongly influenced urban studies literature of the last two decades, questioning how the deep political and economical reforms had crucial spatial consequences and trying to understand if it is possible to speak about a "Chinese urban uniqueness" (Ma, 2002). The "capitalism with Chinese characteristics" launched by now 40 year ago, has unleashed developing forces that has brought the country to pass from 20,8% to 57% of his urbanized population between 1982 and 2016 (Chen et. al, 2011; World Bank, 2017), determining the biggest rural to urban migration in history, framing a number of contradictory social phenomena and questioning which could be the future of the actual urban consistency under high market pressures.

Considering the Chinese urban transition as a "modernization without modernism" (Fan et al, 2006:8), meaning an economical and technological progress without putting into question political cohesion, it has been obvious that terms like "local community", "land rights", "heritage", had to confront the uneven possibilities offered by a dual track market, deeply affecting local socio-spatial structures into areas truly aimed to host development projects. What scientific literature has defined as "urban villages" or "villages in the city" (VICs) or again "city in between the villages" (Al, 2014), probably represents the best spatial contrast regarding the transformation of these meanings within the Chinese urban revolution. Metropolitan areas have enlarged their spatial extensions pushed under the economic reforms, encapsulating these former local communities run under a collective land right regime, deeply transforming their interrelation with the territory as well as their social composition becoming the preferential sites for migrants workers. In the rapid transformation of Chinese society, these villages passed from being

isolated rural communities to emerging real estate protagonists, hardly modifying their relationship with land possession, spatial dwelling and urban role.

The modification of their previous morphological structure caused on one side sanitization problems, especially due to high density building operation which saturated community cropfields, but on the other influenced urban residents public opinion, perceiving these location as “obstacle to the urban development” or “urban cancers”, determining precise redevelopment policies and municipal programs (Li and Wu, 2014).

Within this intricate background formed by local informal businesses, municipal political perspective and market pressures, the definition of operational methodologies in preserving local spatial features confronting tabula rasa procedures appears as a collective and professional challenge. Considering the weak bureaucratic base and the continuous urban policy improvement concerning these locations, the aim of this paper is to reveal how a precise case study like that one of Lijiao village in Guangzhou, could become the protagonist in defining best tactics in governing local decision making processes.

In fact the city of Guangzhou, localized within urbanized Pearl River Delta in China, with its 1.142 villages has often represented in scientific literature the place where to investigate the interplay between the local community and the planning visions of the municipality (Liu, 2015). This especially for its political efforts in promoting in the last decade a series of policies to realize their redevelopment avoiding as much as possible social protests, as well as reinvigorating real estate market through the re-absorption of huge parcel of lands under state control.

In 2009 the municipality has promoted the “one village one policy” principle (yicunyice), which stated the necessity to conduct village transformation under a negotiating progressive approach with local communities: conceiving “every renovation as a research...” officials had to “combine the policy with the reality” (Wu et al, 2013). In the same year Guangzhou officially adhered to the “three oldies” redevelopment policy (sanjiu gaizao), which defined a comprehensive redevelopment not only of the old villages present in the city (jiu cunzhuang), but also the former brownfields (jiu changfang) and the historical city centre (jiu chengzhen), through the creation of lists where to concentrate planning efforts.

This is why, considering the strong governance attention around VICs, in this case the topic of heritage building preservation has to be intended separated from the more its more general discourses, while more linked to the municipal governance issues, aimed to surpass their problematic spatial consistency. Therefore urban policies, planning and compensation procedures define the basis to better understand the intricate framework of actors where historical building preservation has to struggle to affirm its operative space. It had to generate cooperative tactics together with groups of interests involved in the redevelopment process, in order to protect local cultural features and preserve the local collective memory built along the centuries.

In this framework single case studies, like that one of Lijiao village here selected, represents even in the municipal governance programs the testing ground for re-absorbing heritage relics in the transformation process. In case of its institutional success it will be become, part of those Chinese local best practices aimed in “deepening the reforms” (Song et al., 2014), defining a mature urban management (Altrock et al, 2013) and letting the possibility that urban development and historical preservation could “go hand in hand” (Logan, 2002).

Objectives

Likewise it was confirmed by interviews released by officials to news agencies (Qiu, 2010), the promulgation “three oldies” policy in Guangzhou has been mainly set to formalized the land-use appropriation of new areas suitable for transformation accompanied to a general sanitization of the dense VICs: a precise political mission with spatial consequences. Considering this, the main objective of the paper is to unveil the spatial results between the conflictual relationship between relics preservation and extensive tabula rasa operations, investigated through the analysis of the project implementation of Lijiao village in Guangzhou. The selection of Lijiao as testing ground for a methodology aimed to cross project implementation and stakeholders intervention within Chinese urban planning, meant to take the municipal perspective in the way it support its governance improvements. A critical analysis around its redevelopment process could be capable to represent why Lijiao in could became in the next future a strategic reference fostering cultural and political debate.

The spatial analysis of the confrontation between listed buildings and extensive demolition in Lijiao, stays together other important secondary objectives, necessary to stress the attention of the spatial transition in Chinese urban redevelopment.

First of all understanding the role of listed heritage buildings facing the urban development programs promoted by a Chinese metropolis like Guangzhou, and how they could be able to trace alternatives in urban planning strategies. Looking at a long established tradition within Chinese legislation over preservation system, where listing procedures aimed to safeguard and legitimate the preservation of single relics have overcome a comprehensively approach towards the traditional neighborhood scale, VICs question to improve new tools in managing a stratified local culture built over spatial features.

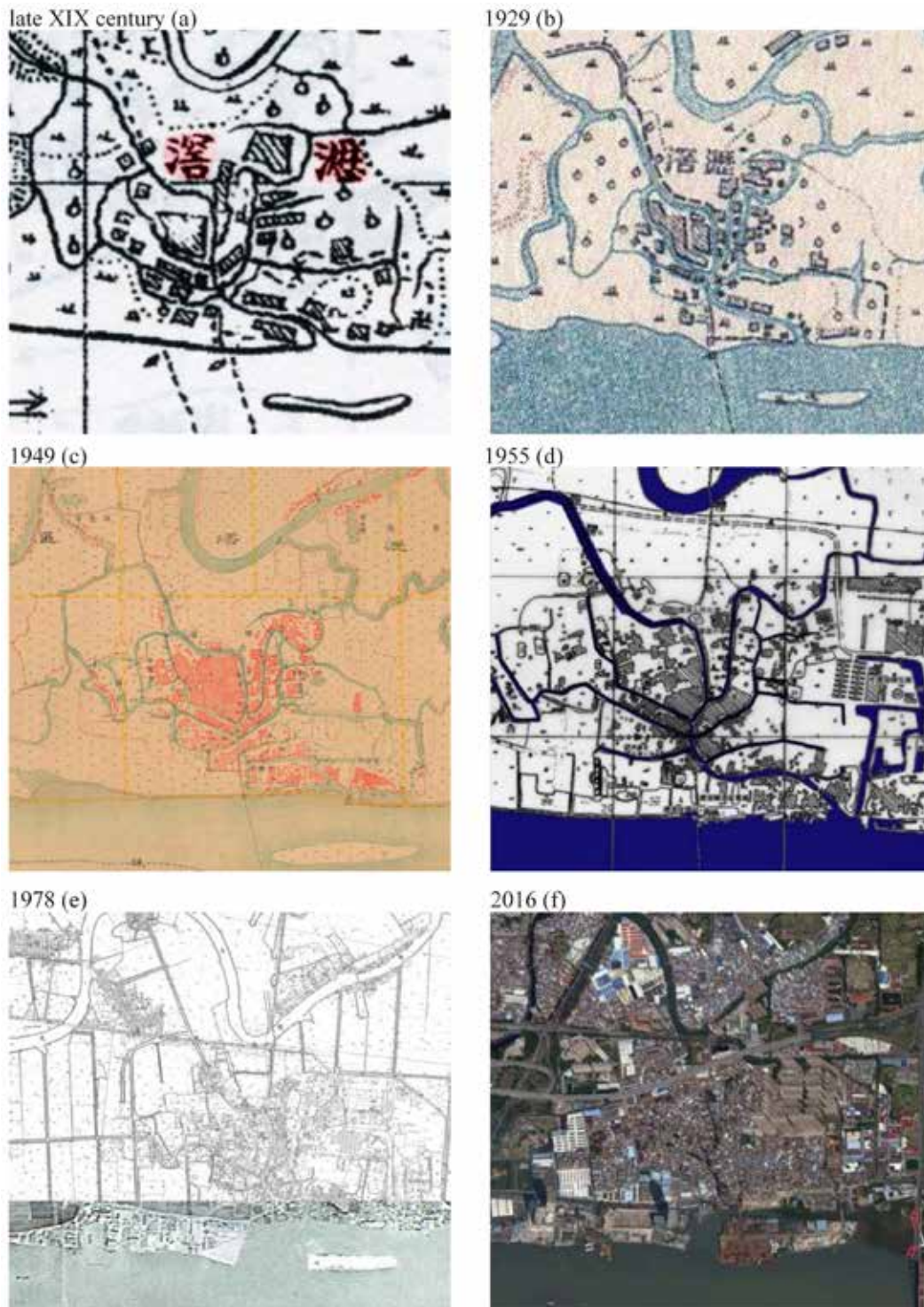


figure 1. a-b-c-d-e-f: Lijiao historical morphological development between late XIX century and 2016. Sources: "Record of Panyu County" (a); Drawings of the Urban context: Guangzhou ancient atlas (guang zhou shi cheng shi jian she dang an guan bian zhi), Map Publishing House of Guangzhou, Guangzhou: 1991 [in Chinese] - Urban Elephant Office (b-c-d); (e) Atlas of historical images of Guangzhou in 1978" (2008). Guangzhou: Guangzhou Urban development Archives. [in Chinese] (f); Landsat Image - Google Earth 2016.

Secondly to overview the relation between a single urban transformation project and the more general urban planning visions programmed by a Chinese municipality. The transcalar relation between District level planning and the village redevelopment, defines a set of mutual influences capable to strongly influence the spatial negotiation at the local sphere. In this case listed building not only represent tangible obstacle to indifferent demolition, but also cultural objects raising question towards which planning methodology has to be use in order to combine long term municipal objectives and the preservation of local spatial features.

Thirdly defining the groups of stakeholders actively called to participate in the decision making process, in order to detect the institutional alliances formed behind the redevelopment project and which spatial transformation they propose to support project implementation occurred.

All these objectives place in the middle a fundamental question: which is the spatial correlation between preservation procedures and the actors behind the transformation of VICs? In this sense focusing on the roles played by institutions and interested groups is crucial to code the forces behind a single project.

The municipal governance dedicated in defining strategies to manage VICs modification expresses how delicate and conflicting is the topic of building preservation in urban villages, considering the many aspect in their extensive transformation. Regarding their redevelopment Guangzhou mostly followed the two principles of “not investing directly” in the operation and “not to carry out profit-driven real estate development” (Altrock and Schoon, 2011). In this sense the municipality guide the transformation offering the management of the negotiation between local community and investors, surveillance of the procedures and experts consultation. For this reasons the role of the real estate company invited to participate in the projects, becomes nodal in defining planned solutions with a profit oriented purpose, balancing the necessity in convincing villagers in supporting the offered money compensation and the oscillation of the real estate market.

Considering the huge market forces behind the transformation of Lijiao due to high money compensations, and the attitude demonstrated in the last year of urban revolution occurred in China under the principle of “one leveling, five connections” (Yeh, 1985), meaning the application of extensive tabula rasa procedures to support fast urban development, the risk of neglecting the insertion of building heritage within regeneration projects is quite high.

It is for this reason that in order to balance the powers behind these renovation projects, higher officials and experts have recently supported programs aimed to place in the centre the role heritage as one of the key element. This awareness has emerged thanks to the combination of long years of building inventories, the rise of professionalism, the intervention of academics and politicians (Du Cros and Lee, 2007) as well as the a growing media attention (especially on dedicated blogs) towards the clash between urban upgrade and local culture conservation.

It is only considering the contemporary ongoing reforming attitude of dedicated institutions and departments, the emergence of the role of the experts in supporting public municipal governance, the profit oriented approach towards villages transformation entire operation, that is possible to better understand the experimental ground within which building preservation could be inscribed in the transformation of urban villages. It is for this reason that the Lijiao case study is more presented as a tactic trying to emerge from a simple spatial and monetary negotiation, instead of an institutionalized or already tested procedure.

Methodology

The contribution of the heritage preservation strategies within the transformation of Lijaio, could be unveiled thanks to the mutual correlation among legitimated and involved institutions, the reconstruction of the main planned intervention and comparing their intentions with the existence spatial conditions. Critically observing the transformation overlapping the processes provoked by selected stakeholders and their spatial consequences, this case study referred to a “grid overlay” approach (Tian and Shen, 2011), already utilized in decoding Chinese masterplanning operations in comparison with local projects implementations. This opened the possibility in reframing municipality planning initiative restarting from a deeper understanding of the actual conditions of land utilization, filling through maps what propaganda set aside and reflecting on the spatial consequences of the village transformation within the fast growing metropolis. This methodology has been applied to Lijiao in order to determine the role of heritage preservation within the complex debate of its extensive demolition, focusing on the spatial deviations derived from its insertion in a discourse involving urban governance, economic interests and planning perspective.

Confronting the different versions of the regeneration project together with the insertion of new stakeholders within the negotiation, it was possible to highlight how Lijiao's relics preservation extended to a comprehensive redevelopment of its historical core instead of relying only to specific intangible buildings, paving the way to redefine the methodology towards the transformation of urban villages.

The process of transformation of Lijiao has started on 9 September 2011 with the submission to the “3 oldies” policy arranged by the “Lijiao Economic Union”, the village shareholding company responsible to carry one the transformation process. This meant the creation of the first preliminary studies, constituting in planning proposal, land use distribution and a first draft for the heritage conservation. It is interesting to note that at that stage of the project only the main ancestral hall, belonging to Wei's family (figure 2) has been outlined as immovable relic following the Provincial lists, while others have been intended to be demolished or moved to a new dedicated area.

This low attention determined the intervention of municipal departments, recalling a deeper attention towards local preservation strategies. On 20th September and 10th October 2011, the News and Media Department

(even responsible for cultural relics) recognized 15 buildings to be preserved. The same list has been invoked by the Urban Planning Bureau of Guangzhou which informed on 12th October the Haizhu District Urban Renewal Office to consider the results of the Third National Relic Survey promoted by the State Administration of Cultural Heritage (Blumenfield and Silverman, 2013) as the basis for future heritage preservation implementation. This demonstrated how the hierarchical Chinese heritage management system (Zhu, 2012), led to strongly influence local projects due to important political changes occurring at the national level.



figure 2. Wei ancestors Hall main entrance captured from the first courtyard. Sources: made by the author November 2015.

Between 2011 and 2013 Provincial, municipal and District institutions began to invite Lijiao in promoting a better and comprehensive involvement of heritage preservation within the redevelopment project, determining an institutional alliance in stressing around the topic. Even Guangzhou Mayor Chen Jianhua on July 2013, stressed the importance to respect the provided heritage lists provided, and set the basis not only for historical buildings, but also for environmental protection. Taking into consideration the low interest demonstrated towards heritage preservation in former Guangzhou's urban villages in the name of a necessary fast urban redevelopment, Lijiao is representing a new political stress even surpassing the merely application of preservation legislation.

The institutional convergence brought the village to involve in the process an important real estate company, capable not only to directly invest in the area, but also to assure the necessary expert management. Through public auction, in 2013 has been selected the ZhuGuang Holding Company Ltd, one of the biggest player in Guangzhou. The cooperation between the Lijiao Economic Union and the ZhuGuang Group resulted in a land division proposal submitted in 2013 (fig. 3b) where the redevelopment of the village tried its best to fit into the newest Haizhu Eco-City Masterplan promoted in 2012 by the municipality. The biggest efforts made by the real estate company were aimed to adjust the infrastructural network in order to incorporate within the grid the largest number of listed relics (figure 3a). But at the same time this solution just considered the position of the historical building as intangible obstacles surrounded by new high-rise towers, creating a difficult co-existence between elements with an average FAR (Floor Area Ratio) around 5 and 6, positioned next to the lower historical ones. This plan aimed to satisfy both the demand of increasing as much as possible the revenues from the area, but it also demonstrated the difficulties in matching already tested residential communities together with urban planning regulations and the recent attention towards heritage conservation.

It is for this reason that in 2013 ZhuGuang Group invited Urban Elephant Architectural Studio (hereinafter called UEA), a design company based in Guangzhou long time interested in cultural relics preservation in China, to cooperate in defining a new masterplan that could find a good compromise between the future urban planning development and the historical preservation in Lijiao's inner core. The invitation of skilled experts on one side reveals the growing attention towards the emancipation of a precise professionalism, and on the other to interpose their role between authorities (not directly involved) and investors (seeking for a profit oriented approach). The intervention of UEA could be reassumed in two main strategies, fundamental to understand the shift from intending conservation based on single elements to a more comprehensive local development.

First of all UEA proposed to enrich the lists proposed by upper level institutions including private residential building which resisted the brutal densification occurred during the last thirty years of metropolitan economic urban, representing an important legacy characterizing the spatial living of the ancient Lijiao. Secondly the approach was based on conceiving the village not just as an agglomeration of relics, but instead a precise coded environment where natural and artificial elements coexisted along its history defining a precise image for local culture.

The creation of a longer list of building preservation resulted on one side with the favorably support from the municipality, but on the contrary provoked an additional negotiation with the real estate company: their larger number could create in the future a conspicuous loss in terms of possible revenues, even considering the little amount of money received from the municipality for their restoration. This testimony what urban village tabula rasa methodology is really made of within Chinese metropolis, that is the easiest way to surpass local morphology restarting from an empty space, erasing local differentiation which require time, expert consultancies and a larger investment.



Figure 3 a-b: The passage from the first solution proposed by ZhuGuang Group to that one proposed in collaboration with UAE. The design of the inner core of the village completed changed the planned grid division, merging different functions and natural elements is a new cultural cluster. Source: made by the author elaborating data from Urban Elephant Studio

The second one represents the tactic utilized by UEA to combine historical and environmental preservation with the new functional destination of the area (figure 4). This brought to deform the contents and objectives of the municipal masterplan, aimed to dispose quantities within an regular infrastructural grid, to focus over a neighborhood scale of analysis. The plan realized by the ZhuGuang Group in 2013 has been updated reconsolidating the present local morphology within the municipal grid. The most innovative aspect was based in conceptualizing the plan starting from the local famous "8 scenic spots" of Lijiao, specific places mentioned in XIX century poems aimed to eulogize Lijiao built environment, in order to define morphological patterns where listed buildings would have been inserted. Therefore UEA created in the middle of the village a bigger plot with a lower FAR including all the ancient relics and moving to other blocks of the real estate intervention high-rise towers.

In addition the expert intervention stressed the attention to intend the main canal as "immovable relics" likewise the others historical elements of the village. The limitation of the utilization of cars, the increasing of pedestrian ways and the correlation of natural resources, heritage relics and new functions in defining a new built environment, gave the chance to intended redevelopment firstly as cultural based operation. To achieve this goal the project has been enriched with a deeper understanding of the local spatial and social conditions, surveying and negotiating with villagers and authorities a new disposition to surpass the previous coded environment simply arranged by the real estate company.



figure 4: Urban regeneration proposal made by Urban Elephant Studio for the inner core of Lijiao village, including all the main listed heritage buildings. Source: Urban Elephant Studio.

Tracing the spatial implementation occurred thanks to stakeholders intervention in Lijiao redevelopment, highlights the importance in decoding within the authoritarian local state governance of Chinese metropolitan areas how transformation could occur through the overlapping presence of different contribution coming from strong social alliances. The awareness around the topic of historical building preservation has been placed in the middle of the negotiation as spatial and cultural aspects capable to influence already tested institutionalized procedures and becoming public debate in continuously deepening the policy reforms in urban management. Revealing the social and experts contribution within urban regeneration projects opens a new conceptualization about the decision making procedures regarding urban villages, passing from the too simplistic top-down bottom up dichotomy, to a more intricate interchange between skilled groups of involved stakeholders.

Results

The evolution of the plans for the historical core of Lijiao, well represent both the spatial negotiations between different actors and the deeper cultural framework within which new concepts and strategies suggested by experts could become crucial testing ground to improve future applications. The masterplan proposed by UEA demonstrated that the listing methodology posed by the Chinese legislation framework it is not enough to support a sophisticated transformation within the growing debate on heritage preservation at the national level: additional immaterial and material features deeply determining local culture had to be considered in order to improve the built environment within the more general redevelopment.

Under this point of view at every stage of Lijiao's project implementation it was possible to detect how different element of the transformation (building heritage, natural resources, existing transportation system, huge asset of informal fabrics) and future objectives (preservation, urban sanitation, profit-oriented operation), were input to manage the whole process under an holistic perspective, guided from legitimated institutions and group of interests. In this sense heritage preservation has become in Lijiao the pretext to create a spatial and institutionalized compromise, permitting that strategies supporting conservation could be reinserted both in a wider urban planning scheme and in the framework of the municipal "pro-growth" alliances.

But if on one side the negotiation could be welcomed as an important achievement, on the other it defined few important spatial consequences that in more general would stress the future Chinese urban agenda in defining tools to support preservation strategies. Firstly the conservation of Lijiao's historical inner core determined a physical separation from the rest of the intervention, where a tabula rasa approach has been never questioned following already tested extensive demolitions (figure 5). This suggests that even if the planned grid has been deformed, homogenization through functional blocks continue to represent the way to intend the sanitization procedure for urban villages. Secondly Lijiao relics preservation is based on cleaning up history (Sheperd and Yu, 2013), especially regarding the more recent constructions, basically reframing listed building within a newest intervention, with the creation of a cultural Park as the solely strategy to improve local quality without losing the support from investors and institutions. Thirdly even considering the project arranged by Urban Elephant an important progress in urban village transformation, the compromise made up with the future land division, admits the difficulty to pass from single building preservation to the restoration of the existing morphology. It has never been stressed out the importance of the geometry of the ancient settlement: even if has been fully compromised by contingent additions, irresponsible demolitions, it still represents features characterizing its everyday life, where its development contradictions could have been maintained next to the heritage relics.

Substantially the persistence of Lijiao village, intended as a the cohesion between social links and its produced spaces determining a precise cultural image, appears unbalanced between the monumentalisation of icons separated from their original ground and the complete demolition of other portions in order to respect the grid created by the planning authorities. Questioning wherever Lijiao will be still detectable, as it happened for example for the "hutong" neighborhood in Beijing or the "shikumen" alleys redevelopment in Shanghai, in term of social space production (Lefebvre, 1991) after the transformation remains an open question.

Conclusions

Taking into consideration the different spatial configurations of the heritage preservation in Lijiao it is possible to outline few considerations, involving institutions in supporting practices which could become in the next future an importance reference for others urban villages distributed in Guangzhou.

In Lijiao the preservation of historical buildings has shown a progressive attitude: based on a quantitative distribution of listed relics, the final projects has been able to pass from simple and static recognition, to the integration into a disposition aimed to define a new image for the local built environment.

The reluctant position of the real estate company in accepting the spatial conformation has to be seen under its political perspective. In order to obtain the fully approval from the municipal departments, as well as continuing to maintain stable social connection for further projects, heritage preservation defines on one side the erosion of financial revenues, but also strategic propaganda which could be addressed to the local community to reach a positive support.

Considering these positions, it is important to stress out who matters space, or indeed legacy, within villages in the city redevelopment? The case study of Lijiao suggests that the role played by the emerging class of skilled experts aimed to promote their professionalism, supported by media, academic debates and dedicated institution within the municipal management, is generating new tactics within Chinese heritage management. Beyond the contents of the Chinese legislation on cultural relics, their social presence becomes the node around which address future actions.

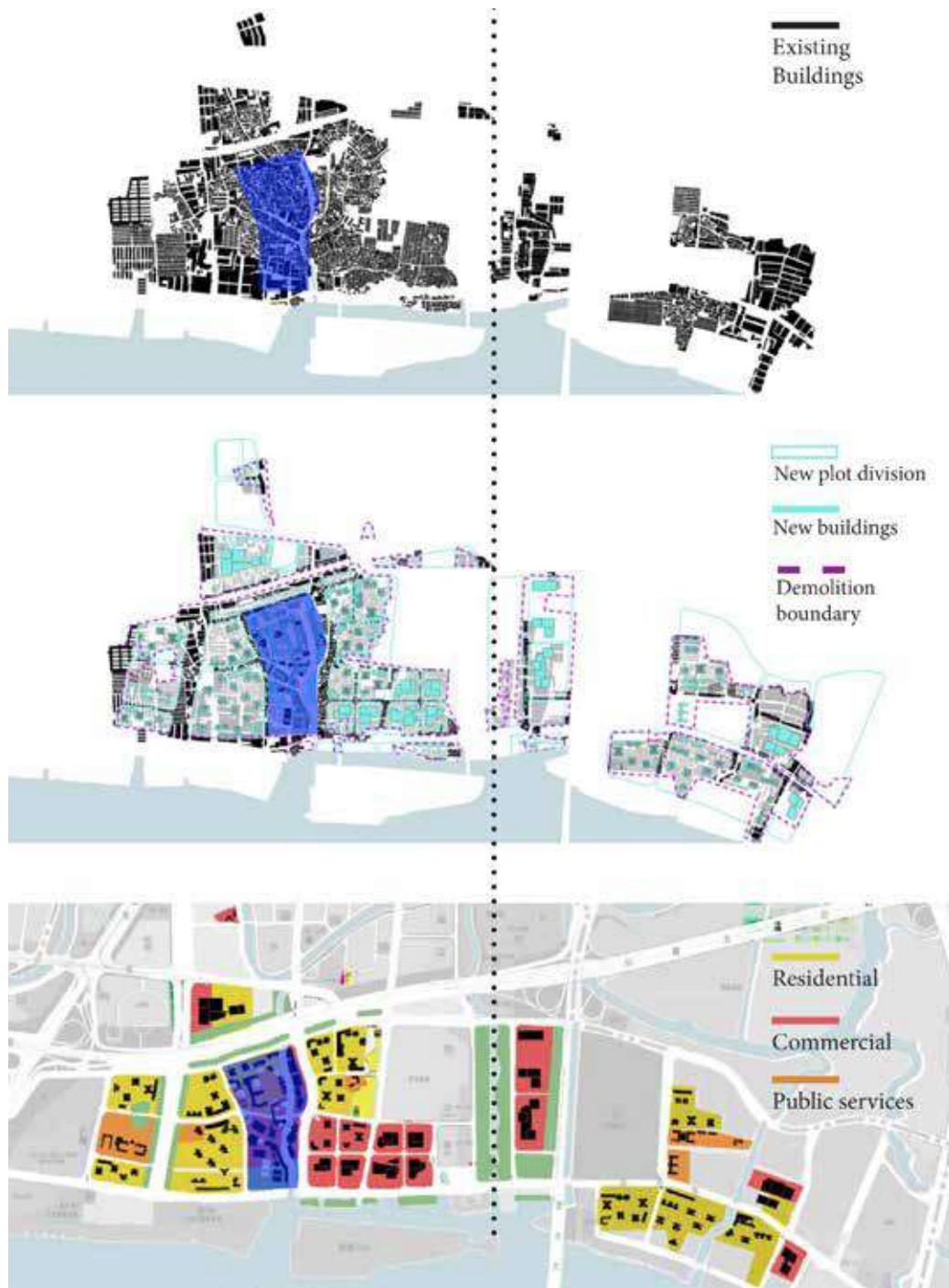


Figure 5: Overlapped scenario of the future transformation of Lijiao. (top): building consistency of the actual Lijiao village. (center) overlapping of actual condition and last urban planning division. (Below) overlapping of the new buildings distribution on the new blocks division. The blue boxes define the site managed by UEA. The black dotted lines highlights the future monumental urban axis promoted by the municipality. Source: made by the author starting from documentation of ZhuGuang Group and Urban Elephant Office.

The heritage preservation strategy detectable in Lijiao, for its innovative approach to surpass the solely requirements of the preservation legislation focused on single buildings towards built environment conservation, appeared an important step forward capable to contrast that “urbicide” occurring in fast Chinese developing metropolitan areas (Coward, 2009). In between tabula rasa approach or bureaucratic legislation application, a methodology based on the deeper study of the co-existence of different elements, raised the possibility to create that middle-scale observation of local features capable to truly affect stakeholders’ negotiations. In this sense starting from the urban planning visions until the recognition of single relics, this single case study pointed out the growing importance of a transcalar approach within Chinese urban planning methodologies, capable to become the future tools in supporting decision making processes around the transformation of local communities living environment.

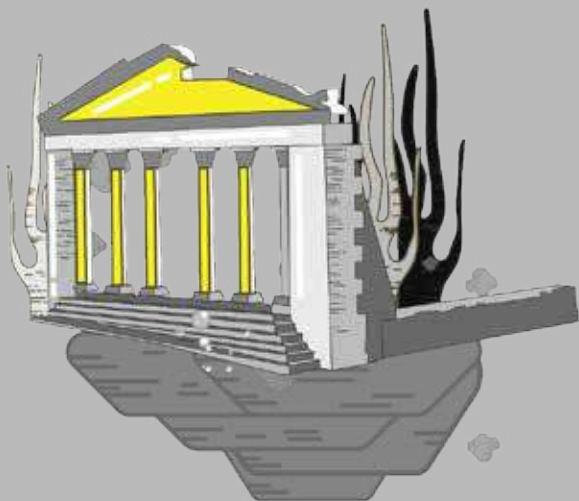
Acknowledgements

This study would not have been conducted the many help of experts and people directly involved in the project. For this reason I would like especially to thank Prof. Feng Jiang from Urban Elephant Architectural Studio and Mr. Ye Mingfeng from ZhuGuang Group for their deep information of Lijaio case study and for their important comments.

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[MEM/23]



Post Seismic Reconstruction: Identity and Safety in the Plan of Arquata del Tronto

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abstract

The current research concerns the thorny theme of the post-seismic reconstruction, through the case study of Arquata del Tronto. Facing the reconstruction in the contemporary debate means responding about two sensible themes: the recognition of the place's identity, respecting what it was and people who live that breakable territory and recognize in it their culture and home, and making it safe that places that are at risks. Historically the debate is divided in two methods. Who maintain that the founding principle of the reconstructed activity is the fulfilment of the form and the image of the destroyed areas, like a derivative process to recreate what it was, and who see safety the right key, through a process to renovate the form and the place, devising in safety areas with right technologies and forms. Using the architectonic plan, the research emphasizes both the problem of the place's identity and the safety to live in. Through a recognition of the relationship between city and territory, not only like a historic memory, but like a founding value of the city itself, the plan starts again from the orographic reconstruction, to redefine the relationship with a breakable territory. The orographic design puts the basis for the reconstruction of the places, in its evocative value, recognizing the ancient city's parts and emphasizing its values. Through this method the plan acquires its own character and independence but putting itself in continuity with the historical and typological process of the city that was, like in a renovation process. The city became, in this way, a recognizable place for who lived in it, not degenerating the territory that contain it, becoming a shelter, where identity and safety blend, joining the ancient idea of the city with the new answers that the territory demands.

keywords Reconstruction, Post-Seism, Safety, Identity, Plan

Introduction. Healing the wounds

"Who is become wise on the ancient origins, you see, he will search for the sources of the future and of the new origins... The earthquake in fact – buries many sources, and creates many dryness: but it brings to light deep vitality and secretes." (Nietzsche, 2017: 216)¹

In 2016 a series of earthquakes damaged the core of Italy. Many settlements were destroyed or strongly damaged, because unprepared to react to the seismic action. The event pointed out two important elements: the first is the deep bond between the population and the territory, that represents their home, a shell of values set between the spaces of the nature and the space of the city. The second is the unpreparedness of the architecture to face immediately to this problem, as methodological problem. Historically the reconstruction has been a problem faced case by case basis, inspecting every case study through its singularity. The attention turned to the preservation of the heritage, in their individuality, forgetting or partializing the problem of the city, creating methods of study and analysis of monuments, but not for the city and the territory, that have been helpless. The research, through the case study of Arquata del Tronto, tries to overtake the fragmentation of the solutions, to face the problem of the reconstruction as a problem of method, a method that can join the characteristics of the territory, the values of spaces of the ancient city, the forms of housing and the safety of the inhabitants. The reconstruction becomes a problem of architecture, interpreting the architecture as the art to create the space of man, so the space of life. The research tries to connect the problem of the form, and of its recognisability in the territory, with the safety of the structures, don't imitating the past, but knowing and interpreting it, considering the fragilities of the area. The knowledge of the territory, as knowledge of its forms and characteristics, is the gateway to understand and face the reconstruction. The form of the places and the objects is the form of their identity, as remember us A.

Monestiroli (Monestiroli, 2002: 74), so through the form, it is possible to face the reconstruction not as an imitation process or worse, as a process that forgets the ancient and the territory's values, but like an architectural problem, that from the remains of the ancient it's able to reconnect the man to his land.

Objectives. Architectonic forms and structural forms

The aim of the research is to identify a methodology to approach to reconstruction. This approach concerns the possibility to put in contact form and structure, where at the necessity to evocate places is added the problem to make the structure safe. Architectonic forms and structural forms coexist and collaborate to respond at unique question: to make places safe and to respect the quality of "urban cases" (Rossi, 2011: 91), in order that people recognize that like their home.

Historically the debate is divided in two approaches. The first, that we can identify like the "historicist" one, believes that the reconstruction process should consist of respecting of ancient image of lost city. The reconstruction translates into a derivative retracing of the ancient urban structure. The aim of this approach is the preservation of the city, to return to the damaged population what they had lost. In Italy, this approach was used by F. Sartogo and G. Caniggia in the reconstruction plan of Venzone. The village, destroyed during the earthquake in Friuli in 1976, was rebuilt like it was before the seism. Emblematic was the reconstruction of the Cathedral, rebuilt through an anastylosis process after a meticulous cataloguing of the collapsed parts. This plan is become a symbol of a method, where the recreation of the ancient is possible, where the destructive force of the nature is defeated through the rewind of the events. The city returns like it was, the nature is defeated through the denial. The second approach entrusts to the construction of a "new town" the response to the seismic event. The destroyed city is a weakness, the territory that it occupied is a fragility. The solution is the construction of a new town, in a better territory, with better structures, with an urban plan that can respond better to the seismic action. The ancient belongs to the past, demonstrating its vulnerability and it becomes memory, settled into the collective conscience. When in the 1968 Gibellina was damaged during the Belice's earthquake, it was decided to rebuild a new town, into a near valley. The new town was built like a garden city, distant from the typological and spatial models of the ancient village. The reconstruction process became an opportunity to build a new town, related to the new anti-seismic norms, that explores new forms of housing, new spatiality, new architectures, forgetting the ancient. The destroyed city is become a work of art, a memory, a remainder, the city loses the meaning of territory of man, and becomes motionless, insensitive to the flow of time.

The research inspects a third way. In fact, if the first approach assumes the noble task to return to the population the lost city, it creates a deceptive image, a false. We can't respond to the event, misleading. The city is the result of a centuries-old processes, a slow settling of experiences. The space is not only artifice but is the consequence of human experiences, of events that create memories, life. The second approach assumes the value of the human life, building safety spaces, with safety techniques, but forgetting the value of the territory, the attachment of people has with the place that they call home. The aim of the current research is to recreate the ancient and ancestral relationship between city and territory, through the study of the forms, the territorial and the architectonic ones, understanding the processes that are at the base of the city. The reconstruction is the result of the encounter between story, nature and the new techniques, the city is based on the evocation of the ancient spaces, in continuity with the typological process, in continuity with the tradition, not to imitate but to understand. The ancient is a value that we must assume, as a part of our tradition, to understand the past and create the future, to develop the potentiality of the architecture. The past stokes the new, guides us into the research, into the choices, into the plan. The identity of the places meets the request of the territory, the necessity to make structure safe, habitable for who wants occupies his home. Not copying the past, not denying it, but interpreting, assuming as a value of the project, of the redesign of the territory. Identity and safety, architectonic forms and structural form communicate, the architecture builds human spaces, connecting territory, city and the man.

Methodology. The territory, the city, the house

To rebuild the relationships between city and territory, man and nature, the research needs to retrace the conditions that created the urban form. This retracing consists in the identification of categories, of the territory and of the city, that allow us to define spatial values, or "the quality of the urban cases" (Rossi, 2011: 91). The task of the current research is the understanding those enduring values that are subjected to the development of the city, to the typological process, that connect the part with the whole, the space of the man with the space of the nature. To compose we need to decompose the parts, to analyse the elements into their singularity, to recompose than into the plan once we have recognized the characteristics. The first step is to decompose the territory, understand the morphology, then to recognize how the urban structure conforms to the topography, into its total composition and its constitutive parts, and then we have analysed the elemental part, the cell. Form and structure, the idea that is subject to the technique, coalesce to return the form of whole.

1. The Territory

The village of Arquata del Tronto is located in the core of the Central Apennine. Historically this part of Apennine is characterized by the presence of an important infrastructure: the Salaria route. This road is an ancient axis of connection that joins the west coast of Italy to the east coast, allowing to pass the arduous territory of the Central Apennine. During the Roman Empire this road became one of the consular way and since that period it doesn't change its route, forced by the form of the territory. The Salaria route pokes through the facet of the territory, and along its path shall comply with the transformation of the topography. The route creates, in this way, a sequence of scenery, consequential episodes that in their sequence identify characteristics and forms of the territory. Like an extensive urban situation, the territory is composed by parts, recognizable and different between them (figure 1). The Salaria road becomes the connection between this "territorial rooms", that occur in their morphological and perceptual values. To analyse in this way the territory means understanding those values of permanence that are the substratum of the transformation of the territory itself. It means to understand the value and the meaning of the "locus". The spaces of the territory represent "the street of the donkey" (Le Corbusier, 1925: 21), necessary to trace "the street of man" (Le Corbusier, 1925: 21), that must understand what there was before, to create the new. Through this analysis of the territory, the research identifies four types of the spatiality in that section of the Apennine passage: the cleft, the pass, the valley and the intersection of valleys.

The cleft is a compression of the territory, where the walls of the mountains create a tight and long space. Like a corridor the cleft allows the Salaria route to cross the Apennine landscape through its compressed spaces. The landscape is dominated by nature: rocks and woodland essences accompany the view of the observer that travels the cleft.

The pass is a hollow of the mountainous spurs by which are formed transport route. The way of the Salaria route doesn't cross the pass but intersect it. The pass is the lower point between two mountain ranges, but it is the upper point in relationship with the route, that cross the valley part of the Apennine. The Salaria grows its height, earning advantaged points on the territory.

The valley is an enlargement of the territory. The mountain ranges create a crown surrounding the hollow, circumscribing the space. In the Roman epoch, these were the favoured places for the constitution of new towns, like Rieti or Ascoli Piceno that occupy situation of hollow of the territory.

The intersection of valleys is an additional enlargement of the territory. Two valleys are interwoven, stretching out the visual horizon. The mountains don't create a crown surrounding the valley, but are deposited on the background, dilatating the space.

Interpreting the words of Vittorio Gregotti, the knowing of the territory is the knowing of the way of a population to live a space, because the living is the way that the man is on the earth (Gregotti, 2008: 44).



Figure 1 – The Salaria route like "landscape system"

2. The city

Understood the spaces and the places of the nature, the research examines the city and how it relates and builds the places of the staying and housing. In continuity with Aldo Rossi's idea the city is expression of "locus", physical and evocative permanence. The "locus" is for us the relationship that the city builds with the territory, the city becomes extension of the nature, not imitating it, but acquiring it and generating the man's space. If the nature is randomness, the man is "the reason to moderate the sentiment" (Le Corbusier, 1925: 21). Tied to the space of the nature there are the space of man, in their recognizability, fortresses on the territory, symbols of the human living. Tied to the territory, the cities assume its forms and the identified categories reflect this condition (figure 2). Before proceeding to the description of these categories, it's important to define the contour in which the research works. In fact, if the study of territory assumes the section of the Salaria route that cross the Apennine, this section can't be convincing for the city. It's important to recognize a cultural and physical surrounding, around the area of Arquata del Tronto. In this way we have recognized around the figure of the Monte Vettore, a pole around which gravitate some settlements. In this cultural region, we have recognized five categories of cities, that relate city and nature.

On the summit of uplands rise the peak's settlements. Like an acropolis these settlements conquer the highest part of the upland, enveloping the side and occupying then the summit. The favoured position allows to these settlements to control the territory, like a lighthouse between the mountains.

Plunged like a wall in the rock of the side of the mountain there are the slope's settlements. The urban structure follows the contours in parallel, putting in continuity with the ground that goes up. The form of the city is a line that stands on the shape of the territory.

The ridge's settlements are urban structures that stand along a ridge of a mountain. The physical shape makes these cities forms in development that occupy the entire thickness of the ridge.

At the end of the ridge's path, when the way falls towards the valley, there are the spur's settlements. These cities enclose the spur, developing around it. The city become a fortress that surrounds the territory and looms on the slope. The valley's settlements are formed in widenings of the territory. The city develops in breadth, occupying the available space.

The forceful relationship with the territory ties the categories with meaningful parts of the territory. This condition generates settlements characterized by a marked landscape component. This connection with the territory has an impact both at the urban scale and at the scale of home that shows in its combination and in its singularity the deep permanence of the physical element.

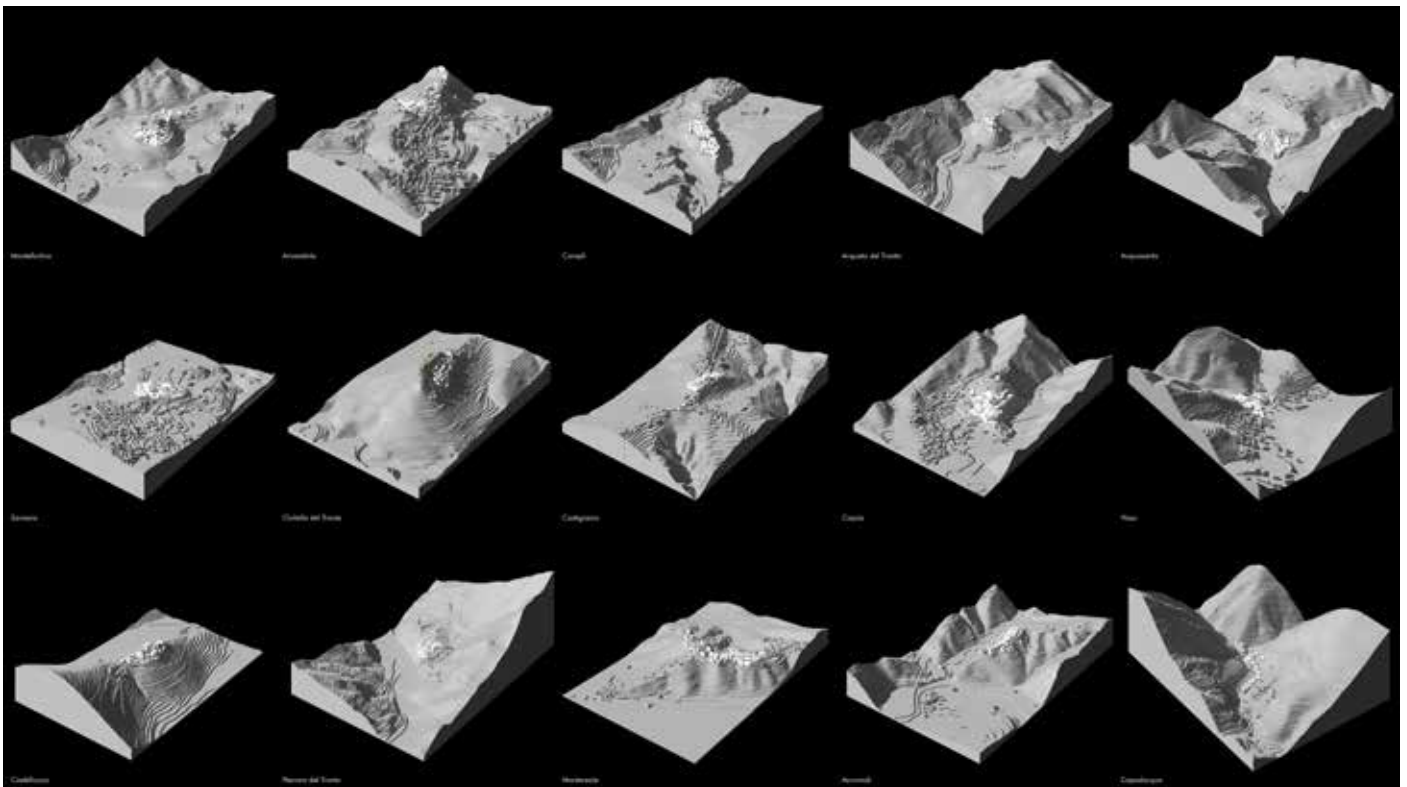


Figure 2 - The settlements and their territory

3. The house

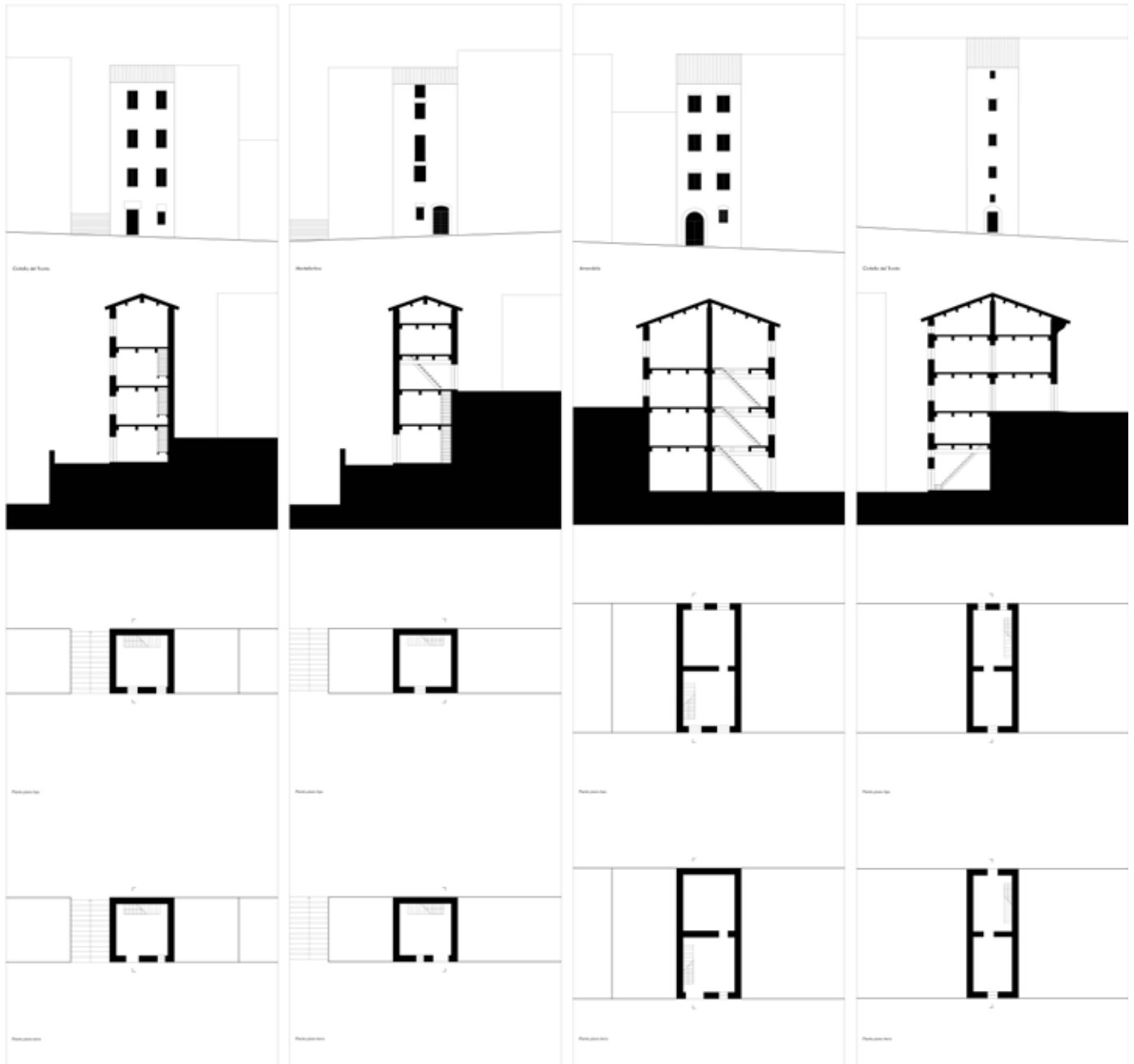


Figure 3 – The forms of the house

Thinking to the city like a “composition as the sum of the same elements” (Benevolo, 1996: 40), the research analyses the housing cell, through its combination, to form parts of city and through its singularity, to understand its typological characteristics. The study of the single cell intersects with the form of the territory and with the capacity of the urban parts to relate between them and to build parts of the city. The research recognizes these urban parts in relationship with the topography, creating three different situation: aggregates that are organized on a plain, that follow the shape of the territory, aggregates parallel to the contours that in their sequence solve the leap of height, and aggregates orthogonal to the contours that with the different heights of the single cell supporting the slope of the ground. The research emphasizes as urban parts, in relationship with the ground, change, even if the structure of these aggregates is similar. In fact, the type is represented by a unique typology: the tower-house (figure 3). This house develops in height: a unique o double piled cell that grows to resolve the different height of the two fronts. These towers seem to be born from the ground with their substantial height, in their double action to compact the terrain, acting like a buttress and to be a place of living. Aggregated between them, these towers create a structure very similar to a town walls that close the space of the city and develop in relationship with the transformation of the ground, modifying their orientation. The nature reveals itself in the discontinuity of the urban tissue, creating urban windows. The continuity, created by the tower-houses, generates passageways into the city. When the urban tissue intercepts monuments or areas dominated by the value of the

nature, the tissue itself broadens, enclosing the urban space. The image of the city is composed by high tower that in a sequence generated a boundary, between “the city of the man” and “the city of God” (Loos, 1972: 272). The towers are composed by a unique or a double cell, in relationship with the availability of the ground. The rooms are in sequence where the spaces privatize going up: from the warehouse in the underground to the bedroom, passing through the workshop and the living room. The structure of the towers is composed by stone or bricks walls, interrupted by small windows or wood structures that create loggias, called “verdesca” in the area of study. A wood structure bears the pitched roof covered by red-brown shingles.

Results. The new image of Arquata del Tronto

“Can I lead you on a shore of a mountain lake? The sky is blue, the water green and all is deep pace. The mountains and the clouds reflect their self on the lake, and the houses, the courtyards and the chapels too. It seems they are there as they aren’t made by the man’s hand. As they emerged by the laboratory of God, like the mountains and the trees, the clouds and the blue sky. And all breathe beauty and peace.” (Loos, 1972: 241)².

These brilliant words of Adolf Loos, in his essay “Architecture”, represents what Arquata del Tronto was before the catastrophe (figure 4). The city was in a perfect equilibrium with the nature: its form encloses the spur, indulging the topography of the ground; its houses made by high tower seem arise from the rocks. Over the city the stronghold dominates the landscape, the valley of Tronto at the bottom of the spur. The mountain appears beyond the stronghold, but it doesn’t instil fear, it is in continuity with the urban structure, or the urban structure continues the work of the nature. Hidden between the houses there is the square, that connects the way to the stronghold and the path to the valley. A work of substruction, made by arches, contains the way to the village. It is like the engineer mentioned by Adolf Loos that build the railway on the “light body of the lake”. It is on the rock wall, but it doesn’t disturb the equilibrium of the nature, but it creates the Arquata’s landscape.

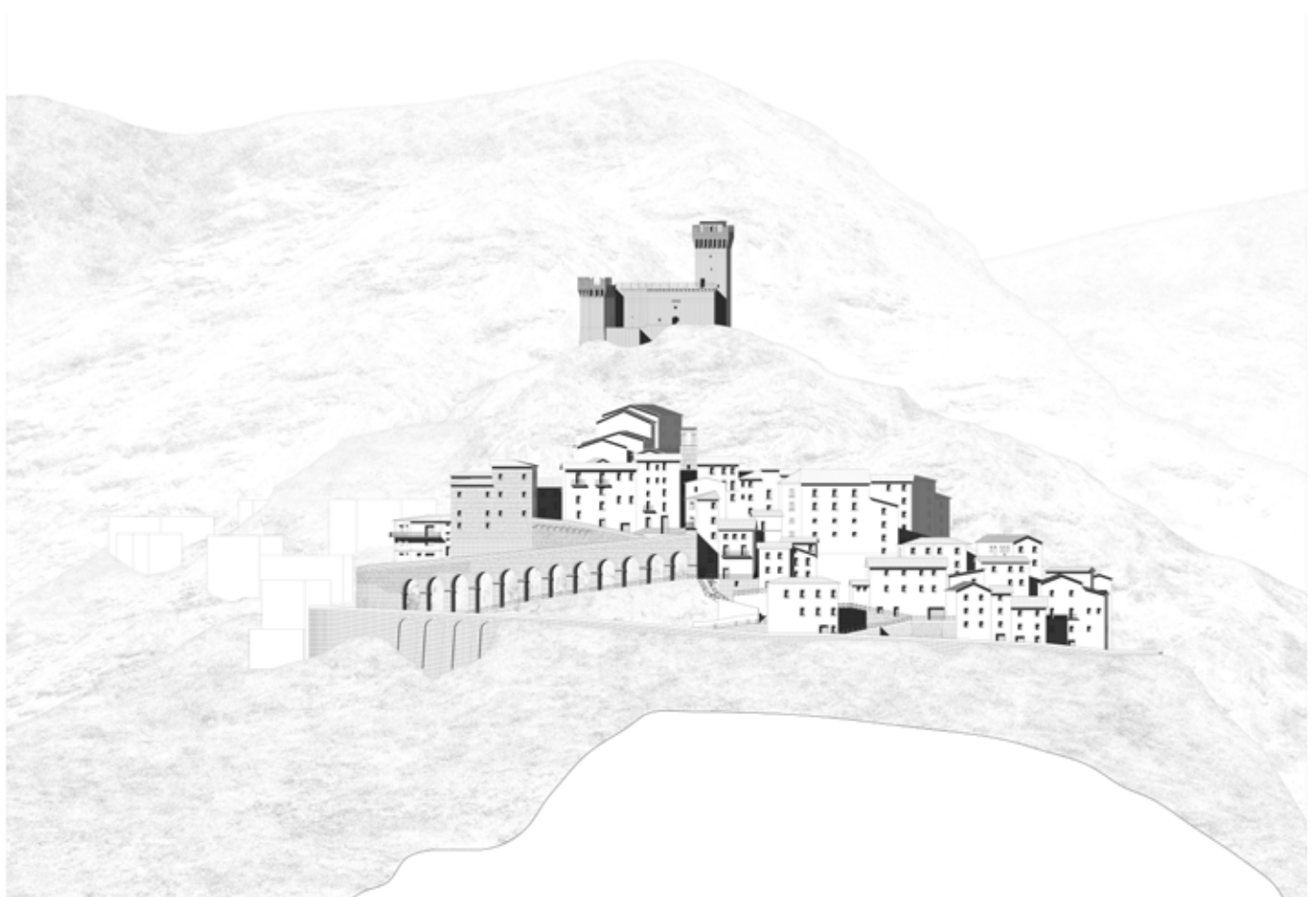


Figure 4 – The village of Arquata del Tronto before the earthquake

When the earthquake hits Arquata del Tronto, the nature is coming up in its intensity. The houses collapse, and it remains the structure of the territory. The stronghold and the arches at the bottom of the village are the only structure that remain, the testament of the ancient image. But the layouts are on the ground: the square, the way to the stronghold, the way to the valley, pieces of city that connect the square to the street at the bottom the

spur. It is the starting point, what the ancient gives us, whispers on the ruins. To rebuild the form, to rebuild the relationship with the ground, recognizing the founding parts of the ancient village. The first step in the plan is to anchor the city on the ground (figure 5). This act has two meanings: the first is an ancestral meaning, that is the act by which the man appropriates the land; the second is to prepare the ground to receive the buildings. The construction of terracing allows to recognize the parts of the city and to stabilize the terrain, improving the seismic response of the city, that works like a great unique block. The plan locates three platforms: the square in the core of the village, the way to the stronghold and the part towards the valley, that close the form of the spurs. The city is composed by parts, and every space is fenced by buildings that recognize the urban space.

Every space is dominated by cornerstones, that identify the space and close the composition of the city: the church, the municipal hall, the museum. The structure of the city is composed by tower, interpreting the ancient substrate of the settlement. The towers arise from the platform and grow independent. Only the slab joins the different towers, that represent the room, in its uniqueness (figure 6). The windows are wood structures that emerge by the discontinuity of the wall and push out towards the landscape. The towers are organized around the space, broadening or moving close, to create the square or the street, in relationship with its composition on the space. "Primal elements" as generating force of the "urban case" and "the residence" that forms the city in its development (Rossi, 2011), trying to start up again the founding act of the city, don't forgetting the city that it was, but assuming and making in the plan the values of the ancient, the tracks of the time. The city is thought as an architecture, a work of art at the service of the man, "a construction in the matter, and despite the matter, of something of difference" (Rossi, 2011: 25). The man is conceived not like the man of the earth but the man that live in a precise place, taking account of the transformation that the territory makes on them and on their way of life (Rossi, 2011: 188). The aim of the plan is to return the territory to its population, allowing them to recognize in it.

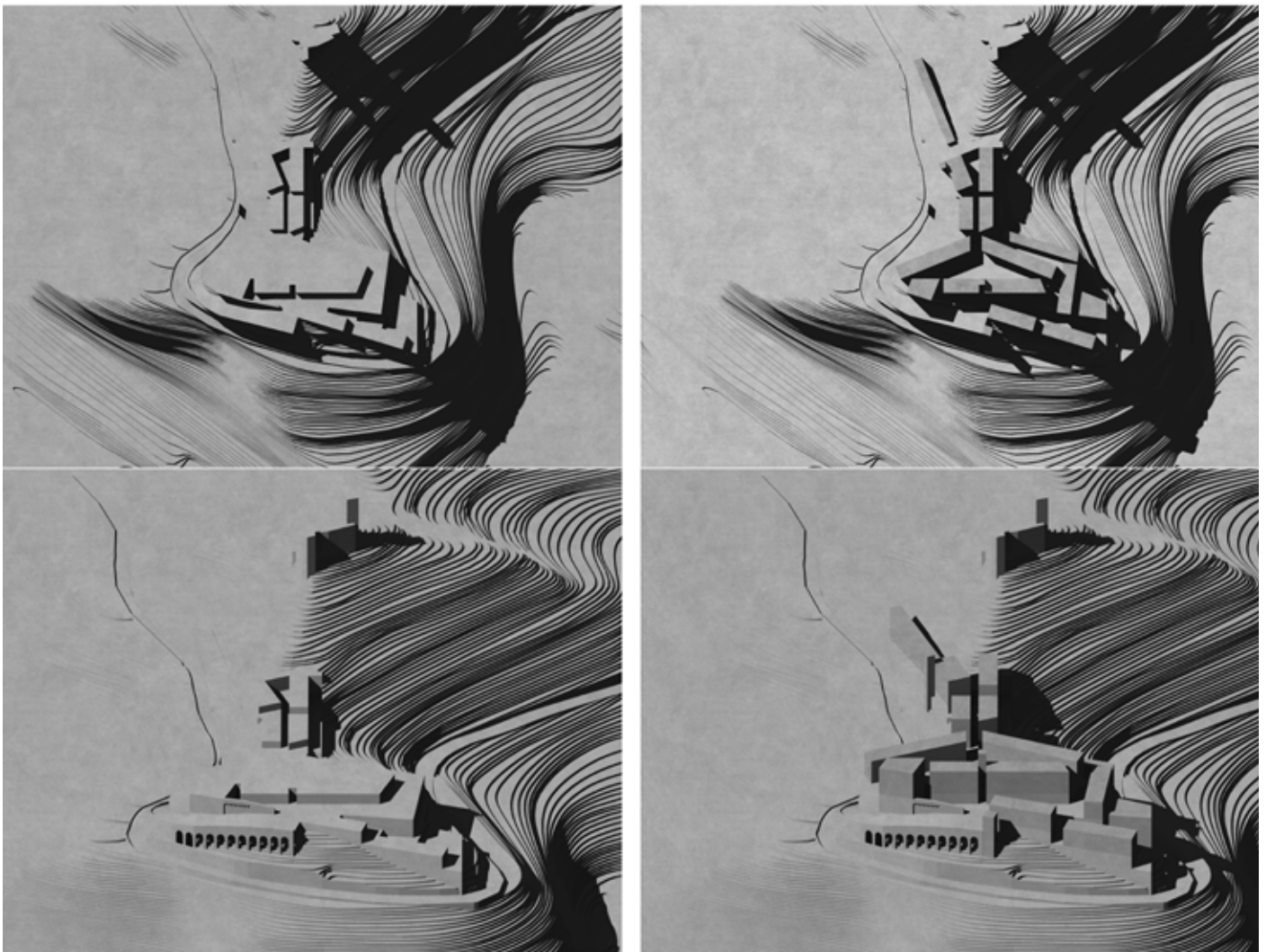


Figure 5 – Identification and enclosure of the parts of the city

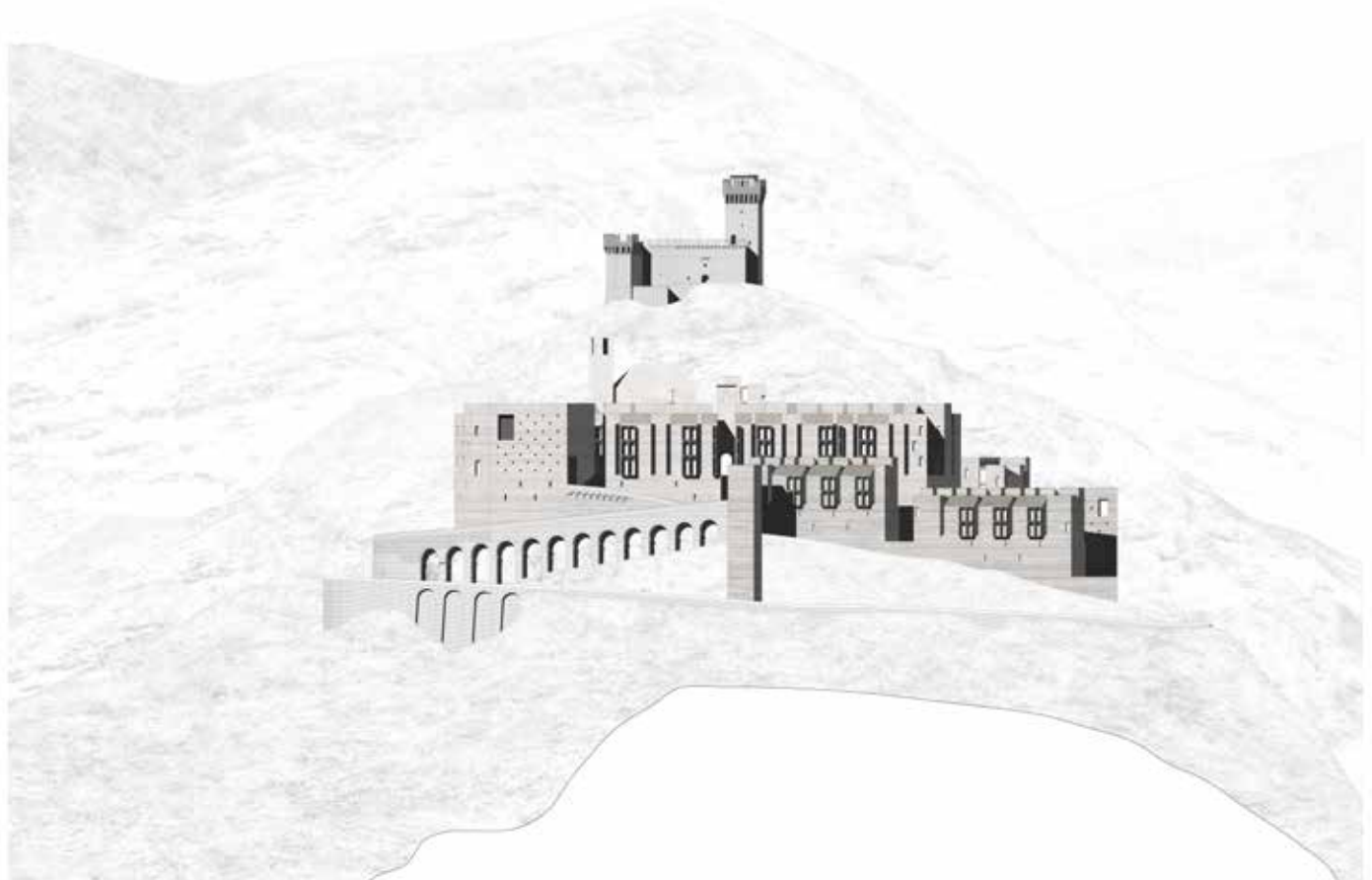


Figure 6 – The image of the new Arquata del Tronto

Conclusion. Rebuilding the places

The reconstruction is a delicate act, a repossession of a place. To rebuild means to retrace the history, the equilibrium that the man created with the territory for ages. The design of a plan is like asking a permission because our action is an insertion in the plot of the history. Adolf Loos, another time, describes and explains this action in a little essay "Rules for who build in mountains":

"You don't build in a picturesque way. You leave this effect to walls, to mountains and to the sun... Pay attention to the forms that the farmer builds. Because they are heritages transmitted by the wisdom of the fathers. But you try to find out the reason that have led to that form... You don't think to the roof, but to the rain and the snow... Be true! The nature stands only the true! ... Because the true, even if it's centuries old, has with us a deeper relationship than the lie that are walking near us." (Loos, 1972: 271-272).

The research of the new form is the act of seeing the former's forms, a way to put in communication with the nature, with the "heritages transmitted by the wisdom of the fathers". The territory, the city, the house, joined through the act of the plan, from the basement to the roofs of the towers that aim at "the blue sky" (figure 7). The equilibrium between nature and man. The plan explores the way of a population to live a territory, their relationship with the nature, with the pre-existence, with the value that the territory, the history of the places. The design of the new is an act of rediscovered by which we unite the man of that place to his origin, his tradition. This should be a reconstruction, a rediscovered, a way to put in communication with walls, mountains and sun. If we understand this fragile relationship, we can continue the history, not imitating it, not getting away from it, but recognizing "the wisdom of the fathers". Through the reconstruction we don't think to the roof, but like the early humans we can think to the rain and the snow that fall on us.

Interpreting the words of Antonio Monestiorli: "...the project of architecture is a moment of the man's awareness and of the places that they live, that are conformed in relationship with their historical culture with the aim to represent clearly and durable the values. The knowledge of the theme, the study of the places, the research of the form are phases of a unique procedure followed with the awareness that who plans must be an interpreter of the culture of the community whose his project is addressed." (Monestiroli, 2002: 40).

These words express clearly the task that the architecture must have in the plan of the reconstruction: to know and to interpret the places of the devastation, to recover the civil value that the ancients recognized at the architecture as the art to build the land of the man.



Figure 7 - "The towers that aim at the blue sky"

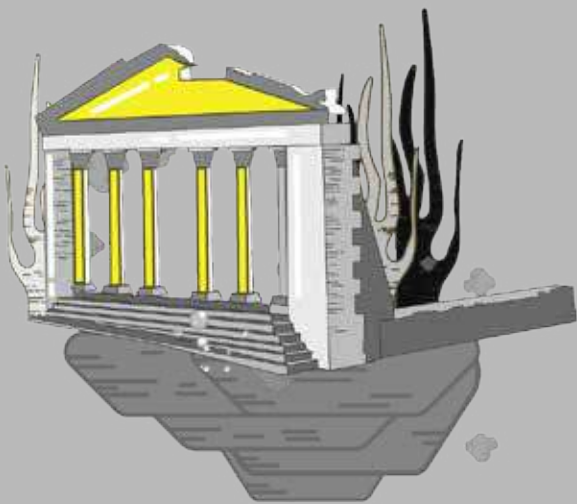
Acknowledgments

The current research is based on the work developed during the graduate thesis "Identità e Sicurezza: Arquata del Tronto" at the Polytechnic of Bari, in the course of master's degree in architecture. The research was conducted by the author with the colleagues Emanuele De Mario, Francesca Sanseverino, Chiara Toziano, Lucia Valentino and Volpe Angela, with the guide and the supervision of the supervisor professor Francesco Defilippis and the tutor professor Antonio Nitti, with all thesis's college: professor Loredana Ficarelli, professor Giacomo Martines, professor Aguinardo Fraddosio and professor Vitangelo Ardito, that share with the author the intellectual propriety of the current work, re-elaborated and deepened for the occasion. The figures in the text are been elaborated during the work of research and they are the property of all authors.

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Layers of time: designing future with the past in mind - the example of the Budapest City Park

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abstract

The Budapest City Park (Városliget, Liget) is one of the world's first public parks, giving a home to several cultural, recreational and entertaining institutions and facilities. Every era of the changing city and its society left their marks in the park, but lacking the comprehensive attitude, Liget had been getting more fragmented, polluted, degraded and outdated. By the turn of the 21st century the area got in need of a complex renewal.

Background studies showed that Liget's visitors don't need serious structural changes, only better conditions, e.g. good quality walking surfaces, more park furniture and larger green area. They reported silence, peace, naturalness and the vegetation as the park's foremost values. Research shows that modern infrastructure, e.g. adequate public toilets and digital facilities are also basic in a modern public park. So the task is to preserve the cultural and natural heritage while making it more usable and accessible.

During the design process modern design tools were used to preserve and present historic values and to re-organize connections, while ensuring feasibility, sustainability, economy, accessibility and "smartness". With these tools visitors can be invited to the park more frequently and for longer periods, and at the same time the rehabilitated ecosystem becomes more stable and sustainable.

Beside leisure and cultural activities, working also became an important use of urban green areas. In our digital world, all these activities require or can be supported by digital technologies. Digitalization (e.g. Smart Liget) as a new design tool is capable to invite a wider range of people to the park, representing numerous layers of past and present. Digital information requires minimal physical interventions in the historic park, meeting the interest of the city, the park and the visitors. This digital meta-layer links all the layers of Liget, making them readable, audible and accessible.

keywords Urban Design, Historic Urban Park, Heritage Conservation, Contemporary Park Uses, Smart Liget

Introduction

1. Renewal of the Budapest City Park

The Budapest City Park (Városliget, Liget) is one of the world's first public parks. At the turn of the 19th century the former urban woodland called City Forest was already used by the residents for walking and taking excursions, although proper infrastructure and outdoor services were absent. The area was designed into a public park by the design competition winner Heinrich Nebbien from 1813 to 1816. (Szilágyi and Veréb 2013:22-23) During its last 200 years the park has become home of several cultural, recreational and entertaining institutions and facilities. Every era of the changing city and its society left their marks in the park, but lacking the comprehensive attitude, Liget had been getting more fragmented, polluted, degraded and outdated. By the turn of the 21st century the area got in need of a complex renewal.

Városliget is a more than 200 years old historic park with a reach history and many noticeable transformations. During its renewal it has been a priority to preserve and present historic values and to re-organize connections, and at the same time fulfilling contemporary needs and principles in a public park as an important part of the urban tissue. Therefore the design process of the historic Liget was preceded by a comprehensive survey in all related fields including urbanism, architecture and landscape architecture, civil engineering, history, sociology, legislation. All concerned agents from decision-makers through green infrastructure managers and planners to the everyday users have been involved.

One of these surveys were spring and autumn on-site observations combined with a questionnaire in 2013-2014¹, recording 34.733 park visitors activity, and evaluating 1.018 questionnaires. Research shows that Liget's visitors don't need serious structural changes, only better conditions, e.g. good quality walking surfaces, more park furniture and larger green area. They reported silence, peace, naturalness and the vegetation with old trees as the park's foremost values. The main activity recorded was walking, the second most common purpose of park visit was meeting friends, and the third was visiting the Budapest Zoo. Research also shows that modern infrastructure, e.g. adequate public toilets and digital facilities are also basic in a contemporary public park. (Szilágyi et al. 2014) So it can be concluded the active and passive recreation, social interactions and institution programs are the main purposes of visiting Liget.

After the investigations, in 2016 an international open design competition was mentioned for the complex rehabilitation of the park. The winner landscape architect office, Garten Studio started to elaborate the conception plans based on their design for the competition. During this period an intensive social consultation had taken place concerning the ideas of the landscape design. The already on-going design process and construction is scheduled in phases. The Garden of the Blind, Hungary's first sensory garden designed for visually impaired people, has been renewed in the 1st phase.

Objectives

The aim of this paper is to investigate the context of inclusive urban park design in Hungary. Through the example of the Budapest City Park (Városliget, Liget), recently being under renewal, we examine spatial designers' attitude towards universal landscape design. We analyse the Accessibility Conception of Liget regarding its applicability for open spaces, and especially for a historic urban park which has many natural and cultural features where principles for the built environment cannot and do not have to be applied. We also question if dealing with accessibility issues from the beginning of the design process, already in the preparatory phase could contribute to a more inclusive design.

While examining the modern design tools, it is important to discover how much the past and contemporary park uses are identical, and how much the average and disabled needs towards an urban park overlap. After showing the changes, focus shifts and correlations between past and contemporary design principles and the abled and disabled park usage patterns, we investigate how physical interventions endangering cultural and natural values can be minimized, and discover the role of digitalization, and its contribution to preserve the historic heritage while making it more accessible for all.

Methodology

We have been continuously investigating accessibility issues for several years, and also the Liget Budapest Project since its beginning, reviewing and analysing literature concerning past and contemporary park uses, and the social, legal and physical context of universal landscape design in Hungary. We participated in the design competition on the Liget's park rehabilitation in 2016, when we studied the competition's surveys and reports. As members of the Accessibility Working Group of the Hungarian Association of Blind and Partially Sighted, visitors' needs toward Liget were questioned and used in the conception phase. In the design phase we also participated in the social consultations mediating between the agents involved. Personal experiences from our design practice also confirm our findings.

Results

1 / The context of inclusive urban park design in Hungary

Equal access to public services is a principle of democracy. In well-developed democracies democratic values are rooted in practice, and analytic regulations can be gathered from the practice itself. This "from the bottom to the top" thinking represents individual equality in the society by default, and the manifestation of this attitude results in equally accessible open spaces, allowing more freedom in the spatial interpretations. The less the democratic values are integrated into the society, the more top-bottom, deductive legal regulation is necessary. In Hungary, disability issues have to be controlled by laws, as the social attitude is still quite intolerant towards diversity. In this case, the understanding of the special needs is essential when designing open spaces in order to achieve inclusiveness for all. (Szászák and Kecskés 2015) As Kálmán and Könczey state, disability is more than a consequence of impairments, but it is more the consequence of the exclusion from social activities (2002). Being part of our society and using design tools for forming the environment spatial designers can contribute to the elimination of this social disadvantage. But social attitude changes slowly, and even recently in Hungary disability is treated as invisible in the society, in the design process and as a manifestation of this phenomenon, also in our

open spaces. The spatial designers, following in more aspects self-serving aesthetic canons, often consider the primarily functional barrier-free design solutions as limits of the creative design process and the aesthetic design product, and experience the global trend of providing equal access to open spaces as an excessive expectation threatening local identity.² We declare that respectful and good design's aesthetics lies in the appropriate spatial answers given on the transparent language of landscape architecture (Kecskés 2014).

In Hungary legislation and design guidelines concerning open spaces are less detailed and developed than for buildings. As urban parks are characterized mostly by natural elements and features, requirements and guidelines on the built environment can be hardly adapted. Accessibility is defined by the laws as follows: "the built environment shall be considered accessible if convenient, safe and independent use is ensured for all persons." (Hungarian act LXXVIII of 1997 on the formation and protection of the built environment 1997:2.§ (1)) With the development of the theoretical background of accessibility, the focus was shifted from the physical barriers to the equal access to public services, including access to urban public open spaces' services. But the design guidelines for open spaces are poorly developed even currently, and have not been translated into the implementing regulation of the building act (OTÉK) yet (Hungarian Government Decree on the National Settlement Planning and Construction Requirements (OTÉK) 1997).

2 / The Accessibility Conception of Liget

As outlined in the previous chapter on the Hungarian context of urban park design, the theoretical and technical background for inclusive urban parks was not well developed and detailed when the Liget Budapest Project started. At the same time, equal access and disability issues were among the project's priorities, therefore every party dealt with the topic from the beginning. In the preparatory phase design guidelines considering the Hungarian legal context and the European standardization norms were collected and adapted for urban parks, with a special focus to Liget. This documentation was discussed with several organizations on disabilities, and all their remarks were integrated to the final preparatory report.

Accessibility for people living with disabilities was a particular chapter within the design competition, and has been getting attention during the design process. After the winner was announced and social consultation started, accessibility conception went through further conciliations, responding to the plans and to the feedback of the consultation about the plans.

Considering theoretical and social outputs – the collection and adaption of up-to-date technical solutions, and the continuous feedback from the social consultation – it can be concluded that this project contributed to the development of the theoretical and technical background of design, and has the potential to get integrated into the laws. The documentations and reports give a strong basis for updating recent design guidelines and requirements. And the social consultation gave the opportunity for Hungarians living with disabilities to begin becoming visible, and add their own remarks to the project, satisfying universal design's principle "Nothing about us without us".

3 / Accessibility needs of people living with disabilities

The equal access to an open space is influenced by several factors, including environmental, social, economic, cultural, legal conditions, and also by individual factors, like the type of the impairment, the time and duration of the disability's occurrence, the aid used, etc. Now as spatial designers we focus on the environmental factors. In an open space equally accessible for people with any disabilities, appropriate ergonomic dimensions (e.g. human reach zones, proper space for manoeuvring) are essential. The differences in level and the grade and length of slopes are also limited. The distance between spatial elements functioning as space marks has to be moderate.

The surface characteristics are also of great importance: the ground has to be stable, firm, and slip resistant. People with sensory impairment need information via other senses, so simultaneous tactile, audible and visual information is required (two-sense principle). Boosting stimuli from the environment, e.g. contrast in colour and light, legibility, or detectible level differences are also tools for inclusive design. Inviting and friendly environment gives a sense of safety and comfort, which is basic for equal access. (AWARD – Accessible World for All Respecting Differences 2009)

Due to the aesthetic-based canon spatial designers ask the question "What do you want (to see here)?" Designing with people living with disabilities, similar to designing with children in mind raises the question "What do you want to do?" (Kylín 2013; Szaszák and Kecskés 2015). People who attitude to the environment this was perceive it via activity, via movement, via body (Kylín 2013). Similarly, as Macpherson (2007) says, walkers living with visual impairments experience the environment bodily, "via movement, memory and sensations other than sight". Therefore equal access to the environment is especially important for people living with disabilities.

1 / The investigation was elaborated by the Garden and Open Space Design Department of the Corvinus University of Budapest, Faculty of Landscape Architecture and Urbanism.

2 / These conclusions were drawn after several feedbacks of colleagues in many situations from meetings to conferences.

4 / Past and contemporary park usage in urban parks of Budapest

The expectations toward Budapest's public parks and gardens have been continuously changing influenced by paradigms, economic, environmental and social conditions, individual needs, etc. At the beginning of the 20th century, the public urban parks were places for social contact, primarily used for walking on the promenades and paths, and visitors had to "keep off the grass" (Figure 1). With the rapid development on several fields of life during the last century, residents' notions concerning urban green areas have also changed: people started to use the objects and features other than promenades, and parks inhabited recreation, sport, play, adventure and numerous other outdoor attractions (Figure 2). For the overworked citizens today the urban green areas and their services are of great importance, contributing to the physical and mental health and well-being of their visitors, providing the experience of nature in a dominantly built environment, and through these benefits positively effecting the quality of life (Thompson and Travlou 2007).



Figure 1: The English landscape garden of Liget in former times, primarily used for passive leisure and social contact. The small fence sends the message: "Keep off the grass". (Source of the image: Bazsó and Szikra 2012:45)

Contemporary phenomena following the visitors' activities in an urban public park include the increase of the need for passive leisure, infrastructural development and services, image elements and communication, and accessibility on foot and by public transport. In the urban parks of Budapest active recreation takes place along the more accessible edges, while the inner areas are less visited. Recent services do not invite children into the park. The need for green areas in the close neighbourhood is also growing among the citizens. (Fekete et al. 2016:117) As the Liget usage survey by Szilágyi³ (2014) showed, the park visitors liked the park in its original form, and needed not structural but only minor changes like more park furniture, increased quality of the landscape features' condition (green instead of grey, good quality and maintained walking surfaces), and better infrastructure (more public toilets). The main purposes of the visits were active and passive recreation, social interactions and institution programs.

It can be stated that the results of Liget park usage survey (Szilágyi et al. 2014) correspond with the general contemporary park usage patterns. The increased need for passive leisure justifies why silence, peace, naturalness and vegetation are considered as the park's foremost values, and why greater green area, more furniture and better infrastructure is required. The absence of children is also proven by Szilágyi's survey. The presence of homeless people in the park is also mentioned by a significant proportion of respondents. Although it is not mentioned in the survey, the absence of people living with disabilities is also noticeable in the Hungarian green spaces. Here we assume that a proper landscape design can contribute to the solution of these partly social problems.



Figure 2: The Kopaszi Dam, Lágymányosi Bay is one of Budapest's large public parks. Garten Studio (also winners of the Liget design competition) was awarded the 2009 Pro Architectura prize for the park's revitalization design, considering contemporary park usage patterns. The information board says "Keep on the grass". (Source: press release)

It also can be concluded that a purpose does not meeting the needs of contemporary park visitors leads to protest: one subproject within the Liget Budapest Project, namely the Museum Liget subproject opposes the needs of the park users, as it invites three new museums to the park decreasing the green area and endangering the park's natural values, especially naturalness and silence. The protest against Museum Liget can already be noticed in the questionnaires, in which visitors mentioned this subproject among the problems (Szilágyi et al. 2014:52).⁴

The reason that Liget's visitors do not need serious structural changes can be traced back to the validity of the 200 years old design principles of the English landscape garden even today (Fekete et al. 2016:120–121). Contemporary landscape design for historic urban parks applies these principles by Joseph Paxton, contemporary to Nebbien, and so does the recently on-going design process of the Liget Budapest Project. In the previous chapter it was stated that contemporary needs toward urban parks had somewhat changed: the structural elements give a frame for the activities of the 21th century citizens, which beside the former and still recent need of recreation also include education, health and well-being. The hierarchic network of paths and promenades in the contemporary parks does not only organize the space, but also connects the several functions and attractions taking place in the park. At the same time, other principles like the adaption of nature and achieving sustainability ensure the feel of naturalness, and the various surface grading contributes to the protection of the park from air, noise and visual pollution have been still identical. And so is the presence of edifices, which beside the aesthetic value also are capable of inhabiting proper infrastructure and services, e.g. restaurants, public toilets and other public services. (Fekete et al. 2016:120–121) It can be assumed that former and recent park uses have many similarities, and an urban historic park can adopt contemporary functions without losing its historic character when applying proper design principles from the past.

3 / vid. Introduction

4 / After a survey by Median 86% of the citizens of Budapest agrees that the new museums should be placed at somewhere else where green areas are not endangered (Medián 2016). Several professional organizations and prominent individuals urged to find another, appropriate scene for the new museums. The landscape architect applicants for the design competition made an extra 7th poster showing Liget without the new buildings, rehabilitated as a park. In the park a protest group called Ligetvédők (Park protectors) formed by environmentalists and other locals has been opposing the construction. So it can be stated that the rehabilitation of the park is highly supported, but the construction of new buildings is refused.

5 / Inclusive Liget for all

So far the context of inclusive renewal of an urban historic park in Hungary was put in perspective. It was claimed that Hungarian spatial designers following aesthetic canons often consider the appearance of the highly functional barrier-free design and the aesthetics of contemporary open space design mutually exclusive, and therefore they deal with accessibility issues at a minimum level prescribed by regulations. Because of this seclusion, also the principles of universal design are poorly applied. Spatial designers ignore accessibility issues and are not familiar with universal design principles, thinking that people living with disabilities always need special and visually dominant solutions not fitting the environment, although one of the basic principles of universal design is to design environments inherently accessible to a wide range of people regardless of their ability or status. If the needs of people living with disabilities are generally known and understood and are taken into consideration from the beginning of the design process, the result will be closer to the contemporary aesthetic paradigms. For Liget disability issues has already been included from the preparatory phase, which is an outstanding opportunity for transforming the social attitude and creating a new, more inclusive paradigm for the design of a historic urban park. During the design process modern design tools were used to preserve and present historic values and to re-organize connections, while ensuring feasibility, sustainability, economy, accessibility and “smartness”. With these tools visitors can be invited to the park more frequently and for longer periods, and at the same time the rehabilitated ecosystem becomes more stable and sustainable (Fig 3-4).



Figure 3: Landscape conception plan for the Liget design competition of the 3rd place awarded Pagony Landscape Architects
(Source: press release)

Looking at the needs of average contemporary park users and people with disabilities, a remarkable overlap can be noticed. In the Liget survey by Szilágyi (2014) the absence of park furniture and infrastructure was the most mentioned problem. The second most common conflict factor was the poor condition of pavements, and problems caused by the disorganized space functions (e.g. dog walking) were also frequently noted. Visitors living with disabilities have the same purpose when going to the park, and the same problems hinder them from doing so. And, applying universal design's principles from the beginning, aesthetic and well-functioning spatial answers can be given to solve these problems, with minimal special technical solutions which do not fit into the contemporary aesthetic canon. (Fig. 5)

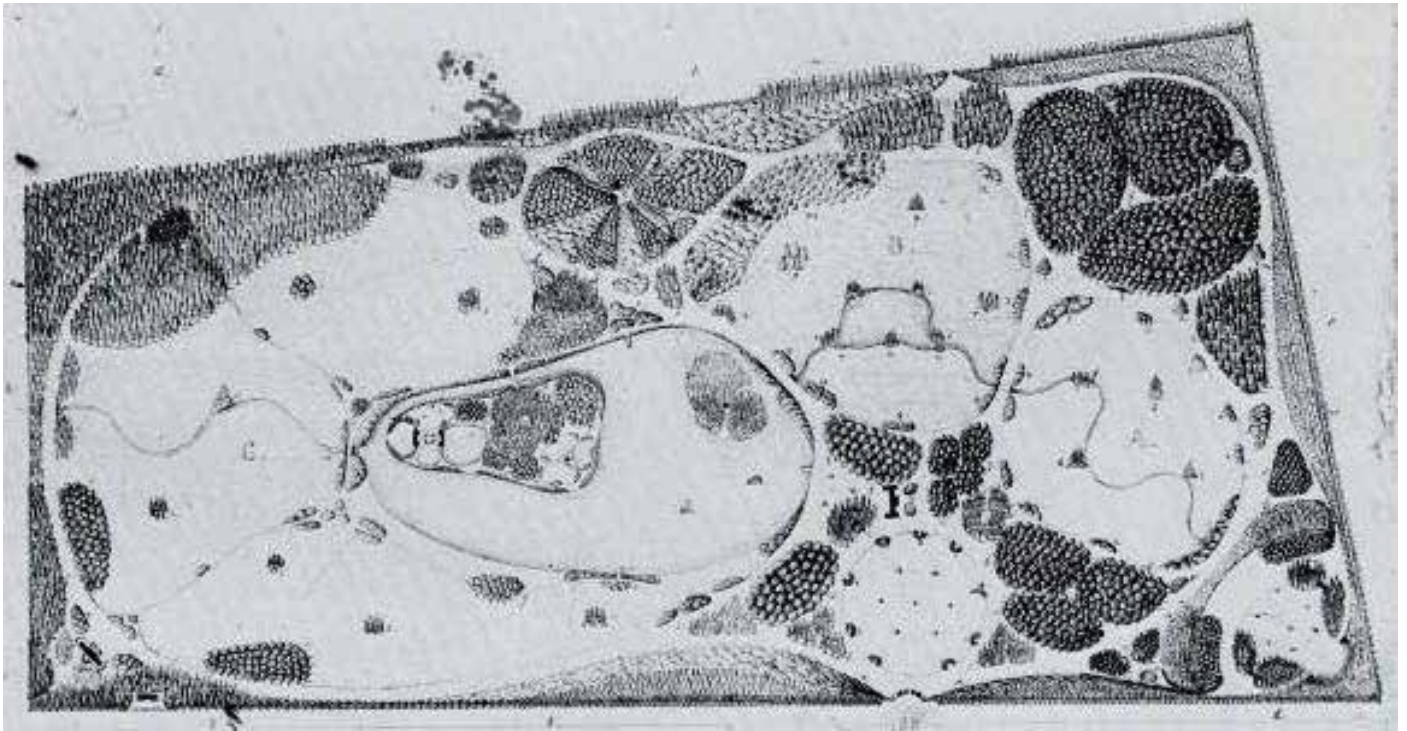


Figure 4: Landscape conception plan for the Budapest city forest by Heinrich Nebbien from 1816 (Bazsó and Szikra 2012:23)



Figure 5: Visualization of the Liget design conception of the 3rd place awarded Pagony Landscape Architects showing contemporary park uses (Source: press release)

It has to be noted here, that the Accessibility Conception of Liget approaches the city park coming from the existing regulations and guidelines concerning dominantly the built environment, applying the same strict guidelines to an urban park. Therefore it has to be continuously completed with edifications from domestic and international examples, because in an urban park dominated by natural elements requirements for barrier-free design can be less adoptable. After deep investigations accessible routes can be specified, and all services can be equally accessed, making the park inclusive for all its visitors. That does not mean every route and feature can be completely accessible for every skill and need, but for example a route with steeper slopes can be a challenge to exercise on. But again, in the recent Hungarian context, special attention should be paid to avoid these occurrences of partial accessibility become references for situations where barrier-free solutions would be

applicable. And here is to mention a new design tool which contributes to making open spaces equally accessible moderating the level of physical interventions in the environment: digitalization.

6 / Digitalization as a new design tool

Beside leisure and cultural activities, working also became an important use of urban green areas. In our digital world, all these activities require or can be supported by digital technologies. By digitalization every data of Liget can be collected and presented when connecting to the internet from home or from the park with the help of smart devices. All the historic and cultural layers of the past can be included. All the recent features and services can be shown, and the data basis can be developed interactively. All this information available through various media is capable to positively affect social and environmental attitudes. People become more environment-conscious when realizing the importance of sustainability, and of cultural and natural values. It also can contribute to the deeper understanding of national identity and to the knowledge about the past.

Via wireless internet and cellular data all this information can be accessed, increasing the park popularity and invite more people to the park, including the young generation. Smart phone applications within Smart Liget containing all this information can strengthen the Liget brand, creating identities connected to Liget. People living with disabilities also profit from digital technology, which can help them to navigate, to avoid obstacles, to find accessible services. When internet and charging points are provided it is also possible to work in the park with a laptop.

One of the disability groups, namely people with visual impairment are worth a more detailed mentioning. For them two-sense principle and info-communication, and therefore digital technology is of high importance because of the lack of the sense of vision. Digitalization provides access for visual information transformed into e-texts, and information in the form of e-text can be read by screen readers or can be zoomed in. This new method of reading, i.e. e-reading expands the range of available information, helps navigation and communication and through these opportunities supports equal access to the environment. During the social and professional consultation, designers raised the question whether physical accessibility-solutions (e.g. tactile and optical warning and guiding surfaces) could be substituted by digital information, but the answer was no, as not every visitor uses smart technologies and equal access would be threatened (Garten Studio 2016).

So it can be stated that digitalization (e.g. Smart Liget) as a new design tool is capable to invite a wider range of people to the park, representing numerous layers of past and present. Digital information requires minimal physical interventions in the historic park, meeting the interest of the city, the park and the visitors. This digital meta-layer links all the layers of Liget, making them readable, audible and accessible.

Conclusion and discussion

In summary it can be stated that social attitude towards disability is still quite exclusive in Hungary, and this phenomenon is manifested in obstacles hindering people living with disabilities from having equal access to open spaces. Therefore legal regulation is needed to ensure at least a minimum level of accessibility. At the same time, legislation concerns mainly the built environment, and does not have detailed and proper requirements for open spaces, especially not for urban parks and other green spaces dominated by natural elements. Spatial designers are secluded from technical solutions applied for disabled needs, because the design principles of barrier-free design do not fit into their aesthetic canon.

In the Liget Budapest Project for the park rehabilitation, accessibility and universal design have already been principles from the preparatory phase. Since the project has started, social consultation is taking place and the Accessibility Conception of Liget has integrated the relevant remarks. We assumed that despite its approach concerning the design principles for the dominantly built environment, the Accessibility Conception and the involvement of the public seem to be able to contribute to a more inclusive design of Liget.

It was concluded that there are many similarities between past and contemporary park uses, and that the needs of average and disabled visitors overlap to a large extent. It was also assumed that an urban historic park can adopt contemporary functions without losing its historic character when applying proper design principles from the past. And it was showed how digitalization as a new design tool can contribute to a more inclusive urban park design.

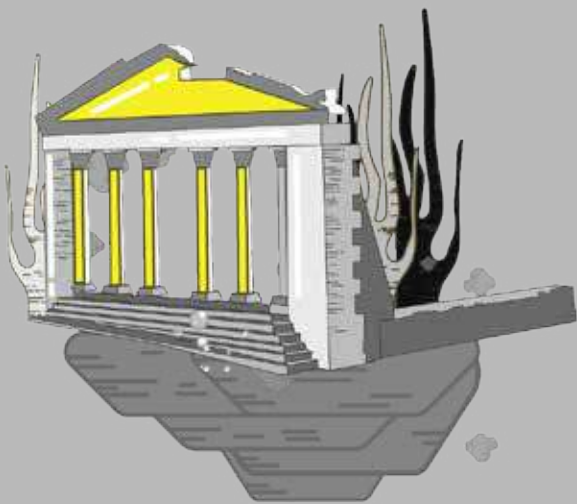
For future research questions concerning the level of intervention are raising. The field of inclusive or universal landscape design is under progress. Technical solutions applied today may be outdated within a few years, but urban parks are renewed for decades. It has to be investigated if and to what extent barrier-free, special solutions

for disabled needs should be applied, and how much they can be substituted by universal design methods and digital technologies. It is also an interesting question if the trend to make special forms of barrier-free design invisible should be supported by the mentioned tools, or they should be preferably integrated to our aesthetic canons. What is the challenge: minimize the visible effect on the environment, or correlate the contemporary paradigms into a new aesthetics? And finally, how does the global trend of accessibility influence the local identity?

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[MEM/25]



Re-construction of urban space through architecture of time and space. Neue Staatsgalerie, Stuttgart, 1977/84 – James Stirling, Michael Wilford and associates

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abstract

The research focus the design process held by the firm 'James Stirling, Michael Wilford and associates' for the 'Neue Staatsgalerie, Stuttgart – 1977/84', considering it as the end stage of the investigations, conducted by the studio during the '70s, having as main theme the reconstruction of urban space connected with everyday life.

The speculation examines whether the space of relations is still the right value of comparison for a new development of the urban space. Does still exist an unique design of contextualization? Is the contemporary urban space facing towards a choral-approach system? Which qualities are necessary to define the strategy of designing the new common space? Are symbols and metaphor taken from history's examples still essential to relate with?

In the miscellanea of different researches following the re-construction of european cities after the second world war, the design process for the 'Neue Staatsgalerie' makes one step ahead, including the capability to design a city within the city, considering, and using, memory-complexity as a toolbox. The aim of the project is the will to search the solution in the complexity of the city itself, according to this approach the idiosyncrasy between old and new, figuratively 'closed and open', are led from dichotomy to a clear stratification.

The increased freedom of the possibilities to use new kind of spaces is not just pointed out but is even more emphasised through the capability of embedding the structure of the city in the process design.

The project for the 'Neue Staatsgalerie' is the solution for the complexity of the city, shaped through the use of rhythmic succession of compressed and rarefied spaces, the consciuos use of the spatial and perceptive relocation, and also the alteration of the relationship of time and space and its binomial digression.

The final result will start a shared thought for a repeatable theory for the critical design of the city of the XXI century.

keywords Memory, Transformation, Design process, Design approach, Reconstruction

The design for the competition of the Neue Staatsgalerie of Stuttgart offer us the possibility to reflect and understand how the choices made by James Stirling were regarding the issues of inclusion within the urban context.

Above all should be underlined the fact that so the consequent choices of physical placement within the competition lot, start from specific requests of the competition itself. The requirements of the competition prescribe a functional heterogenic program, characterized by the presence of spaces, functions, and therefore differentiated uses.

The first complexity is dictated by the geographical limitation of the site on which the building will have to fit in, the lot follows a slope that in the impact with the project area covers a difference in height of 12.50 meters, a question that will increase the degree of solution to the competition question, represented by the need to guarantee the public pedestrian viability, through a path, interposed to the lot, set along the north/south axis¹.

1 / The competition requires a public route through the lot connecting the side on Konrad - Andenauer Strasse with the urban area on Urban Strasse. This type of request during the '80 is usually part of the announcement of design competition in the German cities. James Stirling will define this request on several occasions, ironically, "operation of democratization".

The solution adopted to compose the parts of the project will lead towards the creation of architectural solution composed of a series of ramps. The concourse request requires the creation of a covered automotive stall, that will be solved with the creation of a partially underground car park, included in the volume of the podium, in addition is required a complex organization chart, the requests range from the new musical school, an exhibition system of new rooms connected to the existing art gallery, a bookstore, an auditorium and an open space also in the closing time at restaurant. The presence of such heterogeneous elements that can't be solved just through the development of a single massive shape.

The space reserved for the new extension is placed inside a roughly rectangular figure, which frames the free area next to the existing building. The long sides of the lot lie on Adenauer Strasse and Urban Strasse, respectively downstream and upstream, hinged between the large monumental park and the urban system located to the east.

Adenauer Strasse is a large road network, which connects the state highway system to the city center of Stuttgart, traces a position already present in the city's historical tracks that since the first post-war period saw its traffic increase considerably, until the site situation of becoming an element of separation between the city center and the existing Staatsgalerie.

The surrounding urban fabric lacks of unitary and of the elementary urban relations, missing of the clarity such the neoclassical system of the historical centre, that was built with a series of ordering elements, of which more than half were lost during the second world war. The logic follows both axial and distributive relationships in a rhythmic distribution of the architectural masses, alternating solids to voids, in this way defining the open spaces of public green. The planning of reconstruction following the destruction of the war, characterized both by the road infrastructure, but also above all by choices of quantitative contingency, which will inevitably lead to broken urban figures, that is the existing condition at the time of the competition.

The reasons for the success of the project hold by James Stirling will be fundamental the individuation of an architecture that, although in any case able to guarantee the required museum spaces, would be able to allow the reconnection between the different urban parts, allowing the city to regain public space.

The project drafted by Stirling is characterized by the differentiation of the scale relationships occurring between the two urban fronts of Adenauer Strasse and Urban Strasse, and the dichotomous choices in their figurative and formal representation.

Toward the first, the great urban artery, the author interposes a double row of trees, a sound and visual filter, from which a hiatus is inserted, built through the architectural device of the podium. Toward the second, the urban road upstream, Stirling continues the existing urban curtain, through the use of a volume of modernism reminiscences, whose precursor, even theoretical, seems to be the manifested building created by Le Corbusier for the experience of the Weissenhofsiedlung in Stuttgart itself.

The ordering element of the system on the front of Urban Strasse consists of a body of the building, treated monochromatically, characterized by harmonious volumetric ratios, in which the arrangement of the elements follows a clear design. The presence of a ribbon window, the urban recess that distinguishes the ground connection, containing the circular columns and the typically avant-garde stained glass form, contribute to the definition of an idea of architecture that manifests in the movement modern his first personal reference. Last but not least, the naval reference in the formalization of the two vents, of the laboratories and archives, stand freely, like trumpets on the pier of a ship. Their spatial solution is defined through a logic of liberation from any possible volumetric adherence. This allows them to disengage, appropriating freedom of expression, free actors participating within the overall narrative. They are placed inside a space masterfully obtained through conscious folding operation, according to the orthogonal degree, able to generate a spatial recess, parallel to the layout of the urban road.

The purpose underlying this logic is the creation of a proscenium to the body of the factory. First of all it becomes a moment of suspension within a processional sequence, mediating the urban space and the threshold space at the entrance. In this way a spatial band of respect is thus determined, prior to the entrance of the building intended for directional functions, the modernist block precisely. This hypothesis aims to demonstrate that the front in question relates itself to the existing urban curtain, in such a way as to succeed in the recurrence of the formal dimension, through the clear construction of an ideal vertical plane. The compositional characterization is contiguous both to the logics of the holes of the existing buildings facade, and to the relationship with their median heights. In this way the choice of Stirling is deduced from the use of a necessarily massive expression, characteristic as seen, of the urban curtains of the residential plots facing.

The side on Adenauer Strasse, on the other hand, uses completely opposite formal choices.

The poetic propensity on this side, opposite to the previous one, is structured according to a system of fragmented trays and vertical planes, intended as a complex device, from the undoubtedly not immediate reading, which however, it reveals that it is able to develop two different theme.

The first is to avoid the fascination of the solution with an absolute mass, massive, intended as a box-shaped, containing the programmatic solutions that are required by the competition. The result would undoubtedly have eroded the monumental neoclassical persistence of the existing Staatsgalerie, adding a full value instead of the presence of emptiness, a necessary visual detachment.

The second principle is the creation of a narrative system that, by postponing the spatial threshold of entrance to the building, is based on a path. The reference is both the classical urban typology of the Greek city located in a lot. The spatial control tool makes use of skilful alternations, that investigate the reasons of the opposite, free/constrained, defined/indefinite². The result will become an experiential journey through the architecture of the new Staatsgalerie.

According to the concepts expressed in the inaugural speech by James Stirling³, the project of the Neue Staatsgalerie in Stuttgart (1978 - 1984) finds the Altes Museum's architecture (1823 and 1828) as its first reference in terms of settlement and typology. That typology developed by K.F. Schinkel (1781 - 1841), was already in the past the prodrome for the design of the Alte Staatsgalerie in Stuttgart (1838 - 1842).

With this aim, the investigation of the compositional process, which can only be investigated through sketches and preparatory drawings, has shown that many decisional waste, related to the definition of figures and architectural forms, are not chosen as the result of random theoretical suggestions.

The demonstration showed how the design practice, of the thought that manifests in the project, is structured, in its theoretical abstraction, through the tool of the drawing, thus demonstrating as an insoluble connection between research and its practical verification⁴.

The critical work on archival materials has allowed to identify the evolutionary phases of the different architectonical solutions. The analysis operations, also proven by critical redesign, have taken as their aim the specific investigation of that design steps still not totally investigated⁵.

The desire to relate to the new through logic of alignment with the geometry of the existing Alte Staatsgalerie appears in this particular case with the central factory nucleus of the neo-classical building.

The representative style, represented by the often sign of the drawing, shows in an almost obsessive way. In the plants of the different levels, it is evident that this theme is of great interest to the architect. It should be noted that the graft is considered necessary presence in each of the three plants of the building.

The reasoning represents the splitting of the previous architectural structure, through the creation of two bodies, dimensionally and formally spurious, connected by a path at height, which de-limit a public path that covers the altitude difference across the diagonal of the lot.

The set of sketches is composed of both two-dimensional and three-dimensional representations, using especially axonometry from above and underneath.

The evolution in the design process is extremely clear. The potential form of the building would assume in the first case a soft relationship with the context, from the flexed amplifiers, able to generate a spatial fluidity of mediation with the surrounding area, in which a continuous vertical plane with a curved shape is represented as

2 / G. Simmel, *Bridge and Door. Essays of aesthetics, Archetypolibri, Bologna, January 2011*

3 / Interesting as C. Rowe consider the absence of the façade of the architecture of the Staatsgalerie, an opportunity for failed architectural experimentation according to Rowe himself. This theory can be confirmed, keeping Rowe's theories in mind. On the other hand, the analysis of sketches shows how the formal definition of Stirling initially assessed the possibility of a net volume towards Andenauer Strasse, on whose frontage it would be necessary to carry out some different design strategies.

The preliminary sketches show how the choice moved towards a sequence horizontal plans, generating a kind of urban scenery flat, so an open architecture towards the city.

4 / Understanding the evolutionary structure of thought, translating its evolutionary stages through the identification of models, was necessary to demonstrate how the poetic process is the primary tool of J. Stirling for the generation and verification of theory. Within the corpus of more than 500 preparatory drawings of the project for the Neue Staatsgalerie the study has identified 25 sketches for the drawings useful for the discussion of the theme, 16 critical reflections were extracted through the critical design, from which 7 classifications were identified together, understood as salient moments within the discussion of the theme.

5 / A. Vidler, *James Frazer Stirling: notes from the archive, Canada Center for Architecture, Montreal, October, 2012 p. 14*

a transparent element. If previously the dialoguing form with the context appeared to fit according to a principle of soft movement, generating sinuous spatiality, after, with a completely different way, the theme seems to be based on a discontinuous relationship, generated in both road fronts by a vertical plane supported by a massive volume of rational nature. In reality, the public path, , seems to erode the formal absoluteness of the volume, but the function seems to be more adapted to a possible spatial declination of system of the entrances.

The syncretic operation kept alive in the design process shows even more how the architectural research in Stirling sees the total coincidence with the poetic exercise. The design reflections translated into minute drawings, about 4 cm in size, even if they contain an idea of potential architecture, always dealt within its construction.

It is therefore understandable, as well as logical, how it is necessary for Stirling to relate the project to its construction, meaning the project as an architecture already built, through the exercise of thought as an operative activity. The reference in question is the competition project drawn up by Stirling for the museum complex in Dusseldorf⁶.

The presence of the square base box volume, characterized by the central presence of an absence, the great central void, and a path of public crossing through the building, can only be a clear reference to the previous planning experience.

The formal imprint of the project for Dusseldorf is placed on the Stuttgart site, allowing the transmutation of the dimensional verification to a design theme. The square polygonal that contains the circle, a material void, is placed centrally, at the junction of the median axes.

The choices of grafting to the galleries of the existing building persist, as well as the retreat from Adenauer Strasse. The method useful for highlighting the methodology with which the design is revealed within the genesis of Stirling's architectural form, especially in relation to its theoretical and compositional reference system, demonstrating ability to develop different architectural figures, so their reinterpretation and their use. This approach is evident when the figure of the circle, radial geometrical figure, is inserted inside an orthogonal system, to which the rectangular perimeter of the building belongs. In any case, the reference to the Altes Museum is undoubted, as the translation of the large circular-plan atrium into an element that, although able to maintain the function inside the distribution, becomes a great emptiness inside of the building.

The relationship with Adenauer Strasse is mediated by a podium that regulates the perception from the high-way, this solution shows the research for the separation between the public ascension path and the entrance to the exhibition area, the latter, in an informal way, will take on a form with free geometry. The front on Urban Strasse is attested on the median heights of the existing city walls, but identifies the need for the definition of a space with function of filter to the physical free entrance to the building. The podium, as a mediator, the central core instead the core of the project.

The process of design in James Stirling is not denoted as a stratigraphic procedure, it seems to adhere to a process of continuous feedback, positive and negative, useful to prove the intrinsic possibilities of the compositional figures experimented, the method follows a syncretic principle.

In Stirling, the chronological sedimentation of the project does not adhere to the mental structuring of design thought, as understood in the definition of the relationship with the front on Adenauer Strasse and the formal spatial shape of the podium, the choice is clear, a continuous limit parallel to the urban artery. The division between the pedestrian path of the road and the podium space is clear, access to the first tray is mediated by side accesses. The separation is continuous, realized through the construction of a vertical plane, a wall, which assumes the function of urban filter.

The evocative reference seems to be also the reflections concerning the entrances typology of a Palladio's Villa. Once again the reference for Stirling is included in the historical dimension, in which the operations of architectural design hold a syncretic way.

6 / J. Stirling speaks extensively of the design process made for the Dusseldorf architecture competition, before the Stuttgart project. Consider also the fact that the team built for the project include the presence of two of the most trusted architects of the studio. Published in M. Girouard, *Big Jim: the life and work of James Stirling*, Chatto and Windus, Great Britain, London, 1998.

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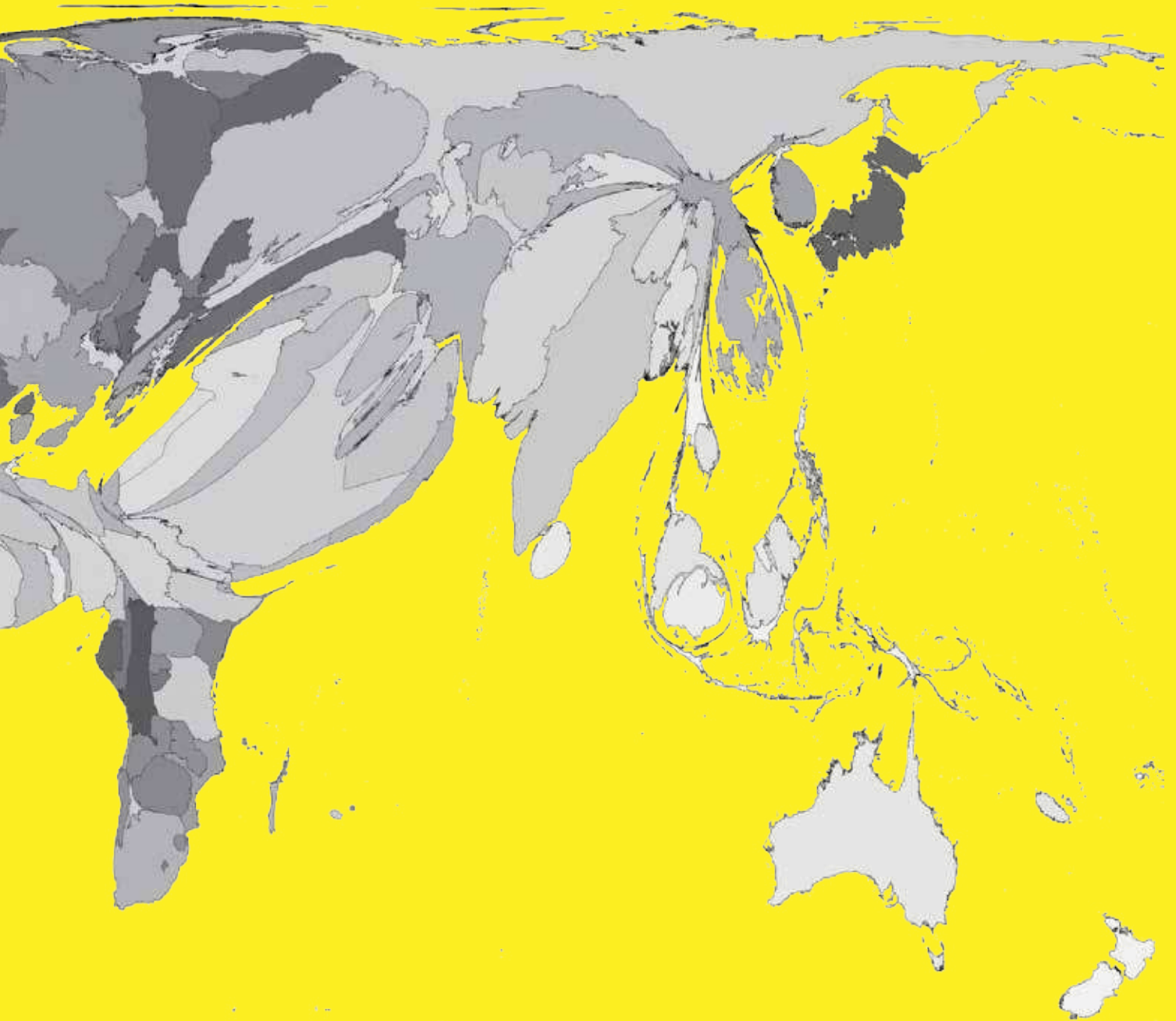


[migration]

in **2015** the number of
international migrants
worldwide reached
244 million

[migrationpolicy.org]

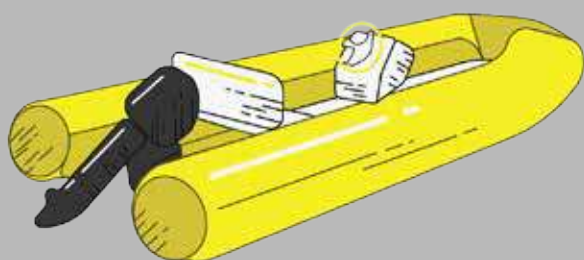
migration



Map 5 'International immigrants' © worldmapper.org

Migration is probably the biggest social challenge of the last decades. The large human flux mobilized by this phenomenon affects the social and urban patch of our cities, it transforms our landscapes and it calls for a further reflection on the concept of boundaries. The latter, currently a core aspect of different disciplines' research agendas, can be considered a contact zone, hybrid and porous, whereby cultural interchange and co-habitation are possible. The aim of this session is, on one hand, to explore how users perceive these spaces, their capacity of interaction and adaptability through co-habitation tactics, and on the other, to propose material and spatial solutions that overcome both, physical and conceptual boundaries. Researchers are invited to present contributions to the topic of migration and its impact in different contexts: architecture, city and landscape.

[MIG/01]



DEPARTURE CITIES?

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abstract

Over the last years, migration has become a key issue in architecture and urban studies. With a focus on immigrant housing, immigrant neighborhoods and questions of integration, however, the debate so far appears to be somehow biased. Epitomized by the concept of the “arrival city” (Saunders, 2010), most discussions, at least in Western Europe, foreground the destination cities of transnational migration and are underpinned by an understanding of migration as a one-time and one-way flow.

In this line of reasoning, the impact of emigration on urban development is widely neglected. Against this background, this paper seeks to advance the notion of the “departure city” to reveal the particularities of urban development in cities that are affected by outward labor migration. Based on a circular conceptualization of migration, the paper, first, argues that departure cities are not necessarily shrinking.

Departure cities are places of co-habitation where multiple translocal spaces and flows overlap. Secondly, the paper focuses on remittances as the backflow of financial means which are often invested into real estate and materialize in the cityscape. Third, the paper concludes by raising the question if remittance-driven urban development is a temporary phenomenon in times of transition or if it can become a long-term urban development path.

keywords Migration, Emigration, Urban Development, Remittances, Translocality

Introduction

There is a paradox about the word ‘migrant’. Whereas migration broadly refers to the movement of a person from one place to another, a migrant does not necessarily have to be on the move for being categorized as one. Like a curse, it seems, the label ‘migrant’ sticks to a person: Just one single relocation across national borders is enough to be ‘branded’ as a migrant for life. In Germany, for instance, both common parlance and statistical classification go even further: The children of those being born abroad still have ‘migration background’.

The issue of defining and classifying migrants is not only a political one. While words constrain thinking, they also reveal insights about shared understandings and the cognitive concepts we deploy. The label ‘migrant’ for people that were born elsewhere, first, is based on a “territorial understanding of space” (Löw, 2016: 49) that is shaped by geographical coordinates and administrative boundaries. Such a reading of space does not only afford binary distinctions between ‘here’ and ‘there’, but also inherently frames transnational migration as a special case: “Sedentarism” (Sheller & Urry, 2006: 208) is standard; crossing borders is a deviation from normality (Amin, 2012). Similarly, the common understanding of the term ‘migrant’ echoes a conceptualization of migration as a one-time and one-way flow: If people leave their country of origin, they essentially do so in order to re-settle permanently and to find a new ‘home’ (cf. Boccagni, 2017). From this standpoint, integration, not movement, poses the main challenge for migrants. While territory is equated with community and locally grounded relations are perceived as the norm, only full integration allows returning to normality (for an early critique see: Glick Schiller et al., 1995). The recent surge of migration both within and to Europe has not only fueled heated public debates, but also re-

drawn the attention of architecture, planning and urban studies to the issue (e.g. Elser et al., 2016). At least in Western Europe, the debate, however, seems to be somehow puzzling. Scholars, on the one hand, appreciate the necessity to conceptually leave behind the “territorial trap” (Agnew, 1994) and to seize a ‘relational understanding of space’ (D. Massey, 2005); they widely acknowledge that “groups are no longer tightly territorialized, spatially bounded (...) or culturally homogeneous” (Appadurai, 1991: 48) and that different social networks overlap at one place (Gielis, 2009). In fact, migrants have been recognized to constitute “transnational urbanism from below” (M.P. Smith, 2001: 146).

On the other hand, architecture and urban studies seem to continue conceiving migration as a one-way flow. Epitomized by the concept of the “arrival city” (Saunders, 2010) the close-to exclusive focus lies on destination localities. Glick Schiller and Çağlar’s (2011) seminal contribution on migration and cities, for instance, deals with issues like immigrant organizations, migrant incorporation or the impact of immigration on urban regeneration. The immigrants’ origins, at the same time, are hardly mentioned. In a similar vein, Gottdiener et al.’s ‘Key Concepts in Urban Studies’ (2015: 65) contain a chapter on “Immigration, Migration and Demography” that largely brushes aside the fact that migration is not a one-sided coin. Notwithstanding a vivid interest in the translocality debate that emphasizes back and forth of migration flows, the impact of emigration on urban development appears to be widely neglected.

Against this background, this paper seeks to advance the notion of the “departure city” (König, 2016) in order to reveal the particularities of urban development in cities which are affected by outward migration. The paper, first, argues that departure cities are not necessarily shrinking (König, 2016; Coman, 2017). Departure cities, too, are places of co-habitation where multiple translocal flows overlap (Vöckler & König, 2017). Second, the paper focuses on remittances as backflow of financial means which are often invested into real estate (Vöckler, 2008; Boccagni, 2014; Lopez, 2015). Third, the paper raises the question if remittance-driven urban development is a momentary phenomenon in times of transition or a possible long-term urban development path.

The remainder of this paper, however, starts with a recapitulation of some basic insights of migration research that emphasize the intricacy of cross-border flows and shed light on temporary and networked forms of (labor) migration.

Variegated Forms of Mobility: Migration in Practice

What else is migration but a one-time flow from A to B? Scholars from different camps have not only indicated that several manifestations of mobility, like tourism, are not framed as migration (Williams & Hall, 2000), but also argued that migration happens for various reasons which exceed the binary distinction between voluntary and forced migration (Richmond, 1988; D.S. Massey et al., 1993). The translocal flux of people literally takes place in various forms (Pries, 2001: 59; King, 2002). It is necessary, for instance, to distinguish different temporalities of migration with “varied tempos and rhythms, (...) often distinctly non-linear and open-ended, involving diversion, repetition and simultaneity” (Robertson, 2015: 45).

Temporary mobilities

Contrary to a perception of migration as search for a permanent home and often not reflected in migration statistics (Meeus, 2012), a large part of the mobility across borders is temporary for various reasons. Even if migrants aim to resettle permanently, their stay is, on the one hand, often limited by regulatory burdens. The legislation of receiving states tends to prevent long-term residency (Andersson, 2014), as it categorizes foreigners “in terms of the length of legal permitted stay” (Cwerner, 2001: 10): Guest students, for example, may only be connived during their education, while asylum seekers are left lost in a state of temporal uncertainty (Griffiths, 2014).

Temporariness, on the other hand, results from migrant’s agency and may be incited by various motivations. Coman (2017), for instance, illustrates how the length of migration episodes is determined by pension schemes of destination countries or schedules to finance personal projects, like opening a shop, in the home town (see also: Upmeyer, 2015: 189). Similarly, Piracha and Vadean (2010) show that, based on the 2005 Albanian Living Standards Measurement Survey, “having accumulated enough savings” is the main reason (19%) for return migration to the country. Even if working abroad may be a longer-term and open-ended project, labor migrants often tend to at least anticipate their future return – be it out of economic calculus, failure or to warrant a sense of belonging (Cassarino, 2004).

Statistical figures to quantify the overall scale of return migration are by and large missing and rather reflect migrant regulation schemes than voluntary return. The OECD, however, suggests that 20-50% of immigrants arriving in its member countries head back to their home countries within five years (OECD, 2008), while a later edition of the same source indicates a surge of temporary inter-company employee transfers growing by 79% between 2005

and 2015 within Europe (OECD, 2017: 23), and EUROSTAT (2018) reports that close-to 90% of immigrants arriving in Romania were Romanian citizens re-settling in their home country.

Although not revealing the exact extend, the figures show that migration seldom is a one-way movement. Indeed, also migrants who re-settle permanently tend to at least visit their country of origin from time to time (Duval, 2004). To conceptualize the back and forth between different localities, scholars have coined the notion of “circular migration”. Albeit some conceptual limits (Skeldon, 2012), it epitomizes that migration is often repetitive, with labor migration for seasonal work being the most obvious case (Constant et al., 2013).

From a spatial perspective, circular migration is not search for a new home, but the installment of a “double home” (Bendix & Löfgren, 2007). It involves migrants “sharing work, family, and other aspects of their lives between two or more locations” (Hugo, 2013: 1). Coman et al. (2018) argue that labor migration can be interpreted as a form of remote communing. As distance thwarts daily iterations between worksite and domicile, migrants have to adjust both spatial and temporal coordinates of their everyday-life. In so doing, they quasi-automatically induce a range of other mobilities, flows or linkages that transform the sites of both arrival and departure.

Induced (im)mobilities

It is a basic insight of migration studies that the flow of people triggers additional flows beyond return travels, and scholars have long shown that “connectivity between sending and receiving societies is cause and effect of international migration” (Waldinger, 2015: 5f.). Self-reinforcing migration patterns, on the one hand, result from the overlapping phenomena of “family-related migration” (Kofman, 2004), i.e., the reunification of migrants’ families at the site of destination, and “chain migration” (MacDonald & MacDonald, 1964): Providing support and information, pioneering immigrants are likely to trail successors from their networks of acquaintances (Boyd, 1989). Chain migration does not only reinforce translocal relations between specific places but can also contribute to the clustering of migration flows and the emergence of stabilized “migration systems” (Bakewell et al., 2012).

Migration, however, does not only induce additional flows from the places of departure to those of arrival. As soon as migrants do not let wither their ties with the left-behinds, reverse flows occur quasi-automatically too. As these backflows can take tangible and intangible forms, scholars distinguish material, financial and social remittances, i.e. the circulation of knowledge, narratives and skills (Cohen, 2011). The debate so far, however, has mostly pivoted on the cross-border transfer of financial means.

From the migrants’ perspective, remittances have been identified as an essential element of labor migration, and “the prospect of remitting” (Carling, 2008: 582) is often key in the decision to migrate. Remittances can be interpreted as form of non-reciprocal sharing with kin and friends, as a mean to reinforce belonging or as an investment in preparation for return (Lucas & Stark, 1985). Not surprisingly, the propensity to remit is higher in the case of temporary migration (Dustmann & Mestres, 2010). From the receivers’ perspective, most often the migrants’ family, remittances can significantly contribute to the income capacity of the household, but can also lead to dependency and shifting familiar roles (e.g. King et al., 2006).

On an aggregate level, remittances are, albeit some mythification (de Haas, 2005), widely cherished as a positive impact on the receiving country’s economic development. The scale of remittances can be remarkable indeed as the contribution of remittances to the GDP of some countries illustrates. As the Worldbank (2016) reports Tajikistan ranks first with remittances amounting to 41.7% of the GDP. In Europe, the top-three shares are 26.2% (Moldova), 17.9% (Armenia) and 16.1% (Kosovo). Given that informal channels and cash transfers are not reflected in statistics, the actual amounts may even be higher (Nyberg-Sørensen et al., 2002).

Moorings and frictions

Notwithstanding the overall positive appreciation of remittances and the mounting significance of cross-border linkages, neither people nor resources are floating smoothly. The “liquid modernity” (Bauman, 2000) is rife with frictions and immobilities; it is complemented “by attachments and reterritorialisations of various kinds” (Sheller & Urry, 2006: 210). Neither mobility nor immobility are ‘original positions’; both depend on spatially fixed infrastructure (Graham & Marvin, 2002) and intermediaries (Cranston et al., 2017). What is more, moorings are socially construed and the right to move is distributed unevenly.

Deviations in mobility are, first, induced by “the inherently political nature of population movements across boundaries” (Waldinger, 2015: 27). The literature has repeatedly pointed to the various ways how political decisions bias migration flows. In (European) receiving countries, the main policy emphasis appears to be on “costs and benefits (...) and on questions of migration control” (Castles, 2016: 25). Cwerner (2001) argues that immigration policies leverage aspects of temporality to govern permits of residence and citizenship. The temporariness of migrant flows, accordingly, does not only result from the agency of migrants, but also from the vigor of destination countries, with deportations being the most obvious case (see also: Griffiths, 2014). Highly restrictive policies, however, paradoxically push migrants into permanent (illegal) settlement (Hugo, 2013).

The concurrence of mobilities and immobilities is, secondly, related to the fact that mobilities require physical infrastructure (Graham & Marvin, 2002: 190ff.). Just like any other form of travel or trade, both migration and remittances depend on “material assemblages of connectivity” (Sheller, 2017) that both enable and constrain flows. Thereby, infrastructure is not neutral but has specific affordances: More infrastructure does not simply lead to better transportation, but streamlines and pre-forms forms both the social organization and the spatiality of transportation practices (Angélil & Siress, 2017). With regard to migration, Xiang and Lindquist (2014) suggest to complement the focus on the people who move with a perspective that scrutinizes human and nonhuman actors that move migrants within specific infrastructural frames (see also: Lin et al., 2017).

The contingency of migration flows, third, results from specialized intermediaries that leverage the inherent frictions of mobilities. As long as mobility is not perpetual, it depends on service providers that, legally or illegally, orchestrate the flow of people and goods (Castles et al., 2013: 235) and often make a profitable business out of it (Gammeltoft-Hansen & Sorensen, 2013). Scrutinizing the ‘migration/mobility industry’, as Cranston et al. (2017: 543) argue, allows to “unpack the social, economic and geographical complexities of migration processes”. Similarly, M.P. Smith (2005) has pointed to ‘transnationalism from in-between’ that shapes transnational urbanism.

Conceptualizing the departure city

The multiplicity of transnational migration patterns (King, 2002), the back and forth of migrants, permanent returns and the backflow of remittances clarify that the sites of origins of transnational (labour) migration are not necessarily shrinking. In fact, the framework of “shrinking cities” (Pallagst et al., 2013), that was mainly built around iconic cases of post-industrial urban development like Detroit and the highly contingent process of socio-economic restructuring in Eastern Germany, seems to be of little help to understand the impact of outward migration on urban development. The intricacy of transnational migration warrants a more nuanced approach.

Instead of void and decay, circular forms of migration induce specific development patterns. Circular migration produces a distinct spatiality and temporality of urban transformation oscillating between absence and presence and blurring differences between visitor and inhabitant (de Haas, 2005: 1273). Circular migration triggers forms co-habitation that are shaped by the overlap of multiple translocal spaces and a high level of translocal dependency (Vöckler & König, 2017). Moreover, the “departure city” exhibits three features that alter urban space.

First and already insinuated, the places of origin necessarily locate a specific material infrastructure that connects labour migrants with labour markets. What might be an informal bus stop in smaller cities (Coman, 2017), adds to a complex network of different modalities in larger cities. Over the last years, low cost carriers, for instance, became an important means to underpin the circulation of (labour) migrants within Europe (Dobruszkes, 2009). The cities which connect countries of origin with the destination of migration flows can be conceptualised as transportations hubs that entice respective service providers.

In a similar vein, scholars have pointed to the entanglement of internal and international migration flows (Çaro et al., 2014). Albanian data, for example, shows that the residence choice of return migrants is associated with the internal relocation of population for the benefit of the Tirana (INSTAT Albania, 2013: 32). Likewise, Vullnetari (2012) argues that the move to the capital city can be both an episode on a migration pathway to another country, e.g. during education, and the cause for additional flows. Internal migration triggers international migration, for instance, as one family member takes a job abroad to pay for higher rents in the capital. Internal polarization tendencies within the countries of origin, therefore, do not only result from foreign investment patterns (Golubchikov et al., 2014) but also from the (transnational) movement of people.

Second, it has been often observed that a significant share of remittances is invested into construction activities (Dalakoglou, 2010; Bürkle, 2016). Be it for the future return, be it as a symbolical affirmation of belonging – the “remittance house” (Lopez, 2010) is a widespread phenomenon that directly impacts on urban development. Drawing on Prishtina, Vöckler (2008) has illustrated how remittances spurred a boom of (informal) construction activities in the years after the war of 1999. As soon the economic potential of remittance becomes evident, however, remittance practices are likely to be financialized: They are not employed to directly fulfil personal needs but treated as strategic assets (for the concept of financialization see: Grubbauer, 2018).

L. Smith and Mazzucato (2009), for instance, observe that remittances to Ghana are increasingly not allocated to home construction works but invested into real estate in the capital city. Similarly, large-scale redevelopment projects in Armenia’s capital Yerevan are financed by diaspora investments (Cheterian, 2004). Once remittance flows stabilize, it seems, they underpin a specific segment of the departure cities’ real estate markets, and construction activities move from family networks to specialised companies that provide “double homes” for (circular) migrants – both as investors and customers. Coman (2017) shows that remittance investments potentially contribute to increasing local real estate prices.

Third, departure cities are business locations for intermediaries that organize migration and remittance flows. Travel agencies or financial service providers do not only leave their marks in the cityscape, but, as argued above, also constitute a specific economy (Gammeltoft-Hansen & Sorensen, 2013). What is more, like infrastructure, the clustering of intermediaries does not only trigger new migration by easing the back and forth of people, ideas and goods but also re-directs flows towards the departure city.

It goes without saying that the way how emigration shapes their places of origin is highly contingent and echoes (inter)dependencies on the transnational level. Urban development in countries, that are affected by large-scale outward migration, depends to a remarkable degree on migration policies of destination countries (Vöckler & König, 2017). What is more, the role intermediaries notwithstanding, living between two or more locations remains an every-day challenge for migrants indeed and for those who are left behind. These experiences make up a significant facet of living in departure cities and its reproduction in every-day practice.

Conclusions

Drawing on insights that blur traditional perceptions of migration as a single and permanent movement from the periphery to the center, this paper argued that the notion of the “shrinking city” may be misleading to grasp the urban development of cities, which are affected by outward (labor) migration. An understanding of migration, which takes variegated forms of mobility, migration infrastructure and intermediaries into account, clarifies that origin cities of migration flows are not simply left behind. Be it temporary, seasonally or permanently, migrants return home, they entail a specific materiality and stoke a specific economy; they remit funds and transmit ideas; migrants invest in housing, conduct entrepreneurial activities or make stop-overs. All these processes are practices are not frictionless and rife with challenges. And yet, transnational migration leaves an imprint on departure cities. It transforms urban space, the temporality of its usage and its development.

Given that migration flows are volatile, the question arises if the ‘departure city’ may only be evidence of a transitory phenomenon that results from specific circumstances. On the one hand, there are, for instance, signals that emigration rates from Central and Eastern countries may recently have crested (The Economist, 2017). Likewise, the years of remittance-spurred “turbo-urbanism” (Vöckler, 2008) in Prishtina and Tirana are essentially over. Evidence like that echoes a conceptualization of different development phases, each of them related to distinct migration patterns: “in more advanced stages of social and economic development, countries tend to transform from net labour exporters to net labour importers” (de Haas, 2005: 1271). Emigration and remittances either contribute to flatten the economic gap between origin and destination countries thereby dissolving the drivers of labor emigration or lead to the long-term erosion of the origin’s economic base and to the dissolution of translocal ties.

On the other hand, technology has eased maintaining relations across borders on the individual level. Digital communication tools and the differentiation of transportation systems have significantly altered the premises of circular migration. Today, it seems to be less challenging to live and work at multiple localities than ever before. Even if scholars have repeatedly argued that communication technology may boost migration and historically turned out to be wrong (Waldinger, 2015: 78ff.), the current transformations are likely to be different. For sure, online interaction cannot replace direct contact. And yet, the advent of the Internet may eventually lead to new forms of co-habitation and belonging at distance – but also trigger tensions.

On the organizational level, the increasing prevalence of intermediaries and enterprises leveraging border flows is likely to contribute to stabilize the departure city. The impact of financialized diaspora investments on real estate markets is, as we argued, an interesting point in case.

On a structural level, de Haas (2010) and Bakewell et al. (2012) have pointed to the (highly contingent) emergence of ‘migration system’. The interplay of immigration policies, transnational labor markets, intermediaries and migrants may lead to the establishment of relative in stable spatialities of (circular) migration and remittance flows. Departure cities as a hub, an infrastructural node and as highly translocalised spaces are likely to play a crucial role in such like migrant systems - not only in mapping but also in reinforcing them.

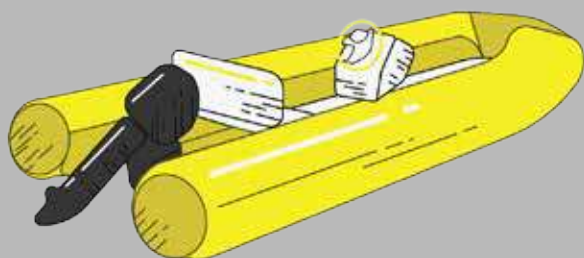
Either way, emigration and remittance-driven urban development is, obviously, never absolute, but just one of the ways and diverging logics that shape the multiplexity of the “ordinary city” (Amin & Graham, 1997) and, in so doing, impact the every-day life of its inhabitants. Thus, understanding the scale and the scope of the ‘departure city’ and its manifold realizations is a question of empirical work. Empirical insights on the impact of (temporary) migration on urban development on the places of origin are also essential to provide policy recommendations for both departure and arrival cities that may need to collaborate in times of co- and bi-habitation.

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[MIG/02]



Identity and Space

Collaborative Developments for Inclusive Cities

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abstract

The exclusivity and the current spatial, economic and social segregation of cities are alarming. New strategies are needed to develop welcoming and inclusive structures where all the different interest groups are included in the short- and long-term developments. Stakeholders from marginalized social groups such as migrants and refugees have no voice and power to be heard and therefore cannot participate in the decision making processes. For inclusion, everybody should find their own space and identity in the city, in the society. Welcoming cities and societies have to recognize the value of migration and start including the experience and knowledge of newcomers.

Spaces for equality have to be built where everybody will find their identity; the importance of diversity has to be recognized; and future cities have to be developed together. Equality-based decision making processes in the problem definition-, solution development-, implementation- and maintenance phases have to be established where everybody - not only the privileged - has their voice. It would bring more understanding and acceptance into the societies. The spaces and built structures should be implemented by the users or they should have a flexible political-, economic- and cultural framework that allows itself to be modified.

Private-, community- and public spaces which represent and serve the needs of all citizens can be developed in collaborative processes and the marginalized groups can mostly be represented by non-governmental organizations. The built environment has a huge influence on the identity of the users and the identity could and should also have an influence on the built environment. For a healthy well-being, the living spaces should communicate with the users. For real inclusion all the above mentioned characteristics should be achieved which shows the complexity of the situation.

keywords City, Identity, Inclusivity, Migration, Space

Identity loss and segregation in the welcoming cities

Migration and change have always played key roles in the evolution of humanity. Changes have made humans what they are, migration has made the world as diverse and rich as it is today. To ensure further development on the local and global scale, these two processes cannot and should not be arrested. Migration generates changes in communities and on the individual level; some old values and traditions are lost but some new values are born due to this.

Being closed, cities offer safety for their citizens and by their openness they welcome newcomers who are in need for a safe place. This is the nature of cities. The evolving global refugee crisis is trying to handle this duality with all its complexity and difficulties. This means a lot of changes - loss and gain - for both parties: refugees are losing their home and with that, their identity, and welcoming societies also suffer loss and changes through the new influences. "It must be emphasized, that not only refugees struggle and have to be supported, but the welcoming societies too" (Glatz, Komlósi and Dúll, 2018).

Besides the significant problem of refugees losing a living place and identity, exclusivity and segregation are also key social-issues in cities. As Gerhard Matzig defines the problems of urbanisation, "...in 1933, cities were segmented: work, leisure time, and housing were spatially separated. The results: deserted bedroom communities and fatal commuter traffic. Urbanity is, however, exactly the opposite, namely a highly concentrated city with short distances. The problem now is that people are afraid of moving closer together and of living in closer proximity to

their neighbors once again. They also fear the alien: foreign languages, cultures, religions ... in short: the specter of "foreign infiltration". The völkisch (a term used particularly in the Nazi era, meaning racial-nationalistic) seems to be becoming socially acceptable again: as a law of spatial purity" (Matzig, 2016: 250). Refugees and welcoming societies are challenged to handle the problems of identity loss and exclusivity on a daily basis and due to the lack of tools and common language, they both struggle with the experience of living together.

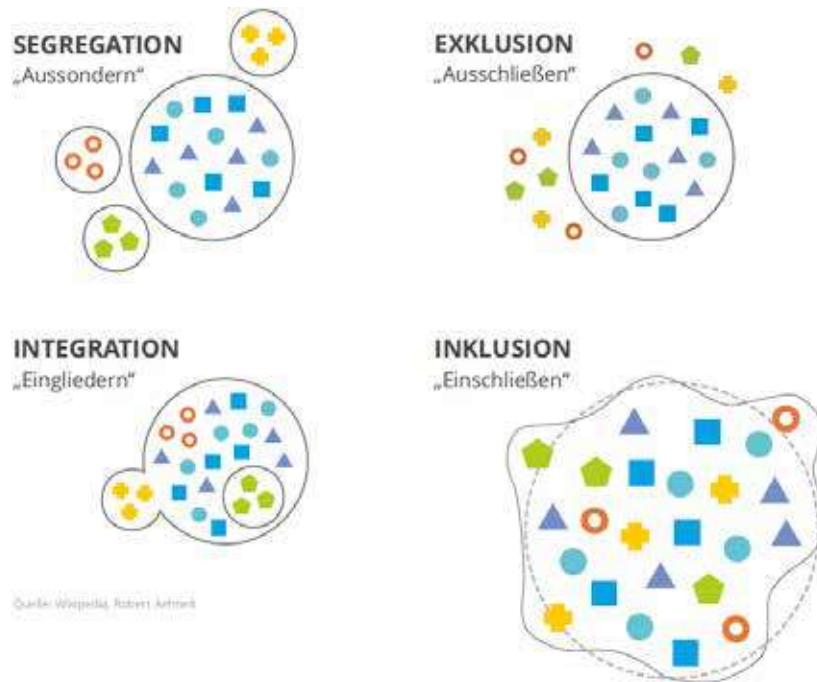


Figure 1 - From segregation to inclusion

New identity and inclusion through collaborative developments

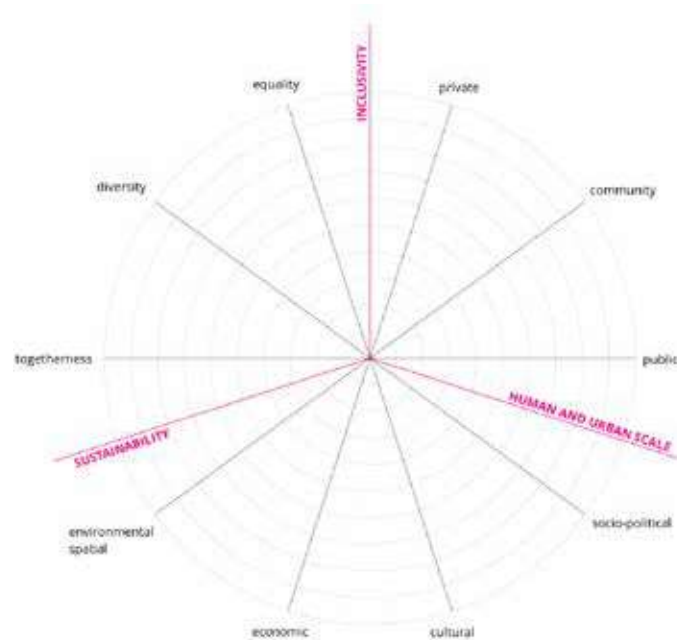


Figure 2 - Conceptual framework

New strategies, tools and languages¹ have to be developed for a common future in peace, where inclusivity through equality, diversity and togethermess² is the basic foundation. The aim of the research is to provide a conceptual framework for the sustainable inclusion of marginalized groups in cities with a special focus on refugees. The core motif of the framework is the cardinal link between identity and space: place attachment. The hypothesis of the research is that sustainable inclusion of marginalized groups in cities is mostly possible via collaborative development processes where all the stakeholders³ are given the chance to express their needs and use their

expertise. Collaborative developments in the cities on every human level⁴ can generate inclusivity and empower all the stakeholders to develop new place attachment and identity.

The newly developed collaborative projects should be analysed and implemented through all the four main fields of sustainability to avoid exclusion. "Exclusion consists of dynamic, multi-dimensional processes driven by unequal power relationships interacting across four main dimensions - economic, political, social and cultural - and at different levels including individual, household, group, community, country and global levels. It results in a continuum of inclusion/exclusion characterised by unequal access to resources, capabilities and rights which leads to health inequalities" states the WHO (World Health Organisation, 2018). As Filmon, an Eritrean refugee has been living in Switzerland for almost two years, explains his situation and current identity, "we eat and sleep, we live like dogs" (Komlósi and H. F., 2017). This is how Filmon and many other refugees around the world experience the same problems. They have lost their homes, along with their identity, and they live in a limbo without any perspective.

1. New identity and place attachment

The identity and place attachment of newcomers and welcoming societies have to be developed in the above mentioned complex system. The inclusivity of cities and the identity of the citizens influence each other, so the development process can be started at any point. "People with higher place attachment report greater social and political involvement in their communities (Mesch & Manor, 1998), and communities comprised of highly attached people are more likely to work together to achieve a desired outcome, such as protecting the environment (G. Brown, Reed, & Harris, 2002) and protecting the social and physical features that characterise their neighbourhoods (Mesch & Manor, 1998)" (Anton and Lawrence, 2014). There are two ways to maintain the continuity of identity when changing the location of residence. On one hand, continuity can be maintained via characteristics of previous places and on the other hand, through visiting places that have emotional significance for a person (Arbenz, 2016). "The creation of new place attachment and a place identity relevant to their new home, is vital for the integration of asylum seekers into their new country of residence," says Christina Arbenz in her research paper in which she deals with asylum seekers living in Zurich, Switzerland (Arbenz, 2016). Place attachment and identity have to be developed on all the three human and urban levels - private, community and public - and this process has to be collaborative with all the stakeholders involved. Harold M. Proshansky, Abbe K. Fabian and Robert Kaminoff write "A sense of place identity derives from the multiple ways in which place functions to provide a sense of belonging, construct meaning, foster attachments, and mediate change. The place identity of a person can inform their experiences, behaviors, and attitudes about other places." (Proshansky, Fabian and Kaminoff, 1983).

2. Both parties - welcoming societies and newcomers

The struggle of both parties cries for new collaborative developments. As Richard Sennett writes in his book "Together" (Sennett, 2012) and as Sébastien Thiéry (Komlósi and Thiéry, 2017) tells in an interview, new tools, skills and languages have to be learned for hospitality and togetherness. Spaces and programs have to bring people together and empower them to heal their lost identity and to develop new common place attachment. Refugees had to leave their homeland, home, culture, language, families and places behind, so in one hand, they have to mourn this loss and in the other hand, they have to start a new life and build up a new identity which is very difficult, mostly if you do not know the new local language, culture, people and you have no roots at all. The welcoming societies are also suffering. On one hand, they fear the change to loose their traditions, culture, language, places and even their financial independence and on the other hand, they do not know how to handle the new situation, how to build relationships with the newcomers, how to build spaces for interaction and how to start a new, more diverse and complex life.

3. Inclusivity⁵ - livable cities for all

Theoretically, cities are for all, but in reality cities are hardly accessible and livable for marginalised groups. Around 70% of the world's refugees live in cities but their living conditions are extremely far from the standard. This phenomenon has to be discussed from economic, socio-political, cultural and environmental-spatial perspectives. Refugees must be involved on every level, from decision making to accessibility of public and private housing, labour market and education. Even their legal status requires re-evaluation from the socio-political aspect. Various theoretical and empirical researches define access, affordability and openness as the three main problems in the

1 / Sébastien Thiéry, the founder of the organisation PEROU in France, often uses the term "new languages".

2 / Richard Sennett, the author of the book "Together" often uses the term "togetherness".

3 / "Stakeholder" refers to the welcoming societies and newcomers as the two main interest groups.

4 / "Human level" refers to private-, community- and public spaces and programs.

5 / The phrase "inclusive cities" is also used by The World Bank organization.

current situation. Economic, cultural, socio-political and environmental-spatial equality can solve all the previously mentioned difficulties. Equality can be reached through developments involving diverse interest groups and diverse tools. Building all the above mentioned elements with equal emphasis into future developments is crucial to create livable inclusive cities.

Collaborative developments from various human and urban levels⁶

One of the biggest challenges of the collaborative developments is to include all the stakeholders from the very beginning of and through the whole process. It means from the problem definition, through idea collection, decision making, solution development and maintenance, to monitoring. The challenge is to involve the marginalised groups, such as refugees, who often have very little amount of energy and resources to participate in such developments. One other way is to support and participate in developments initiated by refugees. These projects should be observed on all the diverse human and urban levels from private to public.

1. Diverse human and urban levels

The specification of levels is based on the numerous “research by doing” workshops, discussions and projects by the NGO Architecture for Refugees⁷ and its local chapters in the USA and in Switzerland. Three - private, community and public - sub-levels are defined, although, there is just a very fine transition between them. In the private level, local observations and small projects are included which influence the life only of a very few people but highlight the importance of privacy and strong social connections. In the community level, the projects analyse the importance of socio-cultural gatherings and interactions and develop new semi-private and semi-public interventions and spaces. In the public level, the monitoring and interactions are more generalised but this also offers a wider perspective. The first findings underline the importance of all levels and focus from the individual level to the public. There must be a good balance between these levels to create a more complex and inclusive tool-, skill- and language-kit.

2. New tools, skills and languages to understand the problems and to develop new collaborative projects



Figure 3 - Desired life cycle of every project - in the case of the collaborative developments, every step should involve all the stakeholders

This research uses practical and theoretical research methods to understand and summarise the problems in the field and to develop new collaborative tools, skills and languages. It is very important to analyse the current situation and to summarise the discoveries. The problems on every level have to be defined for further movements. The complexity of the situation is overwhelming, but without good questions no good answers can be developed. The results of the first analyses show the lack of real problem-based research and monitoring. A high percentage of the current developments are top-down initiated without any previous study or research. The running projects are not evaluated and the rigidity of the system is also alarming. The summarised problems are based on observations, collaborative workshops, interviews, exhibitions, collaborative fieldworks, walking tours and minor interventions. Along the problems, it is very important to stop every further false developments. This is one of the most challenging tasks because of the rigidity of top-down systems. The monitored projects and their negative effects must be communicated towards the current decision makers, developers and society. This is the

only way of controlling the failing developments. The analyses of solutions - new collaborative tools, skills and languages - are partly practical and partly theoretical - literature based. Both the problems and the solutions were analysed on a short- and long-term. The four basic - socio-political, cultural, economic and environmental - fields of sustainability were also used to characterise the situation and the further steps. Thanks to the several research-by-doing projects, some elements of the research were immediately implemented as good practice in the real life.

3. Selection of projects

The selection of the analysed projects was based on their scale and current success. The situation in the field of the refugee crisis in the last few years is changing so fast, that the projects must be evaluated continuously. It is also possible, that some of the selected projects will fail in the near future, but their positive or negative impact must be understood and highlighted. In general, it can be stated, that top-down projects fail because of their rigidity and bottom-up projects fail because of financial difficulties.

4. Private level - privacy and personal identity - housing +

The private level mostly refers to housing. In general discussions, housing is often identified with integration as the one and only problem to be solved. It is only partially true. As Corina Sy says "We were quite fast confronted with the question of housing. This is the first and most important step to get your own privacy, your own space and to settle down." (Home Not Shelter, 2016) or as Gostaph Kara Fallah argues, "I can identify myself if I live in a society, not when I'm alone." (Home Not Shelter, 2016). they define the importance of housing, so it is visible that housing has a strong connection to other human and urban levels. The problem analyses in Switzerland⁸ shows how isolated and homogeneous the refugee housing settlements are. Besides the isolated refugee housing settlements, the lack of freedom is also an important issue. These top-down developments offer very little, almost no space for the residents to personalise their private room and living spaces. As the residents of these Swiss settlements state⁹, the financial dependency is also alarming. The lack of affordable housing and the lack of wish to host refugees creates a very difficult set of circumstances to move on from the situation upon their arrival where refugees live in refugee housing settlements mostly located on the outskirts of the municipalities, hence socially stigmatized.

Two projects are selected and highlighted as examples for best practices and models. The first is a small scale housing network - called Refugees Welcome - which brings refugees and welcoming shared-flat communities together. "The main goal for refugees is to find their own flat. This could offer them a new starting point." (Kömösi and Geiling, 2018). In the temporary position they can hardly imagine to start developing their new identity, which is a limbo situation influencing their everyday life. Many of them do not want to learn or do anything, because they do not know if they can stay or not. Regarding shared-flats, it is important to mention how the flatmates can influence the new life of the refugees. The homogeneity of the shared-flat community on the private level could support the development of identity. "Once a guy moved in to an artist community, where he started to act like them. Since he moved out, he changed a lot" says Mareike, co-founder of Refugees Welcome. "We try to bring people together with similar interest and background. It makes the living easier. It is not always the situation, but generally it helps." The size and contribution of spaces in a shared-flat is also an important question. As Mareike adds, "not so many flats have community spaces. They share only the kitchen and the bathroom. The other flatmates are often look for a new renter to split the shares." The lack of community spaces certainly hinders the social and community life of the flat.

Shared-flats are not for everybody - mostly for individuals and not for couples or families. For those who cannot imagine to live in a shared-flat, co-housing developments offer a better solution.

The second housing project, called Sargfabrik (Elser und Rieper, 2008: 277), is in Vienna and has thirty years of history. Thanks to this time period, real long-term experiences can be evaluated and used for other developments. It is not a single shared-flat but a whole co-housing project with around 200 residents (Sargfabrik, 2004). "We are not missionaries but when something here works, such as, for example, the integration of refugees, disabled or

6 / "Human and urban levels" refers to the scale of the project: how many people were involved and how deep was the personal space of an individual influenced.

7 / Architecture for Refugees is an international NGO based in Switzerland, focusing on the architectural aspects of the refugee crisis on a global level. It has two local chapters: the American chapter is based in Seattle and focuses on the life of newcomers mostly on a neighbourhood level. The Swiss chapter is based in Zürich and organises a variety of projects mostly on the community level.

8 / Problem analyses done by the Architecture for Refugees SCHWEIZ NGO.

9 / Interviews with refugees living in Swiss settlements done by the Architecture for Refugees SCHWEIZ NGO for the "Shelter is not enough" exhibition.

elderly persons, then this could surely be adopted as an example of how it could function at a larger scale. We present our experience in the form of a model that can be applied in a modified form to other situations. And when something doesn't work, then we can hand on this experience also. But nobody can tell us any longer that the integration of refugees does not work – it works, and we live here with proof of this fact." (Ruby and Ruby, 2005: 118-119) - says Ute who has lived in the Sargfabrik co-housing in Vienna.

5. Community level - social life and belonging

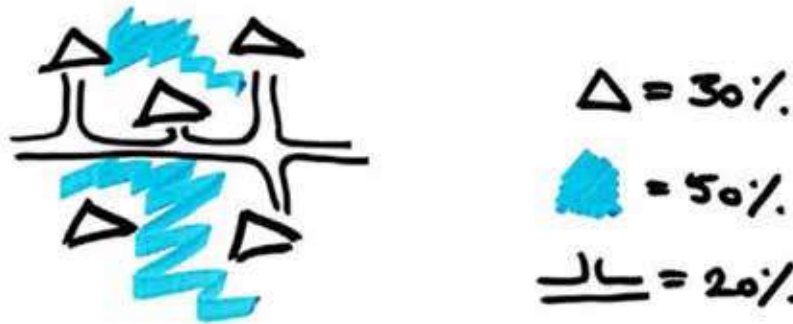


Figure 4 - Community level

The concept of community level means spaces and programs which are outside the private space but not totally open for the public either. As Irma Arribas Perez says, people spend around 50% of their time in community spaces (Arribas Perez, 2016). It is an environment which hosts programs and has spaces to be used by the community. In this community level, people can relate to society, so they can connect their identity to the outside world. Since around 50% of the time is spent in this environment, it plays a key role to identify the place attachment. "Activities build communities" as Irma stated in her presentation and activities could also build spaces and places to serve as a platform for many other projects. As Tashi cries out (Kömlösi and Lhamo, 2017), she would need much more interaction with the local society, but there are no programs and spaces which could bring her closer. She would need friends, a supportive group of people and a stronger social network to improve her new identity, education, housing and potentials as a workforce. But as it has already been mentioned regarding the private level, not only newcomers need these activities, but the welcoming societies too. Activities which help them to learn about the culture and background of the newcomers and programs which could help them to develop a new common identity. As the Swiss examples show¹⁰, it is very uncomfortable for locals to get involved with refugees. It is not necessarily negative but they are more individualism oriented in their social lives. Community projects are often too private for them. The question is simple: how can community oriented collaborative developments offer a comfortable platform for interactions and togetherness for newcomers and locals? Cooking and eating, music and dancing or sports are all basic needs and activities which can support the interaction between the various interest groups. The question is if these interactions are enough to build a new common future and identity. Not all programs have to be intercultural, as Doug Sanders also highlights, homogeneity can also be very useful in the integration process, during the journey for newcomers.

Both selected projects are connected to a permanent location. A good space and program combination is very important to help a new common identity and place attachment to be developed. In both situations, the programs and spaces were developed in cooperation, involving all the stakeholders from the very beginning. The first project "Cooking around the plate" (Über den Tellerrand, 2018) is a community corner in Berlin where co-cooking and eating play the main role, but these are not their only activities. They organise discussion nights, "building bridges" programs and other intercultural events.

The second project offers "education for all". The "Autonome Schule Zürich" is an autonomous school, based on direct democratic rules, where everybody is on the same level (Autonome Schule Zürich, 2018). There are no teachers but mentors, there are no students but participants. As Malek says "This is my home!" referring to the bar of the school which offers a community space for everyone. Locals and newcomers share meals, enjoy tea and small discussions. They do not only develop a common identity and future in this school but also a common spatial understanding. They learn what it means to live together and how to share programs and spaces.

6. Public level - access and affordability

The public level is the most open and accessible from all the three levels. It gives the biggest freedom and flexibility to everyone to join or not to join the collaborative process. Thanks to this level, it is very easy to get in the process - without any gates - but this also means, that it is the most difficult here to develop real, deep and long-term

relations, connections and engagement. A single shop can also function as a “public level” collaboration. As Doug Saunders writes, “arrival cities” need ground floor possibilities - small shops to host new businesses developed by and with refugees (Saunders, 2016: 22-37). The example of migration in the past perfectly shows the potential in this field. We can mention Italian or Indian migrants and refugees who managed to successfully introduce their culture and kitchen to their current cities.

As another issue, the lack of affordable and accessible public spaces and programs isolate newcomers from the rest of the local society (Kömlösi and Tesfamariam, 2017). The spatial segregation on the outskirts of cities makes them invisible (Kömlösi and Refugees, 2017) which hinders any collaborative process. This is not at all beneficial for either of the parties, refugees and locals. The socio-political and cultural stigmatisation makes their everyday life even harder and isolated. The lack of accessible and affordable public educational programs (Includ.org, 2018) blocks their inclusion in the labour market. Since the decision making process for an asylum seeker could take 2-3 years, it is very difficult to wait that long. In most cases, the asylum seekers do not know what to do until they can get the answer and on the other hand the social services do not really support any further educational programs and language schools during this period. NGOs and small independent groups offer informal educational possibilities. However these often only focus on language. The importance of these educational facilities has to be emphasized. The lack of their representation in the socio-political decision making processes isolates them from political collaboration. They are solely dependent on the top-down decisions of political and state organisations.

Many projects and ideas can be mentioned as good solutions. Walking tours with refugees, collaborative public workshops, educational and entrepreneur programs, social gatherings and public cooking are only a few options. There are short- and long-term developments. The “Opportunity Space Festival” in Malmö (Vanalen.org, 2018) was a trial project during the summer of 2017 in the central area of the city. It aimed to bring very different people together on a broad public level. The programs were open for everyone for free of charge. A unique pavilion in a public park hosted shared meals, dance performances and educational activities for newcomers and locals. The visibility of the project was an important issue from the very beginning and the local government stood behind this goal. As they write “researchers have found that to change people’s behavior, their perceptions of social norms are more important than their personal beliefs. If city government is prominently involved in creating public spaces that promote social inclusion, it can send a clear message to everyone about that city’s values and priorities.” (Opportunity Space Festival, 2017). The project was very popular for the local community and for newcomers too, but it required a lot of organisation (Kömlösi and Chou, 2017).

Collaboration on every level is the key for inclusivity

All of the above mentioned projects offer the necessary spaces and programs not only for refugees as newcomers but also for the welcoming people and communities to start developing a new common identity. In these projects, the two sides can get to know each other, mutually learn from each other, and by this, they can gain an opportunity to enrich their own lives. The figure below with all the five projects shows the complexity of the issue and how the various levels can complete each other. The five projects almost entirely cover inclusivity and sustainability on every human and urban scale.

Both private level projects - Refugees Welcome and Sargfabrik - show that community-led developments can result in more welcoming situations in terms of better social and cultural relations, more affordable housing and can offer access to the housing market. It also means more diverse neighbourhoods where refugees are not isolated in refugee housing settlements on the outskirts of the cities and in terms of flats it could mean to offer more inclusive shared-flats. Both strategies should be supported and promoted by top-down stakeholders such as municipalities and public institutions. It is also important to point out that mostly community-led housing projects offer accessible and affordable housing solutions which allow the users to have more financial independency, freedom and possibility to personalise their spaces.

On the community level, more community-oriented developments should be supported and highlighted by the top-down institutions. Support could mean offering free spaces, promotion, professional- and financial aid. The projects show that the cooperation between the bottom-up and top-down stakeholders can generate more sustainable solutions. The two projects on this level - Cooking around the plate and Autonome Schule Zürich - show that even personal identity can be strengthened by community projects and that this level plays a key role on all the three human and urban levels. It brings the different levels together and connects individual and public identities. The projects on this level have to be communicated in a way which makes it possible for everybody to understand them. The Maslow hierarchy includes these basic topics such as cooking-eating, language, music-dancing and sports.

The Opportunity Space Festival also shows that the public level is the gateless entrance for the society to enter the collaborative process. People can meet here without any defined and common ground of knowledge or education. Very different people can be brought together to start the learning and doing process. These public level projects also secure strong visibility for the topic of inclusivity and guarantee that everyone can be involved. The public spaces and programs generate a more elevated discussion in the society which helps both newcomers and locals to build a new common identity on the level of society.

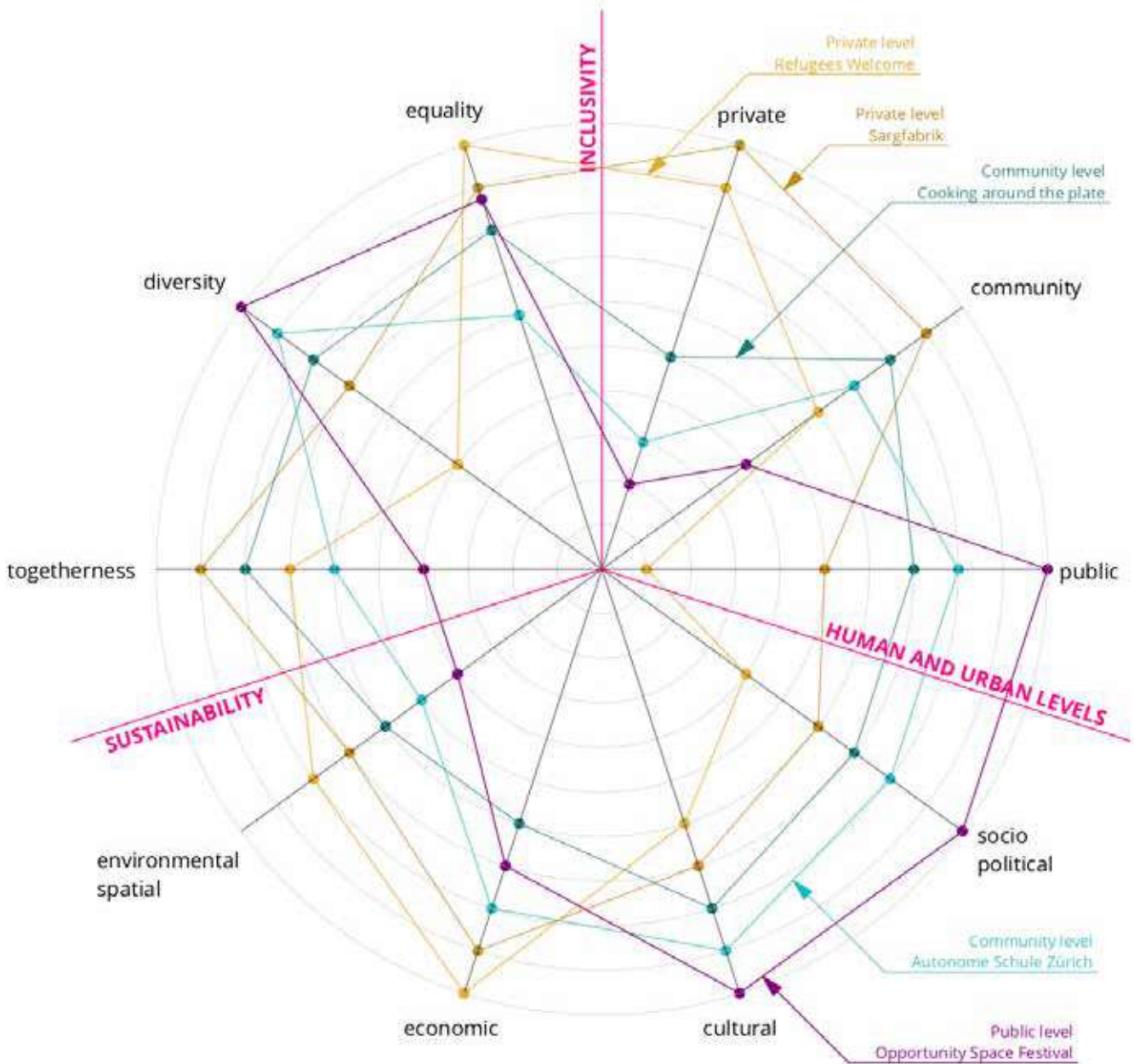


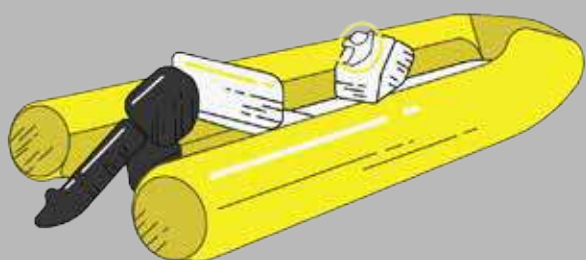
Figure 5 - The conceptual framework with the five projects

The problem analysis and the best practices are pointing to the same direction: collaboration, which is necessary on every level with the involvement of all the stakeholders. There should be no more exclusively top-down or bottom-up developments but projects which involve both parties. There should be much more projects where reaching heterogeneity is the main goal and where everybody has equal rights. Accessible spaces and programs are both necessary and they can only work together. No good spaces can be build without a strong community which can manage their own intercultural programs. For successful and sustainable projects, all the socio-political, economic, cultural and environmental-spatial aspects should be taken into consideration. The lack of even only one of these aspects can drive the projects into failure. New tools, skills and languages should be developed, used and these must be based on the experience of old and currently running projects. Learning from the past is also a key issue. Projects can focus on very narrow local scales so international knowledge exchanges also have to be improved. Finally, to summarise all the above mentioned characteristics of new identity and inclusivity, it can be stated that the strategy of "and" must replace the current strategy of "or".

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[MIG/03]



A New Medieval For A New Communal

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abstract

How to create belonging while accepting the conditions of the post-internet global nomad? When knowledge is the emerging currency, when collaboration is how to get ahead, when labor is everywhere, all the time, the working class are economic refugees tethered to wifi. This globalized entity of people is seeking work wherever they can - moving as the market demands while still attempting to retain minimal comforts. Recognizing people can't own, but still need access, an economic model where degrees of membership replace singular ownership emerges. This ideology is the starting ground for a prototype that blends current conditions of working, living, and playing into a new definition of community. The site acts as a medieval wall, inverting urban growth - densifying an existing footprint. It can be rethought as a neighborhood, a block, even a house - any scale of urban unit that defines community. Tracing the medieval city through 19th century company towns to modern day campuses, whether Harvard, Google, or the Las Vegas Venetian, reveals people living and working together in this way is a housing, working, and social model that keeps resurfacing. Houses on streets, rooms in hotels, and beds in dorms embody the logics of double-loaded corridors - two, isolated, rigid lines facing away from each other. Yet, when people come together, they form inward facing circles. Proposing a model that uses spheres as the primary aggregation method opens a testing ground for a new type of co-habiting. A softer differentiation of space - not enclosing walls of ownership but walls of membership; layers of privacy defined by access, corners, steps, and rituals create different pockets of belonging. Using the efficiencies of Loos's raumplan and Fujimoto's platform plan, there is one connected interior, where living, working, and playing are not parceled out into distinct 8 hour slots, but simultaneously happen everywhere.

keywords Nomadism, Belonging, Community, Ownership, Interiorities

Introduction

This introduction sets up the context of this article. These assumptions and premises set the stage for the objectives and methodology that follows. Simply put, the introduction outlines the starting points that frame the rest of the argument by plainly stating the ideological positioning of the author at the time of this article's conception.

1. Global nomadism stressing modes of stability and causing housing shortage

We live in the world as nomads. Our lifestyles have changed, with stability replaced by a perpetual multiplicity and fluidity. Our generation moves through life as travelers in a changing landscape, across places, jobs, partners, values, even identities, creating a permanent state of in-between. "The life of the nomad is the intermezzo" (Deleuze, Guattari, 1987:380). This creates conflict in the current metropolis between the supposed stability of the home and the constantly-changing temporal conditions of the nomad. Conventional methods of organization are failing to reconcile these differences in contemporary cities, which are, more than ever under stress.

If a certain stability of the urban fabric is necessary for its economic, social, ecological and political viability, it seems clear that the metropolis needs to expand its definition of home and community. Rather than the standard hardline division between public and private, order and chaos, interior and exterior, we must expand the ranges of temporality, interiority, nomadism, inhabitation, and publicness, to reflect the new state of social and programmatic complexity. The wall is no longer a binary division of space, but instead needs to be rethought as a permeable membrane adapting itself to current social, economic, and labor relations.

In this paper, I will develop a spatial prototype that creates an urban fabric of interiorized conditions, examining and repurposing the wall as the primary architectural tool. The prototype's varied modes of intended inhabitation through temporality, program, and publicness aim to expand its performance both in shorter-term stability and towards more stable forms of community. This new architectural methodology uses the prototype to establish new tactics for co-habitation, creating an urbanity that supports the cultural complexity of the new society.

2. Focusing on the interior to create ranges of typologies for belonging

Acknowledging that cities need to accommodate various populations, lifestyles, temporalities, I examine, catalog, and explore interiority as a potential urban and architectural territory. Reclaiming the interior cannot be a naïve movement, rather it opens up an understanding of interiority as a new means of exploring these variations within the urban fabric.

The individual is the primary social agent of our age (Beck, 2002:22-23), so the singular 5m x 5m x 5m cube is the starting spatial grain for the interiorized urban fabric. However, instead of the individualism of suburban logic (aggregation of singular autonomous units) or the totalism of modernist logic (field of repeated self-similar units), it forms architectural landscapes as shared spheres of community. A model that aims to replace the generic spaces of the interior for highly differentiated spaces opens new modes of habitation, much more flexible and attuned to localized, specific conditions.

A fractal organization of the interior could" enable a more human centered, localized designation of space, determined by communities themselves" (Hill, 2014:220-221). These fractal spaces presuppose that zoning can occur at the level of the room rather than a whole sweep of urban fabric.¹ Using emerging software and technology in architecture can allow a level of fluidity of the interior, previously unthought of, shifting the grain of interior/exterior, public/private, residential/commercial to local room-sized definitions.

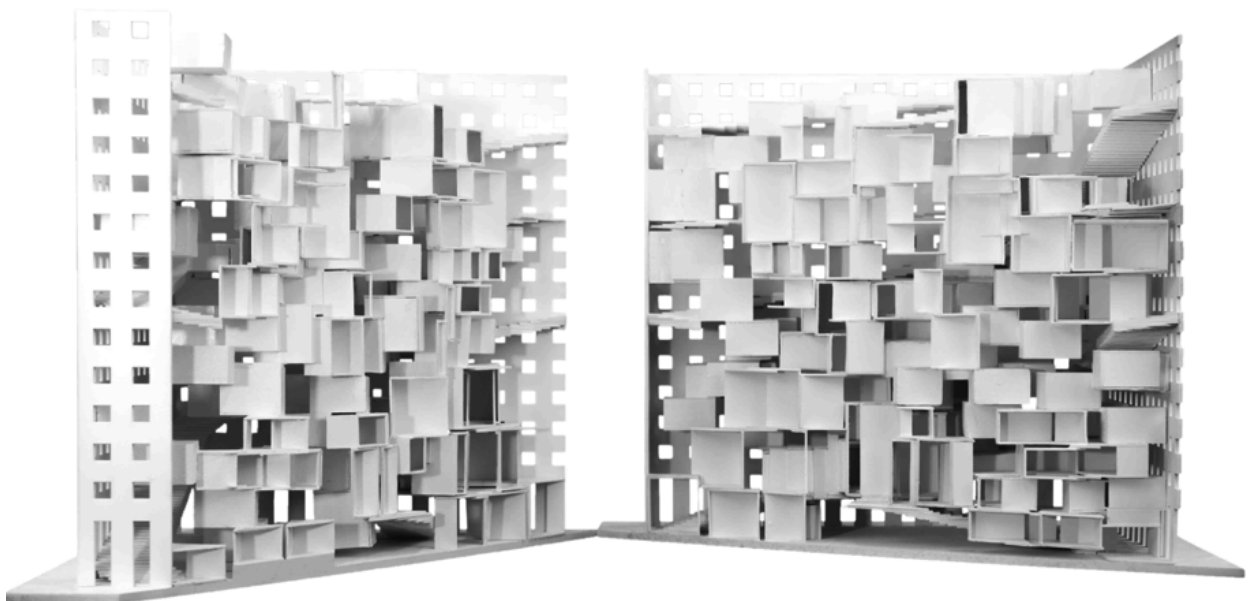


Figure 1 – Fractal interiority model

3. Communal living/working campus replacing single family housing models

The nuclear family model prevalent in housing today is relatively new, and unsustainable, so why not return to a communal housing model? To be part of a collective one needs space to be alone, but the intimate and the social are not binary lines.

Affordable housing is created by breaking down of the previously calcified boundaries between residential, commercial, and industrial designations in the city. The loosening of the definition allows spaces to be multiple things, creating multitudes of programs in a place that previously could only ever be one thing. A model of walls that establish an open infrastructure that turns members into makers, allowing multiple centers to emerge for sharing knowledge, creating, and socializing – the backbone of belonging and community.

A new medieval for a new communal is possible when the architecture and spaces of habitation become functionally intermixed to the point of being one connected interior – all pockets vibrantly active on a fine-grained human scale.

4. The role of architecture in the global debate about borders

Global precarity and mobilization threatens the stability of our preconceived communities, making the recent global focus on strengthening borders at the forefront of current events.² In lieu of these events, it seems the popular sentiment is to build better, stronger, and taller walls. However, a quick perusal of history shows us that walls, no matter how strong or tall or big, eventually fall to the invaders, only serving to prolong the suffering of all involved. Twentieth century nationalism and the shoring up of borders is on the rise, not just in the US, but as a global phenomenon, with more and more people listening to the right-wing policies of unity and strength and restoration of the way things were, a call for stability in a world that is anything but.

In such circumstances, what is the role of architecture? In my opinion, it is not to build these bigger, better walls, but to propose new types of borders with different kind of walls. Architecture at its essence is a practice that divides space, how it decides to divide it is what makes it relevant, here. Instead of reverting back to twentieth century models of practice, with functionalism, segregation, and purity, architects need to find twenty-first century models of practice that can reconcile the instability and change to provide new kinds of community and belonging (Hill, 2003).

The architect's profession is the drawing and conception of division (walls) between inside/outside, private/public, living/working. It is in these conceptions of inhabiting or co-habiting that architecture can play a role in the larger global debate about borders. By focusing on re-defining how borders in the local sphere are formulated to increase co-habitation, the conceptions of how we as cities or nations (the global sphere) can co-habit will undoubtedly be influenced.

A co-habitation tactic for an architectural prototype that redefines ownership from walls of possession and individualism to a new type of communal living, where walls create a variety of pockets, that can be re-imagined by creative users as bedrooms, offices, stadiums, playgrounds, churches, and markets.

Objectives

This prototype shies away from the naiveite of utopian proposals, instead choosing to focus on strategic design and the associated tactics to drive its own social and economic agenda³. Using the exploitative methods of the current economic system against itself, to in turn serve an altruistic cause of providing affordable housing and creating communities is the only play left in the current global metropolitan landscape of increasingly widening gap between housing prices and median wages.⁴

The strategic tactics that follow propose to reuse current trends, as seen in the economic and social spheres currently existing in the United States, as an alternate way of living together, one with a clear emphasis on the common good. This common good, however, is not a sacrifice of the individual for the good of the public, rather an emergence of a publicness set up by current shifts in the social and labor relations that have emerged with the turn of the century.

1 / Fractal planning as a concept emerged as in idea following the analysis of software apps such as Airbnb to create commercial space (hotel rooms) into pockets of unused residential space. According to Hill, Airbnb can currently offer the same amount of temporary accommodation as the entire Hilton chain, without having laid a brick. What can architecture look like if intended for this fine-grain level of zoning?

2 / As this article is being written, nightly news focus on Trump's most recent border policy of separating children from their parents and keeping them detained in cages in various points along the border. In the July'18 Wired issue, an article outlines attempts at building a "virtual" wall in the Mexico/US border by Silicon Valley entrepreneurs, that uses most recent technological advancements in surveillance and virtual reality to create the same functionality as fortifications used throughout history, stretching all the way back to the archaic walls of Troy.

3 / Strategic design applies the principles of traditional design to the big picture systemic challenges such as healthcare, education, and housing. It is about redesigning contexts—in this case, organizations, lifestyles and economies—rather than solely addressing the built environment. It redefines how problems are approached and aims to deliver more realistic solutions. This is a good place for design to be, if not the only one, where it can make a real difference. Looking at the current state of housing crises globally, I would argue we desperately need to make a difference, so our generation can stand any change at affordable homes. Housing is a basic human right, like education, or healthcare, and should be approached with the appropriate seriousness as the problem it ultimately represents.

4 / Since the 1970s, wages and income in the US have plateaued, with very growth, as opposed to the astronomical increase of housing. This pushes the dream of owning a home further and further into the future, maybe in a person's 40s, while its primary alternative, renting has become close to half of the average monthly income in cities such as Boston, San Francisco, and New York.

1. Location, location, location...

Locating the prototype in an existing economic zone designated as a technological park allows it to have the most bang for its buck. It frames what community is or what belonging looks like to the people that will be designing the ideas of the future.

A tech park is an international collaborative community with a shared purpose of innovation for economic gain (IASP, 2018). Innovation is an emerging commodity and knowledge an emerging currency, as seen in Google, Apple, Wikipedia, Facebook, Uber, Airbnb and the countless other tech-startups whose profit comes from intangible ideas manifest in interfaces, systems, frameworks, data, apps, etc. "These areas of innovation are places designed and curated to attract entrepreneurial-minded people, skilled talent, knowledge-intensive businesses and investments, by developing and combining a set of infrastructural, institutional, scientific, technological, educational and social assets, together with value added service, thus enhancing sustainable economic development and prosperity with and for the community." (IASP, 2018). They are hotbeds for young, creative talent and by implementing the prototype in tech parks, it puts it at the forefront of innovation, literally defining culture and norms for the people that are determining what the future will look like.

The ideas that come out of technology parks like Silicon Valley will define the future, undoubtedly, however, implementing a co-habitation model based on sharing and community influences the cultural systems of the people that live inside it. Take for instance, the transport system known as Uber, which is one of those future changing ideas coming out of technology parks. Now imagine what Uber would look like if it was an "on-demand taxi network, underpinned by a good app, as locally owned public transport rather than a VC-backed global corporation" (Hill, 2017)? On the surface, it would look very similar, however its societal impact would be on the opposing pole.

2. Housing creates culture

It all comes down to ownership. How do the people that create these ideas understand community? Do they believe in a public good or only in the false tapestry of lies that is Social Darwinism underpinning the values of places such as Silicon Valley? The current housing model in America is founded upon privatization of property, autonomous ownership, material commodification, all based on the idealized social notion of the nuclear family in 1950s America. Not only this model broken on a social level, but as census data projections show, it is being replaced by different household typologies, the most pre-dominant of which is the single-person household, on the rise since the 1980s, boosted by the recent influx of Millennials into the workforce, and predicted to go up in the next 15 years (Bachman, 2015). This model of housing has created such a shortage of affordable and dignified housing, that it has literally displaced entire urban populations, caused an endemic of precarious living situations, and made the people that inhabit them savage predators: because in survival of the fittest, only the strongest and most vicious have a chance.

In a world where the fight for their very survival is most apparent in the housing fabric that is supposed to create feelings of stability and security, is it any wonder that the cultural values are so skewed that the technology that comes out of Silicon Valley is purely driven by self-interest and profit and not by a public and common good? When the living situations of the people that make these impactful ideas are based on exploitation, autonomy, and profit, everything they create will be a by-product of the same values. Re-defining how they see and understand ownership from a model of individualism and possession to one of a shared community is the ultimate strategic aim, a design that goes beyond the physical architectural prototype.

3. Ownership is replaced by membership

With dorms and hotels as primary housing for the individual, she/he is exploited for profit. In this economic model, temporality is either stable and productive - long-term family - versus unstable and unproductive - the singular agent on the move (Aureli, 2016). This direct relationship between stability and productivity is no longer useful. This idealized notion of home as stable and secure keeps us trapped in houses we not only can't afford but also don't even want.

Designing for a lifestyle that is unstable but productive expands the typology beyond the hotel room or the dormitory into a mode of habitation that is less temporary but still retains home-ness. To accommodate short-term living as an economically viable solution, property can no longer be parceled out into binary private/individual and public/shared, but instead, needs a looser distinction. Ownership extends beyond the isolated house-unit, to the whole community.

Ownership is replaced by membership. Home is no longer where all the stuff is. Stuff is replaceable. Experiences drive people of this generation, maybe because we just can't afford to buy as much stuff. Maybe because we realize it's not a sustainable way of living. But sharing stuff, whether tools, rides, rooms, playlists, Facebook posts - is the new norm. Sharing is not a social benefit for an idealized public, but a reasonable solution that is happening on an everyday basis⁵. It is a viable thought that sharing can replace scarcity as an approach to affordable and quality housing that can in turn provide a feeling of home.

4. Working everywhere, all the time

Moving from the industrial model in which production is the basis of the economy towards the knowledge economy, introduces a new type of laborer⁶. The emergence of the internet and globalization has created a subset working class – professionals working in the digital age, generally of a higher education, either in the tech, entrepreneurial, or business industry. These nomads are not tied to specific places because their production is not in the factory or office, they are free to move around looking for work wherever they can, often as freelancers or short-term employees. The first two industrial revolutions redefined cities, and our current shift in labor and production to a more decentralized mode of fabrication should have just as much an impact on the urban landscape. Production, in this current trend of knowledge economy, in places such as tech parks, can be re-aligned with daily life as manufacturing exists the factory. Working, living, and playing are no longer parceled out into distinct 8-hour slots, but happen simultaneously everywhere, all the time.⁷

“One potential outcome of all this is a clustering of the new style live/work dwelling in 24h neighborhoods that effectively combine local attractions with global connections. These - not isolated, independent electronic cottages - will be the really interesting units in the 21st century urban fabric.” (Ratti, 2016: 130)

5. Redefining boundaries

A place where working and living happen simultaneously is the ultimate upending of industrial era zoning, where everything is parceled out into autonomous categories, whether in the city or the house. The urban fabric could be reimaged as home and factory collapse into a hybrid unit and a more social, community-based model emerges, blurring formerly distinct boundaries. This fractal organization of space, is more in tune with many 21st century conditions: where an apartment can go from residential, to commercial, to industrial zoning in the course of an afternoon.

The singular binary boundary of private/public, work/live, inside/outside is the typical differentiation of space. However, it is this unforgiving line that is causing shortages in housing, individualism and greed, the loss of community. A softer differentiation of space is needed for a more fluid reflection of our current reality. Not enclosing walls of ownership, but walls of membership, layers of privacy – defined by shifting volumes, platforms, and rituals. Looking at different typologies of interiority, from African nomadic dwellings' rituals, through Loos's raumplan of shifted volumes, to Fujimoto's platform plan, the prototype is one connected interior. It is not a universal and endless field, but a highly differentiated landscape of pockets, corners, steps, and walls, which naturally attune to different types and levels of belonging.

Methodology

The methodology for this prototype is a series of sequential architectonic processes, that when combined, form a new type of co-habitation model. Each of these processes is a cyclical tool for evaluating and forming those before or after, allowing the fine-tuning of the model based on a varied set of desired tectonic conditions to serve a larger social and economic agenda.

The prototype is not a closed-loop model, rather a set of equations that allow for variable inputs, being able to create a host of different landscapes, wall conditions, and pockets to accommodate for various contexts and agendas. This prototype is intended to be re-appropriated by other architects and designers, to give them a set of tools through which to create new types of co-habitation models. The model shown in this paper is also intended for transformation by its future inhabitants. “The creative user either creates a new space or gives an existing one new meanings and uses. Creative use can either be a reaction to habit, result from the knowledge learned through habit, or be based on habit, as a conscious, evolving deviation from established behavior” (Hill, 2003:23).

5 / *Sharing Economy is a hybrid market model of a peer-to-peer exchange where transactions are often facilitated via community-based online services, to provide individuals with information that enables the optimization of resources through excess capacity in goods and services. Collaborative consumption as a phenomenon is a class of economic arrangements in which participants mutualize access to products or services, rather than having individual ownership. The consumer peer-to-peer market is valued at \$26bn. (Botsman, 2011).*

6 / *The knowledge economy differs from the traditional economy and therefore produces a different kind of laborer. It is an economics of abundance, not scarcity, meaning sharing resources and information is encouraged. Labor is less tied to a physical location and tends to move more often. National boundaries are not the primary regulators as knowledge and internet-based globalization tend to spread much more quickly. Communication is key to knowledge flows, so social structures, cultural context and other social relation factors are vital to this kind of economy.*

7 / *The key to a harmonious lifestyle in the newly mechanized and industrial world is a clear classification and compartmentalization of space, but also of time. In *Towards a New Architecture*, Le Corbusier defines the three eights: eight hours for work, eight hours for sleep, and eight hours for recreation and meditation, (Le Corbusier, 1946:255).*

This model creates a variety of architectonic conditions rather than a generic interiority, allowing users to create habits of use based on their own norms, to evolve into habitation rather than being forced into a preconceived vision of one.

1. Site

The site, whether a city, neighborhood, technology park, block, or even a house is an existing boundary. The prototype uses the access points of this existing boundary to create its own limits, connecting and subdividing them to create the desired number of circulation paths and points of intersection. The distribution of points allows for urban planning decisions based on types of paths, their distribution, number and size of intersection nodes.

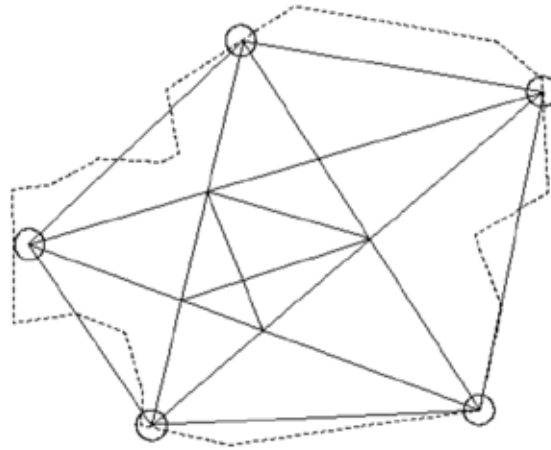


Figure 2 - Site subdivision

The current model establishes non-hierarchical patterns of movement and increases the possibility of change encounters and exchange, a prerequisite to any successful urban design. These intersections of lines create a field, which will serve to densify the existing footprint, increasing the quality and quantity of available space without taking up any more land area. "An economy of means turns spatial thrift into plentitude" (Dean, 2016: 26).

2. Landscapes

The triangular field is chosen for its structural integrity in bridging three-dimensional space. Variations in the field are created by the amount, type, size, and condition of spheres against the ground plane. Plateaus occur at overlapping circles, valleys at autonomous circles, and hills at tangential couplings. The systemic production of landscapes paves the way for a more nuanced variety of architectural spaces to occur as these become populated with cubes.



Figure 3 - Field divisions

3. Spheres and cubes

Understanding the rise of the single person household, the singular 5m x 5m x 5m cube creates the urban fabric in this prototype. The cubes are aggregated on a sphere, allowing for centralized types of communities and spaces to form, similarly to how people actually meet and gather in groups. The density and distribution of points are read against the subsequent creation of clusters, with denser points creating larger, more open clusters, and less dense points creating more autonomously parceled and individualized clusters.

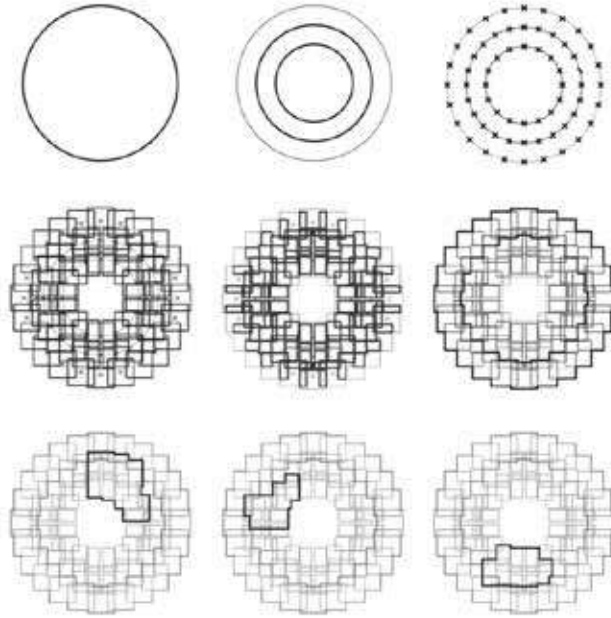


Figure 4 – Density, points, and aggregation

4. Cluster aggregations

Walls do not enclose singular units, but serve as infrastructure, expanding the notion of what it means to live together in a shared community. Levels of enclosure and access relate to an implied level of privacy to create different pockets of belonging. The varied typologies are a sample of the different conditions that can occur at different points in the landscape. The type of spherical operation combined with the level of density of the pixels creates a range of volumes and spaces, each suited to not only housing units, but different types of working and leisure activities.

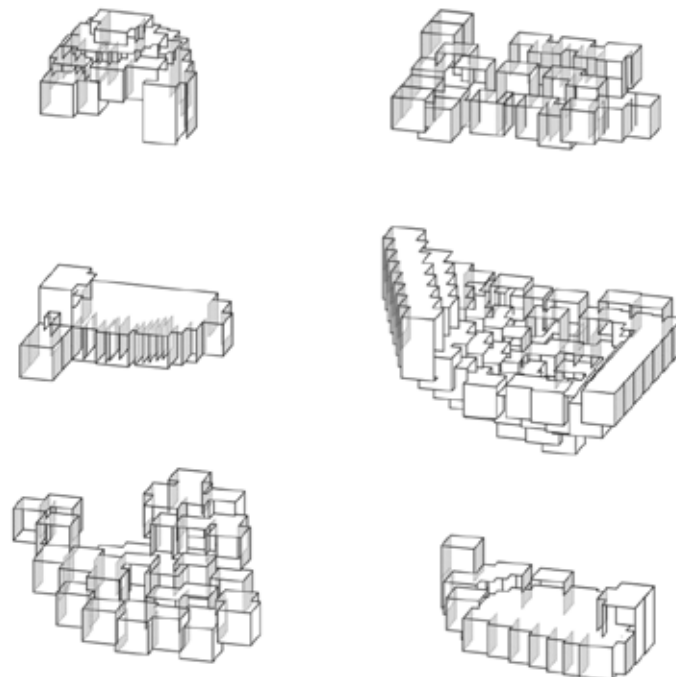


Figure 4 – Cluster aggregations

5. Walls

The difference in pixelated densities, sphere sizes, and landscape conditions, creates an extremely wide range of wall typologies. Using corners and pockets to define levels of privacy, the fragmented nature of these walls allows for a much more localized division of space.

A fractal approach with softer differentiations is much more attuned with the rhythms and lifestyles of the twenty-first century. Opportunities for places to be alone emerge alongside places to be together, truly creating a communal living environment. To be part of a community, one needs space to be alone, and in these pockets of walls there exists enough range between these two extremes of isolation and commonality to accommodate a whole host of activities and preferences.

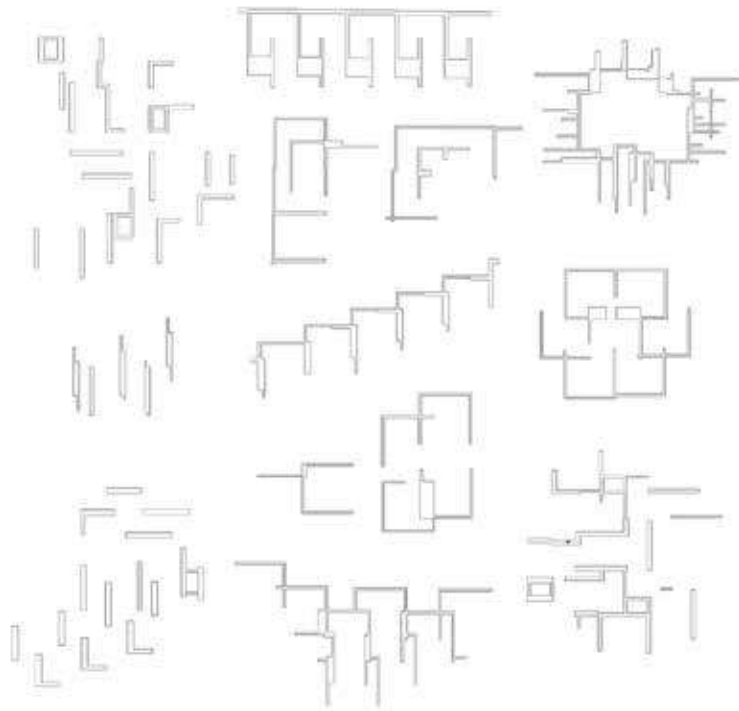


Figure 6 - Wall typologies

Results

The architectural prototype creates a possibility for creating communities. The localized differences in the architecture lend themselves to layers and ranges of privacy/publicity, working/living, outside/inside, which in turn creates fields rather than boundaries. The pressures of the 21st century nomad, an individual that is unstable but productive fracture the existing housing typology. The globalization of the world begs for a localized difference in a person's immediate surroundings. Designing a landscape of differences allow the individual the freedom to find a space to belong that is not self-similar or generic, but a true reflection of personal and social identity – a home in every sense of the world.

“Let the walls fall, but build new ones further out, and learn to feel ‘at home’ in a broader world. The 21st century home and city, the technology which builds them, and the lifestyles they accommodate, change constantly and irresistibly. So it is better to dump the old classical language of structural form, based on stone construction, as well as the hierarchical patterns of living, and to devise a totally new and flexible language whose form neither conceals nor arbitrarily represents each new condition, but inherently reflects it. The home was to be destroyed because collective lifestyles and the new technologies would together soon evict man from it. But home was not to be abolished, only replaced a new ‘home of Man.’” (Tabor, 1999: 225).

The urban units produced in this model by the prototype are not houses, nor are they offices, nor parks, but they contain the basic elements to host all of these programs and more. The primary domestic unit generated by this model is a wider collective, whose infrastructures are shared and defined by its users to create a wider range of habitation possibilities. Using existing architectural conditions to to define programs or temporalities of use by its inhabitants makes this new urban unit suitable for the changing lifestyles and pressures of the 21st century global nomad.

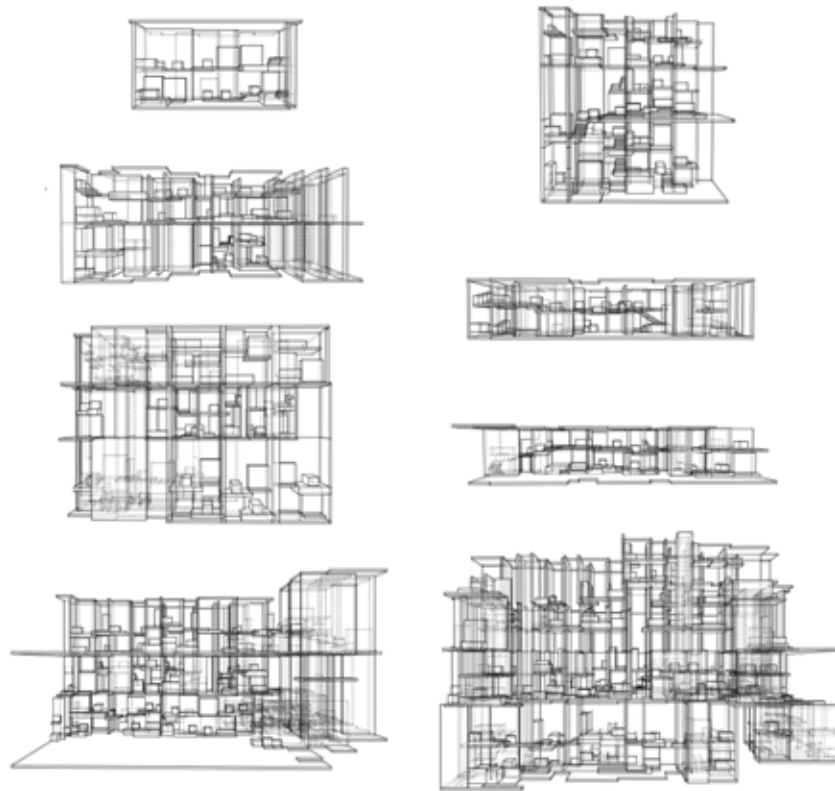


Figure 7 - Urban units

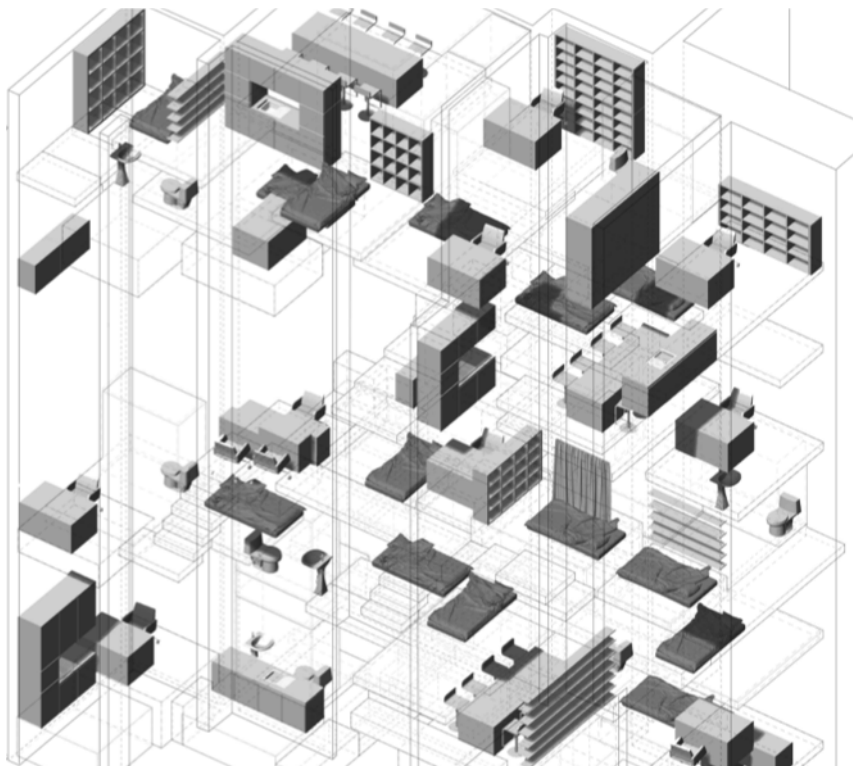


Figure 8 - Urban unit inhabite

Conclusion

The fractal zoning of space and loosening of boundaries allows a more community-based definition of home or habitation. Being able to optimize redundancy in the built fabric of the community, by combining infrastructures, by sharing spaces not commonly used, by creating types of rooms rather than types of buildings, allows for a

maximized economic footprint on a piece of property. This means that there can be more people on a plot of land because their configurations of living have been broken up into smaller components, allowing the minimization of loss of unused space, and thereby, the creation of more affordable living.

Combining working, living, and leisure together into the same urban unit allows for new types of social relationships to develop between neighbors. Because these people are dispersed through the units, neighborhoods are 24 hours communities, not swatches of financial or residential zones, only active part of the day and dead the rest of the time. The breaking up of the existing conditions into industrial, commercial, residential pockets allows it to become a vibrant place, where people can mix with their neighbors, establishing new social relationships based on a public good model rather than an autonomous and self-interest or profit driven one. This prototype's urban unit proposes a new type of community, in which architectural landscapes with multiple levels of interiority define belonging.

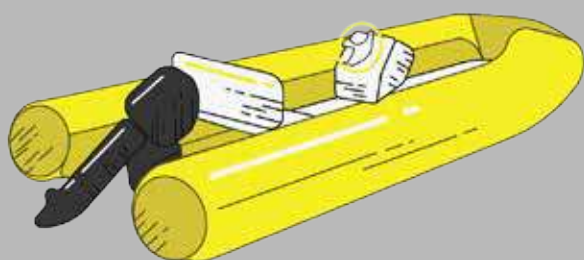
Acknowledgements

This paper expands upon previously done collaborative research by the team of the author, Chandell Gadbois, and Daniel Godziszewski, in a research studio led by Prof. Lluís Ortega at the College of Architecture, Illinois Institute of Technology in academic year 2016-2017.

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[MIG/04]



Labour Migrants, Syrian Refugees, Urban Landscape And In/Visibility In Istanbul

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abstract

My paper focuses on the settlement patterns of international labour migrants Syrian refugees in Istanbul and on the transformations that their presence has determined in the urban landscape. Traditionally, the model of international labor migrants settlement in Istanbul coincided with the "Mediterranean port cities" one defined by poor housing conditions, high spatial distribution and the settlement in the old town central districts. However, compared to the Mediterranean model, the spatial distribution of migrants in Istanbul is accompanied by a high level of invisibility in the public sphere of migrants, their economic activities and their meeting places. A paradigmatic example is represented by the dozens of restaurants run by African migrants and located inside the buildings and in fact invisible in the public space.

Since 2011 Syrian refugees have begun to arrive in Turkey. According to official statistics, in 2017 there were about 3,000,000 Syrian refugees registered in Turkey. Most of them are settled in urban centers and Istanbul with about 500,000 registered hosts the larger community in the country. The settlement model of Syrian refugees differs from that of the other migrant communities. First, their spatial distribution coincides only partially with that of the other migrants and includes new districts. Second, the modalities of their establishment are specific and characterized by a high degree of visibility in the public space. Hundreds of businesses run by Syrian citizens and engaged in a wide range of activities - restaurants, cafes, real estate, transportation, travel agencies - but also schools and charities have profoundly transformed the urban landscape of some city districts. This new urban landscape is an opportunity in the Turkish context to discuss categories such as migrants integration mechanisms, cosmopolitanism but also ghettoization. The frequent references in the public sphere to "Syrian ghettos" mix legitimate social concerns

keywords Migrants, Syrian Refugees, Urban Landscape, In/visibility

1. Introduction

For decades, a migrants-sending country, following the pattern of many Southern European countries (King, Black, 1997)), Turkey has gradually changed its role within the international migration system. Between the late 1980s and the early 1990s, the instability of many Middle Eastern countries, the collapse of the Socialist bloc, and the implementation of a liberal visa regime, turned Turkey into a transit country to Europe for refugees and labour migrants coming from the Middle East, Asia, and Africa, and the destination for suitcase traders and labour migrants so much so that in the late 1990s scholars began wondering whether Turkey was turning into a migrants-receiving country (Erder, 2000). Most of the labour migrants consisted of undocumented migrants who had overstayed their tourist visa. As for asylum seekers, due to the geographical limitations posed by Turkey's signing of the Geneva Convention in 1951, the Turkish state recognized as refugees only nationals from European countries.

However starting from 1994, non-European asylum-seekers were granted the opportunity to apply to the UNHCR representatives in Turkey, and eventually be relocated to a third country.. Istanbul was also the main destination for suitcase traders mainly coming from the former Soviet Republics who in "the giga-bazaars" (Perouse, 2002) in the districts of Laleli and Aksaray bought goods produced in Istanbul¹ - especially textiles and shoes - to be sold at home"² (Yükseker, 2003). Istanbul was also the main destination for labour migrants owing to the informal job opportunities offered by the garment, textile, construction, and services sectors Lordoğlu,2010), and especially by the growing demand on the part of middle class families for domestic workers. (Akalin,2007)

Moreover, at that time, Istanbul also assumed the characteristics of what Ribas Mateos (2005) called border cities³. Like Durres and Tangier, Istanbul was a hub for migratory flows in transit towards European countries; it was a buffer zone and a temporary place of residence.

The growth of the phenomenon of international migration in Turkey has also stimulated the interest of researchers. While the main focus was on aspects such as ethnicity, religion, labour market integration, and legal issues (Biehl, 2014), little attention was paid to the spatial dimension of the presence of migrants, to the relationship between migrants and space in an urban context. This paper focuses on two aspects of the relationship between migrants and urban space in the metropolitan area of Istanbul and their transformations over time.

The first aspect concerns the residential model of migrants. Analysing the impact of migration in the cities of Southern Europe compared to the pattern of the Northern European ones, Malheiros (2002) has identified a residential pattern based on four distinctive elements. This model includes: poorer housing conditions; high levels of informality in access to the real estate market; lower levels of spatial segregation associated with more complex patterns of residential distribution; a higher degree of suburbanization of non-European migrants. However, alongside these characteristics, Malheiros and Arbaci underscore how the old and deprived quarters of the inner city continue to represent a destination for migrant settlement (Malheiros, 2002; Arbaci, 2008). These old quarters of the inner city were very often severely damaged during WWII and then abandoned. They later became a place for the settlement of internal migrants and subsequently for international ones. Arbaci stresses that the possibility that central quarters become the place of settlement for international migrants also depends on the processes of urban renewal and gentrification. In the case of city ports such as Barcelona, Genoa, Athens, and Lisbon, the presence of international migrants in the city centres is still significant since renovation has only been undertaken recently (Arbaci, 2008). Traditionally, scholarly literature considers ethnic concentration and segregation, such as in the case of Southern European cities, to be a spatial representation of marginalization, and, consequently, it regards ethnic de-segregation and spatial dispersal as a form of integration or even assimilation (Arbaci, Malheiros, 2010).

Nevertheless, Arbaci challenges the assumption that spatial concentration automatically represents social exclusion, stating that the relationship between social and spatial distance is indeed multifaceted (Arbaci, 2008). The second aspect concerns the impact of migrants on the urban landscape and their visibility in public space. Social visibility is registered in multiple ways "in bodies, in clothing, in performances, in forms of commerce, in flows of money, in artefacts and in buildings" (Knowles, 2012). In modern Western socio-political culture visibility is associated with public space, while private space is associated with invisibility. Visibility is also closely linked to recognition (Brighenti, 2007) which is, according to a significant thread of contemporary political philosophy, a basic category of human identity (Brighenti, 2007).

According to Brighenti (2007) "fair visibility" has different degrees ranging from a minimum to a maximum. Below the lower degree the person is socially excluded: such is the life of the illegal migrant whose life is that of an invisible subject. However, even passing above the maximum level of fair visibility means entering a zone of supra-visibility where everything becomes gigantic. Again, the example concerns migrants becoming supra-visible when the media portrays them as criminals. Hatziprokopiou (2006) identifies some factors that allow migrants to transform the social fabric of which they are a part (Cancellieri, Ostanel, 2015), that is, in essence, to become visible. The first factor concerns the legal status of migrants, given that regularization may offer migrants a more visible existence; the second factor is the presence of ethnic economic niches where migrants are involved both as entrepreneurs and workers; the third factor regards community organizations among migrants which may offer spaces of socialization, collective identification, and sometimes interactions with other groups. The presence of economic activities and forms of organization may also largely contribute to producing what may be called a semiotic transformation (Shortell, 2016) of the urban landscape.

2. Methodology

This article is based on two distinct research experiences. The first, conducted between 2008 and 2010, with particular focus on the Armenian and Azerbaijani labour migrants, was a qualitative study mainly conducted in the districts of Kumkapı, Tarlabası, and Küçükköy. The study included over 40 in-depth interviews, countless informal conversations and participant observations in different contexts - private homes, churches, mosques, cafés, private ceremonies, and streets. The second reference of this article is a preliminary study begun in the summer of 2017. It focuses on the district of Kumkapı and the remaining districts of the Fatih municipality, with particular focus on Syrian refugees. It includes participant observations in different contexts, informal conversations, and several interviews with Syrian refugees, entrepreneurs, and members of NGOs. Moreover, unlike the first one, at this stage I used quantitative and statistical data provided by numerous reports elaborated by research centres and NGOs.

3. Migrants and Refugees Since the Early 1990s



Map 1. Semi-peripheral and central migrants neighborhoods. Source: Author

The residential model of labour migrants from the early 1990s shares many characteristics with the model of Southern European cities. Firstly, a certain degree of peripheralization, such as in the case of labour migrants from the region of Nakhchivan in Azerbaijan, which showed a certain degree of concentration in the district of Kucukkoy, in the semi-peripheric municipality of Gaziosmanpaşa. Although Hatziprokopiou (2006) emphasizes the importance of the cost of effects in determining settlement choice, the combination of two other factors is equally relevant. Kucukkoy is close to the industrial area of Ikitelli which offers job opportunities in textile and clothing factories. In a culturally traditional context such as that of the families of Nakhchivan, the house-workplace proximity allows greater control by the head-family of the movements of women and minors widely employed in the factories in the district. Men instead, thanks to their freedom of movement, alternate work in the nearby factories of Ikitelli with that in the construction sector dispersed over the entire surface of the metropolis. Another feature of the migrant settlement is a certain degree of spatial dispersion substantially determined by the post-Industrial characteristics of the labour market. A substantial part of the labour force is made up of women, mainly from the countries of the former Soviet area, employed above all as domestic workers, in many cases permanently residing in the workplace.

However, the central feature of the migrant residential model was their concentration in the old and deprived central districts of Kumkapı and Tarlabaşı. The district of Kumkapı, in the municipality of Fatih, was traditionally an area of residence for the Greek and Armenian communities, hosting important institutions such as the Armenian Patriarchate, numerous churches, and schools. The district followed a parable similar to other minority quarters (Mills, 2010). Since the 1950s, progressively abandoned by Greeks and Armenians, it has been the place of settlement of internal migrants, and subsequently of international migrants. The availability of houses, often in miserable condition, a highly informal property market, and the presence of production activities integrated in the circuit of the suitcase trade, of the nearby districts of Laleli and Aksaray, and the neighbourhood's central position were all fundamental elements in its transformation into a place of settlement for migrants who show a highly diverse ethnic composition.

The district of Tarlabaşı, very central and close to Taksim Square, in the Beyoğlu municipality has also traditionally been the place of residence of Non-Muslim communities, in particular the Greek community. Abandoned progressively in the 1960s and 1970s and subjected to a process of degradation, accentuated in the 1980s by the creation of the Tarlabaşı Boulevard that physically separated it from the center of Beyoğlu, it became a place of settlement for internal immigrants. In the 1990s, it hosted the Kurdish emigrants who were forced to leave the south-eastern regions because of the war between the army and the PKK. Progressively it has become a settlement choice for stigmatized categories such as prostitutes, transsexuals, and conscientious objectors, and since the mid-1990s of international migrants, mainly of those from Sub-Saharan African countries. Hence, over time, Tarlabaşı has turned into a liminal space, frequently the subject of mass media stigmatization and police

1 / For the relationship between suitcase trade and the garment industry in Istanbul see Piart, 2012.

2 / In 1996, for example, the Turkish Central Bank estimated proceeds deriving from suitcase traders throughout Turkey to be equal to \$ 9 billion, of which 75% were made in Istanbul. See Perouse, 2002.

3 / Izmir, on the Aegean coast, also partially shares the characteristics of a border city.

attention. The fragmented urban renewal and gentrification processes that involved the neighbourhood in the early 2000s⁴ resulted in some residential mobility of Sub-Saharan migrants who were looking for better housing conditions and thus moved to the nearby Kurtuluş district, in the municipality of Sişli, which gradually became another settlement area for migrants.

The Zeytinburnu municipality, on the other hand, next to Fatih, shows some peculiar differences. Unlike the district of Kumkapı and Tarlaşa, it has a predominantly industrial nature that dates back to the establishment of the first leather factories in the second half of the nineteenth century. In the early 1980s, Afghan Turkmens settled in the neighbourhood, invited by the Turkish President Kenan Evren (Danış, Taraghi, Perouse, 2009). Even if İstanbul was not a government-designated region for Afghan settlement, the people spontaneously moved to Zeytinburnu district basically because they were skilled leather workers. Subsequently, the district has continued to represent the main settlement area for the Afghan nationals who are both asylum-seekers and labour migrants together with Turkish speakers who are migrants from the Central Asian Republics.

3.1 Urban Landscape and In/Visibility

The existence of ethnic economic niches offering services and business directed to immigrants is a dimension that contributes to modifying the urban landscape and the visibility of migrants (Hatziprokiou, 2006). In the case of İstanbul, the most widespread commercial activities aimed at migrants were the phone centres⁵ present in Tarlaşa and especially Kumkapı. However, most of these phone centres were owned by Turkish entrepreneurs.



Picture 1. Phone Center, Kumkapı. Source: Author

Apart from the phone centres, commercial and economic activities in public space were rather scarce⁶. Instead, the majority of economic activities managed by migrants and intended for migrants, especially from African countries, such as the hairdressing and restaurant businesses in the Kumkapı (Biehl, 2018), Tarlaşa, and Kurtuluş districts were generally located inside houses, and practically invisible in public space.

A second important dimension for the visibility of migrants is represented by the existence of community organizations (Hatziprokiou, 2006). However, migrant organizations in İstanbul were very few, highly informal, and had little connection with local civil society. Also the few international associations and NGOs based in Kumkapı that dealt with migrants and refugees having a fragile legal status tended to keep a low profile and not appear in

public space. The main feature of the relationship that undocumented migrants had with public space was the search for invisibility. The use of public space was limited to the needs of home-work travel, and squares, streets, and parks did not constitute sociability spaces. Migrant places of sociability were essentially of two types: the main one was constituted by private houses. The second, at least for Christian migrants, was represented by churches. First of all, the historical churches of the Christian communities of Istanbul, like the Protestant Armenian Church of Kumkapi or the Catholic Italian Church in Beyoğlu (Danış, 2006). Besides hosting religious services, churches were also the space for organizing meetings, celebrations and informal school activities. Increasingly, however, the growing presence of migrant Africans has also brought with it the spread of numerous evangelical churches. The latter, however, are generally housed in private homes, and are invisible in public space (Salomoni, 2013).

Compared to the districts of Kumkapi and Tarlabasi, the relationship between migrants and public space in the municipality of Zeytinburnu, where the presence of Turkish-speaking migrants from Afghanistan is predominant, had and still has some unique features. Firstly, the district had commercial activities - restaurants and bakeries - run by Afghan citizens. Secondly, for years Afghan migrants had established a small network of associations with a stable and formal character⁸ and a connection with the local authorities. More generally, the presence of Afghans in public space was visible, and in addition to cafés and restaurants, streets and squares also provided spaces for sociability⁹. There were two reasons for the different relationship that migrants have with the public space in this district: the first concerns the legal status of Afghans: at least those who came over in the early 1980s have a residence permit or a Turkish passport. Secondly, their ethnic brotherhood with the Turks is supposed to guarantee greater tolerance on the part of the police despite their status as undocumented migrants.

The case of Zeytinburnu shows the need to take into account factors such as national origin, ethnicity, and language in analysing the relationship between public space and migrants. Coming from Turkic countries grants migrants even when undocumented a minimum degree of fair visibility. However, this visibility has a fragile and conditioned character as in the case of ethnic Azerbaijani Turks in Küçükköy. Despite being undocumented, they colonize parks and streets as places of sociability, they attend cafés referred to as “Azeri Cafés” by the local population, and they rent Wedding Houses to celebrate weddings. However, during one of these ceremonies, talking about the music played by Azerbaijani musicians, a migrant confessed to me: “Of course we are Turks ... but we prefer to keep the volume of the music low and not make too much noise because ... you never know” (Salomoni, 2016).

Other ethnic groups, on the contrary, need to maintain a maximum degree of invisibility in public space. This is the case of the Armenian labour migrants who, for historical reasons and because of the currently tense bilateral relations, were particularly careful to maintain their invisibility in public space, for example, by avoiding speaking Armenian when they were in the streets. Nevertheless the case of Armenian migrants also shows that the transition from invisibility to social visibility is determined not only by legal, economic, or organizational factors. In 2010, following the umpteenth rise of bilateral diplomatic tension, Prime Minister Erdoğan threatened to expel thousands of Armenian migrants living in the country. Following his statements, TV networks and newspapers flooded the neighbourhood streets, discovering “the Little Armenia in the heart of Istanbul”. Dozens of Armenians were freely interviewed and photographed by television and newspaper reporters. When I visited the neighbourhood a few days later, many Armenian women proudly showed me the newspapers they had saved with their photos and statements. When I pointed out the difference with respect to the attitude they had had until recently the unanimous answer was “What can we do? We have lived here for years, we have to be seen!” This sudden visibility, which can also be understood as a positive super-visibility¹⁰, in the following months encouraged the Armenian migrant to have a more relaxed relationship with public space.

4. Syrian Refugees and 2014 Law

The second decade of the 2000s coincides with three moments that constitute major turning points in the history of international migration in Turkey. The first of these was the arrival of Syrian refugees. The arrival of Syrian citizens in Turkish territory which was encouraged by the “open door policy” adopted by the Turkish authorities

7 / See, for example, the case of the Nigerian Association, Ozdil, 2008. It is evident that the fact that the majority of members of the association is undocumented is a fundamental element in determining its fragility.

8 / See .i.e <http://www.zeytinburnuhaber.org/zeytinburnutv/uluslararasi-afghanistan-turkleri-derneginin-yeni-genel-merkezine-gorkemli-acilis-v1478.html>

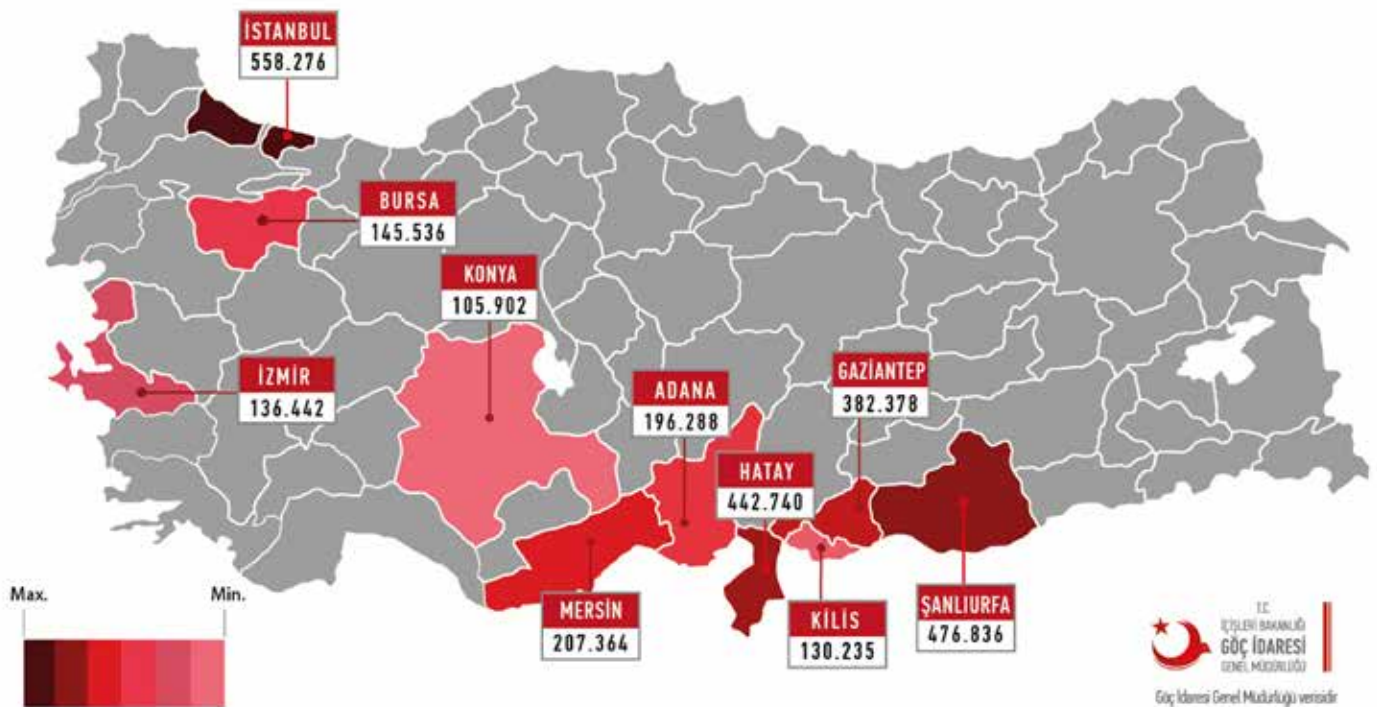
9 / Also from the point of view of their legal status as these groups are more likely to have a residence permit or in some cases also Turkish citizenship.

10 / I am using the term “positive super-visibility” with some precaution, since the Turkish media framed the representation of Armenian migrants in Kumkapi within a paternalistic narrative aimed to show the generosity of the Turkish State that despite tense bilateral relations allowed Armenian migrants to “earn their bread in Turkey”.

shows an exponential trend, growing from 14,000 units in 2012 to 224,000 in 2013, 1,500,000 in 2014 to a total of 3,588,877 officially registered in April 2018¹¹.

Initially, the refugees enjoyed the rather opaque legal status of guest -*misafir* - a category that is not defined either in international or national refugee law (Genç, Heck, Hess, 2018). Although they are present in practically all the provinces of the country, the majority of Syrian refugees registered in Turkey reside in the regions along the Syrian border. While 223,000 are housed in sixteen refugees camps, the vast majority live in the urban centres of the region: Gaziantep (382,378), Şanlıurfa (476,836), and Antioch (442,740). The most striking case, however, is represented by the border province of Kilis, where 132,235 refugees are registered alongside a population of 136,319.

In absolute terms, however, the city with the highest number of refugees is Istanbul, where 558,275 refugees were registered in April 2018¹².



Map 2. Spatial distribution of Syrian refugees in Turkey. Source: Directorate General of Migration Management

The second turning point coincides with an important change from a legal point of view since Law 6458 on Foreigners and International Protection which went into effect in 2014 recognized refugees from Syria as having a temporary humanitarian protection status guaranteeing a number of rights, including the principle of non-refoulement, the right to education, free medical care, and the right to enter the labour market¹³.

Moreover Law 6458 also provides for a reorganization of residence permits for foreigners; this actually coincides with a sort of amnesty that allows migrants with an overstayed visa to get residence permits and to renew them over time.

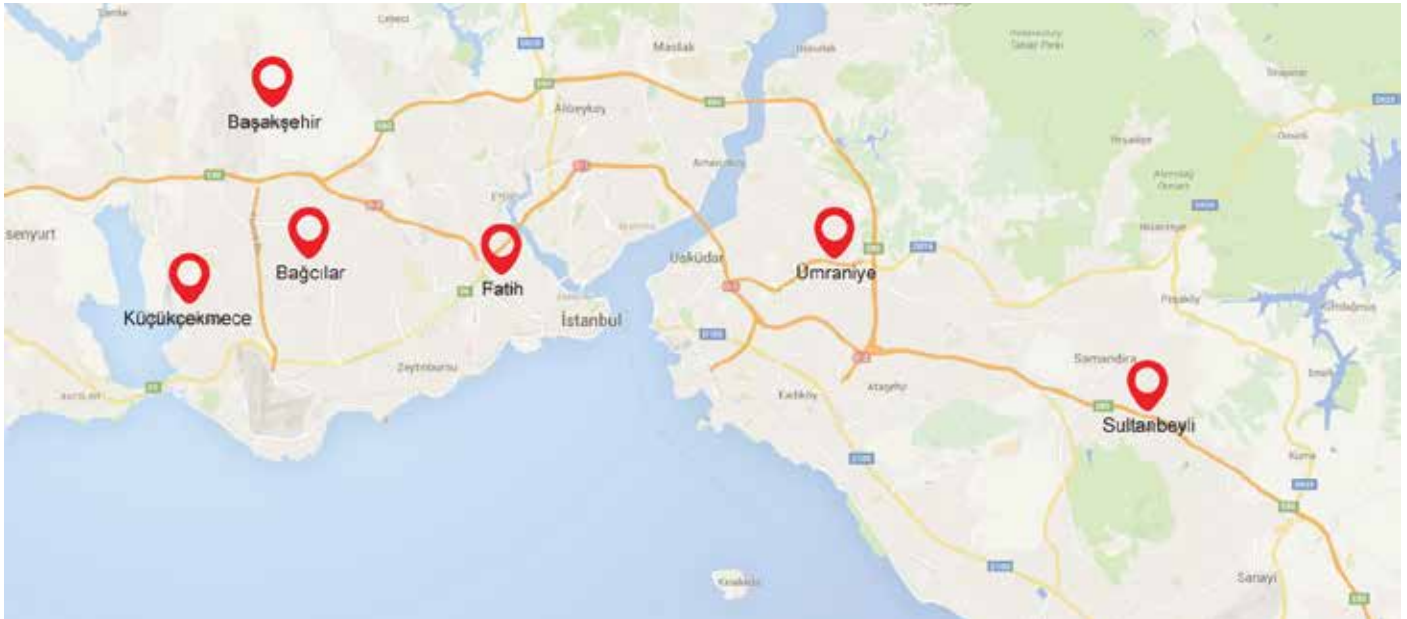
The third turning point was the EU-Turkey agreement signed in November 2015 following the rising number of migrants, many of them Syrian refugees, reaching Europe via the Aegean Sea and the so-called "Balkan route". According to this agreement, Turkey would control its borders towards Europe and improve the conditions for Syrians refugees in the country. In return, Turkey would receive 3€ billion (Genç, Hack, Hess, 2018). This agreement has had the effect of drastically reducing Turkey's role as transit-country for migratory flows, and at the same time it has strengthened the position of border cities like Istanbul and Izmir as buffer zones.

4.1 Syrian Refugees Residential Pattern

The residential distribution of Syrian refugees in Istanbul is highly dispersed and includes all 39 municipalities that make up the Greater Istanbul Municipality.

According to a 2016 survey (Kaya-Kıraç, 2016), the municipality hosting the largest number of refugees is Kucukcekmece, where, in 2015¹⁴, there were 27,419 registered refugees, equal to 3.5 per cent of the total population. On the Western outskirts of the city, Küçükçekmece is a municipality that developed demographically

especially in the 1990s thanks to internal immigration, including from the Kurdish regions, thus quickly becoming home to one of the city's major industrial centres, which has about 10,000 registered businesses (Kaya-Kıraç, 2016).



Map3. Spatial distribution of Syrian refugees in Istanbul. Source: Kaya-Kıraç, 2016

On the other hand, in proportion to the population, it is the Fatih municipality that hosts the largest number of refugees, 23,800, equal to 6.5 per cent of the total population. In this case, the refugees are concentrated not only in the old quarters like Kumkapı, but in all the districts of this municipality which coincides with the historical peninsula. Their settlement in this area of the city is determined by the availability of housing, its central location, the presence of local and international NGOs that are very active in supporting refugees, and also by the transformations in the structure of the area's economic opportunities, especially determined in recent years by the flow of tourists coming from Arab countries.

After the municipalities of Küçükçekmece and Fatih, those hosting the largest number of refugees are Bağcılar (25,406, equal to 3.4 percent of the population), a peripheral area which houses a great deal of industry, particularly textile (Kaya-Kıraç, 2016); Sultangazi (22,000), Esenyurt (18,291) and Başakşehir (17,800). Compared to the previous migratory flows largely concentrated in the European side of the city, the spatial distribution of Syrian refugees also extends to the Asian part, in particular to the Sultanbeyli municipality, a working class suburb on the Eastern outskirts of the city where the 14,661 registered Syrian refugees represent 4.8% of the total population. Furthermore, the semi-peripheral municipality of Ümranye, one of the largest working-class areas in Istanbul, houses 10,928 refugees, equal to 1.2% of the total population.

4.2 Syrian Refugees, Urban Landscape and Visibility

Compared to the recent history of the inclusion of labour migrants and refugees in Turkey, the settlement of Syrian refugees in Istanbul has a markedly visible character that is transforming the city's urban landscape. The most striking example is the Fatih municipality, often called by the mass media "Little Damascus" or "Little Syria"¹⁵, where in some districts the streets are full of Syrian shops and Arabic language is almost prevalent. The economic dynamism of the Syrians in Fatih is a reflection of a more general dynamism throughout the country. Various estimates calculate the companies belonging to Syrian citizens registered in Turkey to be equal to between 8,000 and 12,000, and the number of their employees around 100,000¹⁶. Many of these companies are located in the Fatih district which is filled with commercial activities, particularly restaurants, coffee shops, but also tourist and

11 / See the statistics of the Directorate General of Migration Management http://www.goc.gov.tr/icerik6/temporary-protection_915_1024_4748_icerik

12 / http://www.goc.gov.tr/icerik6/temporary-protection_915_1024_4748_icerik

13 / Simultaneously, the law forbids Syrian citizens to apply to UNHCR representatives in Turkey for asylum-seeker status.

14 / At that date, the total number of refugees in Istanbul was 317,000 ((Kaya-Kirac, 2016).

15 / <https://news.vice.com/article/istanbuls-little-syria-provides-a-home-away-from-home-for-syrian-refugees>

16 / <https://www.haberler.com/suriyeliler-turkiye-de-8-bin-sirket-kurdu-10152724-haber/>

real estate agencies that with their presence and their signs in Arabic have profoundly changed the landscape. Syrian economic activities depend on the fact that the arrival of Syrian refugees has also been accompanied by a substantial transfer of capital. Although the government has imposed restrictions on taking money outside the country, the total amount of bank deposits in Syria has continued to decrease and a portion of this capital has been transferred to Turkish banks¹⁷.



Picture 2. Urban landscape in Fatih. Source: Author

The Syrian economic activities in Fatih constitute an example of ethnic economic niches where Syrian entrepreneurs employing Syrian workers offer services to the Syrian community. However, the economic dynamism of the Syrians in Fatih is also fuelled by its intersection with another phenomenon.

Data from the Ministry of Tourism and Culture show that, in the first ten months of 2017, out of a total of 9,120,240 foreign tourists who visited Istanbul 25% were from Arab countries (505,487 from Saudi Arabia)¹⁸. Fatih is one of the favourite destinations for Arab tourists during their stay in Istanbul and a part of Syrian economic activities offer services to these Arab tourists. Paradigmatic is the case of Syrian restaurants whose patrons include Syrian citizens and Arab tourists, while the presence of Turkish citizens is absolutely marginal if not wholly absent¹⁹.

The second element that contributes to changing the urban landscape and making visible the presence of Syrian refugees is represented by a dense network of associations and NGOs. There are a large number of Syrian associations²⁰ operating in the humanitarian field providing services in the fields of health, nutrition, and education. Most of these associations have several branches especially in border regions and in different areas of Istanbul. However, very often their headquarters are located in the municipality of Fatih. In addition, there are numerous international humanitarian associations and NGOs that deal with Syrian refugees and have their offices in Fatih. An example of the vitality and peculiarity of the Syrian presence in Turkey is the considerable number of organizations and cultural activities that include radios, newspapers, and even bookstores, many of which are based in Fatih. The spread of economic and commercial activities and associations is obviously not just an element of the semiotic transformations of the urban landscape. The transformation of the urban landscape in the case of Syrian refugees also involves the use of public spaces which escape "the market logic" (Hatziprokopiou, 2006) as socialization spaces. As is evident in Fatih pedestrian zones, parks, and squares are also examples of places of sociability in public space.

5. Hyper-Visibility

In the mainstream media and political discourse Syrian refugees are “welcomed victims of war”, and their presence in the country is legitimized by the generosity of Turkey towards people in trouble. Nevertheless, mass media and political representatives of the opposition²¹ as well as local community actors produce a negative counter-discourse based on different elements: the economic one, associating the increase in housing rents in areas with a strong Syrian presence, the unfair competition of Syrian workers in the labour market, and the accusation that Syrians take advantage of the Turkish Welfare State; the threat to the public order with the alleged inclination²² of Syrian refugees to engage in criminal activities, as well as the cultural one which claims their cultural incompatibility with the Turkish context²³. This super-invisibility of Syrian refugees is also extended to their presence in the urban space where the visibility of their different bodies as well of their uses of urban space challenge a spatial order which is essentially taken for granted (Cancellieri, Ostanel, 2015).

In several cities of the country the proliferation of signs written in Arabic has generated protests against the “Arabization of the urban landscape”. These protests denounce the “visual pollution” caused by signs in Arabic and their incomprehensibility to the local population.

In the southern city of Adana, following these protests the mayor, who is a member of the MHP Nationalist Party, has imposed the removal of Arabic-language signs on shops run by Syrians²⁴. Similarly, the mayor of the municipality of Esenyurt in Istanbul ordered the removal of the Arabic signs and decreed that signs in public places must be 75% in Turkish. However, the perception of visibility as a threat to the spatial order has a “contextual” character and is determined by other variants. Even if in Fatih as well it is common to hear the protesting of the inhabitants about the omnipresence of signs in Arabic, local authorities must take into account the reliance of Arab tourism for the neighbourhood economy. Consequently, contrary to what happened elsewhere, the Fatih municipality has chosen to increase the “semiotic Arabization” of the neighbourhood by imposing bilingual tourist signals, both in Arabic and in Turkish.

A second example of the refugees’ hyper-visibility in the urban context concerns Syrian children street vendors²⁵. Although the media defines these children as beggars -dilenciler- the vast majority of them are actually children aged an average of 10-15 years who sell tissues and lighters. The Turkish media in particular, in 2014-2016, launched campaigns to denounce this phenomenon. In response, political authorities in Istanbul as well organized police operations with which children and their families were forcibly transferred to reception camps. However, after the short period of moral panic produced by these media campaigns, Istanbul continues to offer opportunities for migrants to negotiate their fair visibility in public space. This is the case of Ahmet and Mehmet, two Syrian brothers aged 12 and 14 who, in the evening hours, sell lighters in the tourist district of Sultanahmet. Their family had just moved from Ankara, where police pressure made sales activities on the street dangerous and difficult. In the highly diversified and chaotic environment of the Sultanahmet districts the two little brothers manage to find accommodation in the spatial order of the neighbourhood, also playing the ethnic brotherhood card, boasting their membership in the Turkmen minority in Syria.

The Visibility of Non-Syrian Migrants

As previously emphasized, Law 6458 on Foreigners, which went into effect in 2014, has not only strengthened the legal status of Syrian refugees. It has allowed undocumented labour migrants already present in the country to obtain one. As a result, according to the report of the Parliamentary Sub-Committee on Refugee Rights, in

17 / In 2016, the amount of capital deposited by Syrian citizens in Turkish banks was estimated at around two billion Turkish lira. See <http://www.hurriyet.com.tr/ekonomi/suriyelilerin-2-milyar-liraya-yakin-parasi-turkiyede-40117389>

18 / <http://www.hurriyetdailynews.com/istanbul-hosts-over-9-million-foreign-tourists-in-first-10-months-of-2017-122458>

19 / Ethnic tourism.

20 / Many associations come together in networks such as the Platform of Syrian Associations and the Union of the Syrian Association of Civil Society.

21 / The most recent example is the candidate from the opposition party in the presidential elections this past June who in a rally promised “to send the Syrians home”.

22 / Denied by police records.

23 / In some places in the country there have also been violent incidents and attacks by local people against Syrian traders and citizens.

24 / <https://www.sozcu.com.tr/2017/gundem/adanada-arapca-tabelalar-sokuldu-2149427/>

25 / One of the main characteristics of the demographic composition of the Syrian presence in Turkey is given by the very high numbers of minors, equal to 861,730. In addition, according to some estimates, between 200,000 and 400,000 Syrian minors in Turkey work.

March 2018, there were around 600,000 foreign nationals living in Turkey²⁶. The acquisition of legal status had an immediate effect with respect to visibility and the urban landscape as well. Returning after a few years to the streets of Kumkapi makes it possible to verify the gradual semiotic transformation of the urban landscape, mainly due to the economic activities managed and attended by migrants. The signs of some African restaurants and hairdressers', Afghan bakeries, and Pakistani restaurants dot the streets of the neighbourhood²⁷. The case of Armenian cafés in Kumkapi is paradigmatic in signalling the ongoing transformation with respect to the relationship between labour migrants and public space. For years, undocumented Armenians have had a relationship with the public space characterized by mistrust and insecurity, so they have tried to be invisible. In 2010, mass media attention for the Armenian community led migrants to claim their presence and visibility. The process of conquering social visibility has in some ways accelerated thanks to the transformation of their legal status. In 2016, a group of young Armenians opened a café (Grigoryan, 2018). The Armenian-ness of the space is proclaimed by the choice of an Armenian name, by the availability of Armenian dishes and beverages, and by the decoration of the place that consists in the exhibition of the names of Armenian cities in the Armenian language. The café is a space of sociability for the Armenian community and it is also frequented by locals and tourists.

Conclusions

International labour migrants have entered the Turkish social scene since the early 1990s. Vulnerability was their main feature due to their undocumented status, which deprived them of social rights such as medical care and education, and the highly informal and specific characteristics of their integration into the labour market. Daniş, Taraghi and Perouse (2009), to define this vulnerability, use the concept of "integration in limbo", very similar to the "subordinate integration" that Ambrosini (2010) uses to define the condition of migrants in Italy and in other Southern European countries. This fragile integration was also reflected in the relationship that migrants have with space within the urban context of Istanbul. The residential model of migrants in Istanbul was very close to that of the port-cities of Southern Europe, with a marked concentration in the old deprived quarters of the city. The poor conditions of housing in these districts and their crowding helped to make their condition fragile, even if the central position of these districts offered their inclusion in some economic dynamics. The subordination of migrants also emerged in the relationship with public space since the dominant nature of this relationship was based on the search for invisibility through the use of different strategies. As demonstrated in other European cases, the decisive element in generating the search for invisibility was represented by the undocumented status of the migrants. However, the Istanbul case shows that beyond the legal status ethnicity as well can be decisive in reinforcing invisibility in some cases, or in guaranteeing a fragile form of fair visibility in others.

The arrival of an impressive number of Syrian refugees from 2012 to 2013 was a decisive moment in the history of international migration in Turkey. In Istanbul also the residential pattern of Syrian refugees coincides with that of the city-ports of Southern Europe with a marked dispersion in the peripheral and semi-peripheral areas and the creation of residential clusters.

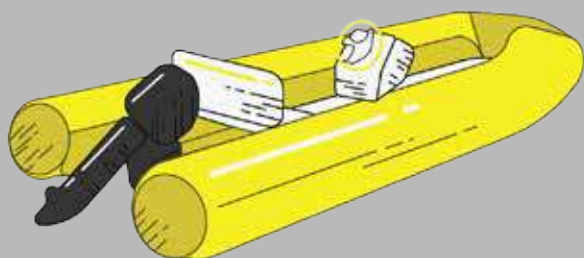
The law that went into effect in 2014 guaranteed temporary legal status for refugees and allowed for the legalization of other labour migrants. The growth in visibility and the semiotic transformation of the urban landscape operated by Syrians and other labor migrants as a result of this law confirms the importance of legal status as a factor to determine the visibility and therefore the recognition of migrants. After years of smug rhetoric on Istanbul cosmopolitanism produced by the local authorities looking for a place in the global tourism market, the growing visibility, in the urban landscape of migrants and refugees, whether Syrian or not, perhaps represents for Istanbul an authentic step towards a rediscovery of the intercultural tradition of the contemporary Mediterranean metropolises (Malheiros, Riba Mateos, 2002). In more general terms, the visibility of migrants in the public space also coincides with greater visibility in the media and in the partial political space. Alongside discourses and representations based on a negative hyper-visibility, there are also elements that introduce into the public debate issues related to the possibilities of integration and the economic contribution of Syrian refugees, and, more generally, to social change in the perspective of cultural pluralism. Although the enthusiasm shown by the Armenian migrants for the interest of the Turkish mass media in 2010 had already confirmed the close relationship between visibility and social recognition, despite their visibility, the possible social inclusion of Syrian refugees remains characterized by a profound fragility. This is first of all linked to the temporary nature of their legal status and their stay in Turkey, given that official discourse often recalls the need to send them back to Syria once the situation has stabilized. Moreover, although visible, the presence of migrants is characterized by other fragilities linked to the conditions of access to the labour market, to problems deriving from the presence of minors, and to the characteristics of the residential model. As Malheiros (2002) points out, spatial segregation in ethnic clusters is a problem when it is associated with other negative elements such as deprived housing, unemployment and lack of childhood assistance. Finally it is worth noting that fragility continues to be the main characteristic of the Syrian presence but also of the other international labour migrants. Access to the public space and visibility were also guaranteed to migrants under the 2014 law. However, as of April 2018, many elements show that Istanbul's police authority is increasingly reticent to renewing annual residence permits to migrants who do not have a work contract. The informal nature of their insertion into the labour market makes it extremely

hard for migrants to have a work permit, and therefore the prospect for most of them is that of being pushed back into an undocumented status. Further research will show the consequences that this new element will have on the visibility of migrants and their already precarious social inclusion.

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[MIG/05]



Borderscape: Forced Migration And New Spatial Practices

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abstract

A network of displaced people's flux is drawn everyday between the north and the south, and the East and the West of the World. Lebanon is host to nearly 1.2 million Syrian refugees, representing around a quarter of the country's total population. With the massive influx since the start of the Syrian crisis in March 2011, millions of people, re-allocated in new contexts, are determining new physical and temporal processes and new relations between the existing and the newly inserted structures.

Lebanon is the only country that, since the beginning and, until today, refuses the establishment of formal camps as per UNHCR suggestion and help, fearing a repetition of the country's experience with Palestinian refugee camps. As a result, 71% of Syrian households live in residential buildings with 12% in non-residential structures, and 17% occupy improvised shelters in informal tented settlements.

The research paper reports the results of the study I'm conducting in the Bekaa governorate and Saida districts, while investigating and comparing the different forms of informal settling and appropriation in the rural and city context. It aims at exploring the multiple meanings and physical materialization of the border, analyzing case studies both in Informal Tented Settlement (ITS) dislocated in rural areas and in informally occupied built structures located in urban environment. A series of mapping exercises supported by an extensive photographic campaign informs the body of the research. It allows delving into the ordinary everyday life and subjective experience of the space in the different typologies of informal-scapes and settlement conditions in Lebanon, pointing out the concept of the border as a constraint/imposition, as a necessity to state the physical appropriation of a space, and as a way of redefining the thresholds and adjacencies, the inside and outside. The objective is to represent the palpable fluidity and evolution of the displayed condition looking at the "human action" as a significant component of a site and important shaper of the contemporary landscape. The mapping exercise was further corroborated by fieldwork, semi-structured in-terviews, analysis of land-use change, landscape exploitation and use determined in guided walk-throughs, landscape readings and evaluations of the traces founded on site, time evolution, and implementation of site specific interventions on the open spaces of one Syrian Informal Settlement on the Bekaa Valley (Lebanon). Limitations arose from the complexity and magnitude of the phenomena, the differences between the multiple realities, the political/religious implications, the presence of multiple local and international actors involved, the mistrust of the displaced community, and the difficulty in monitoring the changes through time due to the dynamic and over evolving situation.

keywords Syrian Informal Settlement, Informal-scape, Reshaping the Landscape

Introduction

Different global issues whose effects have not yet been sufficiently studied are determining large movements of refugees and migrants and are contributing to the risk of major large-scale and complex crises that will increase the suffering of vulnerable populations (Churruca-Muguruza, 2017). While scholars of migration differ on whether the current period has produced the largest migration flows in human history, there is no question of the tremendous number of people involved (Lynch, 2017). Whole communities are forced to leave their countries to escape their places of origins. This has put an enormous strain on not only the people displaced but also the countries and communities receiving them (UN General Assembly, 2016).

UNHCR Global Trends report finds that 65.6 millions of people worldwide were forcibly displaced in 2016, with

10.3 million newly displaced of which 6.9 million were displaced within the borders of their own countries (UNHCR, 2017). Migration and forced displacement are accelerating urbanization processes and cities in the global south are increasingly receiving internally displaced persons (IDPs), economic migrants and refugees in capitals, megacities, peri-urban areas and secondary cities (WDR 2012; IDMC 2011). Based on the Internal Displacement Monitoring Centre (IDMC) report, in 2016 the majority of new displacements took place in high-risk environments characterized by low coping capacity, high levels of socio-economic vulnerability, and high exposure to natural and human made hazards (IDMC 2016). Following the Arab Spring, the Mediterranean region has been the theatre where irregular migration has gained the largest visibility due to the ever more dangerous trajectories used and the high number of migrant deaths (MHub 2015). Forced to abandon their familiar landscapes and cultural comfort zones, deprived and feeling out of place both physically and socially, migrants are experiencing traumatic situations while being exposed to serious risks of abuse and exploitation during their journey (Egoz, De Nardi, 2017).

Since the start of the war in Syria in 2011 more than half of the Syrian population lives in displacement within their own country or across borders seeking asylum in the border's region. Lebanon is hosting nearly 1.2 million Syrian refugees, the largest number of refugees per capita, with 1 in 6 people being a refugee, representing around a quarter of the country's total population. The impact of those vulnerable displaced populations on a highly indebted middle-income country as Lebanon resulted in a mutual and precarious crisis for both Syrians and Lebanese community. Scattered throughout more than 2100 urban and rural locations, this flow of displaced people is generating new spatial patterns and practices (Fig. 1) that are totally shifting and disrupting the existing landscape relationships. Besides, the hardship spatial condition Syrians are forced to live in while sharing small basic lodgings with other refugee families in overcrowded conditions (UNHCR, 2018), and living marginalized by the host community, as well as affecting positive associations with landscape, are at the core of landscape justice (Egoz, De Nardi, 2017). Of the total persons registered as refugees by UNHCR that inhabit Informal Tented Settlements (ITs), 43% live in Bekaa, 34% in Baalbek-Hermel and 13% in Akkar. Located at the periphery of marginalized rural and urban community the ITs are enclosed entity bounded by agricultural and territorial infrastructures and in some cases by natural features. Their borders are often clearly stated by cultural, geographical, topographical and/or infrastructural systems. For instance in rural context rivers, water channels, roads, green linear structures and parcel divisions draw on the landscape's text a recognizable systems of signs, that are clearly stating the demarcation between the newly inserted informalities and the pre-existing rural structures. Those borders, despite the fact that are constantly under modification, due to the internal movement of displaced Syrians, are the result of land ownership, and the materialization of a spatial and political control/confinement over the hosted populations.

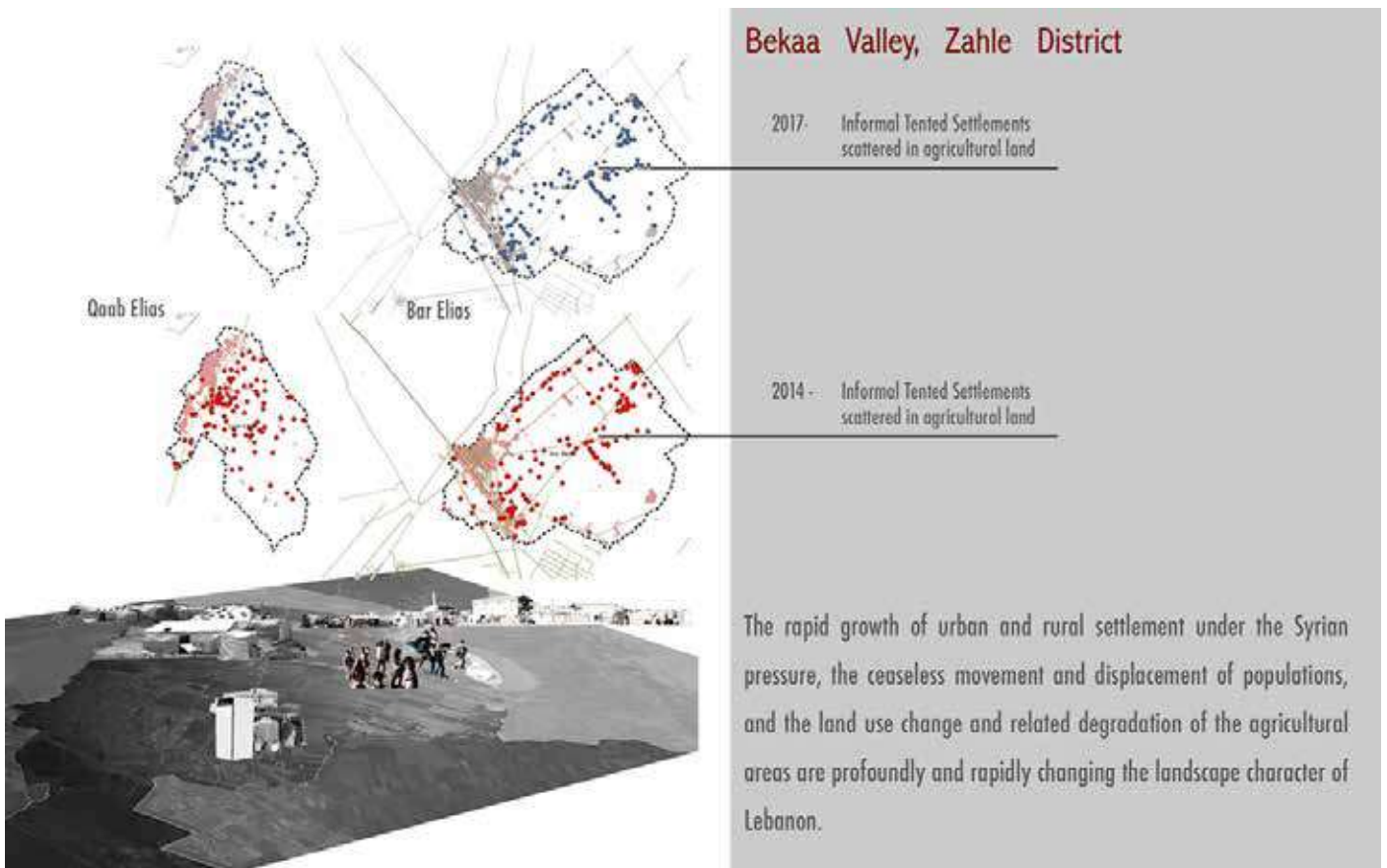


Fig. 1. Informal Tented Settlements location in the Bekaa Valley, Lebanon: Qaab Elias and Bar Elias

A question arises: What landscape design and planning strategies are possible in such extreme conditions of indeterminacy? Michael Hough's sage advice to minimize interference in communities but do "as little as possible" is inadequate when whole landscapes are transformed. While on one hand there is a pressing human need for homes and a healing of community, on the other it is equally important to define design strategies heighten the nature of landscape as process and not as product. (Swaffield, Bowring, 2013).

Moving beyond Swaffield, the paper focuses on the informal and illegal configuration of settlements put in place by Syrian displaced in Lebanon in their struggle to built new territorial ties. While not welcomed by the host communities and everyday threaten by them, they are marginalized and forced to located or hidden themselves at the margins of urban and rural context. Thus the proliferation of borders is a system to demarcate areas of belonging, and to acquire safety in unstable conditions.

The research uses mapping as a tool to investigate and interpret the borders' condition in the case of Syrian migrants in Lebanon. It reports the results of the mapping exercise conducted in two Lebanese districts: one in the Bekaa Valley, with the highest percentage of persons living in Informal Tented Settlements (43 % based on the IOM data); and the second on Saida, on the Southern Lebanese coast, where a big built structure was allocated around 170 Syrian families. The aim is to identify, interpret and represent the boundaries as system of spaces, activities and practices of exchange between the inside and the outside of the Informal settlement.

The mapping tool was used to understand the spatial organization of the overall spread Informal Settlements, and the way new landscapes were and are still shaped under the pressure of multiple actors to respond to an emergency situation. It helped in exploring the new realities in place in urban and rural contexts, and in indicating the path to potential landscape intervention strategies that could be more efficient in the case of migration and borders condition.

Objectives

The investigation on the borders' condition of the spatial organization of displaced Syrians' flow within urban and rural environments has the objective of depicting the magnitude of the phenomena while threatening the borders as a complex spatial device that reveals the ways of defining and handling space and time in the uncertainty and informal condition. At the same time it aims at representing the palpable fluidity and evolution of the displayed condition looking at the "human action" as a significant component of a site and important shaper of the contemporary landscape. The research takes a distance from political, moral and ideological judgments and preconceptions and critically investigates the role of the landscape design approach in the case of forced displacement.

Methodology

In reading the different typologies and materializations of the border-scape in informal conditions a desktop collection and scrutiny of the UNHCR and of other international and local Ngo's data was conducted using GIS to compare and compile all the existing information. This data was further overlapped to Google Earth images of Lebanon and was updated where considered necessary. With the intention to have a better understanding of the phenomena in place, we surveyed and mapped the different typologies of tent clusters in relation to the natural, infrastructural, productive and rural features. Thus we assessed the typology, conditions and locations of some of the built structures used as shelter by the Syrians community. A series of journeys on the most affected area of Lebanon, especially Bekaa and Akkar, corroborated by site oriented walking through the landscape of the informal conditions, in particular in Bar Elias, Qab Elias and Saida, allowed to refine the study and investigate the phenomena at the scale of the village and the individual settlement. A comparison was made between the Informal tented settlements and the Informal appropriation of residential and non-residential buildings. Their locations were equated to the neighborhood and to the near urban area to assess distances to services and to understand the logic behind site location and extension of the settling phenomena.

1. The ITSs condition in the rural context of the Bekaa Valley: Bar Elias - Qab Elias cases study

Different spatial scales were explored to gain a better understanding of the overall spatial condition.

First we focused on the geographical/regional scale to identify and map the ITSs located in the more affected Lebanese districts, Bekaa Valley and Akkar, to grasp the logic of their overall organization. Arranged in lines between agricultural fields, or in groups of different dimensions, elongated along main roads, scattered in between rural settlements or green houses, or located at the periphery of a marginalized urban and rural community, the ITSs are in 'nuce' clusters of new informal cities, and they serve as 'motors of urbanization' (Herz 2013). The diagrams in the pictures show the difference between organized ITSs versus scattered and totally disorganized ones (Fig. 2,3,4).

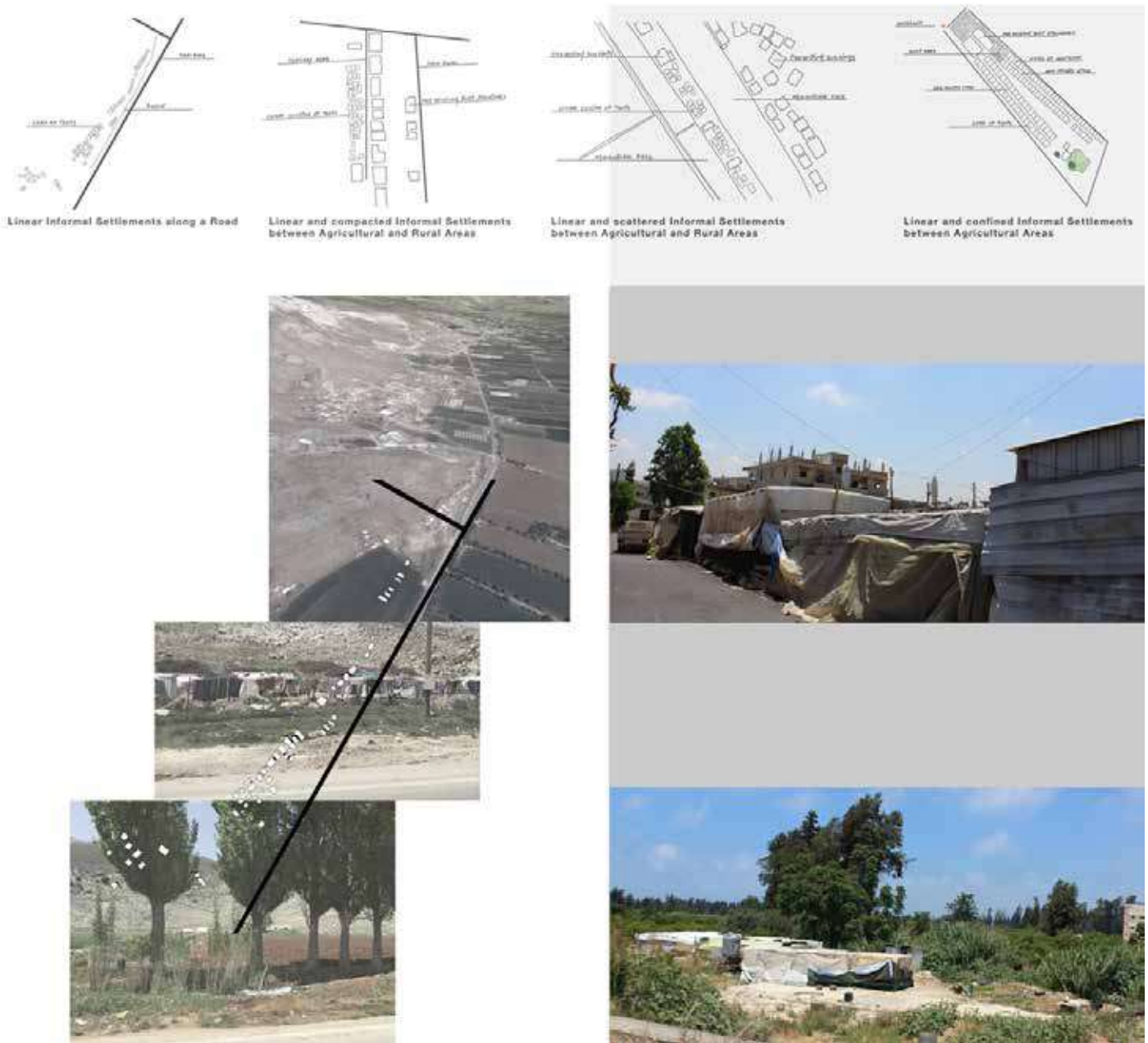


Fig. 2. Linear Informal Tented Settlements in Lebanon

The organized informal settlements are mostly controlled and managed by landowners or religious associations, while migrants and/or guests spontaneously build the ITSs nearby or between productive sources or rural settlements. In both cases, the settlements are enclaves of migrants who are in search of establishing communities and ground connections.

The analysis highlighted the presence of new typologies of borders that are building up a layering of landscapes whose existence and mutation over time is readable in its materialization of the limit. Bricolage and pastiche are the expression of the presence on the land of migratory fluxes that are readapting a space to adjust it to the needs and demands of everyday life and to their material and symbolic aspiration.

Marking out the space, tracing the boundaries, the new comers organize their landscape redefining the thresholds and adjacencies, the inside and outside. Thus they affirm the sense of privacy and security, the ownership and individual rights. The closures make invisible the space that they circumscribe and the exact physical and numerical size of the informal settlement.

Then the reading of some of the individual ITSs enables us to focus on the 'human action' as a significant component of a site and important shaper of the ordinary everyday life. The Informal settlements were thus studied analyzing the single tents, the clusters of tents and their position in the ITSs, the dynamic behind the expansion and contraction of the tents space, the in between area and its use, and the different typologies and characteristics of borders and thresholds.

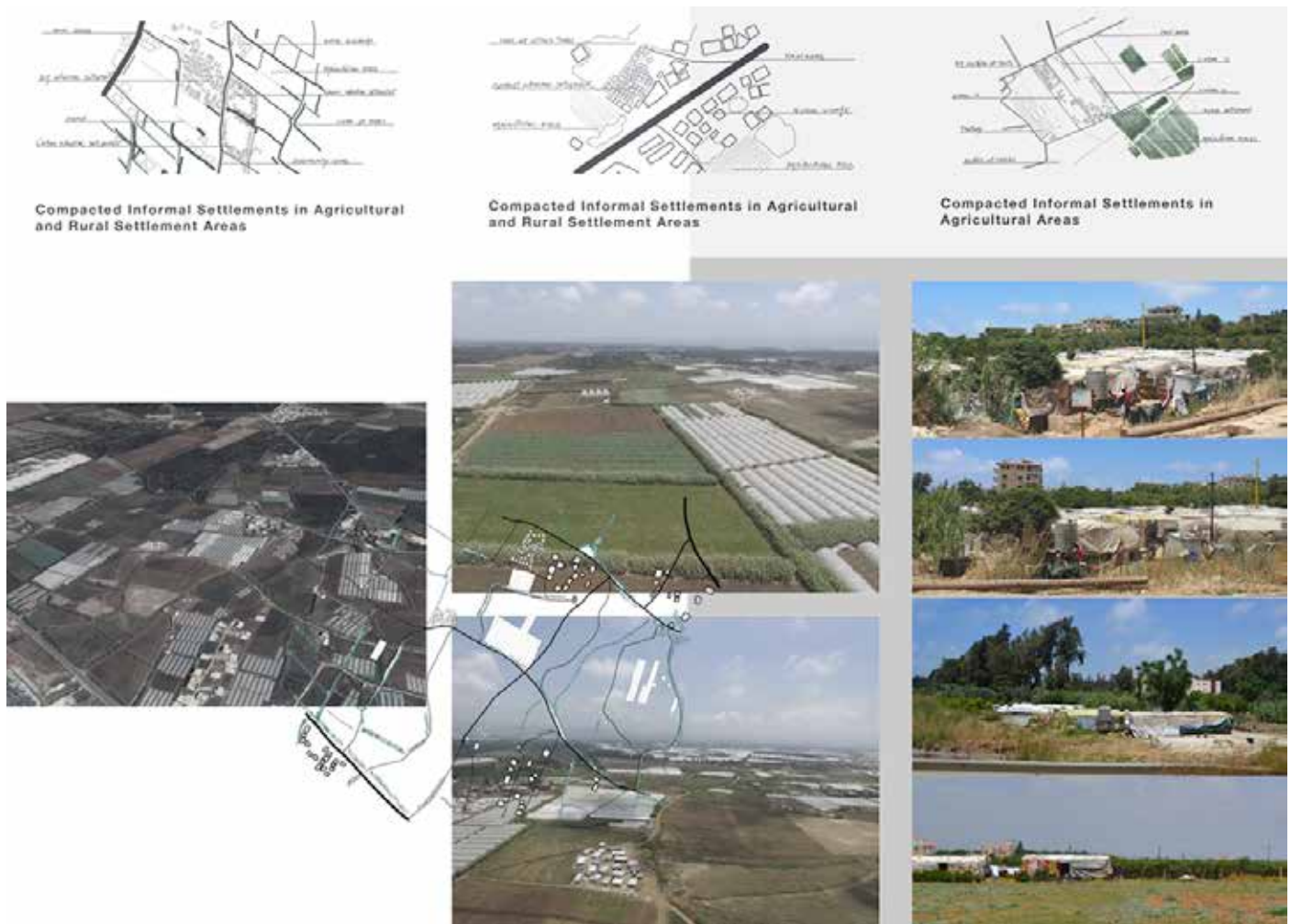


Fig. 3. Compacted Informal Tented Settlements in Lebanon

The organization of the tents varies from a more uniform rows composition to a more organic fabric structures in which the addition of new space or amalgamate of two or more shelters generates a fluid and informal layout. At the scale of the individual settlement the limits play on one side the role of demarcation and appropriation of a space and on the other hand the role of protection from the outsiders and from all the forms of invasion. Inside the settlements, enclosed family compounds emerge generating a layering of borders that separate the private sphere from the open space of the ITs. The feeling of privacy (which is a universal value), and the sense of attachment to familiar things and space, also marks the emergence of individualism and subjectivity (Bulle, S. 2017). The choice of materials depends on the need and desire to create and show a more or less settlement's stability and on the availability of resources on site. Plastic, metal, carton, truck tires, are drawing new languages and unexpected effects characterized by transparency, assembly, combination, height, weight, heaviness, repetitiveness, exception, color. After 7 years different typologies of gardens are re-defining the borders and the adjacencies between individual tents. The residual spaces in front of the shelters or in the courtyards of clustered tents are cultivated or beautified using green features to recreate a domestic environment and to reconfigure the relation with the outside world shaping the space with the memories of their lost landscape.

2. The displaced conditions in the urban context: Saida Ouazi building

Theorizing refugees, be it the camp or settlement or any other spatial configuration, has become a difficult task, both because their stateless condition makes such places an anomaly to the taken-for-granted state sovereignty of the twenty-first century (Malkki, 1995) and because their spatio-temporal condition mimics that of slums around the world when perhaps it shouldn't (Sanyal, 2014). People forced to leave their home and country prefer to settle in urban areas that offer anonymity, livelihood opportunities, freedom of movement and access to better services, safety and reassurance in numbers and the solidarity between groups of refugees and further proximity to power brokers (Kobia and Cranfield 2009; Haysom 2013). In Lebanese urban settings, displaced Syrians tend to cluster themselves around specific commonalities and then formulate community cohesion pull factors (Arous, 2013).

In the suburban and urban areas in and around the main cities of Tyre, Saida, Tripoli and Greater Beirut, 71% of Syrians displaced population live in residential buildings and 12% in non-residential buildings like garages,



Fig. 4. Scattered Informal tented Settlements in Lebanon

farms, shops and workshops located at the outskirts of the urban center. In both cases the shelters are classified inadequate due to the overcrowded conditions, lack in electricity, water, sanitation and all the internal and external infrastructures and services (UNHCR, 2017). In specific 15% of the 71% residing in residential buildings are living in abandoned or unfinished structures, and the 10% of the 12% occupying the non residential buildings are leaving in inadequate housing conditions due the substandard spatial condition and the undeserved structures. In Lebanon the city's ability to absorb the very large numbers of refugees rests on the flexibility and responsiveness of informal housing markets that reacted resiliently and promptly to the spike in demand (Fawaz, 2016). The paper focuses on the building complex of a frozen real estate development at the outskirts of Saida. This structure was to become a campus for the Al Iman Al Ouzai University, but an agreement between the Islamic Education Center, the UNHCR and Premiere Urgence-Aide Medicale International allowed Syrian displaced to locate there, transforming the building in a small city. Between 120 -175 families, mostly coming from the same village in the fertile plains of Hama in Western Syria, live in large family units with around 10 children per family and an estimated population ranging from 900 to 1.500 (Fig. 5).

The investigation showed that life in this unfinished and city's informal/illegal settlements is a struggle between the desire to return home, given the transitory nature of the refugee settlements, and the attempt to create a sense of stability to be able to engage in daily activities. The inside space is manipulated to adapt it to the necessity of the occupants and transformed in temporary/fix home. The continuous modification of the shelters through addition, subtraction, and change in material denotes the perpetual search for a more stable and secure condition. To build a home engages practical steps that have universal characteristics such as the need for protection and

controlled exchange, as well as civility and human community (Mead, 2006). Life inside this vertical city at the margins of the urban area is a struggle between the need of intimacy and the constant exposure to the public life of the 'community' leaving in the building. Co-habitation tactics are put in place everyday to survive. A more depth analysis on the inside of this vertical built structure revealed that the borders between private, communal and public areas are spaces of constant negotiation between the inhabitants of the structures. Ephemeral doors and thresholds mark the thin passage from the inside to the outside, and the limited inside space of the informal 'apartments' push the domestic activities outside the house and in the communal zone of the elongated corridors. Small kitchenettes, sinks, and family gathering areas are distributed along the hallways and located just in front of the entrances of the apartments. The borders between the urban and the 'building/vertical city' are defined by the marginality in which the structure is located. At the city scale, despite the UNHCR emphasis on social cohesion and community building the co habitation tactics between refugees and host populations are practically non-existent. Syrians are marginalized at the periphery of the urban center.

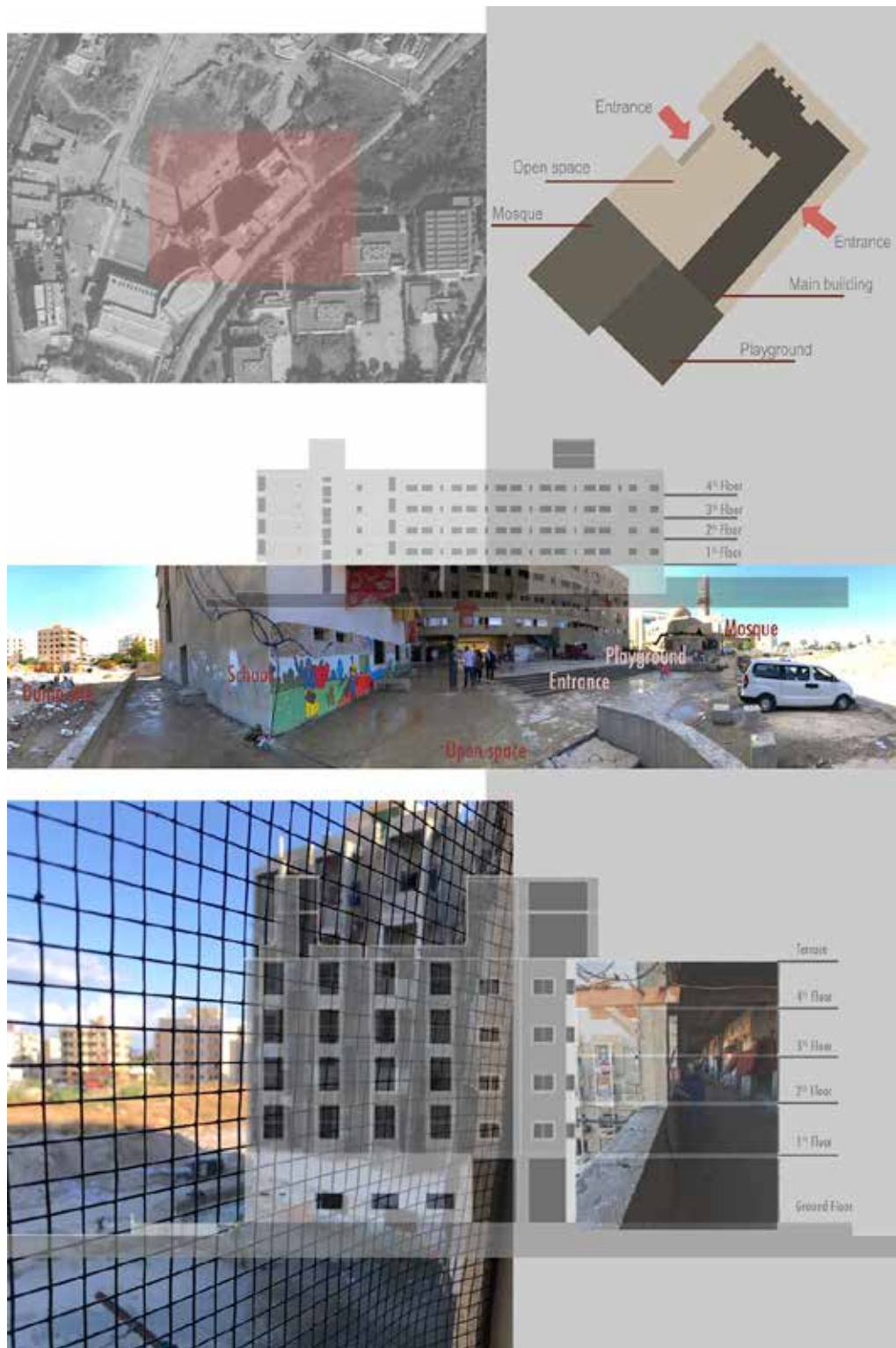


Fig. 5. Informal appropriation of a non-residential structure in Saida, Lebanon: Ouzai building

Results

The study and analysis of the border-scape that was conducted through mapping the physical, biological and cultural aspect of the phenomena allowed us in achieving an understanding of the new landscape organizations taking place in the studied areas. The human occupation of the territory has drawn a new physical and intangible landscape, in which the formalization of living practices in agricultural or urban areas is expressed by the rich thematic variations of material composition of private, and settlement space versus private and productive land. The research revealed that a dynamic landscape system is evolving, and, under the pressure of the Syrian ITSs, new geography of patterns has been built in the urban, peri-urban and rural areas of Lebanon generating new landscape typologies.

In the Bekka Valley, the horizontal spread and territorial sprawl of the Informal Tented Settlements in the agricultural land is setting up a new landscape pattern characterized by the multiple variations and/or materialization of the limit. Salvaged materials are replacing natural ones in the formalization of new boundaries introducing urban artefacts into an agricultural context. Pre-existing lines of trees, which were used to delimit the agricultural fields, are now replaced or doubled by the nonporous structures of the illegal tents and clusters of ITSs fences. Those different spatial practices putted up in the land express the interrelated relationship between inhabitants and the environment that allow the inhabitant to transform the space in place of people's practical involvements with one another and with their environments in their everyday lives (Bulle, 2017). Built at the margins of the rural settlements, the ITSs are redesigning their borders and creating discontinuous fringes of scattered structures in an agricultural context.

The large scale phenomena of displaced moving into urban areas represents an important stress factors for the Lebanese towns and cities with already weak formal institutions that face difficulties in delivering adequate basic services to growing populations (Kirbyshire et al., 2017). In the urban context, hidden between the urban fabric in the middle or at the periphery of the city, the built structures appropriated by Syrian displaced often appear totally abandoned and camouflaged in the neighborhood poor conditions. In few cases they are isolated or positioned along secondary road infrastructures appearing detached and out of context. The co-habitation tactics are differently expressed depending on the political and religious affiliation. In the city the border condition is embedded in the concept of marginality and edge condition. A wall with a well-defined entrance physically delineates the border between the surrounding and the newly built vertical village. But the real border is immaterial, a filter allowing for selective trespassing (Schoonderbeek, 2010). Everyday the inhabitants have to face the challenge that their living in a deprived situation implies (Fig. 6).

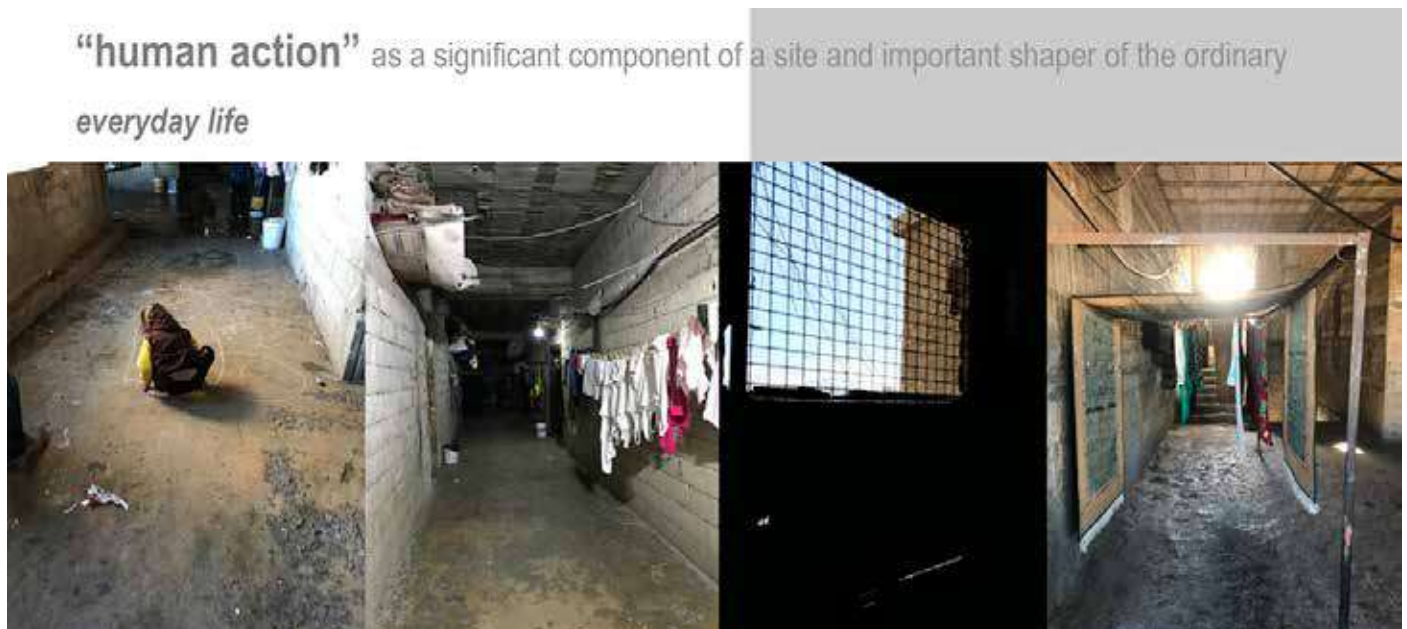


Fig. 6. Human action as a significant component of a site and important shaper of the ordinary everyday life

The lack of basic services and appropriate infrastructure forces them in developing simple but effective solutions that respond to basic needs. The attachments and qualities given to domestic objects express a will and an act—that is the individual capacities to identify and value the meaning embodied within the very existence of life's daily elements (Bulle, 2017). The lack of privacy and of definition of spaces' hierarchy leads to improvised measures of borders delimitation to identify and clearly state the individual living space versus everyone's area. The informality that characterize the physical appearance of those unfinished built structures expresses both the capacity of

the community to react to an extreme and emergency situation and the constant desire of improving their living condition.

To address the social and environmental justice for both hosted and local communities we read the material and immaterial limits as features that enables the readers to have insight related to the socio-cultural appropriation of the sites. While the majorities of Syrians living in Lebanon are not registered, they have no legal status and thus no rights to any form of assistance and protection. This ghost large community lives suspended and hidden at the margins and in the crevices of the urban spaces. The co-habitation tactics in the townscape are based on transience and liminality mechanisms put everyday in practice as temporary suspension of the life of displaced condition. The borders act as temporary formalization of spatial practices aimed at securing their vulnerability status. This suspended temporality enables Syrians to survive suspended in an indeterminate state

Conclusion

Since the 1980s refugee and forced migration issues had become a globally salient topic, in part as a result of major protracted refugee situations in South-East Asia, Pakistan and Iran, the Horn of Africa, Southern Africa, and Mexico and Central America, as well as a substantial increase in the numbers of asylum seekers in Europe and North America (Fiddian-Qasmiyeh, Loescher, Long, and Sigona, 2014). Over the last thirty years, displacement and the multidisciplinary field of migration studies have been the object of scholars' researches from different disciplines becoming a global field of interest (Fiddian-Qasmiyeh, Loescher, Long, and Sigona, 2014; Collyer, 2016; Reiffers, 2017; Gibbons, 2017; Heintze, Lulf, 2017; Ehrkamp, 2005; El-Bialy & Mulay, 2015). A growing body of literature had examined relationships between forced migration and the physical environment with a focus on emergency response planning (Collyer, 2014), on landscape and refugee resettlement (Hoffman Brandt, 2011), landscape and refugees' physical and emotional wellbeing (Egoz et al., 2011), landscape migration and social justice (Egoz, De Nardi, 2017).

This paper, acknowledging the heterogeneity and agency of forced migrants researches, sought to address the topic using landscape as agent to read and interpret the association between displaced marginalized groups and the land analyzing the different formalization of borders and borderscaping actions. The focus on Syrians' displaced community in Lebanon allowed us to investigate the borders as spatial practice used to respond to the threaten sense of security and as expression of the sense of identity, place attachment, place identity, sense of belonging and place-belongingness (Altman & Low, 1992; Antonsich, 2010; Hidalgo & Hernández, 2001; Manzo & Devine-Wright, 2014). The study revealed that, erected in different areas of Lebanon, the informal settlements are enclaves of migrants seeking to establish communities and ground connections. Besides in their movements and relocations, Syrians displaced are trying to meet their housing needs in an accelerated and hostile process that considers individuals merely as numbers and living simply as an occupation of the soil. The term landscape is mentioned throughout the paper several times and purposely never defined. It was implicit in the concept of borderscape considered as a way of shaping, representing and perceiving the area around the borders. Moreover 'landscape' is considered as expression of a community's localized weave of life, land, memory and practice. And further in this vein, landscape is articulated as something quintessentially affective—that is, as a matter of human and non-human feelings, attachments and qualities (Wylie, 2016). The study is based on the assumption that cultures that are forced to give up a landscape and later to move and create a home elsewhere are likely to reinterpret old landscape values in different locations and to remold the new landscape to reflect those values. Thus, landscape knowledge is transported, and new cultural landscapes are created. The relocation of millions of individuals from the territory of their origin, whether it is the result of coercion or free choice, determines a 'deterritorialization of culture' and the end of the equation of culture, territory and identity that was considered until not long ago the salient fact in the existence of community (Fabiatti, 2015). The focus on the borders, regarded as socio-cultural and discursive processes and mechanisms, highlighted the different spatial practices implemented by displaced communities to recreate places. 'Place' is an important aspect of human existence, and it is an important source of security and identity. Places shape our memories and feelings, and in turn people shape the landscapes around them through their experiences and actions. The investigation on the cultural construction of spatial knowledge (Mels, 2016) stemmed from the several formalizations, materialities, leakages and practical enactments of border-scape practices (Brambilla, 2015). The results of this research, albeit limited, present a situation in which scattered but numerous new cultural identities are affecting and transforming the landscape by creating new ones from the addition and overlapping of native and imported models. The investigation of the different typologies of boundaries resulted in the ascertainment of borders stratification, diffusion, and variations based on gender, social and religious interactions and overlapping. It also brought up a sequence of complex, layered territories and objects divided by moveable and blurring systems and at other times straightforward lines (Schoonderbeek, 2010). This continuous shifting of relations and the indeterminate and suspended state we are witnessing require landscape interventions capable to reconcile conflicting imperatives that were intensified by the migratory crisis. Landscape design has to deal with the complexity of the biophysical landscape as well as the entwined and complex nature of the socio-cultural landscape (Swaffield, Bowring, 2013).

Acknowledgements

I am grateful to all the person that in the past six years contributed to this research challenging and inspiring me with their thought and their practical involvement. I want to thank you my Department, Landscape Design and Ecosystem Management (LDEM), at the American University of Beirut (AUB), the Center for Civic Engagement and Community Service at AUB and the IFLA-Landscape Architects Without Borders working group which I'm leading since summer 2017 for their continuous support and critical contribution.

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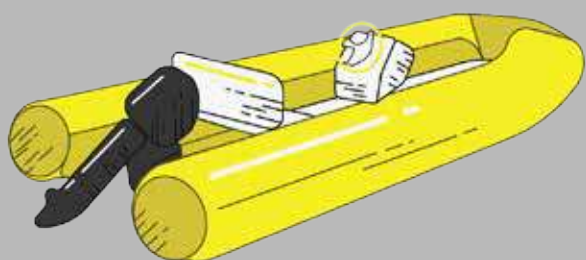
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Tourism and migration: co-habitation as a model of territorial regeneration. The case study of Lampedusa

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abstract

With a surface of just twenty squared kilometers, and a population of about six thousand people, the island of Lampedusa is the Southernmost part of Italy. About two hundred kilometers away from the Sicilian mainland, its closest landfall is Tunisia (113 km away). Besides being a well-known seaside tourism destination, during the last decades it became one of the main gateways to Europe for several thousands of refugees every year: from there they literally move their first steps through the complex European Union immigration and asylum system.

Despite several attempts of keeping their stay as short as possible, most of them end up being stuck on the island for two weeks or longer, therefore it becomes essential to provide proper means for their first integration.

Due to the positive trends, tourists' arrivals overcome the number of immigrants by four times, even though they share a similar seasonal distribution pattern.

Both tourism and migrations reshaped the socio-economic structure of such a small island, whose landscape and ecosystem have been deeply affected by a quick change and a massive presence of short-term visitors.

Architecture and landscape planning play a key role in this process, providing for accommodations and public spaces fostering positive interactions between migrants, locals and tourists.

A combined approach to these themes could fulfill the requirements of hospitality, providing the island with appropriate spaces able to ensure tourists and migrants cohabitation, as well as a constructive dialogue with the local community.

keywords Migration, Tourism, Hospitality, Sustainability

Introduction

Growth in tourism and migration are two of the most significant manifestations of globalization. Even though they both involve the movement of people there has been very little research into the relationship between them. To frame the problem and define the opportunities connected to it, it is fundamental to give a definition of the two phenomena at stake.

1. Tourist

Giving a univocal definition to the concept of tourist would be restrictive, however the only feature that seems to belong to all forms of tourism is the temporary nature of the visit. Tourism, according to the definition given by the United Nations World Tourism Organization, "comprises the activities of persons traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes" (2014).

According to data, only half of the international tourist arrivals concerns recreational trips. Almost one fifth of arrivals are professional trips, while 27% concerns the so-called VFR (Visiting Friends and Relatives)¹. Traditional classifications are very weak, but it is worth tracing the picture of the most recent trends in tourism. Human history has always been driven by the common desire for new experiences. How else to explain the presence of our species in all the continents before the end of the Neolithic? To live - and not just to survive - it is necessary to be open to changes and new perspectives, to be attracted by differences, to interrupt routines and to live in

new contexts. The tourist has the great potential to go beyond the lines that divide cultures, nationalities, ethnic groups, religions and continents.

Giancarlo Dall’Ara has drawn a profile of the so-called liquid generation of tourists: the effect of the current fragmentation of behaviors which results in a multitude of tourism styles.

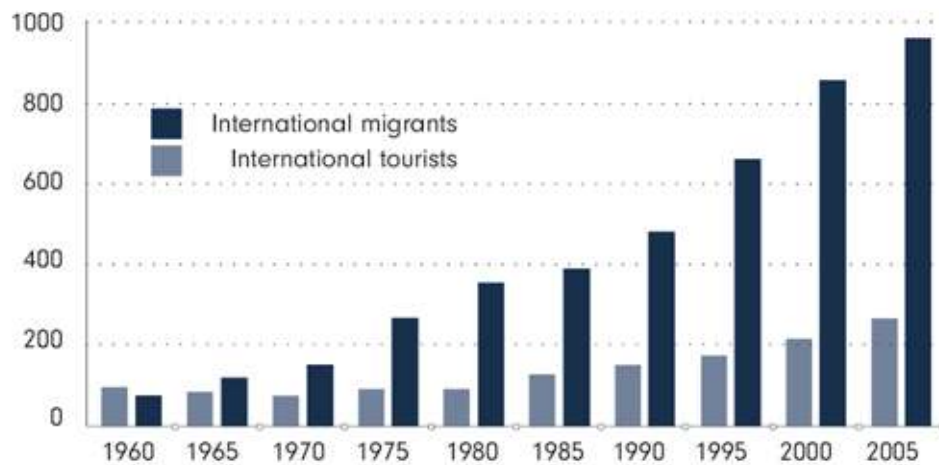


Figure 1. Comparison of international migration and tourism by number of arrivals, 1960-2005 (million) – data UNWTO, *Tourism and migration, 2009*

An “augmented” tourist is a more active, and a more critical tourist, who is provided with the tools to verify any information, compare it and share it in real time. “...planning the holiday and sharing the memories in real time are essential moments of the experience. [...] is more focused on the values of substance, on relations, unique and personal experiences, and back regions” (Dall’Ara, 2015: 15-19).

2. Migrant

Migration accompanies tourism and the dynamics of the two are similar. From an individual's perspective, their principal vector is the desire to change the usual social and physical environment, for a brief period at least, for some time or forever, while psychological, family, cultural or economic links with the place of origin will always be there. On one hand travelling for tourism essentially aims to build new experience elsewhere by means of consumption of goods and services from the income already earned, on the other migration seeks another livelihood, i.e. establishing a household combined with a work opportunity or a new professional experience and career development, or reaching those life ideals the involved individuals do not perceive to be achievable in the place of origin.

3. Lampedusa

Tourism and migration manifest themselves as elements of rupture of local identities. The journey has always been a metaphor for discovery, but also for encounter and exchange. In this sense, tourist and migration phenomena show – despite their differences – some clear similarities.

The island of Lampedusa is the prime example of coexistence of tourism and migration, and the perfect place where to look for a relationship between them. In the center of the Mediterranean Sea, on the borders of Italy and Europe, Lampedusa has always been a place of passage, exchange, relations.

Over the last few decades - while Lampedusa became in the collective consciousness the border par excellence - the exponential increase in the number of people passing through the island was mostly perceived as a temporary issue, as an emergency. The aim of this study is therefore to identify the potential of this unique condition, and to outline a strategy for revealing the similarities between tourism and migration as opportunities for the development of a plural world. A strategy for giving back to Lampedusa its inherent role of frontier as a place of exchange, where different local identities can connect through relationships that enhance their uniqueness while mutually enriching each other.

4. Mediterranean and microinsularity

“Its boundaries are drawn in neither space nor time. There is in fact no way of drawing them: they are neither ethnic nor historical, state nor national; they are like a chalk circle that is constantly traced and erased, that the winds and waves, that obligations and inspirations expand or reduce. The Mediterranean shores have seen not

only the silk route but also the crisscrossing of many others: routes of salt and spices, amber and ornaments, oils and perfumes, tools and arms, skills and knowledge, arts and sciences. Hellenic emporia were markets and embassies; Roman roads spread power and civilization; Asian soil provided prophets and religions. Europe was conceived on the Mediterranean." (Matvejevic, 2006).

The Mediterranean region is the cradle of our civilization, the place where most of Western history took place and its culture was shaped. After centuries of hegemony, its apparent decline as a waterway did not prevent it from maintaining a leading strategic position in the geopolitical context. Hence, the Mediterranean seems to have reacquired its key role as the connection among three continents, which came with new hopes, as well as renewed challenges and contradictions.

The Mediterranean is also the gateway that connects hundreds of smaller islands to the mainland. Islands capture stories and give shelter to men since the creation of the very first poem. Asylum seekers, assassins, megalomaniac generals, visionary captains, misanthropic actors, rebellious children, and all those rejected by society. Islands are Heterotopias, different spaces: "[...] other places. As a sort of simultaneously mythic and real contestation of the space in which we live [...]" (Foucault, 1984: 46-49).

Smaller islands (Isole minori) (AAVV, 1898) are those which depend on wider regional contexts while being autonomous in terms of municipal administration. Their small size and reduced population, together with the distance from the mainland, make of these islands a very peculiar environment.

"Islands are special places. They may be classified according to such criteria as where they lie in relation to the coast, what type of channel separates them from the mainland, and whether or not one can row or swim across the channel (a measure of the extent to which the sea unites or divides). Islands also differ in the images they project: some seem to be floating or floundering, others look anchored, stonelike, and, though torn-off and incomplete remains of the land mass, quite satisfied with themselves." (Matvejevic, 2006: 30)

5. The impact of temporary stay

To better understand the ways visitors live the island and to examine the consequences of the temporary use of the territory, it is necessary to quantify and qualify the flows of tourists and migrants who in recent decades have passed through Lampedusa.

5.1 Tourists

The heavy seasonality of tourist flows caused considerable problems for the island, its environment and its society. The ecological deficit (Dipartimento di Sviluppo e Coesione, Comune di Lampedusa e Linosa, Dipartimento di Urbanistica, Istituto Universitario di Architettura di Venezia, 2009) - the footprint of a population creates a deficit when it exceeds the biocapacity of the area available, due to the tourist presences during the high season is estimated as over four times the surface of the island.

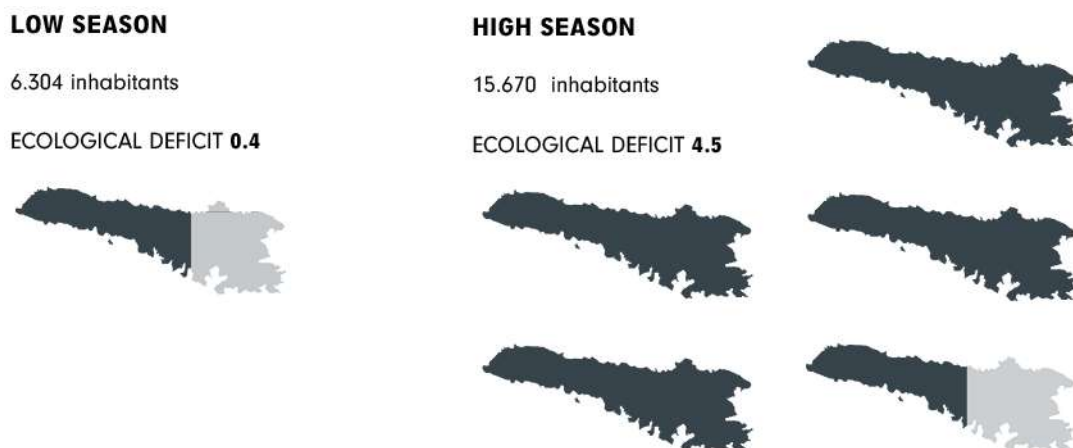


Figure 2. Seasonal variation in ecological footprint

Tourist arrivals per year are around 70.000 (Osservatorio Turistico Provinciale di Agrigento, 2015), clearly too many considering the limited size of the island and a spontaneous, disorganized and often illicit tourist reception system.

The comparison of the main tourist indicators across other small islands highlights a disproportionate pressure on the surface of Lampedusa. On the island of Pantelleria, four times larger but with a comparable resident population, the accommodation density, i.e. the ratio between number of beds and surface, is five times lower than that of Lampedusa. Even more surprising is the comparison based on tourism density, which is the ration of overnight stays by tourists to the size of territory: Lampedusa tourist density is estimated over six times that of the counterpart by ISTAT data (Italian National Institute of Statistics).

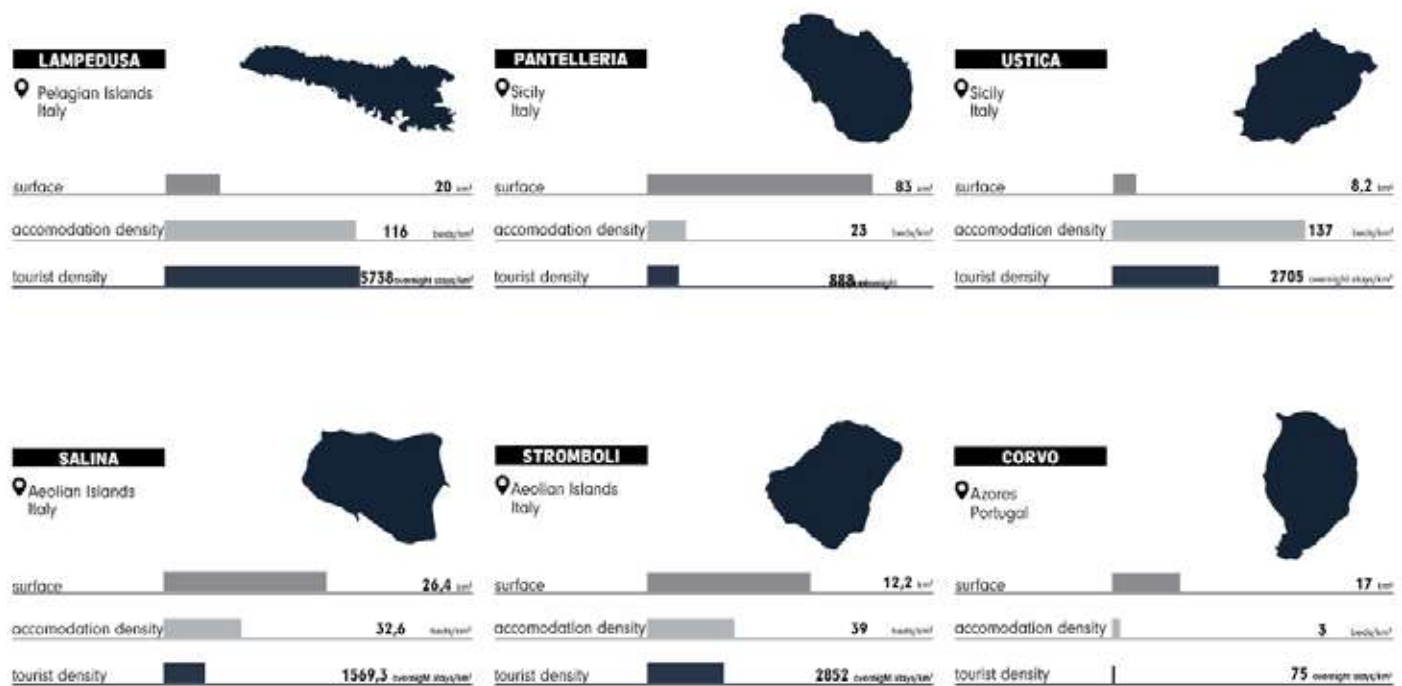


Figure 3. Comparison of tourist indicators with other small islands

The rapid transformation of the last decades has resulted in a proliferation of hotels, apartment complexes, and restaurants. The failure to approve and implement urban planning legislation has contributed, in the meantime, to strengthen the established practice of an extensive interpretation of usucaption, which has allowed the local administration to give land concessions for construction purposes in an indiscriminate way, resulting in an excessive land use on the coastline and across the whole island.

The effects of tourism on the territory are the most obvious, but these transformations have changed the socio-economic structure of the island even more rapidly. Nowadays tourism is the core of Lampedusa's economic activities, which could be a positive opportunity if controlled, while on the contrary it represents, as of now, a great risk because of its precarious nature.

5.2 Migrants

Although Lampedusa has always been at the center of the various migratory flows that cross the Mediterranean, it is only since the 1990s that the phenomenon took on a dimension relevant enough to attract the attention of Italian institutions.

From 1998 on, various constructions and different denominations have been used, but migrants have always stayed in former military structures that are not suitable for hospitality. The hotspot still in use is located in a valley, on the edge of the inhabited area in a position that makes it almost invisible from the outside. According to the legal roadmap (Ministero dell'Interno, Dipartimento per le libertà civili e l'immigrazione, 2015) established by the Italian Government, the "first reception" procedure should last a maximum of 72 hours, during which migrants must be identified and transferred as soon as possible to the second reception system, awaiting relocation to another EU Member State. This solution, conceived for fewer people and much shorter times, has triggered social tensions especially during the periods in which migrants have been held inside the hotspot against their will (Commissione straordinaria per la tutela e la promozione dei diritti umani, 2016).

The survivors rescued offshore by governmental organizations and NGOs are taken to the Favalaro pier, where the triage procedure is carried out by health personnel wearing protective suits, escorted by Italian armed forces and border police.

Migrants do not live in Lampedusa, they just happen to pass through it. According to the latest public records, the average time spent on the island by migrants is around 18 days, in spite of all the regulations that were never implemented. A period too long for the provided means of "first reception" to be enough, but still too short to experience initiatives aimed at long-term inclusion and integration on the island.

Objectives

In a co-habitation approach, four main goals define and summarize the key strategy toward a sustainable development for the island, in order to fulfill the requirements of hospitality while protecting such a fragile environment.

1. Reducing the environmental load

The calculation of the ecological footprint shows the impact of the economic and social behavior of inhabitants and tourists on the local biocapacity. Most of the factors governing the ecosystem's degradation are linked to the uncontrolled growth of tourism.

The Butler Model (Butler, 1980) of tourist resort development reveals that the tourism-related growth reveals that is soon destined to resize itself because of the resources depletion it causes. Those resources being impoverished are the very same ones to make the island such an attractive place for tourists.

According to Butler, the tendency to decline that would follow can only be reversed by renewing the offer to adapt it to different kinds of tourism, enhancing the specific and unique features of the destination.

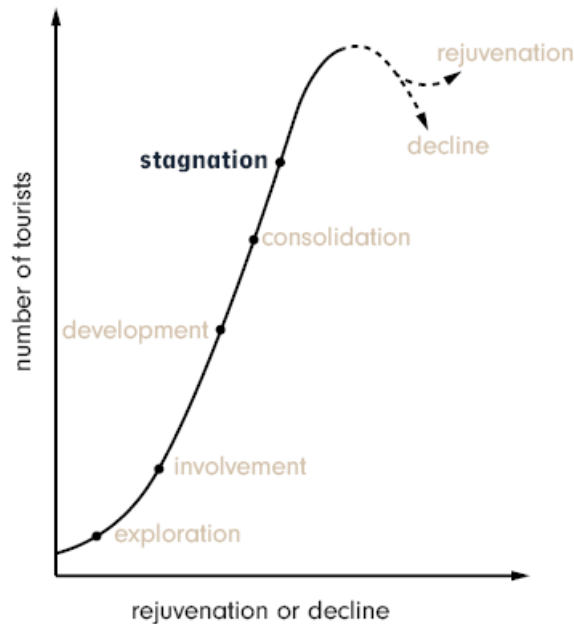


Figure 4. A graph of Butler's life cycle model

2. Sacralization

Planning a sustainable pattern of tourism consumption requires a deep understanding of the elements that make the sight unique, so that it can be marked off from similar objects as worthy of preservation and then become the subject of a marketing strategy able to redefine the image of the island itself.

Modern international tourism has its own moral structure, a collective sense that certain things must be seen (MacCannell, 1976). Not even the contemporary tourist, although interested in the declination of his experience rather than the must-see, escapes the attraction system.

The ritual attitude partly loses its outward appearance, but intimately permeates individuals and directs them towards the sight. However, the value of the attraction has lost its universal feature and takes on meaning when related to contemporary ethics and culture.

Lampedusa, in this sense, has a unique contemporary meaning that could consist in very special attraction for the sightseers. The island has all it takes to become, alone in the center of the Mediterranean, the place where to witness the quintessential expression of the culture of hospitality.

3. Interaction

The prolonged isolation of the local population, together with the disintegration of social equilibrium, has contributed to make it more and more difficult to establish a positive contact with visitors. Furthermore, both the reception of tourists and that of migrants have always been improvised, preventing any interaction with the inhabitants of Lampedusa.

The desired change can only take place through a different approach to the management of hospitality, promoting exchange between locals and visitors in a constructive and mutually beneficial way.

The design outcome of this approach can be explained through the concept of network hospitality.

The social model of network hospitality has the merit of reconfiguring the hierarchical relationship between hosts and guests, entailing fluid relations of host/guest/stranger within emerging emotional and material context (Molz, 2014). In transposing the concept of network hospitality to the field of landscape and architecture, shared public space has to play a key role.

A system based on network hospitality allows a consumer to play a two-sided role and can reshape the territory according to the needs of different users, who could all benefit from new interactions, by acting as both providers and obtainers of services.

This planning process, while being visitor-oriented, has also the potential of providing the island with spaces and services that could improve the inhabitants' quality of life.

4. Diversification

"The most serious problem confronting tourism in Europe is its over-concentration in the high season with congestion of transport and accommodation services as well as deterioration of the natural and man-made environment and under-utilization of capital and human resources in the low season." (89/46/EEC: Council Decision of 21 December 1988 on an action programme for European Tourism Year, 1990).

Diversifying the local tourism product could solve the problems related to seasonality, with a business structure making the local economy resilient and adaptive to unpredictable changes.

Developing alternative tourism products may draw attention on unique features, such as local history, culture or ecology. Alternative products are better adapted to the changing tastes of consumers, who are increasingly looking for more specific and customized holiday experiences.

Such a complex product, rich of cultural and symbolic implications, requires environmental quality as well as developed services to fulfill the needs of different targets.

In order to provide guidelines for the conversion of existing and potential resources into quality tourism products, a research of current and future market trends needs to recognize specific target sectors. Along with a sustainable development of coastal tourism, five "alternative" areas are identified based on the local assets: educational, academic, naturalistic, sport and collective memory tourism.

Methodology

All the data concerning migrants and tourists on the island was collected from three institutional sources: the Italian Ministry of the Interior, ISTAT (Italian National Institute of Statistics) and the Sicilian Region.

The base cartography was also provided by the Sicilian Region, while some areas were surveyed and detailed on-site in March 2017.

During the same period, on-site interviews were conducted with the main stakeholders: members of the local administration, volunteers, activists and workers in the tourism sector.

Results

The proposal for a new hospitality model is divided into two layers: on one hand, redesigning all the accommodation facilities, services and infrastructures to meet the previously identified requirements, on the other hand providing the guidelines to make the island attractive through a functional system of sights.

1. A new form of hospitality

1.1 Infrastructures

The critical issues derived from the seasonality of tourism demand also affect the demand for mobility (Regione Sicilia, Dipartimento trasporti e comunicazioni, 2012). The intervention has the main objective of reducing the high motorization rate by working mainly on two aspects. On one hand active mobility is encouraged by creating a bike path equipped with a bike-sharing system to connect the two ends of the island, on the other hand, a shared mobility alternative is proposed by implementing a carpooling system. This dual approach would reduce vehicle traffic while inducing visitors and locals to new interactions and then representing an economic benefit for all parties involved. To complete and connect the system, redefining a network of pedestrian paths would make it easier to benefit from the small size of the island, turning it into a strong point.

1.2 Accommodations

The starting point in the conception of a new hospitality system is inspired by the similarities detected in the ways tourists and migrants live the island.

Both reception systems present critical issues which make it necessary to rethink their forms, and the need for alternative models becomes the opportunity for an integrated solution.

The new accommodation system is based on the concept of "Albergo Diffuso" (Manuale dell'Albergo diffuso, 2015), with a shared management and rooms distributed throughout the territory. It consists of a network of

small housing units and shared services that can simultaneously accommodate tourists and migrants, adapting to variable inflows according to seasonality.

In addition to the adaptation and regularization of existing informal accommodation facilities, the offer is extended and enriched by redeveloping the many abandoned properties on the island.

The goal is not only to prevent the construction of new buildings, but above all to create an alternative proposal by bringing visitors closer to the local lifestyle.

The first mapping of dismissed buildings reveals the existence of enough assets to host at least 150 beds distributed in the rural territory as well as in the historic center.

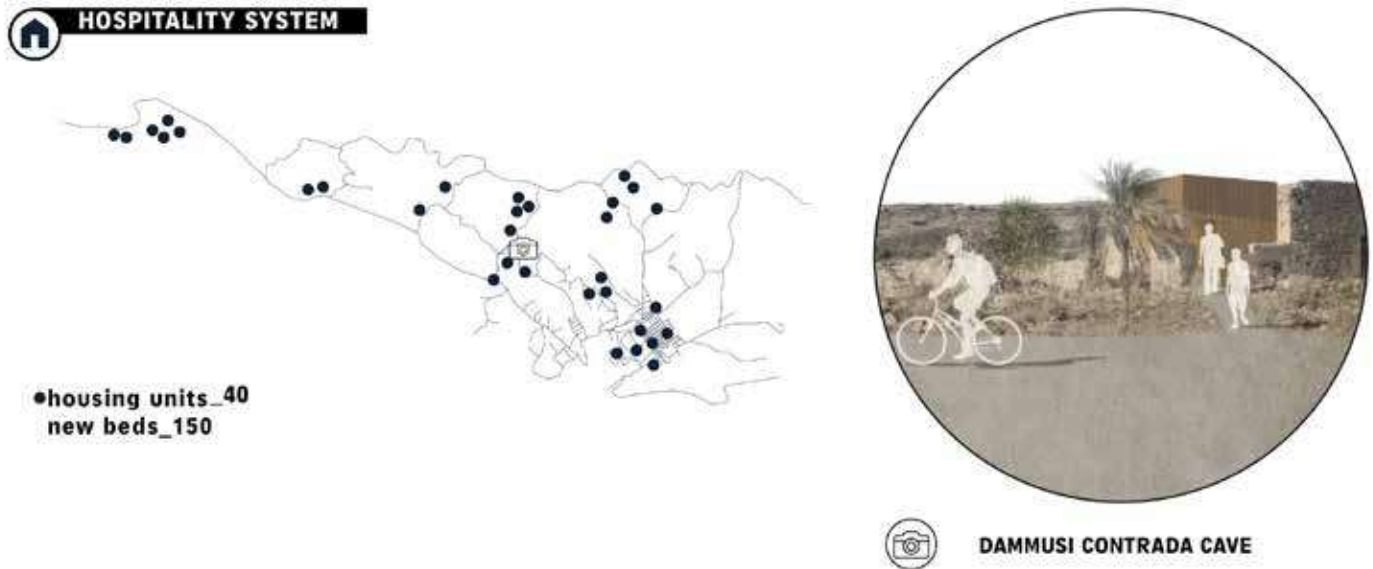


Figure 3. Map of the new hospitality system

The housing units are connected to form a network, which is then completed by providing extra shared services such as cafés, restaurants, and internet points. The central reception area is located in the historic center, making it easily reachable by all users. This simple model is conceived to be adapted to the different kinds of habitations on the island. While the historic center some dismissed properties can fill up the gaps of a denser urban fabric, the typical dammushi are recovered in the inland, starting a regeneration process for the abandoned rural areas by populating these clusters of small houses with visitors.

The management model itself is indeed conceived to encourage positive interactions among tourists, migrants and the local community. The collective kitchen, sports facilities, and community gardens are just some examples of how the temporary stay can become an opportunity to enrich the visitors' experience and be the starting point of a process of integration that migrants will continue in Italy and in Europe (Molz, 2014). The local community, at the same time, has the chance to involve tourists and migrants in voluntary activities of agriculture or self-build: a powerful added value in the process of regeneration of the territory.

1.2 A widespread museum

The project starts from the idea that the recent history of the island linked to migration must be preserved and enhanced.

While history is the reconstruction of what is no longer, memory is a perpetually actual phenomenon, a bond tying us to the eternal present. The interaction of living memory with the history of migrations results in their reciprocal overdetermination, turning Lampedusa into a "lieu de mémoire" (Nora, 1989).

For this reason, we proposed the creation of a documentation center: an archive where to store and catalog the remains of recent shipwrecks, as well as to study the history of migrations in the Mediterranean region.

The unfinished structure that should have become the municipal swimming pool, abandoned since the 90s, could be restored and adapted to take on this function without any further land consumption.

Together with the documentation center, the island needs the proper spaces where to live and pass on memories, where to remember what happened and to commemorate those who died.

The process of sacralization (MacCannell, 1976) begins with the identification of the most significant places for the history of migrations and among the most emblematic ones for their evocative potential:

- The Garden of Remembrance (Giardino della memoria), located in the nature reserve, which features 368 plants in memory of the victims of the 3 October shipwreck;
- The Sanctuary of Madonna di Porto Salvo; The "boat cemetery" where the remains of the boats are dumped;

- The area of Punta Maccaferri, the southernmost of Italy and the place where the Gate of Europe – an installation by Italian artist Mimmo Paladino – stands since 2008;
- Cala Maluk, with its beach not frequented by tourists because of its proximity to the airport;
- The dismissed quarries near Cala Francese, for last, constitute an abandoned space of monumental proportions very close to the sea.

The spots thereby identified are connected by a 7 km long pathway, which thus becomes the explicit sign highlighting that history: a trait d'union that transforms singularities into a real open-air museum.

From the observation of the territory and from the reading of the signs that compose it, the main elements shaping the landscape (Soprintendenza per I Beni culturali ed Ambientali di Agrigento, 2006) are re-arranged to emerge and make the path distinguishable. Dry walls are used in rural areas to delimit and protect it. Rows of *Tamarix africana* and *Pinus halepensis* will shade it where necessary. The shrub species belonging to the low Maquis biome are instead exploited as elements of demarcation at the edges. The prickly pear cactus will be planted in rows to create a natural screening to the airport runway. The colored wooden planks from the wrecks are recovered to be used as sign that indicate the key points along the path.

Conclusion

Responding to the open question asked at the beginning of this research, it is the island itself to suggest an answer and a way to solve the coexistence problem in a positive co-habitation perspective. The interaction between visitors and the local community is not only desirable and possible, but necessary and innate in Lampedusa's history. The project aims to provide a reference for conceiving a new reception system, as well as the guidelines for relaunching the territory through its unique features. This system could face the future while being truly contemporary, going beyond the temporary solutions for accommodating migrants and the improvident idea of a limitless tourism expansion. It would be a model of reception that is ultimately more fair and far-sighted. A model that needs to go through a cultural paradigm shift, to be carried out on new generations so that the awareness of the need for an alternative can emerge locally, and the transition can be promoted primarily by the inhabitants of the island.

Acknowledgements

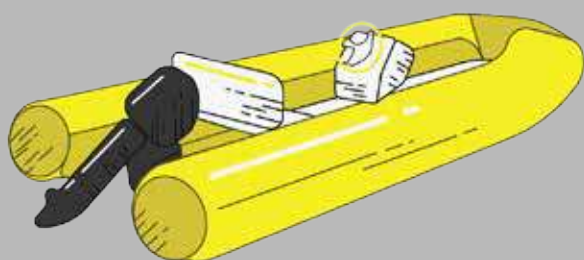
This research was carried out during the last year of the Master course in Architecture at the University of Ferrara, under the supervision of Prof. Luca Emanuelli, Prof. Daniela Moderini and Arch. Enrico Porfido. Its full content is included in the thesis "Zona Franca. Verso un modello di accoglienza sostenibile per Lampedusa", presented in March 2016.

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[MIG/07]



A Synoptic Policy Efficiency Analysis On Informal Areas In Albania: Comparing Two Case Studies In Durrës

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abstract

Economical resources, revenues from legalization, are centralized to high administrative levels and then are redistributed to each single informal areas to finance infrastructure investments. The sum of revenues reversed is differing from area to area, thus it is not equal for each informal area.

(1) Firstly because revenues reversibility to cover infrastructure costs are defined by law in an arbitrary way. Respectively only 20% of the revenues from the legalization fee goes to urbanization and infrastructure.

(2) Secondly, each informal area has different land size occupied, number of settlements and infrastructure dimensions. These three measurement indicators, (land, settlement, and infrastructure) also determine the core revenues and costs for the urban agenda.

Thanks to a Synoptic Analysis it is possible to measure both reasons, (1) and (2), in one single indicator, called F.I.S.I.A (Final Investment for a Single Informal Area). While the objective of the Urban Agenda is to fulfill the second objective, namely to deliver infrastructure, the research aims to answer whether it is possible to determine different percentages of revenues reversibility in other to fulfill the objectives of urbanization and infrastructure. The results show that urbanization, put in infrastructure, has a negative value. It means that even if we apply a revenue reversibility of 20%, as defined by law, the urbanization process will never occur without external resources.

In order to have a fair distribution of the investments on urbanization, the research proposes to apply different revenue reversibility percentage for different informal areas.

keywords Informal Areas, Spatial Injustice, Policy Efficiency, Synoptic Analysis

1. Introduction to the Urban Agenda

The urban agenda on 1) Legalization, 2) Urbanization and 3) Integration of the informal areas and settlements is a public priority of different actors since 2004. From that year many laws, regulations, and directives have been approved and applied. Picture number one shows the most important until now-days.

Basically, the laws approved in different years shows a policy with a strong focus on cognitive resources and economical. This diversity on the picture one is signed with different colors.

With grey are all those laws which has been approved and added to the Urban Agenda and shows the establishment of procedures for collecting data, managing, and graphical language. In public policies studies, this resource is considered cognitive.

With green are signed all those laws which have been approved and added to the Urban Agenda in order to define public revenues from land and settlement legalization. In public policies studies, this resources is considered economical. Both public resources, economic and cognitive, are a public interest matter, defined and managed by the national government and the regional agency for the Urban Agenda.

According to the Albanian Constitution¹, article number thirteen, the two public resources should be managed by the Municipalities, instead what really happens is that higher administrative levels² are in charge of it.

The local government in the Republic of Albania is based on the principle of decentralization of power and exercised according to the principle of local autonomy.

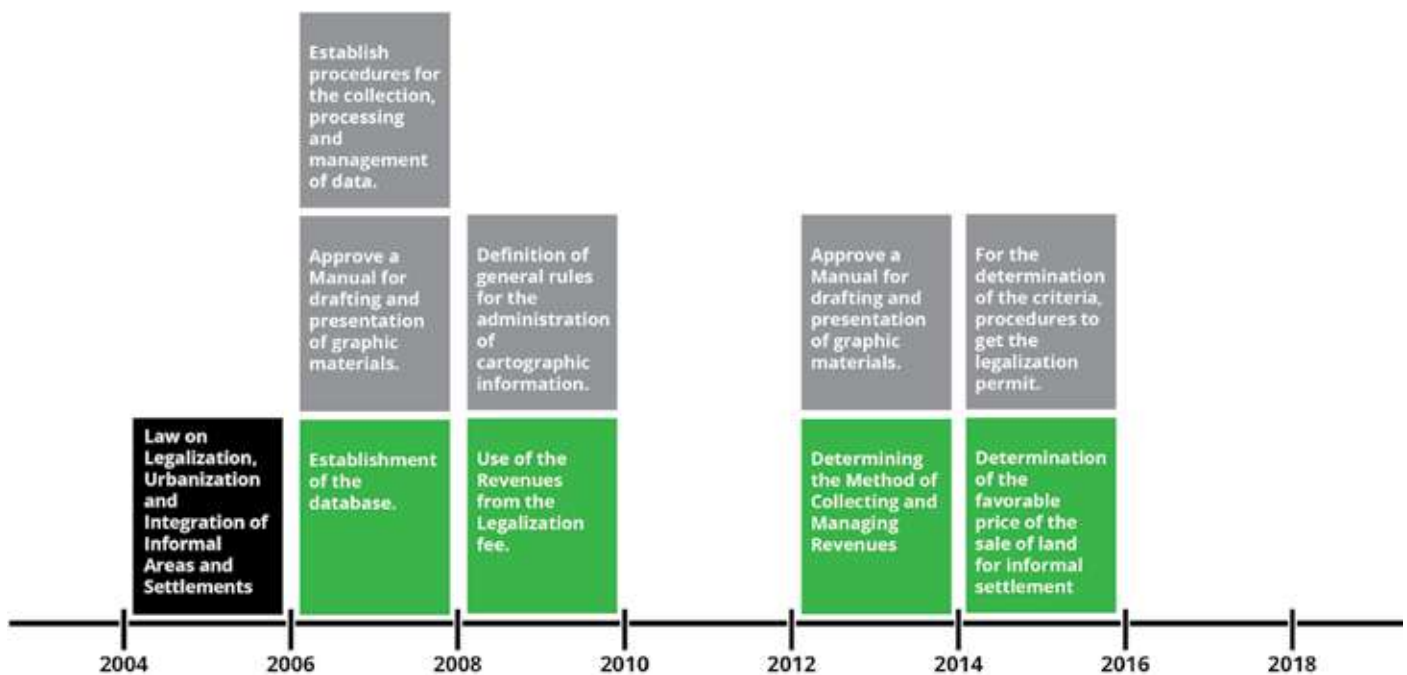


figure 1: Historical administrative phases of urban agenda on legalization, urbanization and integration of informal areas in Albania.

Actually, Municipalities are uncharged only to accomplish the urbanization process with the economical resource that the Council of Ministries reverses. The research assumption is that these economic resources are not enough to accomplish the urbanization process for the same informal area, and this for two reasons.

Reason (1), Firstly because the revenue's reversibility to each informal area is defined by Directive Nr.37, date 20.11.2008³ by the Council of Ministries. According to the VKM⁴ Nr. 860, date 10.12.2014, revenues are defined by the land and settlement fee, and the revenue's reversibility is 20%.

Reason (2), Secondly because some informal areas has a high infrastructural network, others less, and this diversity determines also the policy effectiveness⁵ to archive the urbanization with the revenue's reversibility of 20%.

In order to approve the research assumption, the methodology will focus on measurable units and legal references. These legal references, also illustrated in figure one, determines the public resources, such as the legalization fee of informal land and settlement for the legalization, and the revenue's reversibility.

Legal reference 1) Directive Nr.37, date 20.11.2008, "Use of Revenues from the Legalization Fee", it defines the revenue's reversibility to (20%) for each informal area. This amount goes the municipalities to accomplish the urbanization process. The other part of 80% goes to the Nation Council.

Legal reference 2) VKM Nr. 860, date 10.12.2014, "Determining the method of collecting and managing revenues", it defines the revenues from the legalization fee of the informal settlement and other various public services, such as the cartographic elaboration. As a medium in the methodology, it would be taken 5 euro per meter square. This decision, legal reference, is not only important for the methodological part but also to highlight the fact that it has shifted away municipalities from the urban agenda in a constitutional violation to article number 13.

Legal reference 3) VKM Nr. 488, date 22.7.2014, "Determining the Land Price for Legalization process", defines the amount of revenues that should be generated by each meter square of land. Actually, it is (50%) of the market price. For methodological reasons, it would be taken in a medium of 25 euro per meter square.

2. Research assumption in Planning Theories: Synoptic Planning

The research assumption is that by applying a revenue's reversibility of (20%) the public authorities uncharged with the urban agenda will never accomplish the 2) Urbanization objective, and the methodology can give us economical results. In order to prescribe the methodology, it is important to reclaim various theories which have draw economical resources and their reversibility on the territory. Beyond the (20%) of revenue's reversibility various planning theories have occurred, one of those is the Transactive Planning. Municipalities, for example, has applied for a special fund from the Council of Ministries in order to invest in urbanization and infrastructure. Or, when municipalities have reached on agreements with third actors to invest in infrastructure. According to (Hudson,

1979), “transactive planning emphasizes dialogue and development of trusting interpersonal relationships”. While these agreements seems a political venture for some municipalities for others municipalities it is not. The same argument it’s valid even when on a smaller scale; not all the same informal areas have the same political will to invest in infrastructure. And here we came the same unconstitutional condition.

To solve the unbalanced revenue’s reversibility with the infrastructure cost for each informal area, and the ad-hoc transactive agreements, a more neutral evaluation should happen. Another theory can be the Advocacy Planning, but since it recognizes the local interest it might not fit totally with the objective 2) Urbanization of the urban agenda. First reason i) because there are no political representatives on such scale as the informal area, and second reason ii) because the local interest and needed cost for the infrastructure are not same things. The first reason shows the unconstitutional condition of article 13, mentioned above, and the second reason the cognitive ability to divide needed costs for infrastructure from additional costs that might derive from local interests.

On this considerations the advocacy planning can lead to the third objective of the urban agenda 3) Integration of the informal areas. A good example in the Albanian context is the case study of Co-Plan⁶ in Bathore, Tiranë and Kënetë Durrës, where practices of co-planning with the inhabitants took place. More than an advocacy planning for the early urban growth phase that took place, in late ‘90, it can be considered as Radical Planning. Radical planning calls for ideas to be tested in actions aimed at permanent change in social institutions and values.

As the research question on how much is the needed revenue’s reversibility to accomplish the second objective 2) Urbanization, none of the theories described above can give an answer to a methodological assessment. Synoptic planning seems a more sensitive and responsive theory to measure and compare revenues and cost for the urbanization, second objective of the urban agenda.

Synoptic planning typically looks at problems from a systems viewpoint, using conceptual or mathematical models relating ends (objectives) to means (resources and constraints) with heavy reliance on numbers and quantitative analysis. Despite its capacity for great methodological refinement and elaboration, the real power of the synoptic approach is its basic simplicity. The fundamental issues addressed-ends, means, tradeoffs, action-taking-enter into virtually any planning endeavour. (Hudson, 1979).

Table 1: Theories for the assessment of the urban agenda.

	Transactive Planning	Advocacy Planning	Radical Planning	Synoptic Planning.
Would it give the needed assessment of the second objective? Urbanization.	NO	NO	NO	YES
Why?				
Reason 1	Revenue's Reversibility on different Informal Areas not Responsive for Urbanization Costs. (only 20%).	No Political Representatives on Informal Area scale.	Too late to intervene on this phase of informal urban growth.	Assesses the Revenues from land and settlement surface, Infrastructure network for urbanization costs.
Reason 2	Ad-Hoc Political Agreements on Revenue's Reversibility.	Shows Local Interest, not the needed investment for the second objective, urbanization.	Shows Partial Interest not the needed investment for the second objective, urbanization.	Because follows legal references for the assessment of the final investment.

1 / Albanian Constitution, approved on 1998.

2 / Since VKM Nr. 860, date 10.12.2014, the ALUIZNI agency is uncharged to collect data, cognitive resources, and the municipalities are shifted way from the urban agenda.

3 / Directive Nr.37, date 20.11.2008 defines the revenue's reversibility, “Use of Revenues from the Legalization Fee”.

4 / V.K.M is a Decision made from the Council of the Ministries.

5 / Policy Effectiveness in public policy studies is the ability of an actor to archive a specific objective with determined resources.

6 / Co-Plan in an Albanian Institute for the Development of Habitat since late ‘90, when first informal practices occurred.

3. Methodological measurements for Synoptic Planning. (F.I.S.A Concept)

Synoptic planning theory, as described above, can lead to a methodological approach to have a first assessment of the revenues from land and settlement and cost for infrastructure and urbanization - as the second objective of the urban agenda. In order to understand in a sensitive way for each territorial unit (meter square), it has been given a value according to the legal references described in the introduction. The final value, called F.I.S.I.A, gives the value output from every single informal area. Territorial resources as land, settlement, and infrastructure surface are assessed on the given area. Each of these territorial resources combined with the legal references gives the final investment in the same area. Sheet table number one (1), list the units, value and legal reference used for the methodology to have the final investment.

Differently FISIA can be written as un unique formula, as table 2. According to the final result, if (A) or (B), it is possible to answer to the research question - will it ever occur the second objective of the urban agenda?

Sheet Table 1: F.I.S.I.A. Measurement Indicators; Units, Value and Reference.

Measurement Indicators	Units	Value	Legal Reference	Revenue's Reversibility
Revenues from the Land Legalization	m ²	Euro	(1, 3) 25Euro/m ²	20% to Municipalities for Infrastructure.
Revenues from the Sett. Legalization.	m ²	Euro	(2) 5Euro/m ²	Direct to Municipalities
Costs for Infrastructure	m ²	Euro	250Euro/m ²	F.I.S.I.A

Table 2: F.I.S.A. Measuring the Final Investment on a single informal area.

Final Investment on single informal area **(F.I.S.A) =**

(Land Revenues) x0,2 + Settlement Revenues - Urbanization Costs

If (A) - FISIA>0 the process of Urbanization may occur, considering 20% or revenue's reversibility and other territorial resources and legal/market references.

If (B) - FISIA<0 the process Urbanization may not occur.

4. Research Limits. Hindering Factors for the Legalization

To assess the revenues and the urbanization cost, territorial resources are taken on consideration. Land surface, settlement and infrastructural dimensions expressed in meter square are these territorial resources. But what if land or settlement would have a hindering factor to get the legalization?

For a better description of hindering factor and the diversity that exists on the territory, the methodology considers only two territorial resources, land and settlement surface and their probabilistic chance to fail on legalization. From this considerations, the land has two probabilities, fail or get the legalization, the same for the settlement. Each of these four conditions gives four results of a combination of land and settlement. Here we have to highlight that to get the legalization both land and settlement should exist on the territory. Table number twelve shows the results of the combinations among land and settlement. The example is that of the Prisoner's Dilemma in Game Theory.

Table 3: Methodology to indentify the Hindering Factors for the Legalization on Land and Settlement.(From the 'Prisoner's Dilemma' in Game Theory)

	Settlement (Gets Legalization)		Settlement (Fails to Legalization)	
Land (Gets Legalization)	-1	-1	0	-3
Land (Fails to Legalization)	-3	0	-2	-2

- The first probabilistic result is, land and settlement can get the legalization process but there are hindering factors outside the land that do not make the process to get the legalization. This macro hindering factor is called "Outside the Land". These can be for the various reason, for example when land and settlement are in a hazardous area, or close to the river basin.
- The second probabilistic result is that settlement can get the legalization process but the land has legal constraints. This macro hindering factor is called "On the Land". For example from land conflict with third parties to an undefined parcel.
- The third probabilistic result is that land can get the legalization process but the settlement has legal constraints. This macro hindering factor is called "On the Settlement". For example on the land is raised a shanty or never finished buildings.
- The last probabilistic result is that both and land settlement has legal constraints to get a legalization process. This macro hindering factor is called "On the Single household". An example may vary from the low income of the householder to pay the legalization fee, to unidentified householder of the informal settlement.

For the diversity that hindering factors shows the assessment would be to complex. For this reason F.I.S.I.A would not take on consideration those cases when hindering factors and legal constrains exists on the territory. Informal area one (1) and two (2), on the next chapter, considers all occupied land and settlement build as available for the legalization.

5. Comparing two different Informal Areas

Following the methodological sheet table to assess revenues and costs on a single informal area it is possible to have a final investment, called F.I.S.I.A. Two informal areas around 30 ha and 40 ha in the surrounding urban area of Durres are chosen. Informal area number one (1), figure two, shows a grid network of infrastructure. Instead, informal area number two (2), figure three, an ex-industrial site. Giving the main assumption, "economic resources are not enough to accomplish the urbanization process for the same informal area", it is possible to address the question to the FISIA formula (table 2).

The graph next to figure two (2) shows the revenues that can be generated from the legalization fee if all settlement and land in the informal area one (1) are legalized. With black is signed and assessed the needed cost for the urbanization with the existing infrastructural network. Table number three (3) follows the methodology of sheet table one (1) and converts the territorial resources into value.

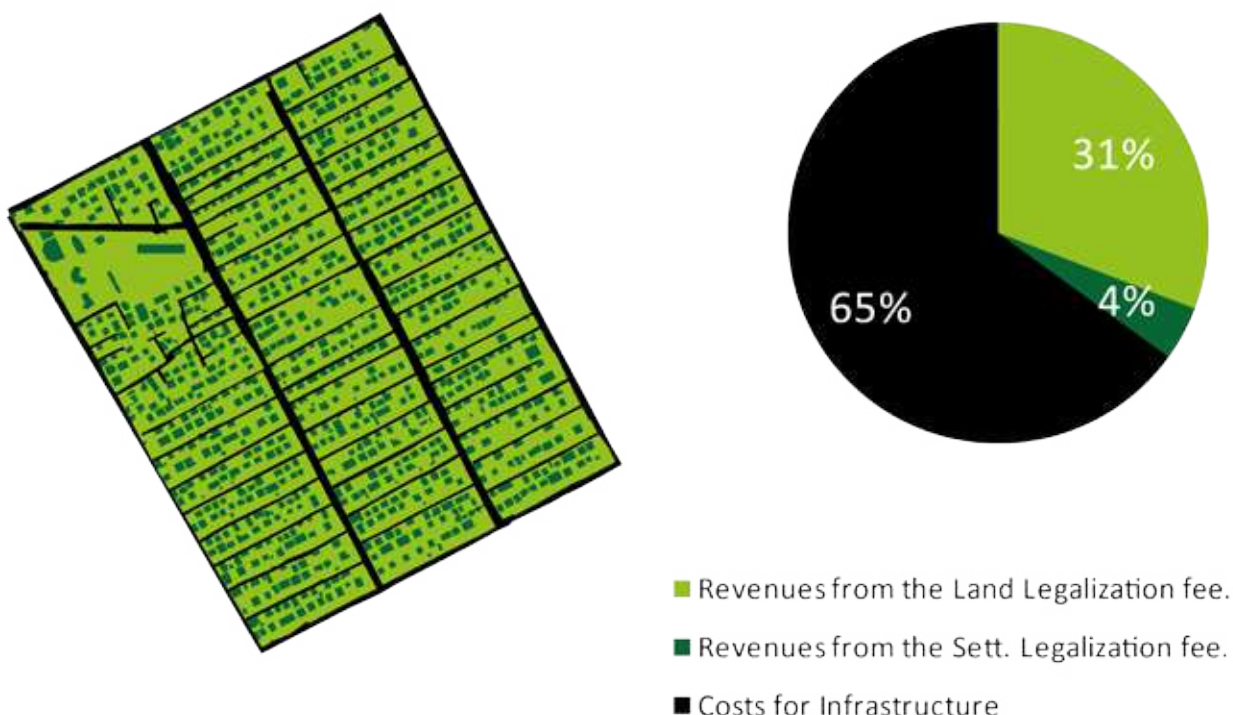


figure 2: Informal Area 1: Revenues and Costs from land, settlement and infrastructure.

Table number three (3), shows dimensions of the territorial resources, the legal reference which consists in value for meter square and the total revenues and costs for urbanization with the given infrastructural network of the informal area one.

If the revenue's reversibility to urbanization is at 20%, F.I.S.I.A is minus 17.844.000 Euro. If the revenue's reversibility to urbanization is at 100%, F.I.S.I.A is minus 9.220.000 Euro. Both cases have a minus investment needed to bring urbanization with the existing infrastructural network and dimensions. The price of 250 Euro per meter square of urbanization cost is taken as a medium from public procurements projects. Even if all possible revenue's are collected, from land and settlement fee legalization, the second objective of the urban agenda will never occur.

Informal area number two (2), on figure number three (3), shows a different balance between revenues and costs. Territorial resources as infrastructure covers a lower surface than in the previous informal area. It takes (47%) of the total value. Table number four (4) list the revenues and cost.

Table 3: F.I.S.A and the revenue's reversibility (%) form land to infrastructure. Informal Area 1.

Measurement Indicators	Dimensions (m ²)	Legal Reference	Total Value
Revenues from the Land Legalization	380,000 m ²	(1,3) 25Euro/m ²	9,500,000
Revenues from the Sett. Legalization.	256,000 m ²	(2) 5Euro/m ²	1,280,000
Costs for Infrastructure	80,000 m²	(3) 250Euro/m²	20,000,000
F.I.S.A for Informal Area 1 Keneta at (20% of revenues)			-17,844,000.
F.I.S.A for Informal Area 1 Keneta at (100% of revenues)			-9,220,000.

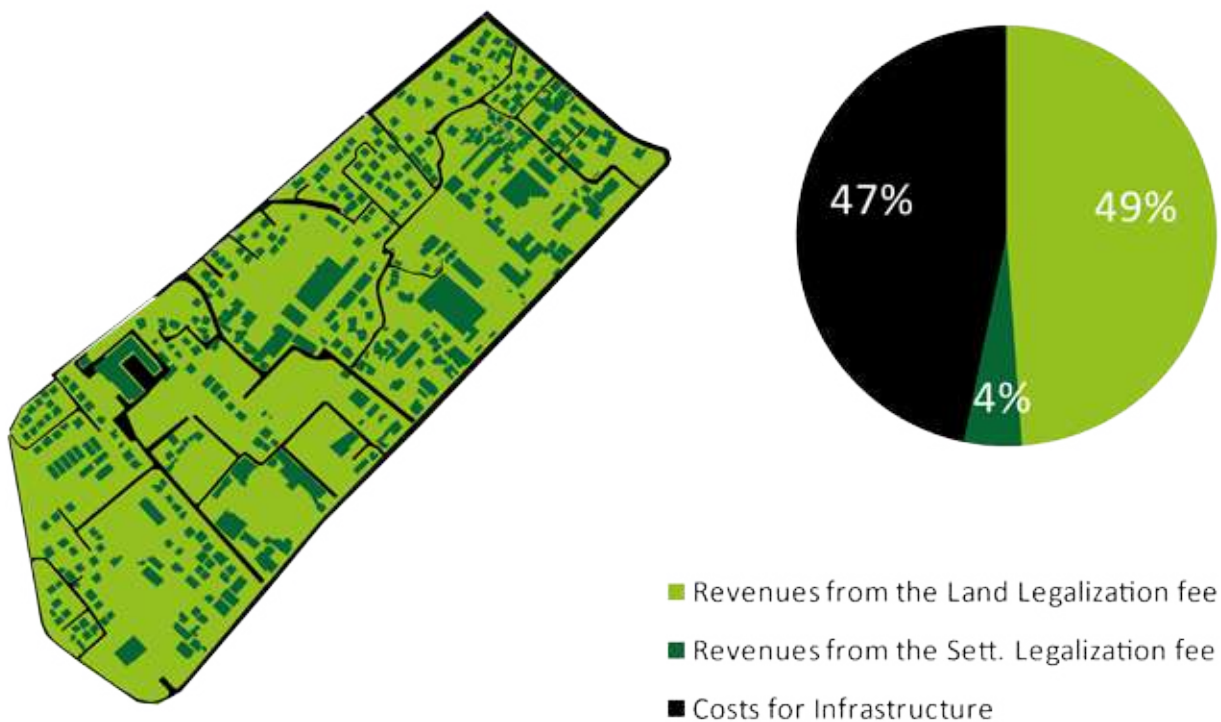


figure 3: Informal Area 2: Revenues and Costs from land, settlement and infrastructure.

Following the methodology revenues and costs are assessed according to the value from legal references, which shows the value per meter square. Adding the proper dimensions of the territorial resources, of the informal area number two (2), for each resource it is possible to get the final investment. (F.I.S.I.A).

If the revenue's reversibility to urbanization is at 20%, F.I.S.I.A is minus 8.595.000Euro. But, if revenue's reversibility to urbanization is at 100%, F.I.S.I.A is 1.555.000Euro. This means that with the existing infrastructural network, with the medium of 250 Euro per meter square, and a different percentage of revenue's reversibility it is possible to accomplish the second objective of the urban agenda.

Table 4: F.I.S.A and the revenue's reversibility (%) form land to infrastructure. Informal Area 2.

Measurement Indicators	Dimensions (m ²)	Legal Reference	Total Value
Revenues from the Land Legalization	460,000 m ²	(1,3) 25Euro/m ²	11,500,000
Revenues from the Sett. Legalization.	210,000m ²	(2) 5Euro/m ²	1,050,000
Costs for Infrastructure	44,000m²	(3) 250Euro/m²	11,000,000
F.I.S.A for Informal Area 2 Shkozet at (20% of revenues)			-8.595.000
F.I.S.A for Informal Area 2 Shkozet at (100% of revenues)			1.550.000

By using a synoptic methodology it is possible to understand the actual condition with a notify on the unfair, and unconstitutional, distribution of the revenue's reversibility to different informal areas with consequences on the spatial justice and local autonomy. But how to make it more effective on the realization of the objectives? Although it might seem as a law and regulations matter a methodological approach is needed. Table number five (5) puts as unknown the revenue's reversibility in order to understand at which percentage it is needed to bring the revenues and cost equal, so F.I.S.I.A equal to zero.

Table 5: Revenue's Reversibility.

Final Investment on single informal area

F.I.S.I.A = 0 = (Land Revenues) x (x) + Settlement Revenues - Urbanization Costs

>> Revenue's Reversibility (x) = $\frac{\text{Urbanization Costs} - \text{Settlement Revenues}}{\text{Land Revenues}}$

If (%)<1 Urbanization cost can occur with the existing revenues from the same informal area.
If (%)>1 External economical resources are needed to accomplish the second objective.

An example of this equalization is made for the second informal area. The result shows that it's only 86,5% of the revenue's reversibility needed to archive the full urbanization costs. And, only on this moment revenues can pass to third objective of urban agenda, 3) Integration.

Table 6: Needed Revenue's Reversibility for Urbanization. Informal Area 2.

Revenue's Reversibility (x%) =

$$\frac{\text{Urbanization Costs} - \text{Settlement Revenues}}{\text{Land Revenues}} \times 100\% = \frac{11,000,000 - 1,050,000}{11,500,000} \times 100\% = 86,5\%$$

6. Results and the importance of the Synoptic Planning

From the two case studies, many questions arise and others give answers to local scale. By how much is the degree of urbanization in other informal areas? Is it possible to confront them in a single unit? The needed revenue's reversibility to accomplish urbanization on table five (5), expressed in (%), can be a first ranking degree. It answers in two directions to the question if it is possible or not with the existing revenues to accomplish urbanization. Results from 0 to 1 answers yes. Those from 1 and more need external resources to accomplish the urbanization in a given informal area.

Only by doing such an empirical and synoptic analysis future policies can take place. The phase of the data collection, in figure one (1), shows only the phase (-1) of the policy development on urban agenda. The phase of the synoptic analysis can be described as phase (0) of the policy development on urban agenda.

From the theoretical point of view, transactive planning, advocacy planning, and radical planning can take place only after phase (0) of the urban agenda and its assessment on needed revenue's reversibility. Phase zero on this

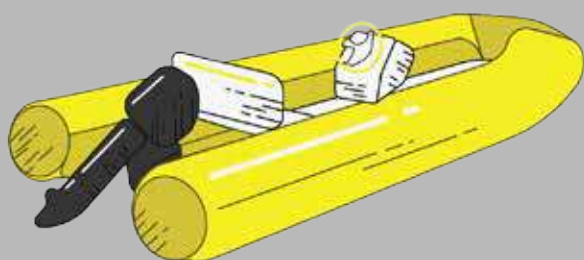
consideration, synoptic planning, put on a better position all actors involved in the decision making. It measures, and use proper economical resources to each territorial resource.

From the political and the decision making on the wealth distribution and spatial justice the synoptic planning can be the first tool for local representatives. Municipalities can address also investment and promote land development to increase revenues where informal areas have a lower degree. In other condition, this phase can be considered as (+1) of the policy development for the urban agenda.

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[MIG/08]



A-LONG PATH

Streets as spatial flow gradient for urban and social integration

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abstract

Many cities are shaped by the forces that limit their borders. These spatial elements are determined socially and acquired culturally, being reified using rigid walls. Nowadays, cities are progressively losing their immunity to changing their static form. This perspective implies the need to rethink our approach to how we draw borders, raise barriers and model our space. We need to rethink our "freedom of architectural boundaries" (Koolhaas Rem 1995).

Our postmodern era, defined by sociologists as the "Age of Migration" (Castels, Miller, 1993), is being stretched by an apparently opposing forces. According to the United Nations, an estimated 60% of the world's population will be living in cities by 2030. By 2050, the number of displaced people is likely to have risen to 200 million. The result will be that migrant resettlement inevitably becomes an urban issue.

This problem therefore takes on two dimensions: Physical, relating to the permeability of a city's boundaries; Social, relating to the new social fabric incorporated in the city. From a social point of view, the Galois group theory can be used as a cognitive tool to recognize four questions that arise from the conflict between static cities and migratory flows. "Closure": identify a group of relationships and the relative degrees of freedom. "Associativity": migration paths are two-way roads that connect a two destinations, departures and arrivals. "Inversion": imagine opposing forces that cause the events to go back to the primary reference point. "Identity": interpreted as a social "multi-identity".

The road acts as a spatial gradient able to manage urban perturbations caused by migratory flows. The road can be understood as the real place of cohabitation since it is not possible to separate the beginning from the end.

The strategy proposed to support urban transformations is to design roads as urban gradients based on three operational categories: Accessibility; Appropriation; Reciprocity.

keywords Migration, City, Streets, Wall, Gradient

Introduction

Cities and migration are two necessary conditions for defining humankind. One of the primordial myths that establishes our urban cultural imagery is the vision of Babel, a city designed by a transient humanity driven by the urgency of finding a city to affirm its existence.

Empirically, we can verify the relationship between city and migration by reading the contemporary world that has become increasingly urban¹, while humanity has become more nomadic than ever². City and migration are two variables of a directly proportional equation. They are driven by feeling communities that orient the imaginary.

The contemporary globalization process should have made us all citizens of one global village where migratory flow could be interpreted as the transition from the motherland to the homeland. What is now evident, however, is the compression suffered by the world, induced by the very same globalization. A split occurred where global hyper-connectivity was supposed to unite. The mechanism jammed. Everyone is perceived primarily as strangers or foreigners, and because of this, an intolerance for closeness among individuals has grown.

In this context, the fluidity that was to be a value has turned into a crisis of exasperation and extremism in relations. Space as the primary relational means (Attili, Giovanni, 2008) is the first and fundamental issue to be renegotiated. Such a situation identifies a common ground from which to restart. Moreover, as the geographer Laura Pulido claims, relations between cultures are mainly determined through the establishment of precise spatial relationships³.

In fact, the relation between dominant and subaltern cultures has always structured dialectical relations. This dialectic is between the center and the periphery, and centrality and physical, cultural marginality.

Migration into the contemporary city can encourage the use of a trialectic process⁴ in urban discourse. In a powerful and explicit way, the concept of Alterity enters: formal city, informal city, and migrant city. Migrants, who live in a fluid and transitory spatial dimension (a sort of fourth spatio-temporal dimension), put the model of the modern city into crisis through their very existence. On the vestiges of this modern city, many of today's cities are self-built.

The term cohabitation refers to the need for a relation. Alterity expresses itself through the communion of space and, through an autopoietic mechanism, generates completely new functional and relational conditions with respect to modern forms. The nature of contemporary space is liquid and therefore changeable and transitory.

Through cohabitation, we indicate the human ability to establish spatialized relationships even before identifying this term with the basic concept of living in a specific place. On the other hand, contemporary coexistence can and must contain in itself the character of transience and temporality that is typical in nature to the citizen-migrant relationship.

Therefore, the assumption is that coexistence between migrants and citizens in the contemporary city should be built from public space. This represents a privileged space for the encounter and relationship between citizens and identity. Such a place is where relations can be spatialized and thus established.

Objectives

The aim is therefore to identify and design flexible spaces that give rise to the relational and reconciling dynamics useful in developing a constructive relationship between different cultures and different temporalities of urban life. One would like to verify the actual disconnect between forms of social communication and media perception of the migratory phenomenon. Starting from the virtual public space of the web represented by the social world, one tries to reconstruct the narration around the migratory question in the collective imaginary. This is in order to understand the sociological framework within which the cohabitation space will be built.

In addition, identifying best practices that can inspire forms of sharing public and urban space shall be sought. More generally, this is in order to foster conflict management in communities triggered by multicultural confrontation. Accessibility, appropriation and reciprocity are three values through which cohabitation space has declined.

Methodology

The first step in reconstructing the city's space for the purpose of achieving true coexistence among cultures is to understand how the imaginary linked to migration is defined, and how knowledge of the migrant subject is produced. First, a decision was made to investigate the world of social media, which is interpreted as a virtual "public space" for meeting and discussing social issues.

In order to obtain a quantitative-qualitative picture of the influence of web-media with regard to migratory phenomena on an international general public, we decided to focus on the analysis of social networks of the International Organization for Migration (IOM), which is the main world reference organization that works on this problem. We specially extracted the information available from their public Facebook® communications network and their interlocutors. We consider this platform a relevant strategy for the analysis given that Facebook® already had 2 billion users in 2017⁵, accounting for approximately 30% of the world's population. This choice is based on the principle that social media is one of the main generators and promoters of the collective and migratory imagination today. For nodes and data crawling links, we used the Netvizz® v1.45 and Gephi® 0.9.2 Web application to display the diagrams. After understanding the nature of the division between operating areas and mass media, we looked for urban development programs and virtuous projects that could combine the world of virtual relations and spatial proximity on the one hand, and projects that worked on the theme of reconciliation between conflicting parties. In this sense, the project is used as a tool to repair the disconnect between the media imaginary and actual reality.

One project experiment that we would like to present is a recently proposed solution for the "Cities of Tomorrow" competition. Upon evaluation, this project was awarded an honorable mention by a UNHCR-associated commission. This project addresses the theme of the migrant settlement in the Western city. It raises the question of the flexibility and fluidity of public meeting spaces for the migrant and urban population as the key to project action. In fact, with reference to the Charter of Public Space (document ratified on May 2013 at the Biennial of Public Space in Rome), where public spaces "[...] should be designed with full consideration for diversity [...] Public space is the gymnasium of democracy, an opportunity for creating and maintaining over time the sentiment of citizenship and the awareness of the roles that each of us has and can have [...]»⁶. The project initiates from this definition for the spatial proposal of a new settlement for the welcoming of refugees and migrants seeking asylum in the city of Rome.

Results

If we use the network as a cognitive structure, we can understand how the collective imagination is structured through sources of communication from international institutions that are both responsible for monitoring the migratory phenomenon and competent in dealing with its related issues.

If we look at the IOM information network, we discover that it does not present itself as a single node but as a four-headed system. There is no main central body that acts as the web's center of gravity. Rather, the main IOM page shares its power influence with three other subjects: the Missing Migrants Project, the Displacement Tracking Matrix - DTM, and the UN Migration Agency's LGBTI Migrant Equality - IOM.

Since 2014, the Missing Migrants Project has been responsible for registering migrant deaths along travel routes around the world. The data are collected through various governmental and non-governmental sources. Displacement Tracking Matrix - DTM, as stated by the site itself "is a system to track and monitor the displacement and population mobility. It is designed to regularly and systematically capture, process and disseminate information to provide a better understanding of the movements and evolving needs of displaced populations, whether on site or en route"⁷. LGBTI Migrant Equality - IOM seeks to protect the rights of the migrant LGBTI community⁸.

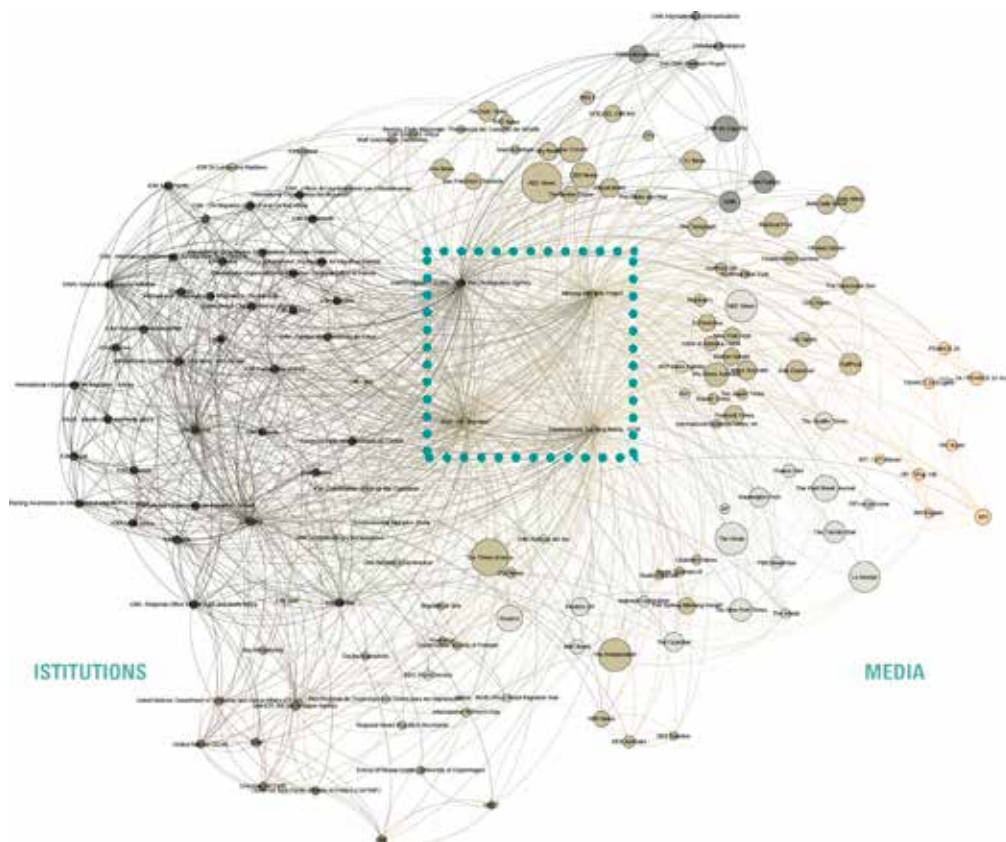


Figure 1 - IOM network

1 / Who.int. (2018). WHO | Urban population growth. [online] Available at: http://www.who.int/gho/urban_health/situation_trends/urban_population_growth_text/en/ [Accessed 23 Apr. 2018].

2 / United Nations - Department of Economic and Social Affairs (2017), *International Migration Report 2017*, New York. Available at: http://www.un.org/en/development/desa/population/migration/publications/migrationreport/docs/MigrationReport2017_Highlights.pdf/. [Accessed 10 Apr. 2017].

3 / Laura P. (2011), *Rethinking Environmental Racism: White Privilege and Urban Development in Southern California*, *Annals of the Association of American Geographers* 90, no. 1 (2000): 13. In: George Lipsitz, *How Racism Takes Place*, Temple University Press. p. 29

4 / *For Thirthing-as-Othering process: Soja, Edward W., Thirdspace: Journeys to Los Angeles and Other Real-And-Imagined Places*, Hoboken (USA), Blackwell Pub, Hoboken (USA), 2011.

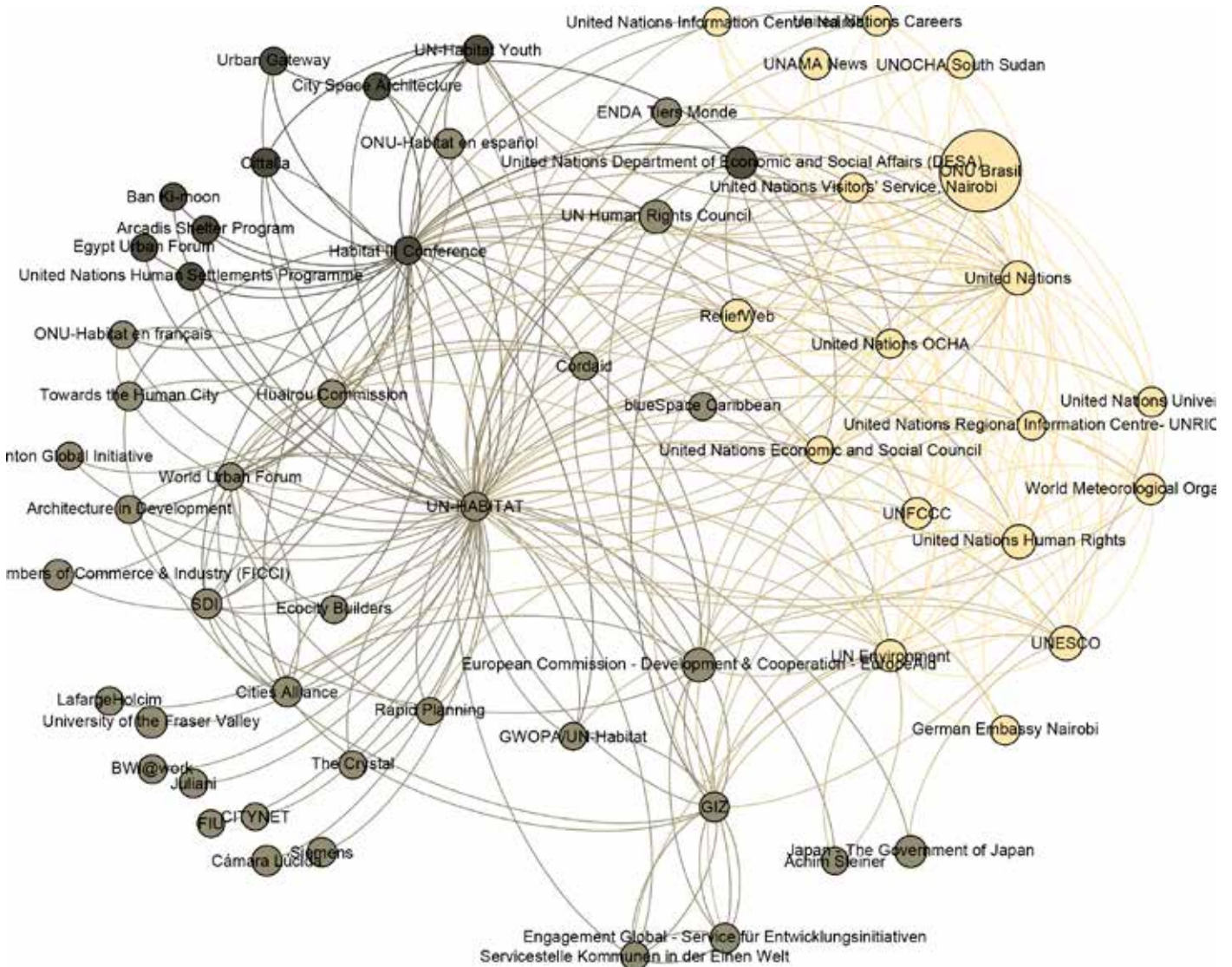
5 / Balakrishnan, A. (2017). 2 billion people now use Facebook each month, CEO Mark Zuckerberg says. [online] CNBC. Available at: <https://www.cnbc.com/2017/06/27/how-many-users-does-facebook-have-2-billion-a-month-ceo-mark-zuckerberg-says.html> [Accessed 23 Apr. 2018].

6 / Art. 17 "Charter of Public Space", Rome 2013. Available at: http://www.biennalespaziopubblico.it/wp-content/uploads/2016/12/CARTA_SPAZIO_PUBBLICO.pdf [Accessed 23 Apr. 2018].

7 / Displacement.iom.int. (2018). Displacement. [online] Available at: <https://displacement.iom.int/> [Accessed 23 Apr. 2018].

8 / Lgbti.iom.int. (2018). IOM-LGBTI. [online] Available at: <https://lgbti.iom.int/> [Accessed 23 Apr. 2018].

according to a global system image . It shows a network of complex relationships between different geographical points on the globe. Migratory flows do not appear as the sum of the single vectors that they involve, nor as a simple transition from north to south. Rather, they show a multidirectional reality. A lattice structure then emerges in which the flows move simultaneously in a circular manner across the entire surface of the earth.



Figures 3 - UN-HABITAT network

So if the reality is that of a continuous multi-directional fabric that is seen and perceived by the population in an undistorted way, then what society lacks is an instrument designed to connect the inhabitants of a neighborhood with the real world of the migrants, specifically and directly with refugees. Without a system that acts as a bridge between actual migration and a stable society, refugees will always be perceived as either a dramatic yet distant situation or a forced proximity of foreign elements. The network communication system to be adopted must change from a global dimension (spectacular, distant, and impersonal) to a local dimension (colloquial, close, and personal). This level of communication, however, is not possible under a centralized hierarchy. It must take place at the neighborhood level where the proximity between subjects is real. Therefore, communication must be realized as a constellation of nuclei located within the territory.

In this frame, if we consider that different habits, rituals, and specific cultural and behavioral rules exist among cultures of different origin, then misunderstandings can occur. In extreme cases, such misunderstanding can lead to acts of reciprocal aggression. We recognize the need for a synergistic system that connects people both virtually and in real life. Such a system should be implemented with operational services in order to provide an important mediation between resident citizens and migrants. Recently designed facilities for resolving conflicts use negotiation and mediation systems that are referred to as "restorative justice". This lies outside the judicial and law enforcement system. This methodology is based on putting conflicting parties in contact. The protagonists of a mediation process are capable of understanding mutual positions and repairing damages to injured parties. Such a methodology has found increased application within different contexts involving intercultural problems with refugees. The advantage of this approach is manifold: it allows the different people involved to be active

protagonists of the reconciliation process. It also reduces the time and cost associated with the normal processes that involve law enforcement and judicial institutions. Through this method, real problems on a human scale are dealt with rather than relying on abstract standards.

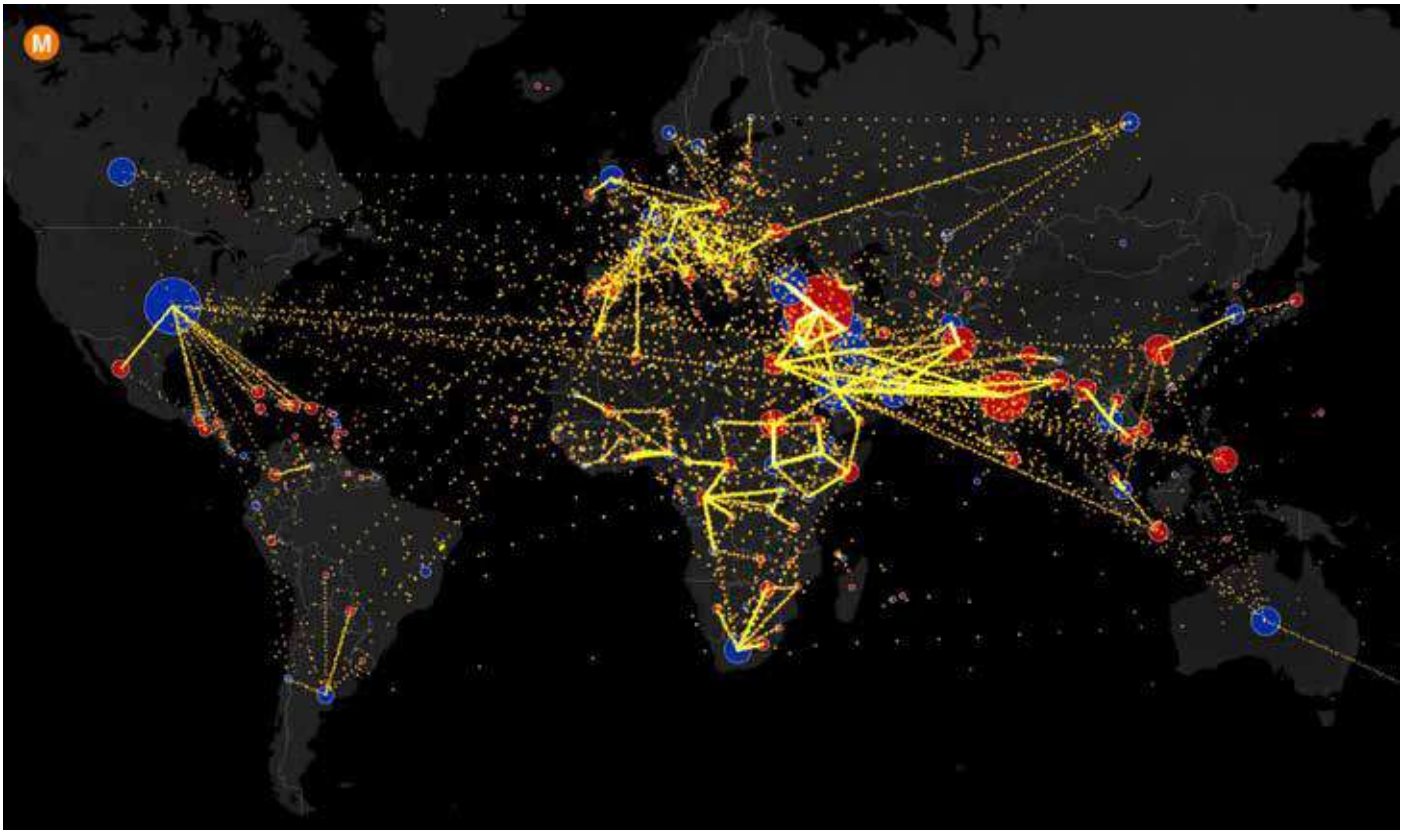


Figure 4 - *metrocosm.com: Country-to-country net migration (2010-2015)*

Today, the main designer who applies these principles in the field of architecture is Deanna Van Buren with the "Designing Justice + Designing Spaces" program. Her proposal is to use groups of small, de-centralized buildings that can host training centers, association and social service offices, and rooms for reconciliation meetings. According to Van Buren, these places must be structured on basic sensory and perceptive principles: the privacy of those who are hosted must be guaranteed so that one can speak freely. Space should help reunite a group yet, at the same time, allow one to isolate themselves when the situation becomes too stressful for a single person. Environmental psychology strategies should be adopted to maintain a fundamental equanimity. Van Buren's approach is based on the operational check-list that she has created, which indicates that it is necessary to use the phenomenon of biophilia. This specific design phenomenon pays attention to the points of view towards the natural elements, and in fact, has proven itself as a technique that carries important implications on psycho-physical health and on maintaining emotional equilibrium (Kellert-Wilson, 1993).

In our opinion, the geographical position of these centers of reconciliation should coincide with infrastructural nodes where the social bond manifests itself topologically, and where the different flows of individuals can converge and generate new shared activities. Frei Otto states: « paths do not only connect occupied points, but also stimulate new occupations, especially at crossing points or forks ». Thus, the street and its intersections are the spatial and vital physical nodes of this virtual grid of relationships.

The street is the physical place where movement manifests, placing temporal distance and spatial realities into one system. If the square represents the space for a community, being a privileged place for the self-representation of a specific urban character, then the street is rather a place of urban entropy, being a space in which multitudes mix in the realm of fortuitous encounters among strangers. The street is spatialized movement, and the migrant brings with themselves a mobile space.

In fact, the street in contemporary reality is no longer a merely spatial object, but it is an entity with a multidimensional extension. It is the agent in the space of the city, a true cognitive space that can activate processes of knowledge and understanding among those it connects.

As Professor Antonino Saggio claims, the infrastructural systems in the city must be collectors of information to make the city «reactant in real time». If information is linked to physical facts, then both structures and situations can be changed quickly and effectively.



Figure 5 - Up: Francis Goyes, Deanna Van Buren, RESTORATIVE JUSTICE CENTER Oakland, California 2013. Down: Kyle Rawlins, Deanna Van Buren, et al., POP-UP RESOURCE VILLAGE (ongoing)

In the specific analysis of the street theme, we analyzed those that have already tested as operational practices and what new intervention tools can be adopted to reconstruct and restore the image of this as a preferred place for coexistence between individuals with different cultures and identities. In both theory and practice, this revolves around the concept of Shared Space in that the most interesting operations can be identified as a design translation of what has so far been supported. The interest in the street as a shared space in the practice of urban projects dates back to the '80s. However, it has recently developed into interesting experiments, especially in the Anglo-Saxon and American world.

This design practice is mainly oriented to the idea of sharing the street with different mobility flows, particularly vehicular and pedestrian flows. Thus A revolution of the consolidated image of the street was fulfilled in order to induce greater attention towards individuals who live together in the same space. Vertical and horizontal signals and any type of physical barrier are abolished for the purpose of reducing accidents and conflicts among the different ways of crossing and traveling. The sidewalk is positioned at the same level of the street and new spatial tactics are adopted as a filter to discretize the use of space available to different users. Results of abolished physical segregation among the various subjects on the street includes increased proprioception and consequent greater attention reserved for the other subjects. The indifference and spatial alienation induced by the loss of references diminish. Furthermore, the redesigned street ceases to be a simple transition and can actually become a place.

Starting from this concept, the idea of rethinking the street can be advanced, emphasizing the sharing of connection and infrastructures systems also on a cultural level.. The key points for the project of a new shared and dynamic

dimension of the city become: physical and cultural accessibility of space, and recognition of the right to live with the reality of the street. What currently prevents the transition to this new vital condition is the break between the imaginary of the sedentary population and the imaginary of the migrant population.

The strongest need for mediation and communication takes place in the neighborhoods where there is a large presence of migrants (often in the periphery). Those who cross the territory to escape adverse living conditions need direct communication with the sedentary population. The citizen should be able to know the personal stories and needs of those being hosted, and to have a realistic and human perception of what otherwise turns out to be an unfathomable and dangerous black box.

An interesting experiment in the dynamic neighborhood relationship has been that of the "Social Street". At the moment, there are 450 communities in the world that are replicating this experience. The idea came from Federico Bastiani after his relocation from another region with his wife of South African descent and their young son. After clashing with the inability to establish social relations with the inhabitants of his own street he founded the "Residenti in Via Fondazza" group in 2013 in order to mend a now dispersed, isolated, and silent reality. The group has set itself the goal of using social networks (mainly Facebook) as a bridge between virtual and real, creating a space for relationships in which other citizens can meet. The Social Street system provides well-defined guidelines while actions are managed independently by proactive groups. The system is not managed by institutions, parties, or the like. It is instead managed by independent citizens working on a principle of local territoriality, delimiting and focusing on a specific area to foster a dialogue based on concrete conditions, and offering citizens a direct response to individual problems. The structure is based on voluntary service. In fact, no advertising of any kind is allowed.



Figure 6 - Rom Camp "La Barbuto" in the south suburbs of Rome, 2018

The advantage of this method is that the passive condition of citizens changes by inducing a proactive and interdependent behavior. The problems of both the neighborhood and the individual emerge from a dialogue, and the community proposes solutions and direct assistance. This network always deals with points of convergence and cooperation. Criticism is accepted only if presented with alternative, constructive proposals. Social Street also connects social actors with virtual communications and relational events.

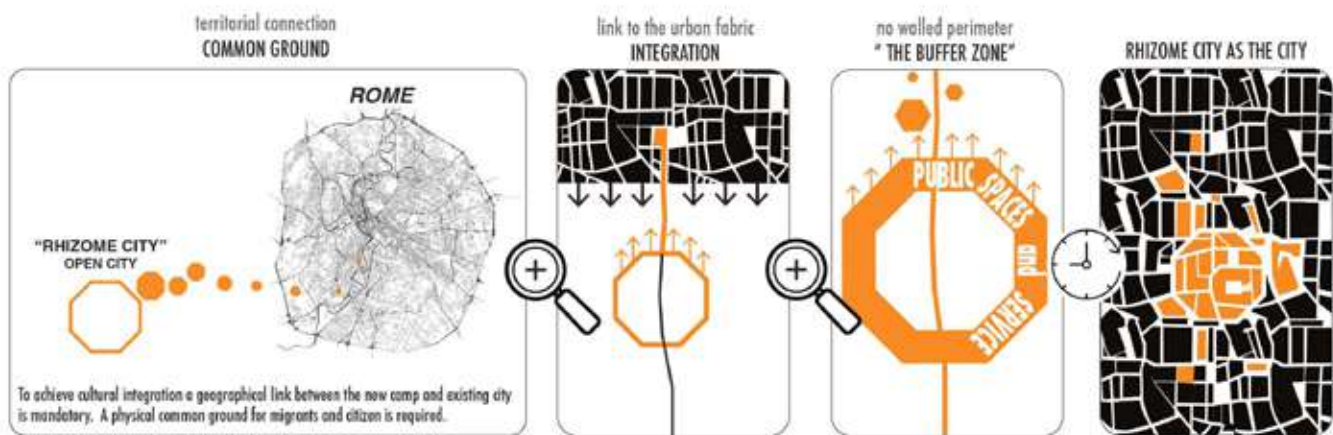
These social structures are made real as suggested by Freeman and White through the participation of individuals in shared events that have both the function of connecting people and forming working groups. The modalities of this participation are governed by rules that can be defined according to the logic of the lattices of Galois. This allows for reading reality through three levels: (1) the actor-event structure; (2) the actor-actor structure; (3) the event-event structure.

The anthropologist Claude Lévi-Strauss and the mathematician André Weil first identified the presence of behaviors structured according to the logic of Galois in a famous study of the parental relationships of the Australian Kariera. However, we can go further considering that cultural anthropology shows more generally that events can connect actors as a community much more than ideological identification with an ethnic group.

The matrix connecting the actors to the events leads to a hierarchy in which primary events tend to separate the actors into social subgroups. This can take their own stories to more and more global factors, moving up the tree of events (Freeman and White, 1993). What we will interpret is not a declared bond of affectivity between actors as in sociometric systems, but the scheme that actors and events have in common. The theory of Galois groups is therefore used here as a cognitive tool for recognizing four issues about conflict between static cities and migratory flows. The four qualities of a group (identity, associativity, commutativity, invertibility) can become the interpretative key to human dynamics. "Commutativity": identify a group of relationships and the relative degrees of freedom. "Associativity": migration paths are two-way routes that connect points of departure and arrival. "Invertibility": imagined as opposing forces that report events to the primary reference point. "Identity": interpreted as social "multi-identity".

Now consider a typical condition in Italy: settlements for refugees, immigrants, or foreign nationals of Roma ethnicity are usually located in isolated areas and disconnected from the consolidated city. These aggregates are devices that often grow at a sustained rate and that take on the structure of a welcoming camp more than an urban one.

They are "almost cities", unexpected, instantaneous, and unstable, given their "definitive temporality" (Bauman, 2003) character. The rigid Cartesian plan of blocks and orthogonal streets is taken from the field structure with the expressed purpose of guaranteeing security, control, and accessibility. However, those who adopt this approach completely reject the qualitative value of the inhabited space, which is fundamental for ensuring the emergence of positive relations between migrants and citizens. Public spaces are missing and public parks are lacking. The same grid leads to an alienating and repetitive space in which we become disoriented. Elements that transform a "settlement" into a real urban system are landmarks, places of aggregation, architectural variability, and the ability of residents to act in their space by transforming it. Therefore, the actual places that generate cohesion and social belonging are lacking.



The new settlement is located on the South-Western suburb of Rome. The area is an expansion zone of the City toward the sea. The camp is designed as a devise for urban regeneration.

Figure 7- Project "RhizHome City" F. Ficcadenti, F. Caserta, F. Casini, G. Lucarini, 2018

The new type of settlement proposed to respond to this problem, starts from the idea of taking action in an area of peri-urban expansion in Rome. This is connected by a main artery to the city that represents a physical and social bond with it. Instead of a closed perimeter and an enclosure, the new settlement will be surrounded by what is defined as a "buffer zone" of public space and services: a common ground that can really represent a meeting point between the city and the new settlement, as well as between citizens and migrants/foreigners.

As time goes on, the suggested expectation is that the new settlement, relying precisely on this "belt" of sharing space, can weld itself to the urban structure and be absorbed by the metabolic processes of urban tissue growth.

Going down the scale, from the morphological and typological point of view, the shape and the transformation over time of the settlement recalls a biological process, which can be identified in the concept of "Rizoma" . It is a sort of reservoir of vitality that resists the boundary conditions when adverse. The heterogeneity and the strong connection of the components, consistently with this metaphor, characterize the rhizomatic space. This new settlement modality is acentric and borderless. Without centrality, marginality is excluded a priori. Further, without a boundary, one cannot distinguish who is inside and who is outside. There is only a cohabitated space. The perimeter of the welcoming camp's traditional settlement is physically and symbolically deconstructed in the "buffer zone" of the public space. This zone acts as a relational gradient with the city, connecting the individual cells of the settlement matrix.

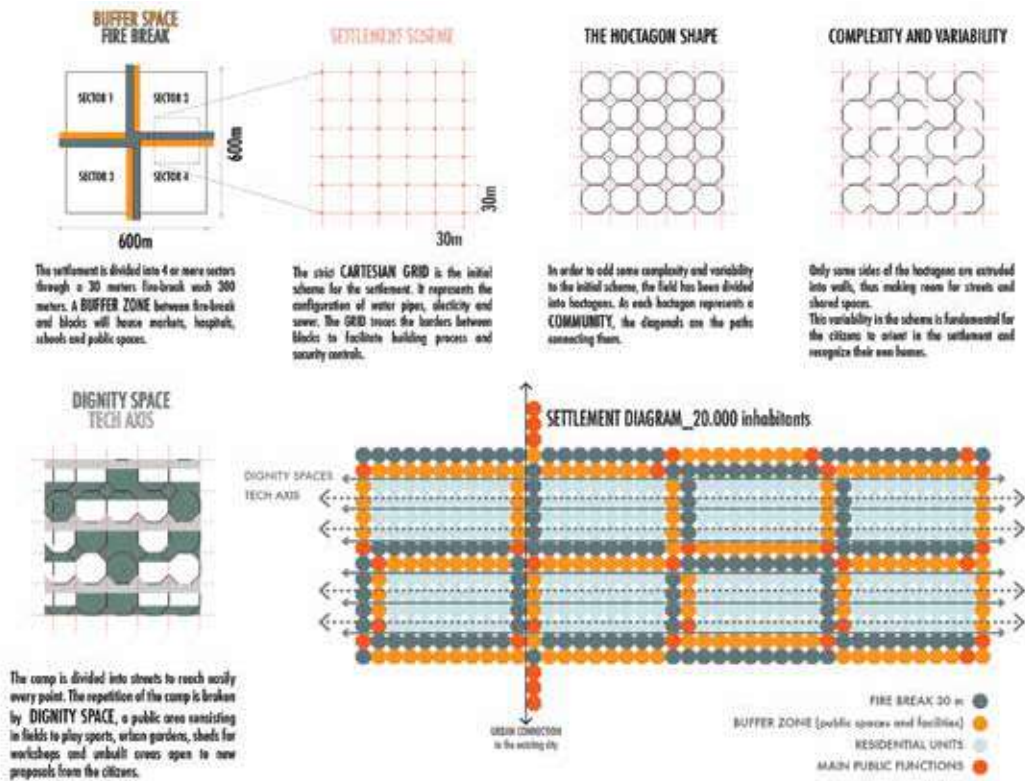


Figure 8- Project "RhizHome City" F. Ficcadenti, F. Caserta, F. Casini, G. Lucarini, 2018

The project involves an aggregative logic that can be oriented towards diversification based on the logic of the Galois groups. This logic involves the rotation of four basic elements whose principle is to simultaneously provide hospitality, public space and related social functions, a dynamic relationship with the street, and social safety. In this project, the relationship with infrastructure is very close and is articulated by street organization and internal pedestrian routes.

The first aggregative organization can be obtained by applying a logic similar to that found by Levi-Strauss and Weil. This is to guarantee a functional mixité and diversification of the fabric.

We can therefore make a first distinction between the following: short-term and long-term residential areas; welfare and reconciliation activity elements; equipped buildings for work, cultural services, and commercial activities, as well as collective areas equipped for children and public green areas.

The following aggregative rules are obtained by organizing these elements into a Galois group:

- 1) A residential block must always be associated with an open space
- 2) Blocks dedicated for work must always be related to blocks dedicated to social services
- 3) In the proximity between a short-term residential area and a public park, there must always be a public utility activity as these spaces can otherwise suffer a vagueness and a dispersive effect
- 4) Long-term residential areas must be combined with a fully-equipped collective area that must follow a productive activity
- 5) The proximity of care services/reconciliation and work spaces must always be accompanied by collective areas or parks in order to offer the vision and use of a space open to an active group of individuals
- 6) The proximity of cultural services with commercial activities must follow a residential structure

Given these characteristics, the settlement is capable to contract or expand according to people needs thanks to the redundancy of the main formal and technologic elements: the settlement presents no main pole as it is conceived as a non-hierarchical net.

Conclusion

The road can be interpreted as a "gradient" device of urban space. In mathematical and physical disciplines, gradient is the resulting vector (entity with a certain intensity associated with a direction and a verse) of a series of diversified variables. Likewise, the road can be interpreted through a new space project that re-establishes the relationships between those who cross it and those who live it.

The road changes its role from a structural element to an urban procedural element. A space which embrace the variation and transformation induced by migratory, maintaining its ability to be a home for the residents.



Figure 9- Project "RhizHome City" F. Ficcadenti, F. Caserta, F. Casini, G. Lucarini, 2018

We can establish progressive development strategies if we use the logic of the Galois groups to resolve the issue of the relationship between migrant movement and permanence as a key of constructive circularity and social relationship.

Examples such as Social Street and the restorative justice projects are an inspiration to create concrete bridges of communication between the two realities currently in conflict with citizens and refugees.

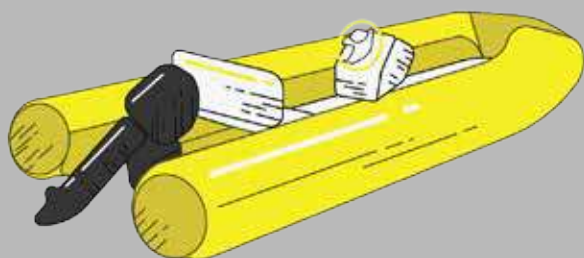
The street and the community that is generated around it then becomes an active and vital system in which real local action and virtual social communication are two components of a proactive driver that responds to real and immediate needs.

The RhizHome City project proposed at UN-HABITAT therefore seeks to incorporate these positive instances and experiences through a flexible organization based on clear principles that positively orient the developments.

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[MIG/09]



Ambiguities of social housing policy and immigrant housing demand: the case of Bari

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abstract

This paper focuses on the implementation and effects of recent housing policies in a city located in southern Italy currently experiencing problematic and enormous housing pressure: Bari. The extreme fragmentation of housing demand, the emergence of new population groups at risk for social exclusion and the general reduction in public spending have stimulated new policies to tackle the housing emergency. Alongside traditional public housing policies, in recent years new hybrid forms of policies have emerged that can be defined as Social Housing. Within this framework, the study focuses on the housing condition of immigrants in detail.

keywords Housing Policy, Social Housing, Immigrants

Introduction: The debate on immigration between the past and the present

A comparison of the current debate with the first systematic reflections in Italy on the issue of immigrant housing likely indicates more reasons for continuity than for change. We must go back more than 25 years, to the beginning of the 1990s when the territorial aspects of immigration in Italy significantly began to interest not only researchers but also became part of the political agenda. This can be symbolically linked to 1991 when the ship Vlora disembarked precisely in the port of Bari, carrying 20,000 people fleeing Albania in a state of serious crisis. Since that episode, the resistant attitude of politics and society seems to have remained constant in addressing the presence of the immigrant population as a structural element – above all from the residential point of view – treating it mostly as a “phenomenon” and “emergency”. Therefore, particular attention – often ideologically-driven – has been paying to the analysis of migration flows, of the quota system, of the adequacy of asylum and reception system on the basis of the different categories of immigrant (refugee and asylum seekers, economic immigrants, unaccompanied minors, trafficking victims etc.).

Methodology: beyond case studies

One aspect of this continuity is the analytical and methodological approach to the topic that often refers, both in the publications of 25 years ago and in more recent ones, to case studies examining exemplary actions and innovative social housing projects in relation to current national policies, mostly promoted by associations, organisations or local authorities and administrations (Tosi, 1993). The case study and best practices approach has continued to be the most suited methodology within a framework of very fragmented and differentiated regional and local actions and solutions. These cases could be considered as interesting experiments from below, as well as indicators of activism and social creativity, but these ones are also the sign of the weakness of comprehensive and long term housing policies targeting immigrants, as well as the sign of difficulty in establishing theoretical synthesis. It's not by chance that in Italy there are very few studies able to systematize the analysis of the new housing demand of immigrants with the exception of the numerous classifications of such emblematic cases resulting from comparative analysis. But these analysis – both those dating back to the 1990 and the recent ones – shows that there are constant aspects that need to be asked. One of these constants is the extremely differentiated situation between the North and the South of Italy: these cases are mostly concentrated in the North and are cases that also show a high degree of innovation in responding to housing problems. The decision to observe

and describe the case of Bari is therefore dictated to be a local, southern context, where this delay is particularly marked. We want to overcome the logic of the best practices analysis that tends to hide the critical aspects and, due to the limited number of cases, the issue of social housing related to immigrants is generally considered as a trace and a 'contrast-agent' that can highlight the characteristics and weaknesses of local system. It would be appropriate for this purpose to adopt a systemic approach such as that used by 'field theory', especially oriented to the analysis of the bureaucratic field (Bourdieu and Wacquant, 1994), and by its variants as New Institutionalism (Meyer and Scott, 1983; Powell and DiMaggio, 1991). These are two of the main theoretical perspectives used to understand organizational behavior as situated in and influenced by other organizations and wider social forces – especially broader cultural rules and beliefs – and to understand how their structures tend to be reproduced. What is proposed in this paper is only a first step of this analysis as it is limited to describing the characteristic and actions of the relevant actors in the institutionally defined arena of organizations of the Metropolitan city of Bari, sketching only how these are connected to each other within a meso-level social order. These relevant actors are those who ultimately 'produce' territory a) social actors (third sector, social enterprises etc.) b) economic actors (construction companies, foundations, financial fund etc.) and c) institutional actors – political and administrative ones in particular. The reconstruction of the local system that potentially and in fact configures the field of social housing has been based on recognition of the policy and regulatory acts, also considered as local declination of more general regulation, and on recognition of the field and typology of the interventions realized by economic and social actors.

The national housing policy framework

It is impossible to say that nothing has changed since the 1990s, both in terms of housing policies and welfare, especially in relation to the immigrant population, or that some fundamental characteristics of Italian society have not changed. In fact, we cannot speak strictly of housing policies addressed to immigrants because they are still configured, as mentioned, mainly as reception policies, which have also undergone significant changes:

- a) in the intervention methods in the municipalities with greater migratory pressure, where programs have been concentrated since the early 90s for the creation of preliminary reception centres and services, and therefore also financial contributions¹ for reaching various types of housing dispersion, accompanied by a quota system which aims to also include the smaller municipalities of metropolitan areas and internal regions;
- b) in the introduction of alternative temporary housing modalities to the Reception centres (see SPRAR – Protection System for Asylum Applicants² – and CAS – Extraordinary Reception Centres), addressed to subjects with asylum rights and therefore holders of residence permits which should have an 'integrated' character, that is to say, to provide activities aimed at the immigrant's insertion in the labour market and more generally in the social and cultural fabric.
- c) in the enlargement and variety of subjects to involve in the reception policies, not only third-sector subjects³ but also private economic subjects. This last aspect - which is part of the more general process of horizontal subsidiarity – is in fact progressively characterising not only reception policies but also housing policies tout court.

The most recent legislation⁴ has in fact outlined a new housing governance structure whose main feature, in view of the drastic reduction of resources, seems to exist with relative flexibility and puts fundamental trust in the virtuous relationship between the public sector and the private social sector.

As mentioned, this led to the restructuring of the public housing system as a matter of priority in response to the fiscal crisis of the State and the need to rebalance the budgets of local public administrations or public housing agencies rather than a growing housing demand, and one of its most relevant outputs has been the reduction of public housing assets through a policy of privatisation that began in 1993⁵. More than before, it has above all constrained social renting to the poorest population sectors. This market dynamic is associated with other decisive, backward elements of public action, including a policy that – as in other southern European countries – has favoured access to property over supporting the rental market, has deregulated the private rental sector and has also favoured methods for providing economic subsidies to families to support rental expenses or the purchase of a first home with respect to the new housing offer⁶.

This has come to undermine the fairly rigid division of sectors/actors and relative competencies that supported the housing policies system for decades in which, in summary:

- a) the private sector has contributed the housing supply on the free market, for families that were able to sustain the costs;
- b) the State and its territorial sub-systems have dealt with the housing needs of the most fragile classes through so-called 'subsidised-housing' carried out directly by the State and regions through the municipalities or local social housing agencies, with exclusively or mainly public financial means and essentially aimed at providing homes to rent at limited costs
- c) the cooperative sector has produced homes at lower-than-market prices. More specifically, this is 'facilitated-

building' carried out by private subjects with public funding tenders and is intended to provide homes to rent or purchase to social categories with medium/low income.

The obsolescence of this system can be traced back to at least two phenomena that have become part of the previously-mentioned long-term fiscal crisis of the State: on the one hand, the private real estate sector is grappling with important shares of unsold property assets, and on the other hand the housing demand has contracted in the mid-market - also including the facilitated-building of the cooperative world - while it has grown in the low-end of the market, as evidenced by the number of applications for the allocation of public housing units, contributions for rent, etc. In other words, the composition of this demand has changed, affected by progressive social polarisation and the greater economic 'fragility' of the middle class, or certain groups belonging to this category (youth, single-parent families, single-income families, elderly living alone...). This fragility has intensified with the economy's recession and the relative increase in the necessary housing expenses compared to family income.

Social Housing. As is widely argued, the crisis of the 'impoverished' middle class still in a relative state of solvency that is instead offered a solution with the structuring of a new housing governance model that, as mentioned, has found a declination in social housing policies. The term 'social housing' in Italy identifies a wide range of initiatives and has become increasingly significant on the basis of some legislative changes which occurred in the last few years⁷. In fact, these initiatives still have an experimental character, as they are aimed at the enhancement of the housing supply while trying to respond to an increasingly complex and fragmented demand for which it seems that neither the State nor the market can provide answers. It is however possible, for example as was done by Nomisma Research Centre in 2010, to outline some predominant features that distinguish the forms of social housing compared to those of traditional public housing. Firstly, a) the attraction of private resources in various ways: with the possibility of selling private housing within the context of residential transformations and urban regeneration, with the land granting or building rights, also through equalisation mechanisms ('perequazione urbanistica'), with the establishment of public guarantee funds to support rent, etc.; b) the promotion of social mixing which serve to avoid concentrating disadvantaged populations, for example through the introduction of a wide range of rent costs within the same building, and not merely social rent costs; c) enlarging the group of possible actors who can be involved in these operations, in particular economic and financial ones such as foundations, even of banking origin, real estate funds, albeit of an ethical nature, venture capital companies, etc. This has weakened the clear distinction between profit and non-profit by introducing these subjects within the sphere of 'social enterprises' and in the new and cloudy section of the 'social market economy'; d) the extension of the concept of social housing, which is now no longer limited to the offer of a roof and therefore the solution to a primary need, but supplemented by a series of services and actions aimed at responding to further, differentiated needs: work, leisure, social integration, etc.

The synthetic reconstruction of the social policies framework relating to housing seems necessary in order to understand the consideration and weight that the immigrant component takes on within it; indeed, to understand how its transformations have substantially left immigrants' possibility to access homes dependent on market rules. Although the Consolidated Act on Immigration establishes⁸ that any immigrant holding a regular residence permit not only has the right to access reception centres but also social housing on a temporary basis while waiting to find ordinary and definitive accommodations, and to public housing units on an equal footing with Italian citizens, in reality this right has largely been rejected. The emergency-based logic of the reception centres has had a minimal and often improper impact on immigrants' housing needs, and they have had even less access to public housing. This has brought the housing issue of immigrants who have not had access to the free housing market to be treated with regulations and administrative and bureaucratic structures that have largely been inherited from the system that has historically managed the problem of poverty in Italy. The identification of immigrants as poor has placed interventions for immigrants within the definition of normal social interventions, also in the housing

1 / Italian Law of 28.2.1990, no. 39, art. 11 envisages "the supply of contributions to the regions that prepare, in collaboration with the municipalities with increased settlement, programs for the creation of First reception centres and services"

2 / See Italian Law no. 189/2002.

3 / Starting from Law no. 40 of 1998 which identifies spaces for collaboration between administration and voluntary associations and organizations.

4 / See Italian Law no. 9 of 2007, Italian Ministerial Decree of 22 April 2008, the 2008 House Plan and the 2009 National Housing Building Plan (DPCM of 16/07/2009).

5 / Recent data reports a strongly negative relationship between the disposal of properties and new acquisitions of 3 to 1.

6 / See the 2008 Home Plan

7 / See the 2008 Budget Law (Italian Law no. 244/2007) and the 2009 National Housing Building Plan

8 / Italian Law no. 286 of 25 July 1998, "Consolidated Act of the provisions concerning the regulation of immigration and rules on the foreigner's condition".

field, and is therefore the responsibility of social services and councils for social policies. In fact, this situation was already outlined by Zincone in his studies carried out in the early 2000s and has not fundamentally changed.

Immigration and housing policies: local actors

In the context of Bari, there are no obvious signs of the political and strategic integration of migrants' diversity as an added value in terms of social capital and in function of the 'repositioning' of this local system with respect to the global one, understood as a competitive system (Schiller, Çağlar, 2011). The presence of immigrants is still mainly treated as a social problem requiring the identification of adaptation methods, usually through sporadic and residual actions rather than systemic ones relating above all to the issue of their arrangement and redistribution throughout the territory of the metropolitan area and its capital. At the same time the regulatory system, which translates into a local interpretation and declination of general norms, but also the system of territorial political-administrative responsibilities and in general the shared "rules of the game" that are at the base of economic and social actors' participation in the policies (Bourdin, Lefeuvre, Melé, 2006), become the barely flexible and weakly innovative structures of these adaptation methods.

Metropolitan Government. A first critical level is identified on the metropolitan scale, or rather in the weak integration and confused responsibilities relating to immigration that are evident in the relationship between the governance of the metropolitan city and that of the capital, Bari. The clearest issue is the government of the metropolitan city's lack of political delegations or specific responsibilities in relation to the presence of migrants and the housing demand and problems expressed by the same, especially the absence of a strategic vision on the issue. This has led to anomalous extensions of actions responding to the housing emergency by the Welfare Department of the entire metropolitan area's capital, especially with regard to low-threshold housing (homeless or emergency shelter).

This criticality is even more evident when considering that the distribution of the immigrant population residing in the metropolitan city of Bari is highly dispersed: this is a first distinctive and constant feature compared to all the other Italian metropolitan cities. The relationship between the immigrant population residing in the capital city at 1 January 2017 (about 13,000) and in the rest of the metropolitan area (about 42,000) makes Bari the metropolitan city with the lowest population percentage residing in the area's urban hub, 31.13%, well below the averages and medians of the Italian metropolitan cities which are between 48 and 52%. It should be also taken into account the volume of the temporary presence in institutional first and second reception centres that is very high when compared to that of most Italian provinces, as well as the number of residence permits that have a quota of long-term residents which is lower than the national average (47.8% compared to 59.5%). If we associate these data with those related to the low presence of minors (19% compared to 24.2% for non-EU citizens in Italy), the low percentage of non-EU citizens born compared to the total number of births (5.2% compared to 15.2% in Italy) and the lowest employment rate, the metropolitan area of Bari is configured as a 'passing' territory rather than a residential one, with a low stability rate for presences compared to the other southern provinces (Ministry of Labour and Social Policies, 2016).

City Government. Descending to a more specific administrative level to observe the system of those Welfare Department responsibilities which are dealing with housing policies in the capital's municipal administration, the picture is characterised by extreme segmentation: a) the Urban Planning Department is also responsible for private housing, b) the Estate Administration Department is responsible for public housing and c) the Welfare Department is responsible for low-threshold reception services. All three Departments could propose solutions that relate to social housing in different measures and with different methods, as they all certainly make it one of their main guidelines, at least in terms of proposals and programming, similarly to how all three departments could make proposals addressed to the immigrant housing demand. The facts instead show a reality entirely lacking any initiative that could be included in the types of social housing – except for a proposal made by private subjects together with ARCA (Regional Agency for Home and Living), and thus remain fundamentally 'on paper', which would be configured as PIRU (Integrated Urban Regeneration Plan) to implement in the C.E.P. San Paolo district of Bari. Above all these facts show how a symbolic system and a system of dispositions – which have an important function in defining 'field' for Bourdieu and Neoinstitutional scholars – are pervasive. These systems involve both the political agenda and that of the local media and public opinion closely involving social housing and housing/social mix (Edilizia Residenziale Sociale) and considering areas of innovations where it is not easy to define what's really new. These facts demonstrate also how most of the measures adopted respond to the strong general housing pressure characterising the municipality of Bari⁹ in an overly insufficient manner compared to the overall demand, even if inadequate for including the migrant target. They are not those relating to public housing, whose mechanisms for selecting entitled families are affected by the discriminating national rules, but also by a local context with an elevated number of families which have been evicted or in a state of overdue payments or default that actually benefit in terms of ranking and special lists¹⁰. It is not the subsidised housing supply nor rent-

controlled or rent-to-buy housing for the excessively high threshold of fixed housing purchase prices, as required by law through local agreements between municipal administration and owners' associations.

This situation also shows us how the homelessness strategy, the tenancy strategy and the housing strategy that each local authority is required to produce are important elements of the local 'field' that we are analysing. Elements that keep it in a stable order. It is evident how a) it is strong the resistance to change the social housing (understood as public housing and housing mix) allocation process and criteria even for the fact that has up to now avoided conflicts between native population and immigrants, b) persistent is the effort to not disrupt the balance between the construction sector, real estate actors and private owners interests and local political administration. This economic sector has historically represented the most influential lobby in the city and in the recent economic slowdown that has severely harmed it particularly strong has been the support and the protection against risk that it has received from local policy.

Private sector. The private sector is, in our opinion, one of the weak link in the system, considering above all how laws and regulatory acts related to social housing provide for conditions in which the risky can be controlled. Some scholars (Cowan, Pantazis and Gilroy, 1999) have considered the way social housing allocation embeds risk-based assessment and management within its processes. These have been designated to assess the risks posed by particular individuals and low-income groups both to the management of social housing as well as to the safety of the community. If a person or a group are regarded as 'risky' they are likely to be excluded from social housing. In regard to the case of Bari, it has been said that immigrants have difficulty accessing not only subsidised housing but also facilitate-building and rent-controlled housing, as these homes are mainly intended for purchase rather than rent and have unsustainable costs for families. This is because the regulations favouring housing mix as a form of equalisation between the public and private sectors discourage the production of this mix as a way of differentiating the entrepreneurial risk. Entrepreneurs do not take risks – perhaps by introducing innovative models of social housing - when building housing for the weaker and immigrant categories, but only – and with adequate concessions from public administrations as a counterpart – for categories with a sufficient degree of solvency. On the other hand, the private sector is taking on an important weight in the Bari area for emergency housing rather than for medium or long-term housing, putting collective property residences that have been unused for some time into the real estate circuit. This phenomenon is particularly affecting the coastal districts of Bari, where predominantly abandoned hotels have been used and others have been proposed for possible use as temporary shelters.

Among private subjects, financial institutions must also be considered - above all banks, banking foundations and real estate funds – which, unlike in northern Italy, are particularly absent in the south and in the Bari area among the social housing actors. It is no coincidence that not a single bank responded to a 2011 municipal call aimed at creating a guarantee-fund management service to implement the Youth Housing project called F.RHO.G¹¹, and all the solicitations to set up other guarantee funds as a mechanism to increase the supply of properties on the rental market have fallen on deaf ears. The only case to examine is an initiative, the second in southern Italy, which includes the participation of a real estate fund - Esperia, created by Cassa Depositi e Prestiti - which is the only fund aiming to support initiative for the reduction of housing deprivation in the regions of southern Italy, as required by the National Housing Building Plan. The initiative involves the construction of 230 apartments in the Santo Spirito district north of the centre of Bari, is labelled as social housing and is the outcome of an agreement protocol among ARCA, Confcooperative Puglia and the builder's association ANCE Bari-Bat, but is ultimately an housing mix case that has already been extensively tested in the city and includes rent-controlled and rent-to-buy housing units together with apartments sold on the free market.

City Welfare Department and Third sector. This framework helps us understand how the immigrant housing demand has on the one hand extended to the free market, and on the other hand - in relation to the low income or indigent part of this portion of the population - on the low threshold supply under the responsibility of the Welfare Department. This strong pressure, together with individual sensitivities rather than strategic policies or forms of "integrated planning", have probably been the factors that have prompted the introduction of innovations in the sphere of services and social housing, which are in fact under the responsibility of the Welfare Department and

9 / With CIPE Resolution no. 87 of 13/11/2003, Bari and over half of the municipalities of its metropolitan area are considered high "housing tension" municipalities, which affects rentals and especially a) the tax benefits that the owners who enter into agreed rental contracts can enjoy, and b) on the deferral of evictions, especially for certain categories of disadvantaged tenants.

10 / Out of 1948 applications for accommodation accepted in the last call that dates back to 2012, those of immigrants were only about 6.50% (empirically detected from the list of 125 applicants), but only a few families were actually assigned a house, and not without creating conflicts with those who were not assigned a house and claimed their priority right 'as Italians'.

11 / Co-funded by the Ministry of Youth Policies, the initiative is aimed at increasing the availability of accommodations for rent for youth (individuals, couples, immigrants, students far from home or Erasmus students) under the age of 30.

are generally addressed to homeless people and to reduce 'serious adult marginality', but in fact register 70% of the user base consisting of foreign immigrants (out of a total of about 500 homeless). These innovations have essentially resorted to reducing housing pressure a) to extensive subsidiarity models (extended, in fact, to families, informal networks, the third sector, individual citizens, etc.) which aim to replace collective and institutionalised forms as much as possible (temporary shelters, reception centres, etc.), and b) to forms of self-management and co-housing, even if partial or assisted, both to reduce operating costs and to encourage 'active' migrant integration processes.

With the exception of some autonomous local charitable initiatives, this approach produced only two different social housing cases that involved Third Sector organizations: such experiences must be regarded fundamentally as public initiative that are carried out by associations and cooperatives. The first is a multi-purpose centre (la Casa delle Culture), opened in 2016 after a renovation of an unused public school situated in a peripheral district of the city. It includes temporary accommodation for 25 immigrants and cultural and multicultural activities. But the most interesting initiative of this approach was to introduce, through recent municipal calls, new policies to combat the serious adult marginality that refer to the model known as Housing First that has already been used for some time in Anglo-Saxon countries. It is a co-housing model, but above all a rapid-rehousing model that overturns the traditional progressive path the traditional policies adopt (from the sidewalk to the dormitory, to the communities, to the apartment groups), immediately assigning a house and starting from there to build a path of re-entry into the various dimensions of individual well-being. This action is not only consistent with the objectives of the European programming inspiring the programs of Italian cities, but it is explicitly requested as a priority option in two of the main National Operational Plans (PON): Inclusion PON and Metro PON.

At the moment, only five Community Houses – inhabited by immigrant families – are open in the city of Bari which are inspired by the Housing First model, and the results of the new call for proposals are not yet known; but above all these are signs of changes in the most recently proposed policies, beyond those of the Community Houses¹², subjected to funding by the municipal administration within the 2014-20 PON Metro which refers to Housing First¹³. We could consider a third case of social housing, located in the second belt towns of the Bari metropolitan area. This is a project (Agri-culture) of working and housing inclusion (co-housing and self-construction) of 10 immigrants in the rural area. It is financed by a banking foundation, carried out by 2 social cooperatives and 1 cultural association and supported by 2 municipality that gave them land to be cultivated and buildings to be renovated in concession.

In short, the initiatives of social housing in the Metropolitan area of Bari summed up in these three case, two of which involved almost the same social organizations. Further initiatives are, as we have said, in the planning stage or under discussion at political level.

The local system framework described here also show how the local third sector has some weak point, especially when compared to the situation of other local contexts, in particular those of Northern Italy where the reference model proposed by several organization is that of the American Community Development Corporation (Provasi, 2004), widespread in the sector of affordable housing production, mixed income and inclusionary housing.

It would be sufficient to consider an exemplary case among the northern experiences mentioned (as that of Casa Amica of Bergamo, founded in 1993 as an association and transformed into a Foundation in 2009) by noting comparatively how these differ from the southern ones a) for a broader and more heterogeneous composition of founding members and supporters (Province of Bergamo, 7 municipalities of the same province, 4 associations of immigrants, association of builders, 3 trade unions, dioceses, etc.), b) for a support action to the housing policies of local institutions – that entailed, on the one hand, an institutional recognition (by the Lombardy Region as well as by the Prefecture that has appointed the association as president of the Territorial council on immigration) and, on the other, the opportunity of carrying out lobbying activities using a professional management staff, c) for the impact that they have in local development to the extent that they are able to mobilise a multiplicity of financial, social and cultural resources, e) for the impact that they have in the local housing market, through residential property portfolio acquisition and development operations¹⁴, d) by proposing a plurality and often integrated housing models – ranging from collective residences to community housing, from brokerage to local integrated participation and partnership etc.

The social entrepreneurship in the context of Bari expresses different structural characteristics that play a fundamental role in the local 'field' of social housing.

Firstly, it doesn't consider explicitly housing needs as a possible field of action. More than in other parts of Italy some cultural, political and economical factors – partially described above – have directed the social enterprises development towards care-home and social welfare sectors¹⁵. Secondly, the limited number of organizations operating in this field has given rise to initiatives with a low innovative character. They mostly developed as mere providers of reception or information services envisaged by European, national and regional policies, with particular attention to the profitability of tenders, then in almost total dependence on public funding/programmes.

Thirdly, social entrepreneurship involved in social housing initiatives is characterized fundamentally by temporary organizations with low level of structuring, formalized as Temporary Association with specific-purpose (A.T.S.). Lastly, it is impossible to avoid highlighting the absence of interventions promoted by the immigrants themselves, such as cooperatives aimed at self-construction – with the exception of three cases that mostly consist of the illegal occupation of unused buildings that have remained in stand-by for years, in a suspended situation between institutional promises for transformation into innovative forms of housing and threats of eviction and restoration of the building's previous use.

Conclusions

A field refers to a configuration of relations between positions, it is characterized by a high level of specificity: it possesses its own history, a particular configuration of agents operate within it and induces its own habitus and upholds a distinctive set of beliefs. The housing welfare system, that we have considered focusing on housing situation of immigrant in the context of Bari, engages not only the state, but also market mechanisms and many agencies within the civil society. Housing Welfare systems don't only differ according to how 'developed' they are, but according to the way their diverse elements are connected. The local field described in that way is characterized by a general 'habitus' that has reduced the potential innovativity of social housing because a) the symbolic capital system has changed its meaning in a rhetorical exercise, b) the local government aims to reproduce itself preserving the consensus of native population, of real estate actors and private landlords c) the latter are very reluctant to take risks – that are perceived to be very high in the field of social housing d) the cultural capital of the social enterprises recognise social housing as an opportunity only partially. The model of housing welfare field revolves around the structure of distribution of diverse types of capital, and around the mechanisms through which various types of capital are converted into each other. On these conversions strategic actions should be taken to change and develop the field.

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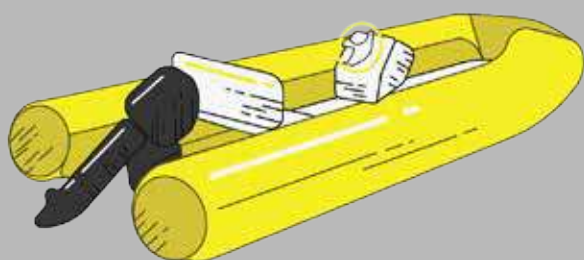
12 / *Community Homes (Axis: 3 - Services for social inclusion, Action: 3.1.1 - Integrated actions to combat housing poverty) aimed at adults without dependent children and/or separated fathers.*

13 / *Apartment and co-housing groups (Axis: 3 - Services for social inclusion, Action: 3.1.1) for families with children aged 0-36 months.*

14 / *Through the realization of new houses or the requalification of those already existing to be reassigned or sold at moderate prices to families in need, italians and immigrants.*

15 / *This trend had already appeared in the 1990s and 2000s when a new phase of urban and housing policy on regional level opened. These policy was aimed to realize integrated urban and housing regeneration programs, both urbanistic and socio-economic (the EU 'Urban' Program in 1990s and regional program PIRP in 2000s), but they have registered the almost complete absence of third sector.*

[MIG/10]



Mboka Bilanga: the urbanisation attitude of Kinshasa, RDCongo

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abstract

The fast paced urban migration that is transforming the the capital of RDCongo can be seen as the opportunity for the encounter of two different worlds: the urban and the rural one. If the first one mostly appears as an appropriation of the colonial city remnant, the second is embodied by the customs and practices introduced by villagers during the post-colonial rural exodus. In Kinshasa the cohabitation of urban skeletons and rural praxis is producing unforeseen results. This paper follows a field research for a master thesis drafting carried out in Kinshasa. Here the intensity of the postcolonial rural exodus has doubled the urban population in a decade. The speed of the spreading process gave birth to new territories within the city but independent from the former colonial part of it, although the uncertainty of urban services and infrastructures. We've explored during four months the hilly region that hosted the first phase of postcolonial sprawl and that is now an example of how the kinois population is producing a unique territoriality following an informal city making process. This contribution first explores the historical genesis of these territories, then focuses on the description and analysis of a portion of land chosen as a sample of this new territoriality. We define it as a specific urbanity, result of spontaneous strategies and characterized by a structure which reinvents the relation between city and fields: the Mboka Bilanga. (Leloutre, Vigneron 2015). Literally translated from Lingala, the vehicular language of Kinshasa, it means city-field, a term that points out the presence of a strongly cultivated area nested in a recognizable urban context. The aim of this contribution is to go in contrast with the attitude to consider these territories as a physical obstacle to the achieving of the new modern city, and to present them as an opportunity for an urban territory constantly facing the lack of resources and physical infrastructures, a set of social and spatial dynamics that represents a fundamental tool to understand the present and design the future of this metropolis.

keywords Kinshasa, Rural exodus, Mboka Bilanga, Informality, African city

1 Introduction

The rural exodus and the expansion of Global South cities point out the issues of the analysis and planning of territories on a fast paced transformation. Describing the African urbanisation process, the mainstream scholar literature acknowledges the growing importance of the city, mainly understood as the spread of the former colonial city, for its economic and international value, but sets the theatre of the main urban transformation in the fringe areas between the urban world and the rural one.

On the other hand documents as the SOSAK (Schéma d'Orientation Strategique de l'Agglomeration de Kinshasa - Groupe Huit, Árter, 2014) show that, on an institutional level, the analysis of these areas lead just to a description of the obvious problems rather than to the identification of the potential that they can represent in a project for the sustainable development of the metropolis. An inside/outside correlation is established among the urban dynamics that are underway: if the city is the inside, privileged by politics in the process of urban planning, the outside is a vast blurred territory where the new citizens are taking control of the city making process, filling the institutional gap with spontaneous dynamics that have to be eradicated.

Here we propose to analyse the case study of Kinshasa to go beyond this inside/outside separation. The description of the Mboka Bilanga aims to show how a wide set of informal practices implemented in the recent expansion areas have shaped a territory neglected by the authorities. The resulting territoriality reflects a specific relation between the morphology of the space and the social structures of its inhabitant, a relation that can not be ignored

in the planning process. The creation of knowledge is a first important step to include the value of these areas in the institutional agenda.

2 Objectives and methodology

This study aims to show the ordinary strategies implemented by the population of Kinshasa in a situation of scarcity with a positive attitude and to understand that, instead of being denied or eradicated, they can be used and empowered to imagine a sustainable future for the city. An approach that recognizes the great challenge of managing and planning such a city and for that reason wants to face the description of Kinshasa for what it actually is, distancing itself from the attitude of describing it as what it should be.

The themes treated in this contribution have been developed through a wide set of tools. The main one is a field research conducted in the southern extent of Kinshasa that led us to present part of this territory as a case study. Here observation and interviews, both formal with institutional actors and informal with the population, helped us to obtain a better understanding of the area that has been chosen to present what we define the Mboka Bilanga territoriality.

A critical reading of the historical evolution of the city played an essential role in the writing of this contribution. We enriched the notions deduced from the main texts on the city of Kinshasa (Lelo Nzuzi, Pain, DeBoeck) with a personal mapping work that led us to retrace a timeline of the urban politics that drove the expansion of the city. With the help of this tool it also appeared very clear the relation that exist between the lines of growth of the city, the land morphology and the managing problems that Kinshasa is now facing.

A meticulous book review has been conducted to support the understanding of the political, urban and social dynamics of this city at first, and to get in touch with a much wider scholar literature about the rural exodus and the urbanization process in the Global South context.

These tools allowed us to organize an intervention that, moving from the historical genesis of the city, explores the effects of its recent urbanization process propelled by the migration of a wide rural world into a given urban skeleton.

3 Results

3.1 From Leopoldville to Kinshasa

The actual urban layout of the Democratic Republic of Congo in general and of Kinshasa in particular (Figure 1) largely reflects the formal colonial structure designed for the collection and trade of raw materials from the heart of the continent to the western countries. Setting up this scheme meant to spawn urban poles in correspondence of strategic sites for mining or commercial activities and to start composing an imbalanced layout between few overcrowded urban settlements and emptied rural areas. On a perfect spot for the creation of an interchange point between river transport and railway in 1881 Henry Morton Stanley, an English explorer recruited by Leopold II King of Belgium, founded the Stanley Pool Station

Under the name of Leopoldville, the city developed very fast in detriment of the indigenous villages present in the area and follows a strict and precise urban scheme. The city is divided in two blocks divided by a buffer zone: la ville, the European colonial part of the city, close to the river and the station, and les cités indigènes, the part of the city reserved to the natives characterized by a regular grid made of small lot of land where identical houses were built to host the workforce needed for the thrive of the colony. Nowadays this division is still very clear and shapes the city, not on an ethnic base but on the management and distribution of public investments and economic formal activities, splitting the city in a formal world capital on one side and in an informal, horizontal urban sprawl on the other.

Until 1960, year of the independence, the city grew and filled the whole Mpumbu plain, pursuing this segregationist scheme and adopting a demographic control politic in order to manage and control the size of the city. For the aim of this research it is important to point out that the hills represented a limit for the expansion because of the nature of the soil and the consequent high risk of erosions. After the independence the rules to control the access to the city collapsed and the first waves of migration started shaping the sprawling directions toward East, across the Ndjili river and South, climbing the sandy hills (Figure 1 and 2).

Along with the saturation of la ville, the sprawl of les cités went too far and too fast to follow the urban plan presented in 1967 that was already obsolete at the time of its publication (Beeckman, 2017). Any infrastructural upgrade followed a process of urban production that targeted the simple occupation rather than the activation of new areas. (D'Ascenzo, 2009). The result today is a megalopolis of more than 10 million inhabitants holding on to the precarious colonial infrastructures, where a wide set of informal strategies is mixing with an urban lifestyle in the quest for the resilience needed in an overcrowded and unstable habitat.

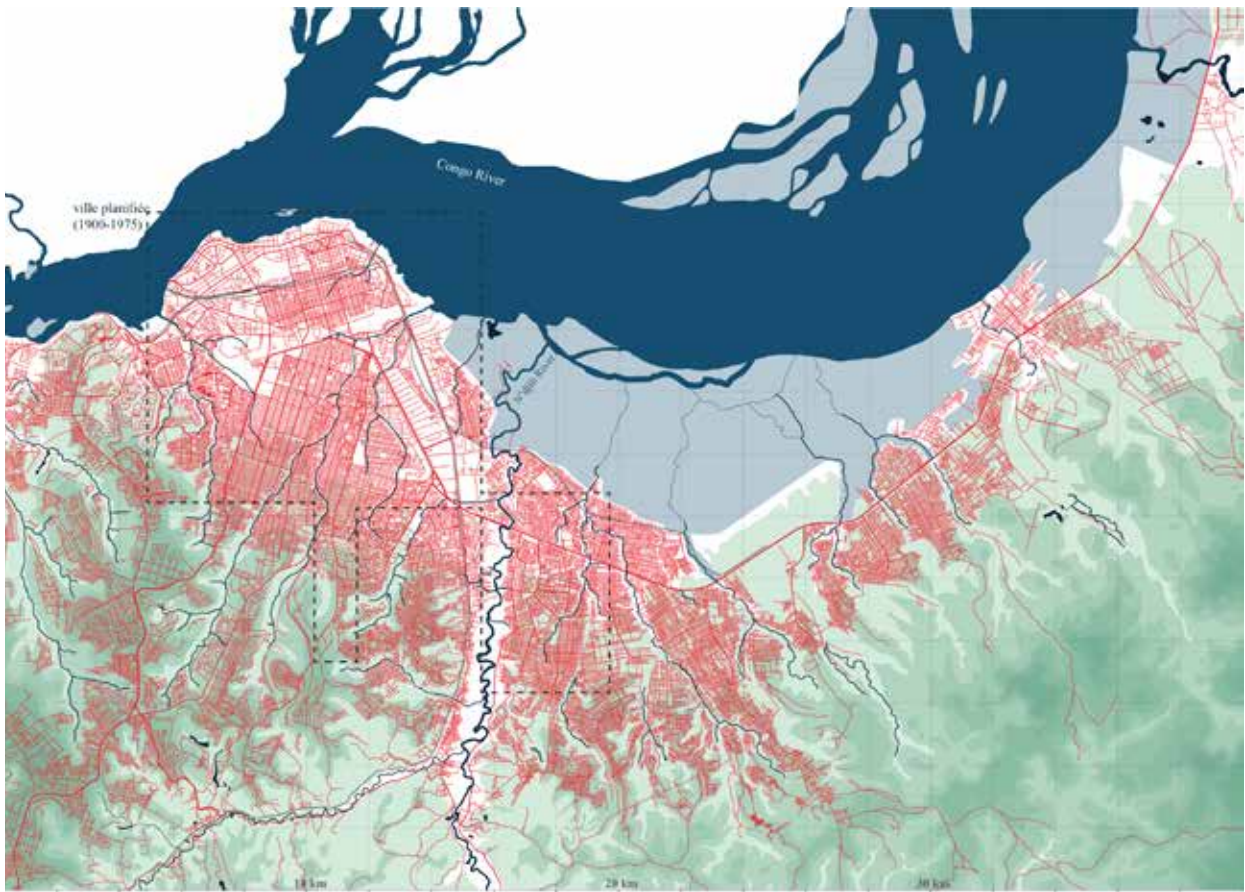


Figure 1. Current extension of the city

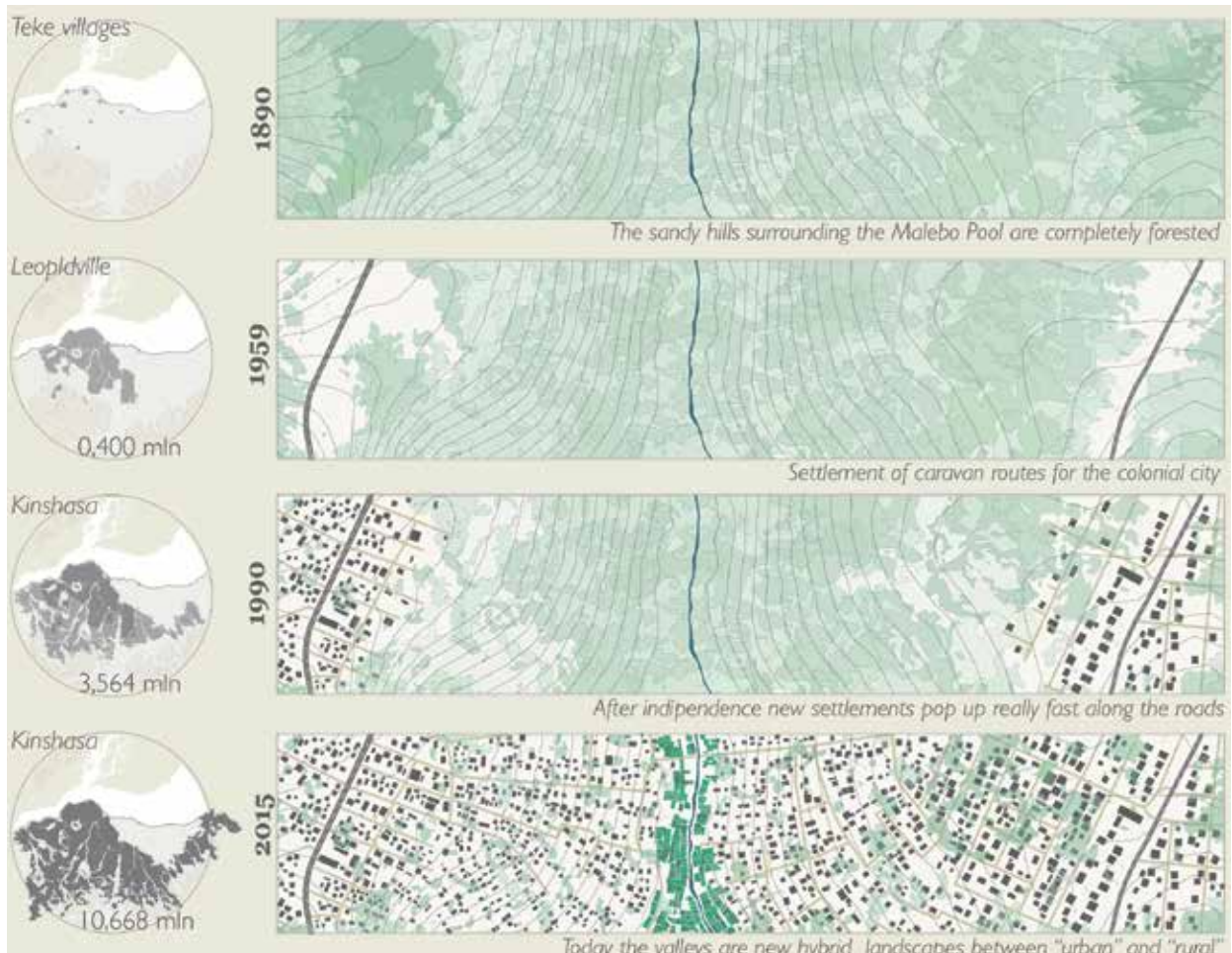


Figure 2. The informal settlement in the hilly region

The relation between the urban growth and the presence of the hills is one of the phenomena that is mostly shaping the city. The mobility issue is emblematic: on their ridges flow the main routes connecting the outskirts to the city centre, contrarily it is impossible at the moment to cross them transversely if not through steep pedestrian paths; the valleys between the hills are holes in the roadmap. The inaccessibility and the hydrogeological issues of the hilly area make it a very interesting subject of analysis and research because of the social dynamics and practices that the population implements to get its right to the city, to access to the infrastructural network, to exploit the agricultural potential or to reinterpret the concepts of city life and city making to respond to a situation of scarcity.

Our analysis focuses on the valley that covers almost the entire area of the Selembao district (Figure 3). The choice is mainly linked to two characteristic of this territory: its land use rates with a high agriculture percentage and its position. The area is delimited by two roads that plays a key role in the import and export of any kind of goods and that host important markets and urban services, two factors that strongly contributed to the dense urbanization of such a territory. In the attempt of living as close as possible to these poles the dwellers gradually climbed down the precipitous and sandy slopes lying down the Avenue Bypass and the Route Nationale N1, despite the high risk of erosion and the absence of basic infrastructures.

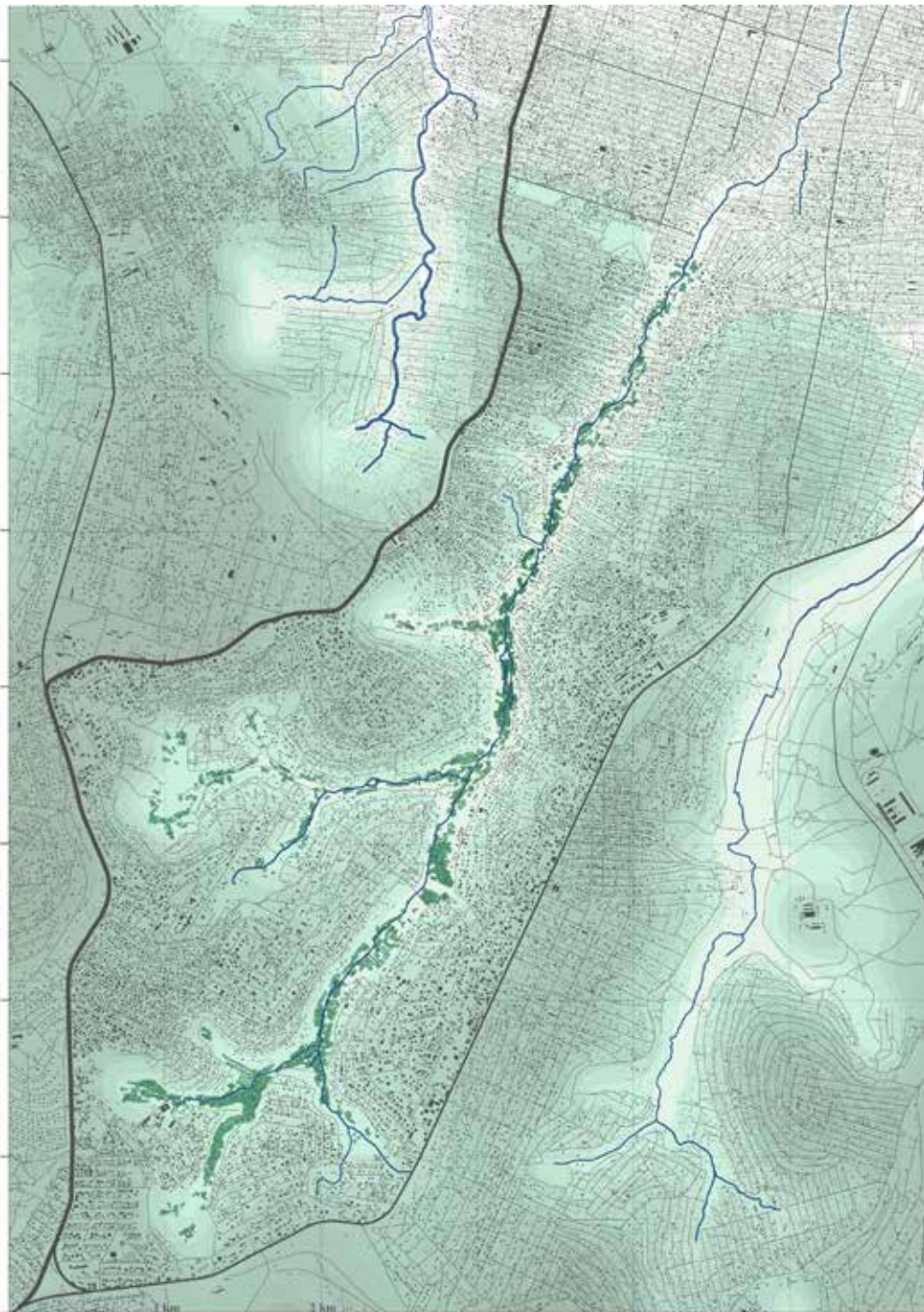


Figure 3. The Selembao valley 1

3.2 The role of the valleys

The desire for a proximity to the urban poles has to be interlaced with the importance of house holding issue that in Kinshasa plays an important role in the definition of the often conflicting relationship between human settlement and geomorphology fragility. During the rural migration the sandy hills have been the field of a spasmodic research of an inhabitable piece of land at low price. The whole urban landscape from the Mpumbu plain to the sandy hills is the mirror of this quest: the one floor houses are the main ingredient of the urban landscape except from the former colonial areas of this megalopolis.

« Quand tu as une parcelles, tu es libre de tout. Tu peux même ne pas travailler, tu te débrouilles de gauche à droite pour vivre. Tu es chez toi » (Pain, 1984 : 143)

More than find a job it is important to take possess of your own "parcelle": this has been the fuel of the post-independence urbanisation which involved every new urban dweller as actor of the urban change. This process had obviously great consequences on the urban environment: here in fact the first act to point out the occupation of your own "parcelle" is the deforestation which is perceived as an act of civilisation. Kinshasa represent for its inhabitants the space of the modernity, the constructed space which stand against the rural space dominated by the forest and the vegetation (Nzusi 2008). The lack of a vegetal covers on the sandy hills mixed with the heavy seasonal rains often lead the valley to sink on its own inhabitants, causing deaths and great repercussion in the plain. The fragility of the hilly erosive region during the rainy season is certainly one of the most relevant environmental issue for the entire urban context as pointed out by the recent official analysis which directs the program of the future urban plan of Kinshasa (SOSAK 2014).

The appropriation of the space by the new citizens took place in a spontaneous way, with no electricity, water supply nor other basic urban infrastructures upgrading. Moreover this process represent a curious overlapping of power: the official cadastral service lean on the work of traditional chiefs that parcel out the territory and solve the disputes on land property. The lack of a parcelling plan lead to a built landscape that hasn't any regard to the geomorphology of the site: the access roads that cut orthogonally the curves enhance the already critical erosive phenomenon.

Here the new settlements have been built with a rural approach which characterised the development and stratification of these areas. The customs and practices introduced by villagers during the post-colonial rural exodus give birth to a specific urbanity, result of spontaneous strategies and characterized by a structure which reinvents the relation between city and fields: we called it Mboka Bilanga.

Literally translated from Lingala, the vehicular language of Kinshasa, it means city-field, a term that points out the presence of a strongly cultivated area nested in a recognizable urban context. The rural attitude of the villager escaping from the rural poverty has been adapted to the new context and hybridised with urban practices and uses thanks to the proximity to a weak ridge-infrastructure of urban services which still works as layout for the development of the main urban features (Figure 4).

Accordingly to what have been just presented the valley play a central role in the future city development and a settling plan for this area is overdue in order to preserve the whole urban environment. Despite this, in contrast with the attitude to consider these territories as a physical obstacle to the achieving of the new modern city and a waste product of the city, our hypothesis is that they are potentially replicable way of development: if reinforced and improved -rather than dismissed- they could represent an opportunity for an urban territory constantly facing the lack of resources and physical infrastructures.

Taking in account the inventiveness and the creativeness of the valley inhabitants in responding to physical and psychological needs is then crucial to understand how the city has been produced by itself without official plans and through addiction of small scale tactics. To take firstly and seriously in consideration what is present -instead of what there should be or should not be- is the starting point for further considerations about proposing a project for the Kinshasa hilly suburbs.

3.3 An overview of the valley: raw materials

To walk through the foot path connecting the ridge road to the river gives the chance to observe the material surface of this landscape. The access to the valley is made in orthogonal direction from the paved ridge road through a sandy road surrounded on the both sides by familiar "parcelles" hosting an average of 12.8 components (Selembao official rapport 2015). As for the rest of the city the "parcelle" and the sandy roads are the key elements of this landscape and their characteristics have a strong impact on the surrounding revealing some remarkable peculiarity, in particular for what may concern the relationship with the vegetation and the environment in this hybrid landscape.



Figure 4. The settlements in the Selembao valley

The sandy roads passing through the parcelled slopes are inevitably subjected to a strong erosive phenomenon. In order to limit the risk of landslide different tactics are applied on two different scales: the neighbourhood scale and the private one, acting respectively on the road and on the parcel. The foot path is paved by recycled materials to prevent the rain water flux and to maintain stable the soil during the rainy season: truck tires, bamboo sticks and sandbags are the raw materials of this poor interventions. At a smaller scale every parcel is equipped with a water collecting device (puit perdu) to prevent the increasing of the rain stream along the roads: a hole is made at the bottom level of every parcel in order to collect the rain water giving the time to the sandy soil to absorb it without dangerous repercussions. Occasionally another tactic implemented to stop erosion is the farming of the most erosive spots to let the roots reinforce the soil. These actions represent a crude but efficient juxtaposition of tactics that at different scales have a strong influence at the valley scale.

Traversing the slopes from the ridge to the valley floor means to discover how the materiality of this territory changes according to its level of accessibility. What appears clear is a sort of urban gradient that shades from the areas closer to main ridge roads, where the rhythm, the noises and the urban fabric appears the same of the saturated neighbours of the plain, to the valley floor where the river and the agricultural fields shape the landscape. An important feature of this transition is the delimitation of the space: the impenetrable walls built around the households that forms closed blocks in the top area, as in the rest of the city, are replaced by small bushes which have no meaning of protection but are just boundary marks. This totally changes the perception of space: the feeling of walking along the impersonal, monotonous and closed wall front is little by little replaced by the experience of a space that blurs the limits between private and public and that reveals the vegetation that becomes always more present in the parcel layout as we get closer to the valley floor. The lower density and the bigger dimensions of the parcel allow the cultivation of a small field of peanut plants or matembele (sweet potato leafs) or manioc or other vegetables as additional opportunity of subsistence. Moreover, in contrast with more accessible areas where that are more dense, in the valley the presence of a fruit tree in the familiar space is a constant feature.

Once reached the valley floor the landscape suddenly changes, the predominant practice here is undoubtedly agriculture: the fertile soil beside the Bumbu River has been preserved from the spontaneous occupation to safeguard the agricultural production (Figure 5). The river is the predominant element of the territory: it provides water supply for agriculture and for his inhabitants and its floods influence the settlement of the valley floor during the rainy season. Regarding the technics, the density of the fields and the diffusion of the variety along the valley are all influenced by the flood risks of the Bumbu river. The high risk areas are cultivated with a short growing cycle varieties and very poor technics because of the probability of flooding during the rainy season, while

in the safer areas there are long growing cycle varieties and more advanced technics as irrigation channels dug around the fields or small rudimental greenhouses made by palm leaves. Agriculture, which is the predominant resource of the valley floor, is still too dependent from the seasonal behaviours of the river but the adaptation of this practice to this particular landscape nested in the city reveal the attitude and the survival capacity of the kinois population facing an daily situation of scarcity.



Figure 5. The agricultural practice in the valley floor

3.4 Informal jobs and access to the city: taking advantages from the absence

One of the main field of application of livelihood strategies in the whole kinois urban context is the elaborated network of informal activities: where the urban infrastructure is inadequate to respond to the local needs the kinois sees the opportunity to build his informal activity. The local satisfaction of basic needs consumed on a daily basis is largely supported by an informal distribution through the whole city which guarantee an income to thousands of urban dwellers. The valley makes no exception: the work opportunities in the Mboka Bilanga come from both the resources and the defects of the valley. From the agriculture in the valley floor as from the eroded and inaccessible path come the possibility to gain some profit exploiting the lack of a formal management asset. As reported from the Official Annual Report of the Selembao Municipality of 2015, the number of workers which have a recognised work officially registered is only the twenty percent of people of working age of the municipality: the rest of them are allegedly employed in the informal sector which group together a multiplicity of trades.

The arrangement of the agricultural practice well reflect the flexibility of the informal job market. Despite the fertile ground occurrence the production is poorly organized and the farming practice remains mostly a livelihood strategy for the farmer's family. But for those who can produce a surplus because of a bigger and safer field, the agricultural production can become an easy source of profit. Informal merchants come buy part of the harvest to resell it in the small markets or in the streets walking and shouting the name of their product. The vendors that don't have enough money to buy big amount of products coming from outside the city, go directly to the farmers of the valley to negotiate a price for part of their harvest. They buy it when it is still on the ground, pick them off and often pay the farmer just after they have sold them, in a sort of financing mechanism.

To carry products from down to top and vice-versa is another job that feed a lot of young workers: they carry for example heavy sand bags taken from the river through steep and sandy paths to the ridge roads or markets because that sand is used as raw material for construction. Vice versa the fertilisers are carried down to the river for the farmers from the main markets. In practice the city and the valley are in a way constantly connected through the back of this workers or through their rusty handcart (pousse-pousse) pulled no stop.

Like the inconsistent linking infrastructure is replaced by the very inhabitants of the valley, also the anti-erosive infrastructure and precautions are implemented by informal workers locally called "bare-handed engineers"

(“ingeniéurs aux mains nues”, Nzusi 2008). They found a way to gain money carrying out rudimentary systems of ground containment. Their work provide to the valley a spontaneous inventory of solutions to slow down the valley breakdown as for example the already cited interventions of reinforcement of the steep sandy paths or the construction and maintenance of terraces.

Another set of informal occupation is composed by the in-parcel works: all these works that ordinarily allows the women of the family to stay at home, look after the children and after the household and at the same time earn money. It is the case of the “malewa” which in lingala address the presence of a parcel where it is possible to buy food for lunch cooked in place. Another very diffused example of in-parcel work is the retail shop: a barrack put at the entrance of the parcel, faced to the road, exposing a variety of consumer goods picked up in the city markets and resold in the valley.

According to the lack of infrastructures, in these autonomously urbanized areas the distribution of basic services as water or electricity is once again organized in specific ways by its inhabitants. The ridge roads are not just the backbone for a poor but efficient infrastructure of mobility but also for the main nets of supply in terms of water and electricity: while on the ridges there are still some connections with the urban networks, descending the valley the capillarity of the distribution suddenly decrease forcing the people to invent new form of sharing of these services based on a punctual distribution system. As consequence these distribution spots became places of sociality then a structural support for a multitude of public spaces giving shape to the social life of this territoriality. As an example the rudimentary wells in the valley floor have become meeting points for the women who spend time together while washing their clothes or dishes. The same happens with the fountains implanted by some ONG near the ridge roads to help the water supply in the valley.

For what may concern the distribution of services as schools, medical points, bar, terraces, shops or churches they are all present in the valley, spread into the tissue. Their dimensions are adapted to the characteristics of the territory: the impossibility of making big constructions, due to the geomorphology of the site and the weakness of the constructive technics, has encouraged the emergence of small scale service spots in order to respond to the necessity of the valley inhabitants. On the opposite from the city where the paved roads are the main axes for the structuration of a network of services, here we can find services spread through the valley grouped around or along significant structuring points as bridges (connection infrastructure), old and decadent drainpipes (control infrastructure) or in some areas safe from the floods.

As noticed by the Kinshasa based researcher Lelo Nzusi all these kind of job and autonomous forms of organization are sensibly influencing the ordinaries coming and going from les cités to la ville which is losing importance while on the opposite seem to be gain more and more importance the transversal connections through and between the suburban settlements (Nzusi 2011) reinforcing the perception of a growing importance of the small scale connection at the expense of a strong and daily relationship with the city centre.

3. Conclusions

Far from provide an exhausting description of the territoriality of the Mboka Bilanga, our purpose is to reveal it as a specific urbanity generated by the encounter between two different worlds: the material world of a decadent and fragile architecture and the system of practices and relations brought by the new citizens after the Independence. As stated by Jean Remy, the concept of “city” has a double nature: it can be defined at the same time in a descriptive way –through his materiality- and in an interpretative way –through the social effect underpinned by the proximity it enhance (Remy,1992). In the relationship between this double character the urbanity brings shape in an always particular and not unequivocal way: reading the urbanization process in Kinshasa as an act of appropriation of a space already set up (in the last instance by the colonizer but previously by autochthonous cultures) lead to consider the current aspect of the city as result of a certain territoriality defined by specific relations between the morphology of the space and the social practices and social structures imported by its inhabitants.

With this premise we can see the Mboka Bilanga as a model, as example of the possibilities of the production of space fuelled by the urbanization process which is going on in Kinshasa, rather than a waste product of the city. Although the lack of attention and the total disregard for the daily practices that people have to do in the attempt to survive is a constant in the governance practices which don’t take in consideration the very physical body of the city: the body of their inhabitants (De Boeck, 2016). The crumbling urban infrastructure in fact encouraged an urbanization propelled by the spontaneous tactics of the people responding to the daily problems posed by the urban context in a situation of lack of governance, reflected by the structuration of a myriad of informal connections.

“In a city like Kinshasa, it is not, or not primarily, the material infrastructure or the built form that makes the city a city. The city, in a way, exists beyond its architecture. In Kinshasa, the built form is not, or is no longer, the product of a careful planning or engineering of the urban space. It is, rather, produced randomly in human sites as living space.” (De Boeck, 2004 : 233)

The essential research work of the anthropologist Filip De Boeck about the city of Kinshasa is oriented in showing how the material architecture of decadence and deprivation became a fertile ground for the implantation and implementation of particular practices of survival by the new inhabitants of the city came from the rural Congolese world. The academic literature and our research experience lead us to state that the urbanization in Kinshasa has a strong informal and often rural character, but it doesn't mean that is less urban. The peri-urbanity, seen as the attitude of the African city to multiplying the connections between the urban and the rural world (Trefon, 2015) is hybridizing the concept of urbanity itself, leading to what has been called ruralisation or re-ruralisation of the city "not only in terms of its social infrastructures and spheres of social interactions but also in terms of its economic of survival and coping strategies", generating new territorialities (De Boeck, 2016 : 51). The softening importance of the city centre, in favour of the empowerment of the informal network between suburbs at a smaller scale, has a strong impact on the survival possibilities of a growing urban population: it can overturn the point of view of the studies about the African city.

Territorialities as the one described here as Mboka Bilanga have to be taken in consideration positively to find new ways of interventions in the city making process. Recognising the suburban territories as the main stage of the African urban crisis –with the meaning of "change"- is the first step to deepen the study of the existent relation between the city and its environment: to accept its hybrid nature, and not denying it, is the first step toward new sustainable projects for the city itself.

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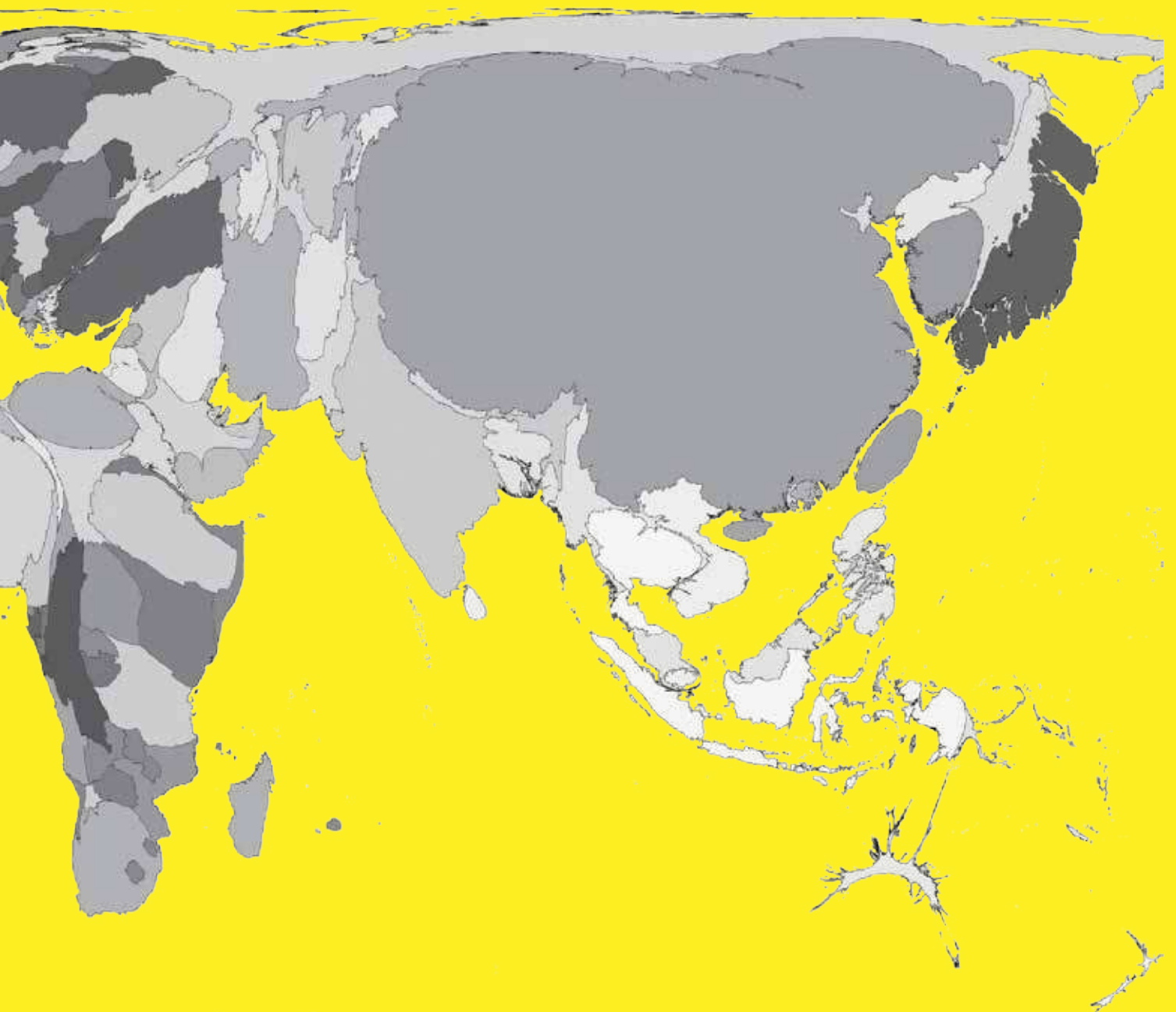
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[mobility]

almost **1** out of **5** people
owns a **private vehicle**

[web.worldbank.org]



Map 142 'Public transport' © worldmapper.org

For the past two centuries many architects, planners, and politicians have been struggling with mobility issues, and attempting to offer solutions for the movement of people and goods, focusing on sustainable transport systems, spatial differentiation of transportation means and on infrastructural layering. Contributors to this session should propose a new way of approaching mobility, reviewing and exploring tactics to endorse soft mobility and accessible, integrated, and regenerative transport systems. In this session, papers are invited to address the issue of mobility in contemporary cities and its impact of civil society, urban landscape and architecture, with the aim of defining tactics for a better co-habitation between users, places and transport means.

[MOB/01]



Development Of Pan-European Road Corridor X In Last Two Decades

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abstract

In view of the European Union Enlargement, the Pan-European corridors it was more intensively attention especially after the stabilization and association process started in western Balkans. In the region of south east Europe, the transport strategy has been expressed for non-EU countries, notably after 1990.

In the context of EU enlargement, the focus of the European Commission related with the transport was the development of Pan-European corridors, it proposed five priority axes and one of them being the South East European Axis that covers the South East European region and further near to the middle east etc. The Pan-European Corridor X was considered as a strong pillar for the national network for all the countries around and especially for these that are affected by it. Over the last decades the infrastructure is insensibly improved. In particular, the SEETO (South East European Transport Observatory), categorized the criteria to five groups connecting economic and development impact, environmental and social impact, regional interest, financial sustainability and technical standards.

The purpose of this paper was to present these changes during the last twenty years with focus on the development of the region and especially analyzing the effect of Corridor X in transport facilities. There were analyzed the effects of the Corridor X on the environment and in social life, as well.

keywords Corridors, Environment, Pan-European Transport, Strategy

State of arts

This article corresponds with one of the concepts of co-habitation and that is mobility. In this context, this paper presents a study of the Corridor X in Europe in the last two decades, its network with the main branches linking settlements in the region where it lies. Mobility and transport are closely related to planning and go parallel to the development of regions, their accessibility and other benefits they receive.

The planning of a core network within the territory of the EU has induced further extensions to neighboring regions, because of the EU enlargement strategy and nature of economic relations. Therefore, the corridor concept for the acceding and candidate countries have been developed, which promotes a similar structure already established by the EU. The corridor concept is designed to connect the EU with the neighboring regions and extend the planned transport network to the Caucasus and Central Asia.

The Pan-European Transport Corridors have also been used as a tool for precession strategy of the EU and the acceding and candidate countries has redefined their national transportation priorities in line with the Pan-European Transport Corridors crossing through their territories.

The European Union enlargement strategy, which essentially has economic relations, has been the cause of planning a transport network and further expansion in neighboring regions. For this reason, the concept of the corridor has been developed both for accession and candidate countries. This concept is designed with the goal of linking European Union with neighboring regions, as well as extending the planned transport network to eastern Europe (the Caucasus) and Central Asia.

Also, these projects (corridors) have served as a tool for the European Union Progress Strategy, where member and candidate countries have re-established their national priorities in the transport sector in accordance with the Pan-European transport corridors. Below is a map showing the extent of these corridors in the central and eastern parts of Europe.



Fig.1 Pan-European Road Corridors

Pan-European transport strategy in south-east Europe consist on Pan-European Corridors (PECs) and Areas (PETRAs) for the non-EU European territories were defined at the Pan-European Transport Conferences of Crete (1994) and Helsinki (1997). The Crete Corridors running the region of SEE (including Bulgaria, Romania and Slovenia) are Corridors iv, v, vii (Danube), VIII and IX. Later, at the Helsinki Conference, PECX and four PETRAs were defined (Marios Miliadiou, 2012).

The concept of Pan-European transport policy and corridors was born during the preparatory work for the 1st Pan-European Transport Conference organized by the European Union (Commission, Parliament) and the European Conference of the Ministries of Transport (ECMT) in 1991 in Prague. The purpose was to speed up the development of transport routes throughout Europe and to further contribute to smoother economic exchanges. With the enlargement process becoming a priority in Europe, the corridor concept started gaining ground. The Prague Declaration on All Europe Transport Policy (1st Pan-European Transport Conference, 1991), foresaw the indication of the most important transport routes linking the European countries and regions to be considered for improvement and modernization, while more decisively, in Crete (2nd Pan-European Transport Conference, 1994), it was declared that a starting point for future work on coherent infrastructure corridors for the various transport modes (Marios Miliadiou, 2012).

The Second Pan-European Transport Conference (1994) which hosted representatives of not only major international organizations such as the ECMT, UN and European Commission, but also those of the countries Western and Eastern Europe; many Mediterranean countries were also present.

In this contexts, giving more information about the Pan-European projects, it was developed by ETF and ITF in 2000, and had a series of goals:

1. Consolidate inter-modal working structures at national level, particularly the National Coordination Committees;
2. To expand cross-section, regional cooperation between the transport unions along the 10 pan-European Transport Corridors;
3. To stimulate the dialogue with the socio-economic interest groups in the transport industry;
4. To ensure the trade unions' stake in the consultation process in all aspects of transport policy (at both national and regional levels);
5. To deepen the joint analysis of the transport and social policies of the EU. (Federation, 2018).

After the Crete Conference, the corridor concept became more substantive by acquiring connotations of a technical, methodological and political nature:

- Technical because the aim was now not only to think in practical terms about infrastructure projects but also, and above all, to consider a series of accompanying measures designed to facilitate trade, border crossings, standardization and the harmonization of operating systems;
- Methodological through the development of a multimodal approach and the promotion of intermodal transport chains that included maritime links;
- And political because any project aimed at creating corridors in many cases called for agreements between actors and governments. The phase that followed the Crete Conference also saw efforts to generalize the use of the corridor concept in the sense of implementing a new international practice for infrastructure planning, not only in Central Europe but also in co-operation with the other countries sharing a common border with the European Union. In practice, this generalization took the form of:
 - The opening-up of areas that had not been taken into account in Crete, in particular the countries of the former Yugoslavia; one outcome of this was recognition of corridor "X", which thereby acquired a status comparable to that of the nine corridors established previously at the Helsinki Conference;
 - Discussion of the TRACECA linking Europe to Central Asia;
 - Lastly, an attempt to define corridors within the Mediterranean region on the same basis as those established for Central Europe after taking due account, obviously, of the specific geographical context of this region in terms of the importance of shipping (Federation, 2018).

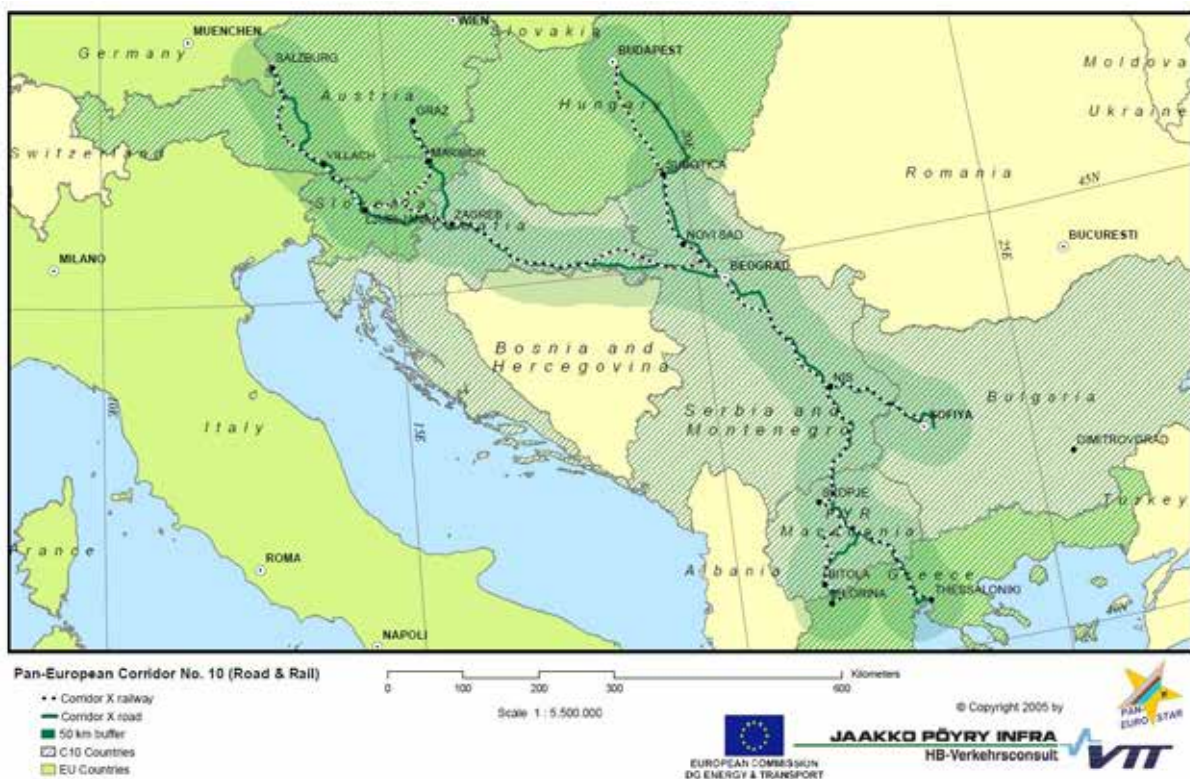


Fig.2 Pan-European Corridor No. X (Road and Rail)

Furthermore, the overall objective of the Helsinki Declaration (3rd Pan-European Transport Conference, 1997) was to promote sustainable, efficient transport systems – taking into account technical and interoperability aspects in order to facilitate movements at border crossings, which meet the economic, social, environmental and safety needs of European citizens, help to reduce regional disparities and enable European business to be competitive in the world markets (Marios Miliadiou, 2012).

Also, in addition to this in general terms, this statement stressed that a collective and coordinated effort of all stakeholders should be made to ensure appropriate investment schemes.

The presented progress on PECX (Pan-European Corridor X), a case study of realization of the European Transport Strategy, consists of a synthesis of information collected directly from the PECX participating countries, in the framework, relevant studies (TIRS, REBIS) and SEETO. The information and data, part of the detailed Database of the GIS developed for PECX, refer to the investments made per sector of transport infrastructure and type of intervention during the last decade (Tamás, 2007).

Methodology

The study focuses on analyzing the changes of Corridor X during the last twenty years with focus on the development of the region and especially analyzing the effect of Corridor X in transport facilities. Main objective is analyzation of the region development related with transport in macro scale. The second is to analyze the growth or decrease of transport facilities in those places where the corridor passes.

In this way the realization of these objectives can give a good answer for the thesis purpose. This of course is related with historic part of conferences held for that purpose. The three conferences (Prague Declaration, 1991, Crete Declaration, 1994, Helsinki Declaration, 1997) are analyzed in the state of the art chapter.

Results

The roads constructed in the era of the Roman Empire, were three times longer than the proposed trans-European road network. (Debra Johnson, Colin Turner, 1997).

Started from this long history nowadays generations need to plan with the same vision for the next generation and to give them a full meaning for the coexistence, in national and in regional scale.

Corridor X was identified as the tenth Corridor at the Pan-European Transport Conference in Helsinki in 1997, in order to accelerate the integration of the former Yugoslav republics with Europe. The corridor development was initiated in parallel to the stabilization process of the region. It is a multimodal Northwest-Southwest link, connecting Salzburg (Austria), Ljubljana (Slovenia), Zagreb (Croatia), Belgrade, Nis (Serbia and Montenegro), Skopje (Macedonia) and Thessaloniki (Greece). The Corridor has four branches. Road Corridor X consists of a total length of 2299,6 km, and main axis: 1451,4 km.

Branch A is Graz (Austria), Maribor (Slovenia), Zagreb (Croatia) 163,4 km; Branch B is Budapest (Hungary), Novi Sad, Belgrade (Serbia and Montenegro) 352,9 km; Branch C is Nis (Serbia), Sofia (Bulgaria) and further along Corridor IV to Istanbul, 191,8 km; Branch D is Veles, Bitola (Serbia and Montenegro), Florina, Kozani-via Egnatia and Igoumenitsa (Greece) 140,1 km.

Corridor X project is developed in different part of it and connects:

- Austria to Greece, through the Main Axis, crossing Slovenia, Croatia, Serbia, and F.Y.R.O.M. and linking Salzburg with Ljubljana, Zagreb, Belgrade, Skopje and Thessaloniki;
- Austria to Croatia through Branch A, linking Graz with Maribor and Zagreb;
- Hungary with Serbia, connecting Budapest and Belgrade through Branch B;
- Serbia with Bulgaria through Branch C, linking Nis and Sofia;
- F.Y.R.O.M with Greece through Branch D, from Veles to Florina.

It consists of 2528 km of railways, 2300 km of roads, 12 airports and 4 sea and/or river ports. For Hungary and Bulgaria, Corridor X provides an opportunity to improve the road and rail links to former Yugoslavia. For Serbia, both rail and road projects to Hungary are important.

Any developments along Corridor X are largely dependent on the stabilization of the situation in the Balkans following the Kosovo crisis. The Corridor provides Macedonia, of which transport connections with Europe have been mainly from North to South until now, with alternative transport connections in the direction of East to West.

On the governmental level, Greece took on the task to organize meetings, inviting all parties involved, in view of preparing a Memorandum of Understanding by the Ministers of Transport. Due to the politically difficult situation prevailing in the region, notably between Croatia and FR Yugoslavia, it has not yet been possible to achieve the

signing of a MoU. The first Pre-Steering Committee meeting took place in Thessaloniki, Greece, on November 19th-20th, 1998, where the participants agreed on a first draft MoU. The next meeting, which will be held on 18 March 1999, in Athens, will aim at finalizing the draft MoU to get it initialed. The Greek delegation presented a proposal for the creation of a Steering Committee Secretariat for Corridor X, which will undertake both secretarial and technical support for the work of the Committee and should be organized and financed by the Greek Government. At the Pre-Steering Committee Meeting the Chairman, Mr. Maniatis, referred to the fact that there has been a significant drop in traffic along this Corridor, influencing also the status of infrastructure. The aim of the Steering Committee is to upgrade the whole Corridor to the standards prevailing in Europe nowadays and attracting the portion of traffic, which normally belongs to it. The railway companies have organized several informal meetings under the chairmanship of the Austrian Railways (OBB), in order to prepare a Memorandum of Understanding on the level of railways. The date for signing has not been fixed yet. The last meeting took place in Bad Voslau, Austria, on 10 and 11 November 1998 (EUROPEAN COMMISSION, December 1998)



Fig. 3. Corridor X with 4 branches (A,B,C,D).

In November 2001, the FNV formally agreed to fund the Corridor Project. Five months later, in March 2002, the Opening Seminar was held, preceded by an Opening Conference.

During the discussions at the "Seminar on Transport Infrastructure Development for a Wider Europe" to which Reynaud contributes, the corridor concept is noted as: a means of developing international cooperation in transport between neighboring States in order to avoid wasting resources through the coordination between individual countries' projects. It is an approach that makes it possible to give due emphasis to projects of international interest compared to national or regional projects .

Development of a transport infrastructure across Europe and beyond, indeed, is nothing but supranational forces' endeavor to expand the market, which induces new regions to integrate with and to establish where the market forces can easily regulate economic activity. The transport branches of corridor consider in themselves as a small region and of course have different impacts. This corridor passes through countries with different economic level, Austria, Croatia, Hungary, Serbia, Macedonia and Greece. They have social and economic impacts on regions. From this point of view, the regions of branches are joined to the main line of corridor X and receive positive inputs from the movement and generation of free trade between states. In addition to the economic factor,

another very important factor is the environment. In this aspect, it is worth to discussing on many things since today the environmental issue is one of the hottest topics of debate on the world scale. Transport is one of the largest CO2 emissions in Europe and for this reason ongoing studies are being conducted to find environmentally friendly alternatives. The transport sector has not seen the same gradual decline in emissions as other sectors: emissions only started to decrease in 2007 and still remain higher than in 1990 (European Commission, 2018) The graph below gives this information.

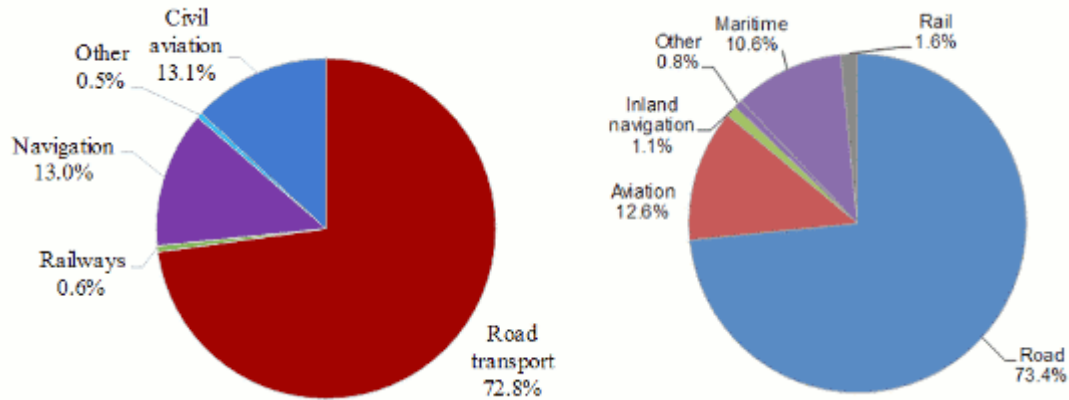


Fig. 4. CO2 Emissions in Europe

In this point of view, in order to have a reduction of the problems of the air, especially those that are caused along the main corridors, some actions should be avoided starting from the reduction of delays at the border crossings along Corridor X, which should be reduced by the Treaty AGTC (European Agreement on International Command Lines and Similar Installations), which imposes a maximum limit of 30 minutes.

Corridor X needs to be upgraded to a fully operational level through the co-operation and coordination of the countries it is going through in the framework of the stabilization process in Southeast Europe and the European Union, and to serve international transport. Co-operation in the transport sector and economic activities serve the unification of the nations, harmonize their relations and contribute to a common set of objectives for the development of the region. The common will for stability and development should open the horizon for a global use of Corridor X not only from neighboring countries but also from other continents countries. Turning the conception of connections from the regional to the continent serves the free movement and shortening the time of transport from one country to another.

In all the studies, there is no basis in the scientific theory of corridor access as there are networks in the areas of operational research, geography, or even application of the case in the transport sector.

In contrast, there are numerous examples and practical experience, with the use of a corridor approach, widely different contexts, where in most cases the goal is to solve a specific problem of co-operation between partners developing links along a particular corridor in which they have a common interest; a certain pragmatism always stands behind the initial decision to promote a corridor.

With the expansion of the European area, this practical experience with corridors took place in more formal arrangements as well as agreements between national and international institutions. The result is that experience with a given corridor has not always been helpful in the development of subsequent corridors, given the extent to which the particular context, objectives, and particular partners involved may differ from one project to another. Planning and prioritization recommendations have deviations from actual investments made. Many sections had been suggested to be rehabilitated, based mainly on the demand criterion, but there are cases of promoting motorway construction on PECX against the low demand forecasts and socioeconomic indicators (SEETO 2017).

Apart from the mature projects for motorway construction on the north-western parts of PECX in Slovenia and Croatia (Main Axis and Branch A), the only motorway projects prioritized by the regional studies were the construction of the Belgrade bypass and a Serbian part of Branch B. The rest of the motorway projects realized or under construction are examples of projects that have been promoted without the demand justifying the investments. As far as the regional impact is concerned, these projects of this magnitude have national and regional significance for the countries they pass through but also for the region to reach a higher level of access to other countries.

These projects focus on moving, communicating and transporting between countries, reducing distances and simplifying customs issues.

Conclusion

The planning of a core network within the EU territory has prompted further expansion in neighboring regions due to the EU Enlargement Strategy and the nature of economic relations, citing also candidate countries that have redefined priorities in line with the Pan-European Transport Corridors go through their territories. The result of the conference (Prague, Crete, Helsinki) was accelerating the development of transport routes across Europe and further contributing to the slower economic exchanges.

At the Pan-European Transport Conference in Helsinki in 1997, the identification of Corridor X was the integration of the former Yugoslav republics with Europe. The development of the corridor was initiated in parallel with the process of stabilization of the region, their promotion in economic activity, This corridor passes through countries with varying levels of social and economic influence in Austria, Croatia, Hungary, Serbia, Macedonia and Greece.

Transport is one of the largest CO₂ emissions in Europe and therefore it is recommended to conduct ongoing studies to find environmentally friendly alternatives such as: Reducing delays at the border points along Corridor X, which should be reduced by the AGTC Treaty (European Command Line for International Command Line and similar installations), which imposes a maximum limit of 30 minutes.

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[MOB/02]



Critical Litterature Review On Adressing Transport Challenges With TOD

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abstract

Cities are very important, more and more cities are trying to be innovative focusing on lowering inequalities, provide better living conditions and achieve sustainability. European cities constantly try to be centers of innovation, culture and well-being by increasing service and promoting urban services, mobility, energy and education. Cities have high level of economic concentration in activities with complex urban structures supported by transport. The more complex the cities spatial structure, the more complex the transportation system have to be, to address the transport efficiency.

Transport is a complex topic that has no constant recipe for successful development. Cities try to adapt and translate these models by using instruments of governance and innovative models.

Transit oriented development is a model of transport that promotes urbane dense areas and is often defined in terms of mixed-use dense areas oriented to or by mass-transit facilities. Some of TOD main characteristics include public spaces near stations, urban compactness and pedestrian and bicycle-friendliness.

Many cities have embraced the concept of transit-oriented development (TOD).But TOD is hardly a new concept for transportation and planning. This paper aims to provide an overview by analyzing and evaluating TOD's evolution into the modern version of today and the ability of this model to respond to the challenges that cities face about transport. But TOD was not created or invented, the theory was plainly an observation and interventions of influential territorial policies, new planning initiatives and economical changes. This paper will try to acknowledge the main contributor to the theory evolution and transformation to the modern version of it.

TOD approach reaches beyond transport stations toward a network approach to realign entire urban regions around rail transport. The concepts strategies are usually based on the idea that there will be both social and economic benefits of implementation. Although many cities and regions have conceptually embraced TOD, most still need to move from concept to implementation.

keywords Future Cities, Transport challenge, Transit oriented development

Introduction

Cities are the future. As the scarcity for land of resources is growing, cities will have to adapt to this changes, but at the same time provide a better quality of life for their citizens and setting higher goals for the future generations. Cities are already learning from each other's mistakes and helping to reinforce good practices and anticipate externalities. Participatory and multi-level governance will be an example on how should cities be governed in the future. Mobility and transport is often a multi-level approach, applied and executed by different actors and stake holders to better and develop cities.

The phenomena of sprawl and the commercialisation of the private car, are only a few of the problems that contributed in the expansions of the cities. The reinvesting in public transport and multimodal solutions is how the government of today is trying to address this problems. They are not focusing on the finding the "right" solutions, rather than the best practices to be used in different situations.

The objective of this paper is to examine the challenges within an urban context that cities face and to understand the role that TOD could play in addressing this challenges. Providing an overview of the concept evolution to answer the fundamental question of the current theoretical or policy issues that TOD represents. Research in urban mobility and particularly in transportation model called Tod is still an ongoing investigation. Many literature

can be found on both future transport and mobility. All the aspects presented during this research are relevant and key components for future developments as mentioned above. We follow a critical literature review approach through this paper to establish an overview on the concept of TOD. obeying this methodology the paper offers evaluation and considerations of the development of TOD from multiple perspectives.

During the first section of this paper we introduced the current challenges and problems that cities face, extenuating some of the externalities and long term challenges that they undertake by cross cutting similar concepts as sustainable development and sustainable mobility. During the second part, we gave some definitions and in-depth understanding on topic composition and how the concept has developed in the timeline, has evolved and how its application has effected cities. We follow the same methodology approach in the third and final part of this paper, by tracking the development of TOD through Calthorpe's lifetime work and influences up to the materialisation of the concept by the "The New American Metropolis." Published by Calthorpe.

1. What are the Transport challenges of the future

Cities level

Cities are hubs of concentration in people, economy and energy. The cities of today have a variety of field and areas to work on so they can provide better living condition and quality of life to their citizens. By the estimations of the United Nations almost 72.5% of people live in the main cities, these numbers are estimated to go to 80% by 2050. (EUROSTAT, 2016 edition).

Since the middle of the last century, most of Europe has expanded by spreading cities and increasing population numbers. People choosing to relocate out of inner cities into suburban and peri-urban areas blurring the division between urban and rural. These pattern of development increases the dependency on individual transportation and complicates further sustainable mobility planning. Estimated that in 2014 nearly 83.4% of the transport in the EU is dependent in individual car travel. (EUROSTAT, 2017).

The large concentration of people in the main urban areas, increasing demographic numbers, population ageing and financial crises are just some of the future challenges that cities face. Understanding this current problems is the key to addressing this future challenges, using coherent and integrated approaches to better prepare for the future. As underlined in the document of the European commission "Cities of Tomorrow" Cities are places where both problems emerge and solutions are found. They are fertile ground for science and technology, for culture and innovation, for individual and collective creativity, and for mitigating the impact of climate change. However, cities are also places where problems such as unemployment, segregation and poverty are concentrated. (Union, 2011).

Mobility is one of twelve main topic that the urban agenda takes into consideration, putting urban matter in the priority of this agenda. The key principles of this agenda include approaches of multi-level governance, working by partnership methods, problem solving by integrated approaches, sustainable urban development, common goals as the united nations goals, working on functional urban areas, strengthening urban linkage and providing equality to citizen of all sizes. These key principles are addressed in the twelve priority topics including mobility. The objective of this agenda is to involve cities in the design of EU policies and mobilise the implementation of this policies. (European Commission, 2016).

As the urban population grows the need to have services grows with it. Putting constant pressure to provide better, faster and affordable transport for all. This also complies with the main dimensions of sustainable mobility including sustainable energy use, friendly environment for alternative transport, local and regional interconnections etc. In time many definitions and components of sustainable mobility have emerged, not forgetting perhaps the most important translated into: Brundtland Report (World Commission on Environment and Development, 1987) "satisfying current transportation and mobility needs without compromising the ability of future generations to meet these needs" (Black, 1996) .Black expressed that transport was mainly focused in the environmental part of the sustainability pillars, but with the new challenges and changes that cities are facing this focus has broaden to problems of congestion, density, accessibility and accidents. He also proposes a measurement to help manage cities challenge by using indicators.

People their city and later on mobility have been largely discussed in many literature, but the cities currents challenges have been under microscope long before the problems were real and externalities begun. This warning signs have slowly started doubt into the management of cities and their future goals, starting with: (Jacobs, 1961) strongly criticising the "rationalism planning" and its role in the city making, among many observations she describes and criticised the importance of mobility and infrastructure pointing out the importance of connectivity and quality of life¹; Pointing out the connection between quality of life and mobility. An example of a later research is: Cities for people by (Gehl, 2010) , in this publication the focus is shifted in the people's perception and preference

of their city, how the connection and accessibility influences your decision to live and be a part of a city, the author not only gives us an understanding of city shaping but also proposes a toolbox for cities to change and become better, enhance accessibility and facilitate service connection to alternative transport, not to be overpowered by car but by alternative transportation means and people².

Nation and states are changing, globalization, information and technology have changed how cities work, interact, operate and grow. (Union, 2011) As we have established in the first part, cities are complex and their problems are growing, changing and challenging for the government but also experts such as planners. Transport problems impact cities their quality of life, but also their ability to be competitive and attractive cities. The competitiveness of cities is how cities grow, market, learn and adapt to crises and challenges, but is also how cities become more attractive to investing and people.

The interventions in the transport field and the choice of a model to be implemented comes from a number of factors, impacting at local and national scale. Most of the time these implementations include a multi-level policy measure. (Dorina Pojani, 2015). Since the social dynamics of cities have changed, policy making and implementation has changed with them. In past practices giving a single and clear indication of urban policies has been a way to go, but the increasing polarisation of cities has made cities and government aware of the changes needed to be made (Vranken, 2011). There seems to be a shift in the way the decisions are made changing from government to governance, not only making decisions but also managing cities through their decision making. The expansion of governance practices into so many spheres represents a secular response to a dramatic intensification of societal complexity. (Jessop, January 2002) Policies have been inter-sectorial and integrative, brought down to smaller implementations, to provide maximisation and efficiency of these policies. (H.T.Andersen, 2004) Cities are implementing shared visions, identifying challenges, developing capacities and revisiting regulations.

The cities of the future are linked closely to technology, data and information. This rapid trend can bring benefits innovation, acceleration in the economic development, but also externalities in the increasing of the polarisations, economic challenges, and larger traffic congestions risking the declining of the quality of life. The shift we are considering will increase the pressure on our resources such as water, food, energy and infrastructure. The models of urbanisation will change and cities will be as they are ideal testing ground for policies and growth. The contexts and development of the cities is unique and there for complex and diverse. Planning this cities is fundamental in making a good "layout" for the future cities. The application of density in the cities gives hope to lower energy consumption in transportation means, this by simply putting people together and being in the vicinity of where they work, shop and live.

2. Sustainable Mobility

The life of people and their interactions are now geographically independent and this plays a key role in the development of mobility. But the need for mobility is also a major contributor in the cities bigger problems such as congestions, sprawl, pollution and land fragmentation. (Philipp Rode, 2014) Anticipating the future and acknowledging the importance of mobility interventions the lines between the public and private transport systems are blurring leaving space to alternative and hybrid systems. To understand the role of sustainable mobility we must revisit some definitions of this paradigm. A definition that stems from The Brundtland Report, (Development, 1987) being "sustainable mobility as the right to use and develop current transportation needs without compromising the ability of future generations to do the same". The Winnipeg Centre for transport defines SM as transport that enables individuals and societies to satisfy their needs for access to activity areas in complete safety, in a way that is compatible with the health of mankind and ecosystems, and which is also balanced fairly between different generations. (Urry, 2011).

SM has many definition and the ones represented above only portray the concept in relation to cities and people. Sustainability in relation to mobility gives a long-term perspective on the future of mobility. The aim of sustainable mobility is to provide a vision that views cities as a network of connection and not an island, taking into consideration the people that live in this cities and the economic class disparities.

There is no single or universal solution to achieve sustainable mobility. The transition to sustainable mobility requires a wide range of innovations technological and institutional. Mobility itself is defined in many ways all meaning the same thing: The ability of people and goods to be transported and move, mobility is related to the

1 / Among many other her contractive criticism laid a stronger connection to principles of transport, including mix uses, permeability, connection and nodes.

2 / The Book *Cities for people* reflects on many aspect of the cities living condition as: public space, management and perception we have only underlined the mobility related aspects.

way, infrastructure and fluxes of this movement . (R, kein Datum) SM is not possible by short-term solutions this concept is linked to long term, multidisciplinary solutions. The vision of SM embody notions of “universal access” focused on four main goals: equitable access; security and safety; efficiency; and pollution and climate-responsiveness. (David Banister, 2000) As mentioned above SM is not a sole concept its vision is shared and applied to smart cities, smart models of transport, SUMP , Integrated systems and TOD.

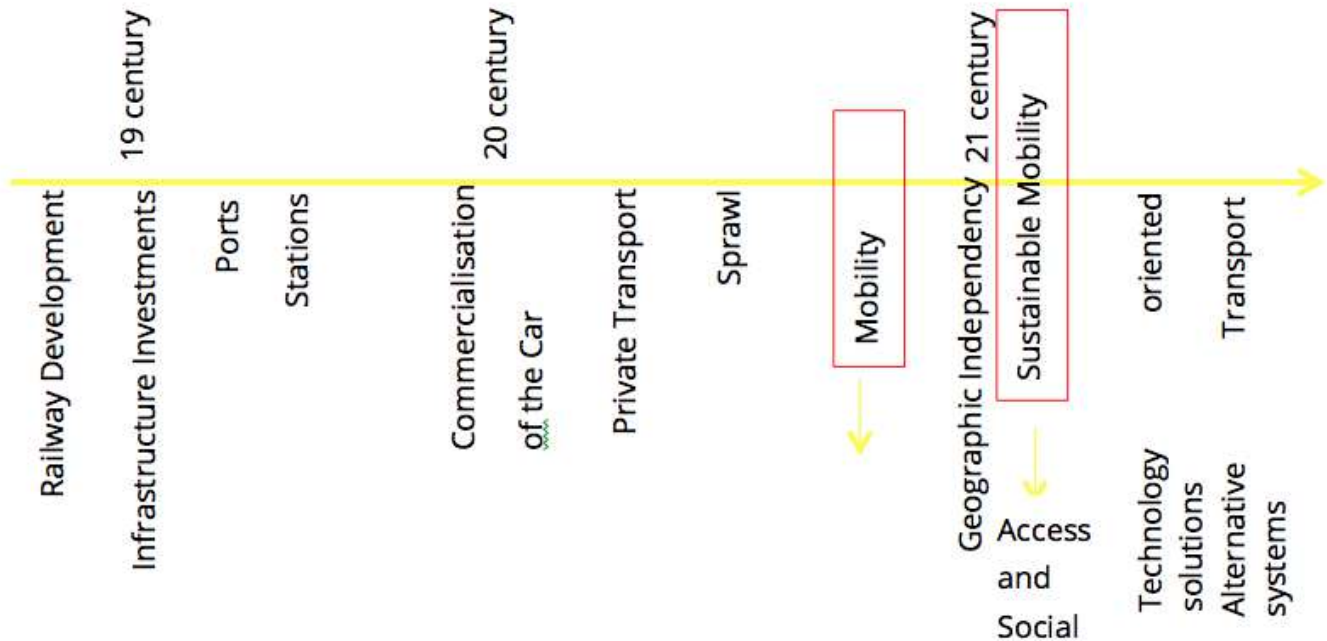


Figure 1 Concept of Sustainable Mobility/Personal Library

3. Transit Oriented Development

Transit oriented development it's a complex concept involving more than one elements in co-relation to it. The Transport development as a concept itself is consider the key of developing economic activities in modern societies (Peter Nijkamp, 1997).TOD can be viewed as an instrument to achieve sustainable mobility, this by embodying the same components. The concept of TOD emerged officially in 1993 when Peter calthrope published: The new American Metropolis a book that for the first time acknowledged a need for change in the way transport and mobility plans are made³. Transit oriented Development is liked with developing areas that are organized around or in the proximity of transit stations, compact mixed use, walk able and pedestrian friendly areas. TOD embraces the idea that location close to amenities, employment, mix uses as shops and housing around, social equity will promote hubs of transit that encourage more the use of public transport and non-motorized travel. (Corporation, March 2009) (Crawford, 2000)

TOD has many definitions, the model has evolved and adapted in time to fit the cities requirements and particularities. From Curitiba to Copenhagen, TOD has been partly or fully implemented, there is no recipe for success. As C. Curtis (2009) says, creating a tailor-made toolbox has made all the change.TOD is a concept that can be adapted to address specific aims and goals. Using this model as an instrument is a response to policies and previous actions that fail to meet the objectives and are based on conventional development patterns. The case of Curitiba with the implementation of Bus Rapid Transit has one of the first successful applications of this concept. The need to apply this model became clear after 1965 when the city expended rapidly through sprawl development, creating new unplanned areas that had no connection to the city center with low quality of life and mobility issues. This change started in 1970 with the new transport plan focused on bus transportation with dedicated lanes, quality service and affordable price for all citizen groups. To make this plan happen instrument of planning were integrated such as value capture, bonus intensity etc. The important components were the increasing of density in the main roads to improve land use and the mixed use developments to ensure that the areas were not homogenous. (Leroy W. Demery, 2004)

The case of Copenhagen is quite similar to the case of Curitiba, the need for implementing a TOD model was made clear after the 30's baby boom accompanied with the sprawl of the city and lack of planning initiatives

and the need for the city to be regionally competitive. The finger plan implemented the TOD concepts creating a development in corridors connected by public transport and bicycle lanes. The corridors were interrupted by transport nodes distributed according to the max distance of walkability. These nodes were characterized by high density development with mixed use and public spaces. The concept itself was for the development to be guided by infrastructure. (Ministry of the Environment, 2015)

In both Curitiba and Copenhagen TOD was a successful instrument used to guide development and improve the quality of life. This instrument aimed to achieve the goals of sustainable mobility and economic development, by guiding the future development and improving the existing situations.

TOD concept evolution

The evolution of this concept came as response to many failed attempts of planning. As we mentioned before there is no recipe for success. The evolution was in adapting this concept to specific scenarios of development taking into consideration the specific context. As this model being transported and changed in the future applications, we must go back to recognise its components being illustrated in the Life and Death of great American cities by Jane Jacobs and also at the Garden Cities of Tomorrow by Ebenezer Howard in 1902. This concept has been partly or fully implemented, as this case studies have shown creating a tailor-made toolbox has made all the change. (Carey Curtis, 2009) TOD was seen as a neo-traditional guide to sustainable community design and mobility. As Calthorpe stated TOD is simply the 1990's branding of an old concept⁴. The transport and mobility together with the build environment are codependent entities with a push pulled synergy that creates urban forms. In the early twentieth century TOD was defined as "Development-Oriented Transit" meaning that once transit was incorporated and transformed land within the reach of jobs, the area would be developed further and sold at a higher profit. At this time transit was portrayed as an enabler for the development of real estate. (Hank Dittmar, 2004)

Going back to the origin of the TOD starting with Ebenezer Howard who created a movement centered on satellite cities connected by rail transit access⁵. The concept of this movement was based in real estate development with rail as the primary conduit between developed areas. Even though his ideas were based in the London's deteriorated social condition the theory was translated in the U.S as well⁶. This movement occurred on the edges of most major U.S. cities of the time. During the turn of the twentieth century Sam Bass Warner, traced the origin of development-oriented transit in Boston. The metropolitan area of Massachusetts as the phenomena of the "a two part city", the city of living separate from the city of working⁷. This phenomena was the next phase of transit-related development. After the 1945 depression and lack of investments in public rail that followed the WWII, the mass production of the private car dominated the transportation mode. The turn of this phenomena was attempted in 1964 with the "Great Society" movement by the president John F. Kennedy. The idea was to preserve the existing urban values and provide good urban transportation with a balance of public and private transport systems. To enhance this balance the suburban commuters accessed the public system with the "Park and Ride" idea. In the 1970'S the transport agencies created small real estate agencies to develop or lease the land near transport center as a means to finance transport project. This indicative was called "join Development". (Cervero, et al., 2002). During these years until 1980s this development received great attention as a new financial tool. And the local, regional and state authorities began to see that they could play a part in increasing ridership by guiding the type and scale of development on land near stations.

Tracing the TOD precedents we would go back to the 1811 in the master plan of Bristol, England. Where the working class lived in the proximity to the working factories connected by pedestrian routes. The beginnings of the modern TOD are traced back to 1875 with the Bedford Park master plan. Bedford Park was connected by rail to the station in London. To benefit the large amount of middle class people traveling everyday adjacent to the station were develop stores, schools and activities for people to use in their everyday commute (w.Creese, 1992).

The modern definition of TOD as defined by Calthorpe relies on design guidelines that municipality incorporate into the planning process. The first evidence of this was in 1880's with William Owen and Alexander Harvey's late utopian designs for worker villages, developed considering road and rail infrastructure. The examples mentioned

3 / Taking into consideration at this time the car was no longer a luxury, sprawl was being discussed as an emerging problem, together with expansions in the peri-urban area. All this being fitted with the concept of the "American dream".

4 / See Working Paper: Histories of Transit-Oriented Development: Perspectives on the Development of the TOD Concept / Ian Carlton (2009)

5 / This movement was developed in "To-morrow: a Peaceful Path to Real Reform" in 1898, and again in 1902, within "Garden Cities of To-morrow".

6 / See case studies in Hilton Village (Newport News, VA), Chatham Village (Pittsburgh, PA), Sunnyside & Jackson Heights (Queens, NY), the Woodbourne (Boston, MA), Garden City (NY), and Baldwin Hills Village (Los Angeles, CA).

7 / See Book Streetcar Suburbs: The Process of Growth in Boston, 1870-1900 by Sam Bass Warner, Jr. in 1962.

above as well the influence of Edward Bellamy in 1888 with the Boston Utopia or Olmstead's 1869 with the Riverside community influenced the development of the garden city of Ebenezer Howard's. Howard's garden city was circular in diagram and consisted of housing with dwelling density limits and proximity requirements to the central core. A combination of multiple garden cities and connected by inter-municipal railways formed a metropolis of the garden city. Because of the great influence on neighborhood design the garden city was the most influential precedent in the Calthorpe development of TOD.

In 1903 Howard formed a joint stock company including Cadbury to develop Letchworth the first Garden city. A city focused on a garden surrounded by public buildings, and off which would radiate a series of avenues leading to residential areas connected by rail. The Master Plan included a central town square with radiating axes a main commercial corridor, clearly defined along with residential, industrial and recreation areas were planned into the design. And surrounded by a minimal greenbelt representing the "country." (Council, 2007). Even though there were later influences the majority of Calthorpe's ideas were represented in the development of Letchworth. Critics like Lewis Mumford supported the ideas of Raymond Unwin in the first decade of the 1900's stating that the best development of the garden cities should be supporting more towards pedestrians and less towards the cars. These concepts were later supported by Calthorpe's developing guidelines. Adapting to the future in 1920's Barry Parker designed a satellite garden city called Wythenshawe. This city provided much needed housing for the metropolitan area of Manchester. The difference between this model and the previous ones is the construction of "princess Parkway" a landscaped highway connecting the two areas. This showed the evolution of the concept as garden cities adapted to the future including the automobile.

Soon after the concepts of the garden cities started to shift towards planning with auto-focus. The concept of garden cities has adapted to auto oriented countries losing its roots. To illustrate this change from the natural and romantic garden cities to auto-focused planning we can consider Robert Moses planning for new york city. His idea was that cities and automobile were inseparable elements. His biggest opponent of this concept was Jane Jacobs . She believed that the automobile should always be second to the pedestrian connections within the city. In the 1970' and 1980' Leon Krier a German urban theorist revised classic philosophies as a response to modernism. (sprawl) He looked into European cities at a urban blocks level connected by pedestrian-oriented transport defining the 10-minute or quarter-mile walk human scale neighbourhood appropriate for people to walk. This concept was later incorporated into Calthorpe's TOD's as a main principle. The Concept brought to life by Leon Krier were first implemented in Florida's Seaside resort town. This development offered all-in-one suburban solutions such as offering water features, bike paths, and shops all in the reach of Krier's human scale neighbourhoods increasing density but preserving open spaces. Infrastructure radiated from the center connecting facilities and services with automobile and alternative transport like bike routes and pedestrian ways. Concepts all incorporated into the modern TOD.

Table 1 Main authors Contribution

Author	Year	Project	Contribution to theory
John Nash	1811	Bristol, England	Picturesque aesthetics of planning with nature in mind, connected by transport (Walking)
Janathan Carr	1875	Bedford Park	Developing near Transport and rail, providing services near the station as a service to people
William Owen & Alexander Harvey	1880	Planning Utopia	Nature in connection to the city (Later Garden cities)
William Owen & Alexander Harvey	1888	Port Sunlight	Cities with a focus on activities and public building connected by narrow paths

Edward Belamy	1888	Utopia standards	People and nature connected by preserving 1/10 of land for recreation and urban parks
Olmstead & Vaux	1869	Riverside Community	The satellite city connected with the city by shaded park way and narrow streets
Ebenezer Howard	1898	Garden cities	A city focused on a garden surrounded by public buildings, and off which would radiate a series of avenues leading to residential areas connected by rail and surrounded by a minimal greenbelt
Sam Bass Warner	1900	Boston	The two part city, the working city and the sleeping city connected by transit development
Howard & Cadbury	1903	Letchworth	The first Garden city of residential areas connected by rail
Lewis Mumford & Raymond Unwin	1910	Theory	Garden cities should focus on pedestrian transport
Barry Parker	1920	Manchester	Satellite connection of a landscaped highway connection for people and cars "Princess Parkway"
Robert Moses	1939	New York city	Cities and automobile should be one. (Transit-oriented development)
Jane Jacobs	1961	The death and life of great American cities	Cities, neighborhoods should be pedestrian to preserve the core of their values
Leon Krier	1970-1980	Seaside Community	People should be able to feel human, neighborhoods should provide transportation alternatives within a 10-mile radius of walking

4. TOD's from theory to implementation conclusions

The concept shaping itself has undertaken many changes through indirect urban experimentation. Calthorpe's originally believed that TOD is a concept that fits within the need of cities and people. After publishing "New American Metropolis," he believed that TOD could accommodate all the development of the 80' if the resources to build a rapid transit system were dedicated. Coming to the conclusion that TOD's always limited to future development by resources and adaptation. The projects that have incorporated TOD's principles and adapted the concept did not fully incorporate the philosophies of Calthorpe's TOD. These projects put a barrier into development by the providing of poor-quality service in transit, incorrect mixes of land uses near transit, weak transit link between housing and jobs routes, and antiquated zoning codes often ignoring their relationship with transit altogether.

The mistrust of this concept came from Calthorpe's guidelines as a misconception the truth. As the concept addressed sustainable principles and approaches at the same time it encouraged high density making it environmentally sensitive as an intervention.

Many other barriers include the absence of academic and political consensus on TOD's implementation, the weak link between regional and governance institutions and the lack of coordination in policy implementation.

But most of all the gaps that the theory fails to address since the "The Next American Metropolis" of Calthorpe's been the confusion of the concept itself. The concept has been used to describe neighbourhoods with limited transit access, neighbourhoods developed along highways with no transit access as well. As we have mentioned above there are no clear definitions of TOD or its outcome from the implementation. While Calthorpe's theory provides guidelines and principles to the theory the lack of standards and systems make it hard to define the success or failure of the TOD.

Conclusions

During this paper the author has tried to understand what are the challenges of cities in the transportation sphere of planning, including a closer look to the materialisation of this challenges in the city level and policy implications. Providing literature on the role of mobility as an umbrella concept of the transport planning sphere, concentrating to a single concept, that of Transit Oriented Development. To better understand the birth of this concept we have considered theoretical dimensions and applications through a long history of transit and real estate development and TOD's position in a long history of social and urban theory. This paper tracks the concept through his evolution of work and influences up to the materialisation of the theory into the "The New American Metropolis" published by Calthorpe.

In the late 1980's Peter Calthorpe was the maker of the concept of Transit Oriented development that became an influencer in modern planning. Calthorpe defined this concept as a neo-traditional guide to building sustainable communities. Concentrated not only in the design and build, it was also a community design theory that believed the concept to solve a myriad of social issues by making neighbourhoods more community oriented.

He believed as a student of environmental sustainability to address the ecology of communities.

The concept was slowly adapted and changed into the modern version of today's TOD influenced by the Garden cities principles started by Howard's circular diagram which reinforced the relation of nature and the city by a connection of infrastructure and services. To later on incorporate Edward Bellamy dwelling density limits in relation to the center to preserve the structure of the city and its relation to nature. More influences surfaced by Leon Krier human scale neighbourhoods of 10 miles. These and many other similar concepts influenced the birth of this concept conceptualised by Calthorpe. This concept was gone through metamorphic phases due to indirect experimentation of the similar concepts adapting to future principles.

Calthorpe's theory of TOD has been a largely used concept in transport planning through years, incorporating many of TOD's principles, but not fully incorporate the philosophies of Calthorpe's initial idea of TOD.

As all concepts this one has its limitations and gaps mainly related to the confusion of the concept, as the concept has been used to describe neighbourhoods with limited transit access, neighbourhoods developed along highways with no transit access as well. And while Calthorpe's theory provides guidelines and principles to the theory the lack of standards and systems make it hard to define the success or failure of the TOD.

The lack of standards makes TOD an easy and at the same time hard concept to implement into addressing transport challenges. Therefore this concept finds many applications and completely different outcomes to each scenario of implementation.

TOD still remains a concept that inspires developers and planners to pursue its goals. Perhaps the next step into the evolution of the concept would be to establish guidelines for the development of sustainable neighbourhoods, zoning criteria, energy and environmental design criteria, coordination of land-use and transportation for a viable model of TOD into future applications following the principles established by Calthorpe.

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[MOB/03]



The Urban-Port Threshold: models and strategies

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abstract

In the era of globalization and transnational flows, the multiplicity of borders in urban planning and landscape imaginaries is a lens to illustrate changing configurations of contexts. Furthermore, «today fast rail links, airports, and motorways are what make cities grow. 'Magnets' like these shape and solidify the urban field into one of a number of scapes. We shall describe the distortions borders bring to the built environment as 'border solidifications' or borderscapes.» (Harbers, 2005).

From these standpoints, it is possible to state the potentiality of borders as fields of research in presence of big infrastructural complexes, as ports, and grasp their dynamic and symbolic characters. Between a city and its port a boundary exists: a consequence of the first port consortiums that were set up as independent entities from the 1950s internationally. Though the urban-port border is a legal separation, «the port-city interface may be described as a system, or as a concept, or as a series of mechanisms that link port and city. » (Hoyle 2006). This intermediate zone is a 'threshold' (Crotti 2000) with mutable geometries and patterns that vary according to multiple factors.

The urban-port threshold is a particular form of landscape, a result of processes of global trade and production. As well as a typology of borderscape, it is also a clear example of 'logistics landscape' (Waldheim 2016). In many port-cities, indeed, we can detect a system of operative territories gathered along the border and codify the 'threshold heritage' as a common category in the port-city plot. This built patrimony, often belonging to both sides, consists in in-between and on-hold areas, former silos or disposal power plants. Exploring this border organism offers opportunities to set up strategies for the urban-port entity and to shape various threshold models, where is embodied the relationship between power, aesthetic and memory.

keywords Borderscape, Threshold, Port-City, Heritage

Introduction

Globalization & Bordering

Even if the opening of the world economic market is apparently a very distant fact, if not even opposed, to the process of building borders for security, control and defense, today globalization and bordering are two strongly connected phenomena. Indeed, globalization has severely impacted territoriality from a theoretical point of view but, mostly, has conditioned its transformation and management potentialities. This phenomenon has 'de-solidified' the contemporary world asserting its fluid complexity, but above all it introduced the 'borderless' world model, questioning the national hierarchies and the concepts of 'center' and 'periphery'. Paradoxically and just in this context, the topic of borders returns: « [...] border, that seemed over-passed during globalization, now come back strongly boosted in a universal dimension. Globalization is the shifting of the border until its conceivable limits. [...]» (Ferrara, 2011)

At the turn of the new century many disciplines involved in urban studies report an unprecedented explosion of various typologies of borders: static or naturalized lines that mark the limits of the authorities and emerge usually for reasons of surveillance, regulation and fear. The idea that 'borders are everywhere' (Paasi, 1996) is confirmed by the overproduction and over activity of borders that becomes interpretative lenses of the contemporary condition of territories and communities and also strategic objects valuable to define new operative tools in planning fields. After all, these liminal spaces determine a new spatiality which represent the bond between different forms of power and urban patterns defining notions as citizenship and territorial identity.

Among the most interesting studies on the combination between 'borders and landscapes', is worth mentioning the research by the Dutch planners Topotronic, led by Arjan Harbers. Even in this research¹ the political-institutional component of borders emerges as an influencing factor: "Political ideologies have affected architecture since earliest times. Government buildings and urban ensembles reflect not only the zeitgeist but also the political climate at the time of building. [...] An attempt to make sense of this patchwork [...] with different political systems, traditions and alliances requires case studies, new classifications and recommendations on a continental scale. The best places to carry out such research are border areas, the fault lines between political entities. "(2003) Contemporary territories, especially the most infrastructured and equipped, are specific typology of -scape (for example, Charles Waldheim called them 'logistics landscapes') that not only guarantees the functioning of society, but also transforms systems condensing the urban plots. "'Magnets' like these (i.e. fast rail links, airports and motorways) shape and solidify the urban field into one of a number of -scapes. We shall describe the distortions borders bring to the built environment or nature as 'border solidifications' or borderscapes. Borderscapes can find expression in various ways." (Harbers, 2003)

In theory, the contemporary concept of border has lost its classical nature of dividing and defensive element to assume a more heterogeneous and active configuration. However, the operative experience shows a quite different picture, especially in the field of spatial planning, where the issue of borders almost doesn't exist, or rather is managed in a random, non-specific way. Yet, in some particular cases, i.e. the boundary between a city and its own port, interesting characters of alliance and synergy along the administrative border are detected.

Port City Borderscapes

The port condition always shows a certain attitude to change. Because of the incessant technological and infrastructural developments and the global maritime and commercial dynamics, the structure of the port city is often subject to profound cycles of adjustment and upgrading. The most complex and evident combination of patterns and fluxes condenses along the administrative boundary, formed as a consequence of the first port consortiums that were set up as independent entities from the 1950s internationally. Though it is often perceived as space of conflict, the liminal landscape located between a city and its port is a responsive interface characterized by strategic potentialities and, firstly, subjected/willing to change (figure 01 and 02).



Figure 01. PortCity Borderscape in Genoa (IT). Copyright: Diletta Nicosia (©2017)

Port city is a system that has undergone secular contaminations and, in the current framework, reports opposite scenarios that are at the same time unitary and multiform. It is an organism with particular qualities that define a 'distinct urban category' (Ducruet, 2011) turning a general city in a port city (Broeze, 1997). In order to better understand this distinctiveness or otherness, it is necessary to conduct a multidisciplinary exploration about ports and cities, but even more recognize a starting point of the reasoning: "[...] the port creates in the urban community that surrounds it a "distinctive form of environment", a milieu that derives its uniqueness from the physical and economic dominance of the port. Hence the analysis must take its start at the places where goods and passengers are transferred between ship and shore, the ultimate rationale of the port." (Broeze, 1985)

The port city evolution in centuries, as fully described by the by the International Maritime Geography², has completely revolutionized the relationship between city and port. For a long time the two entities lived integrated and the border between them did not exist because the spaces of community life (squares, markets, quays, canals) coincided with the spaces of exchange and work. By contrast, from about sixty years ago, the standardization of trade and intermodal transport on a regional scale imposed the definition of administrative boundaries between the port and the city areas, in order to steer more efficiently the process and ensure competitiveness to the port. This change gave more autonomy to both territories, but at the same time, produced an irreversible separation after which also the original port core, often placed in the historical inner city, it is unused and disposed. When ports became independent entities, the urban-port border began to emerge as a real figure. A line which was perceptible in everyday life in the movement of people and goods, a physical barrier and a functional and legal margin. Says Hoyle on this topic: "the port-city interface is a phrase that would not have been understood in past times when an interdependent city and port shared a common identity. [...] As ports and cities have developed new roles within contrasted but interrelated and interdependent systems at local, regional and global scales, a new interface between port and city has emerged [...] as a major concern of many people and organizations over the past fifty years." (2006)

From a planning point of view, this evolution required the development of efficient and balanced tools. For example, in Italy, Law 84/1994 has given to major ports a new perspective. First, it established the elaboration of specific port plans (art. 5) that are no longer viewed as simple programs for maritime and infra-structural works, but are understood as articulated and complex processes of planning and management. Moreover, the norm instituted the Port Authorities as public entities with legal personality to control, manage and enhance the largest ports (art. 2).

Compared to the past, when port was seen as a static moment, today the port area is turning into just one link in a continuous transportation chain. In this perspective, ports not only tend to adapt physically to the new requirements of the transportation cycle, but must constantly adapt to the demands of the market and its rapid transformations. This has kindled the need to set up flexible spaces that may be quickly reorganized. According to Rosario Pavia, the different speed at which transformation occurs in port areas compared to urban areas is one of the key factors that have caused the port to behave as a closed and separate system from the city. (2004) Following the prescriptions of Law 84/1994³, the port is institutionally divided from the municipal territory by defining an administrative boundary. The limits of the territorial jurisdiction of each Port Authority are decided by the Minister of Transport and Navigation and determine not only the overall layout of the port, but also the area within the Port Master Plan guidelines are applied. Another important paradigm of Law 84/94 is the involvement of local authorities in the development of the Port Master Plan: indeed, the Municipality and the Region organisms must contribute in the drafting and, after, in the approval of the strategic rules. Despite this boost to interaction, a constant fragmentation between municipal governments and the Port Authority is still observed. Again, according to Pavia, these diverging trends and necessities present themselves with a bias, without an overall strategy capable of understanding the new connection between not only the economy, but also the identity of the port and the city. The administrative boundary, therefore, exists and his regime is effective. Often, the presence of a legal border between two territories generates a division and consequently a sort of sectoriality regarding planning aspects and tools. Hence, what is important is to recognize an alternative and emerging potential of liminal landscape that helps defining the complex and multiform identity of port cities. The institutional issue, indeed, is relevant in all the different situations of interface between port and city. This condition identifies the forces involved in the border space and, above all, shapes the governance model, that set of processes through which territories are governed by local authorities.

1 / Harbers A. (2003) *Borderscapes. The influence of national borders on spatial planning*. In: Broesi R., Jannink P., Veldhuis W., Nio I. (eds) *Euroscapes - Forum 2003*, Amsterdam, MUST Publishers and AetA, pp. 143-166.

2 / Among others, the reference is to the studies of Brian S. Hoyle, César Ducruet, Yehuda Hayuth, Theo Notteboom and Jean-Paul Rodrigue about the evolution of the port city over the centuries.

3 / L. 28 gennaio 1994, n. 84, *Riordino della legislazione in materia portuale*. Source www.assoporti.it/files/Legge%20n.%2084%20del%2028%20gennaio%201994%20testo%20vigente.pdf



Figure 02. PortCity Borderscape in Genoa (IT). Copyright: Diletta Nicosia (©2017)

Objectives

From Border to Threshold

Following the previous standpoints, it is possible to go further affirming that border spaces (or borderscape, as Harbers said) are thresholds that materialize in the complex space along the administrative margin between the two authorities, in that recurring landscape in which city and port are side by side. To do this the first and most important step is to acknowledge the idea of border 'as a space' (not only a line) and to recognize the existence of various and mutable spatial sequences along and across the legal boundary. In this way, the border becomes a threshold, an intermediate space made of streams, bonds and trading, a 'unifying suture' more than an 'insulating barrier'⁴.

The urban-port threshold is, indeed, a unique and multiform system, a filter space precarious, discontinuous, fragmented into parts where the juxtapositions take sufficient shape to acquire a dimension and be recognizable. As Sergio Crotti stated (2000), the threshold is a concept and could be an architectonic figure which many potentialities that requires dedicated codes and suitable languages. In the specific case of port cities, the border is conceived as a 'dynamic threshold' that presupposes transition and motion, a medium where, while flows and forces converge and diverge, identity and character of communities and places condense.

This point of view contributes to expand the potentialities of the threshold as a working field and to make clear its strategic nature within the urban plot. As a mental space but not only, the threshold emerges as a result of external actions (disposals, technological upgrades, economic trends for example) that forces and changes the spaces, unbalancing the factors and forcing a redefinition. In this sense, the threshold is a spatial model that is studied in an exemplary way as a part or a significant fragment of a complexity.

Further extending the reasoning, the urban-port threshold could be conceived as a 'liminal body' (Bunschoten 2010), an organism or a spatial device that composes and solidifies the in-between nature of the border. There are many types of thresholds within the contemporary city that are expressed in plural and diversified shapes and geometries. For example, when the management model changes, different modulations of the figure of the border are generated, which have both specific forms and specific aims and operations. From the survey of several study contexts in the European field, at least, is possible represent a catalog of multiple urban-port thresholds and the absence of a univocal and stable configuration. In parallel, from the models is possible to deduce strategies of the urban-port threshold in order to evaluate not only the symbolic but also the operative consistency of this element.

From Integration to Coexistence

Along the city-port interface two different administrative entities meet: beyond the differences in each context, in some cases, the design and management of the two subjects are always particularly controversial. In the last thirty years, the border between the city and the port has been the focus of very extensive reconversions due to the disposal process that has affected the historic parts of the infrastructure. Generally, in these actions, an approach animated by the will to restore a deteriorated relationship prevailed, trying to merge the two territories into a new dimension. With the last century waterfront projects, the port was removed generating urban fragments separated from the consolidated core. This model of reversion has spread all over the world producing cloned spaces in terms of functional program and urban design. Places “cleaned up” by the port mark and returned to the city as a compensation for the many inconveniences caused by the port in the past decades. Landscapes of consumption for cruise passengers in which each parameter was adjusted to generate memorable perceptual experiences in the shortest possible time.

However, in recent times, this approach seems to have been overcome and port and city have developed a new role that allows them wider margins and, above all, new potentials as urban actors. In this sense, it is becoming a common idea that the two realities can no longer be united or integrated mostly because they are distinct areas in terms of functionality and conceptual meanings. So, the integration between the two territories is a false goal, perhaps inappropriate, in some cases even counterproductive. According to Rinio Bruttomesso⁵ a possible path of research and experimentation is the coexistence, namely the simultaneous monitoring of the territories with particular attention to the common margin between port and city. This approach is not limited to the consultation of the areas of contact, but produces a completely new design approach that pushes the port and the city to design and coordinate spaces that lie within and beyond the respective boundaries of ownership. These demarcations, in fact, are a linear and compact system of public spaces, artifacts for mixed use, in disuse or completely abandoned, traffic junctions and flows that, together, constitute an interesting opportunity for dialogue and rediscovery of a new shared civic identity.

In order to overtake the confinement of all port activities in peripheral areas and, more generally, the zoning of the territories, it is necessary to recognize that the port-city border creates in every context variable spatial conditions but, above all, generates different states of coexistence. These states of coexistence sometimes are forced situations that originate a critical management and use of spaces and equipment, but they could be sources of new opportunities for mutual interactions and symbiotic synergies.

Coexistence, declined as an operative paradigm, is materialized in that middle space that divides (and together connects) the port and the city: also, it can be a valid idea to understand its ‘third’ and alien nature, not just a port, nor just a city. From the study of the different states of coexistence that solidify along the threshold, the basis for the elaboration of potential border projects are deduced. Solutions dedicated to on-board spaces that take into account its particular and changeable dimension and concentrate in the elaboration of proposals that are not necessarily clear and finite, but capable of interpreting the incompleteness and the ‘boundless vivacity’ of the margin (Zanini, 2000).

Methodology

The development of a Matrix

Exploring and illustrating the border areas requires the development of a technique of representation but, first of all, the investigation needs to clarify its methodological position, individuating those tools able to grasp the multiplicity of information through which borders are constantly affected and transformed.

The representation of borders and borderscapes is particularly controversial. It is something about the bond between spatiality and law, about the visual portrayal of a contradictory and paradoxical condition, but not only. A matter that concerns mapping something that exists but is not visible, that determines an institutional regime and a binding statute, but is often quite invisible. Indeed, the issue of invisibility of territorial borders is real, says Brambilla: “[...] questioning the ‘where’ of the border also involves a focus on the way in which the very location of borders is constantly dis-placed, negotiated and represented as well as the plurality of processes that causes its multiplication at different points within a society “. (2015)

4 / Cf. Lynch K. (1964) *L'immagine della città*, (eds. 2006), Marsilio, Padova.

5 / Cf. Bruttomesso R. (2011). “Port and City: from integration to coexistence”. In: Bruttomesso R., Alemany J. (ed.), *The Port City of the XXIst Century. New Challenges in the Relationship between Port and City*. RETE Publisher, Venezia.

In the specific case of port cities, the urban-port border describes a crystallized state in which today, in most cases, the physical limit of the two territories coincides with the administrative one; as mentioned, this separated condition is often worsened by planning tools that persist to regulate the spaces surrounded. Furthermore, as explained before, the urban-port threshold is a spatial concept shaped in different configurations and models according to the variations of the morphological, institutional and planning framework. Even if borders are often drawn as polylines, they are actually uncertain spaces with variable thickness and size.

To explore the mutable nature of this borderscape between city and port, the research methodology elaborates a specific tool, the 'Aspects/Models' Matrix, which catalogs various but recurring models of the urban-port threshold by grasping different characteristic, or better aspects, that affect the port city borderscape among several European port cities. Specifically, the exploration is conducted through the analysis of three particular aspects of the port city border: the morphological one (related to physical configurations), the institutional one (related to governance issues and schemes) and the functional one (more connected to all the planning components). To different thresholds correspond different coexistence strategies to apply in the threshold territory.

In addition, each Aspect (morphological, institutional, functional) is further articulated in various subcategories in order to give a wider and more complex set of subtleties. In particular, the morphological aspect is articulated in 'continuity', 'discontinuity', 'closure', 'aperture'; the institutional aspect in 'overlap', 'sharing', 'separation', 'mobility'; the functional aspect in 'permeability' and 'impermeability'. Combining the various subcategories of each aspect the study aims to read and represent the multiplicity of the urban-port threshold.

The main result of this interpretative investigation is to produce different maps for every urban-port threshold Models revealing the intangible and even mysterious character of this space. The collection of the various maps composes the Atlas of Threshold's Models. Obviously, the 'Aspects/Models' Matrix operates a simplification, or better a conceptualization, of some aspects in order to 'shape' the complex and elusive nature of the interface; a still in progress version of the matrix is shown in figure 03.

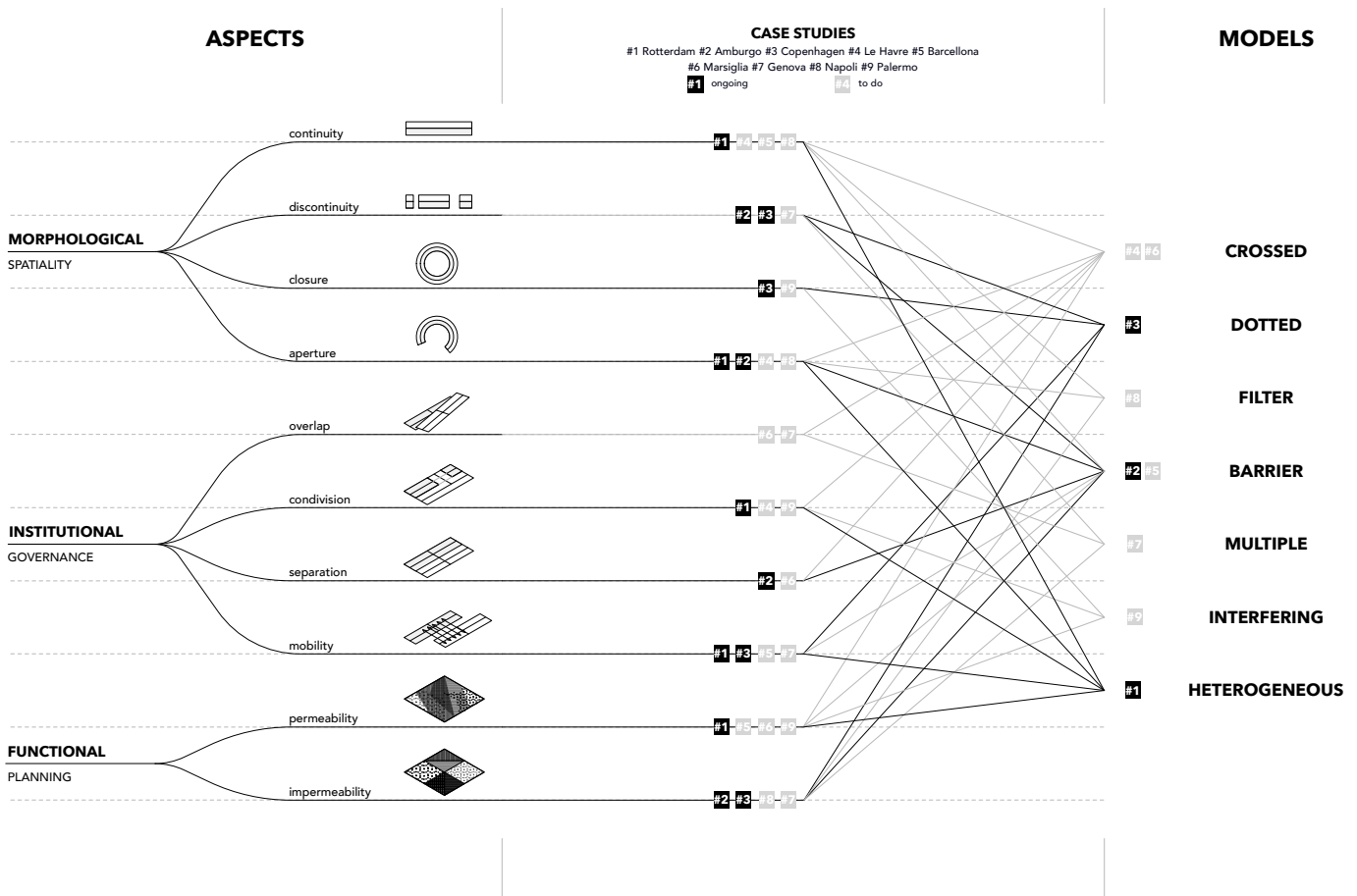


Figure 03. The 'Aspects/Models' Matrix (unpublished and ongoing work). Graphic elaboration: Beatrice Moretti

As explained before, the two administrative entities (city and port) are governed by two sets of laws that originate a sense of separation and sometimes contrast. So, going beyond the operative aspects, a fundamental idea of the research is to consider the built patrimony of the urban-port threshold a unique and compact system. This approach tries to overcome planning and administrative demarcations improving the power of the threshold as an urban incubator, also valuable in terms of identity, memory and territorial belonging.

Results and Conclusion

Models and Strategies for the Urban-Port Threshold

In accordance with the methodological approach, the research investigates the composition and consistence of nine different urban-port thresholds in the European context. In every case the morphological, the institutional and the functional aspects are systematically analyzed to bring out the main characters of this complex landscape and, consequently, to draft different models and strategies. The overall work will develop a sample of border frameworks where in-between and on-hold areas, former silos or disposal power plants are the main players of a transformation process that can contribute to a new coordinated cultural development.

In order to give some insights, it is useful say that in every context the threshold is composed by different types of landscapes mixed together or simply juxtaposed. In fact, moving along and across the legal border between city and port different situations are detected as results of the multiple transformations and reorganization that every port has experienced in its own life. Besides, ports produce a specific spatial condition, in every time their development has followed different codes and categories, giving rise to a distinctive language. As Alessandro Rosselli affirms this is a long-standing peculiarity of ports that was established exactly in parallel with the port city separation: "The great extension of artificial terrain, in many cases reaching dozens of hectares, led to the creation of a new territory grafted onto the coastal edge of the consolidated city that acquired a distinctive shape, following totally different rules of formation that had nothing to do with the rules and traditions of urban construction. In planning port basins, the design categories of street, square, route and street alignment, height-width relationship were no longer pertinent, and the rules of composition referring to visual perspectives, archetypal figures and metaphorical or allegorical development lost all meaning; the new port territory generated and developed throughout the nineteenth century in Europe was conceptually closer to a support mechanism than to a district of the city". (Rosselli, 2005)

Following this reasoning, it is possible to recognize that every port has its proper threshold, or even better, in every port there are more than one kind of threshold. In this sense, could be very controversial provide a unique and fixed model for every port city. Nevertheless, the use of the Matrix (with different types of aspects) aims to overcome this limit, drafting conceptual models of the urban-port threshold. For instance, here are some examples outlined so far: crossed, dotted, multiple, filtered, barrier, compact, interfering or organic... As can be seen, each model tries to phrase an attitude and to evocate a quality.

Talking about graphics features, a useful source is the study of different forms of 'line symbol' keeping in mind that "[...] in cartography, the line is used for many things, including hachures and contours, boundaries, borders, property lines, rivers, infrastructure, and, finally, routes. [...] [Lines] are generalized, approximating lengths and curves, depending on the scale of the drawing. They not only connect precise points but also tie together relational elements. Lines represent both physical features and distances between places. The line typology describes a hierarchy of physical presence and character in the landscape. The density of lines alone can reveal patterns of settlement and urbanization, while choices of type encode information. [...] The thickness of the line, too, is embedded with information about use, profile, material, distance, speed, and time. In route maps, the physical depiction of the ground is thus overlaid with a temporal narrative". (Desimini, Waldheim, 2016)

So, a simple line, studied in shape, color and proportions, can contain many meanings but also express strategic potential. Different types of lines constitute a starting point for the elaboration of a personal set of codes useful to draw different geographies of the threshold (figure 04). The map itself is a simplified representation that requires a sort of inaccuracy or a certain degree of approximation and compromise. More the contemporary technology has provided precise and realistic media to describe the world, the more the search for new languages has spread in order to represent relationships, flows, divergence, even impressions and feelings. Maps have been enhanced thanks to conventional signs that became less and less interested in the physical objects, but instead increasingly concentrated on space phenomena, on the stories derived from the experiences, on the resulting landscapes.

Though this evolution has requested a radical update in the field of drawing, it has not changed the original ambiguity of maps: still they are imperfect images, non-neutral visions that return an indefinite, plural and dynamic 'reality'. These qualities seem to be in accordance with the variable nature of borders: they are in tune with the ability to interpret the continuous changes happening in contemporary spaces, to put together the multi-scalarity issue and, above all, to enhance the diversity of urban-human cultural heritage often embedded in the liminal spaces.

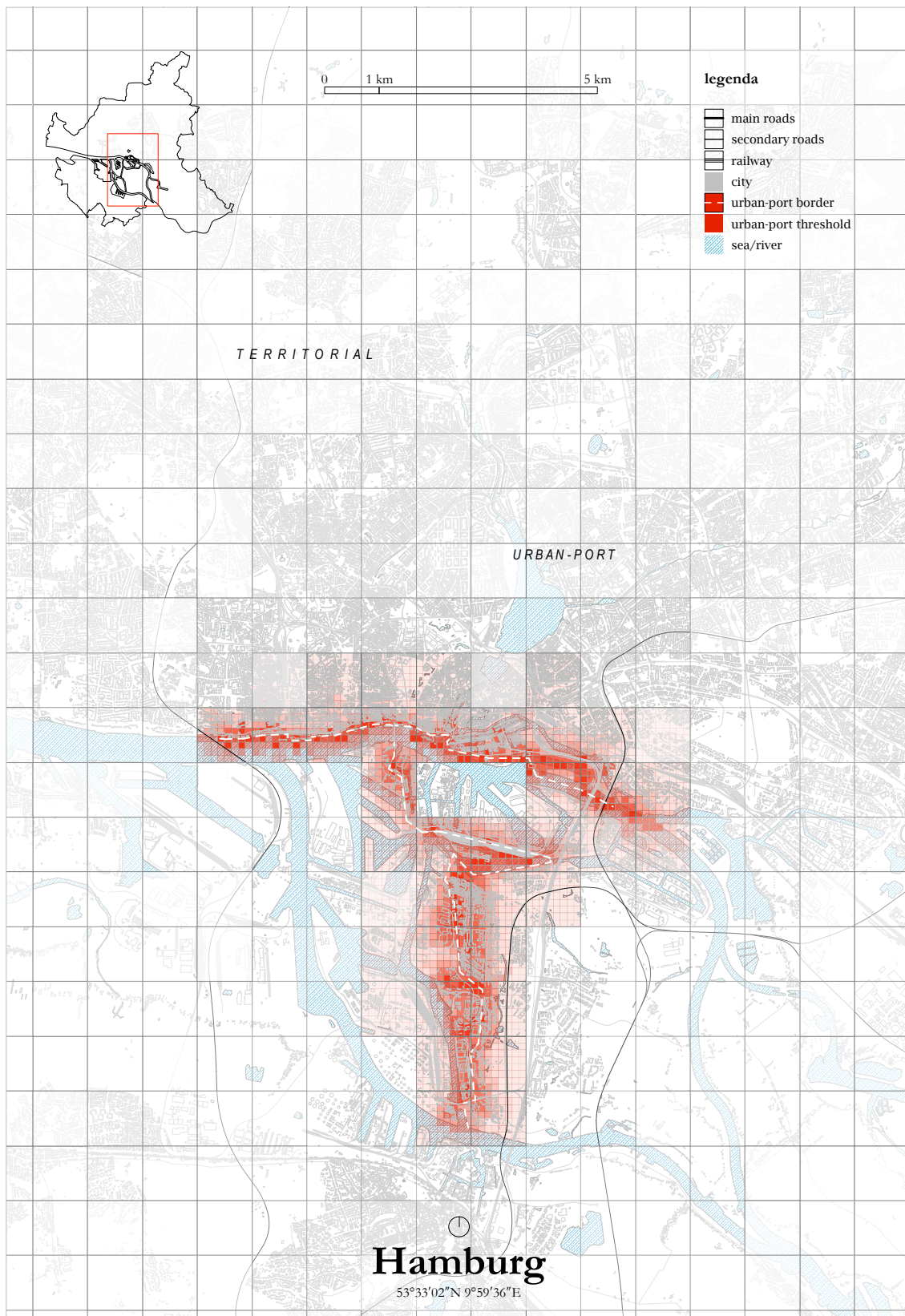


Figure 04. The Threshold Map: Hamburg (unpublished and ongoing work). Graphic elaboration: Beatrice Moretti

Acknowledgements

The paper presents part of a doctoral research in elaboration by the author (Beatrice Moretti) within the Doctoral Course ADD of the Genoa Polytechnical School, Department of Architecture and Design - dAD. None of the final results of the doctoral research are here completely outlined due to the 'ongoing status' of the work. However, some theoretical standpoints, tools and methodological aspects are introduced as paradigms of the interpretative approach of the research.

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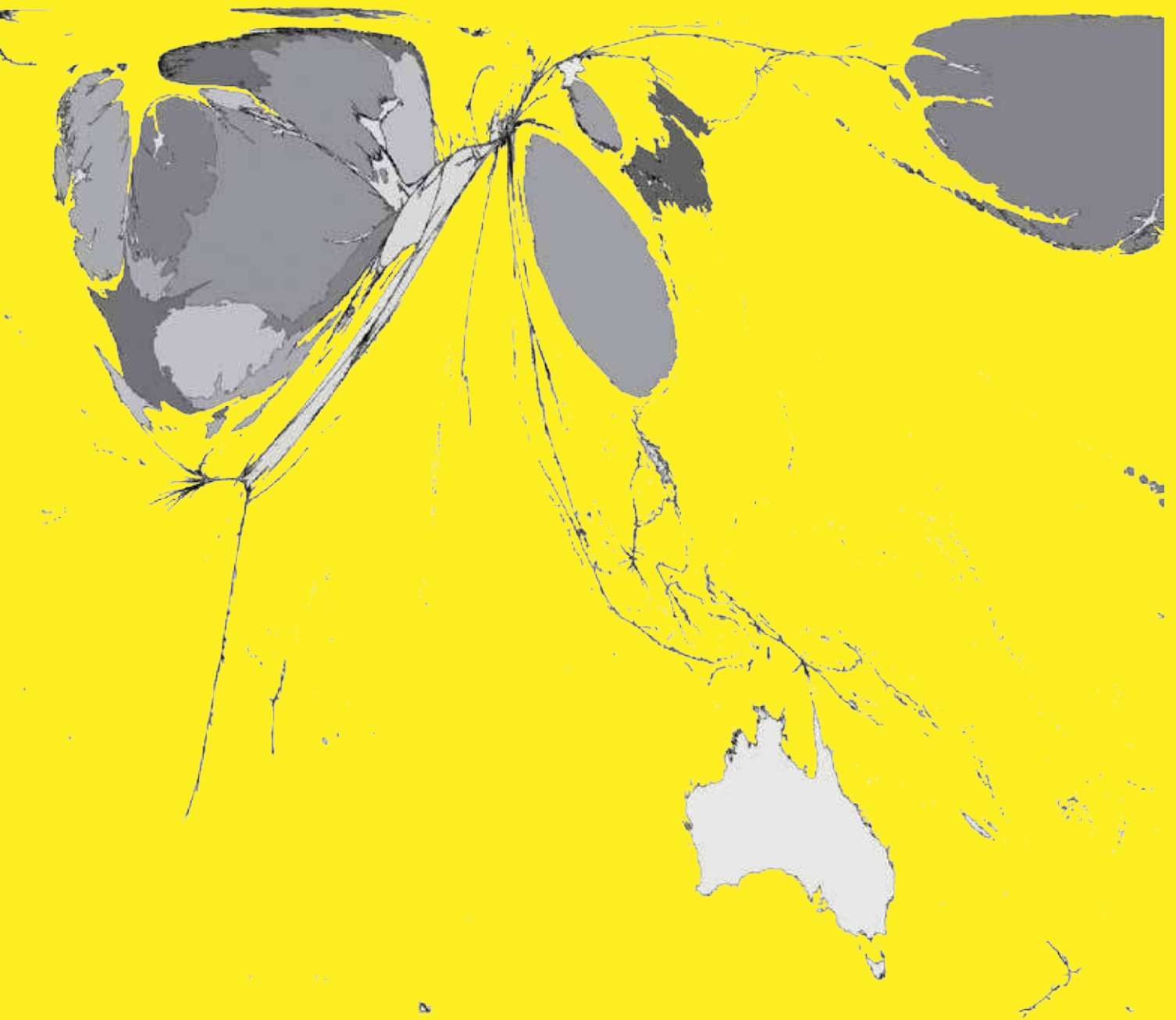
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[technology]

around **40%** of the world population
has an **internet** connection

[internetlivestats.com]



Map 332 'Internet users' © worldmapper.org

Current generations are experiencing a continuously evolving architecture practice, focused on the expanding formal and material possibilities offered by the digital age. Digital methods have fundamentally shifted the architecture discipline to a more interdisciplinary focus. Through the use of digital tools, the design process has shifted to a more accessible and streamlined process. Researchers who delve into the digital realm, seek to elevate standard building materials through non-standard fabrication methods and processes. The role of technology among architectural ideas and their physical manifestation in practice is fundamental. This session aims to reflect on innovations concerning materials and building technologies, design methods and advanced computational design practices, focusing on the co-habitation of tradition and innovation.

[TEC/01]



Active Citizens And Reactive Spaces: How Urban Design Changes With Digital Technologies

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abstract

Participatory approaches, variously connoted, are widely recognized and fostered as valid tools for sustainable urban regeneration processes.

In this perspective the research investigates the relationship between project of public spaces and digital technologies, the latter are considered in relation to their intrinsic and effective power of participation and transformation.

This relation is expressed with a bottom-up approach, that exploits functions of sharing and communicating of information offered by ICT's (Information and Communication Technologies), to develop operational methodologies that use the "virtual" to reinforce the "real", able to create and feed incrementally urban, environmental and social quality. That way public spaces bring up as bearers of values of liberty, diversity and spontaneity. They become preferential places for the construction of citizenship and catalysts of the community. This determines a new design attitude, aimed at developing spaces capable of stimulating, channel and welcome citizens' requests and visions, reacting quickly to the possible modifications generated by contamination and hybridization of new technologies in the physical space.

The goal is to understand ongoing changes and probable futures for the project of public spaces; possible transformations, usable technologies and their role and their spatial and social repercussions. This work aims to analyze tools and operational methodologies to identify new possible directions of the urban design, which by implementing physical space with digital and immaterial, increases exponentially its ability to respond to contemporary urban challenges.

keywords Urban Design, Public Space, Urban Regeneration, Citizen Empowerment, ICT's

Introduction

Urban systems and the social regeneration of cities

Urban systems are an expression of the strongly felt and indispensable relationships which form between city spaces and the common collectivity. Therefore, the city is the result of delicate balances between citizens and administrators, who receive and become the mouthpiece for their requests for action (the social network).

A city is thus the balance between spaces, their quality and the connections between them (the physical network) as well as information and networks and the ways in which these are managed and operate (the virtual network). The City, "Universal Architecture, both individual and collective, private and public" (Rossi, 1995: 9), must necessarily be conceived as an "opera" (Lefebvre, 1974), a shared practice of production and spatial signification, a "strategy" (de Certeau, 1984) in the creation of one's own spaces in urban environments, defined by top down planning strategies.

During the last fifty years, this conception of modern practices in the creation urban space has been significantly challenged. Nowadays, digital technologies increase the opportunity of sharing and expressing one's visions and aspirations; moreover, they help to actively involve citizenry in projects designed to regenerate and transform cities. This process of openness to the community is made possible by the integration of digital technologies and physical space; the virtual space becomes an instrument for conception, implementation and management of the

physical space, promoter of new environments of dialogue between those involved (Cadeddu et al., 2016: 6) and catalyst of a renewed vision.

Public spaces, the places most favoured by urban communities

Communities need a series of spaces to congregate that are representative of the city, and in essence, “public spaces are the elective places of urban life”. (Garau et al., 2015) since they tell us about historical, economic and social developments, representing a litmus test of a society’s well-being and vitality (Baumann, 2007) Contemporary Urban Design is a hybrid (Carmona, 2010) and polysemous (Cecchini 2004), discipline, a process that defines urban relations; it is primarily concerned with the quality of the public sphere – both physical and socio-cultural – and the making (and managing) of meaningful ‘places’ for people to enjoy and use (Carmona, 2010).

It is in public spaces that people interact and develop visions and aspirations, confidence in themselves and in others and hopes for the future. If a place is unable to satisfy the expectations of its citizens, it cannot be considered an authentic place of focus for the community, which over time loses its sense of being urban. On the contrary, a place that should be of the citizens and for citizens must prevent this from occurring.

It is a process of reciprocity that sees urban identity as an essential trait, in a process that starts with small individual practices and comes to involve an increasingly greater number of people right at the heart of the community, people whose lives are subsequently improved.

A space in itself is therefore the result of a metamorphosis brought about by the population, who develop a real attachment towards these places that grows out of the concept of identity and belonging. Identifying yourself with a place is the result of space being made understandable from a multi-perspective and multidisciplinary perspective, construed as a social vision of urban space.

Participation, effective practice for public space

The first step to activate the process is to improve relations, eliminating fixed hierarchies and dynamics that cause social exclusion, making the relations flexible and collaborative, in which the various levels of skills and participation can breathe life into the whole process, which ultimately aims to reach a common goal: to enable citizens to make the city and make citizenry by means of the city itself (Manca, Salaris, 2017).

“People’s rights to the city” (Lefebvre, 2014), to feel a mutual sense of belonging (collective and interactive in the fruition of space); on a theoretical level it helps shape a substratum that governs an operational outlook which is “too important to be left to the architects”.

Today, social involvement and participation is a crucial point in the scenario of architectural and urban design, but this is nothing new, rather a timeless way of building, which is simultaneously social, collective and spontaneous. With the crisis of Modernity from the sixties onwards, the theme of people participation has assumed renewed importance in the culture of project-making; since then, albeit in a fluctuating manner, it has had an acknowledged value within the theoretical-disciplinary debate through a series of critical openings to models and operational methods of conducting urban transformation processes aimed at allowing the direct participation and in some cases giving citizens exclusive control.

Today, participatory approaches are a tool of recognized worth in the processes of sustainable urban regeneration, proving to be a powerful supporting tool in all steps of a project (its original conception, realization and management) “The downside is that the term has become a slogan and risks becoming a mere buzzword of the 21st century” (Siddi 2017: 14).

Although a timeless notion, current models of participation first emerged in the second half of the 20th century. It was Giancarlo De Carlo who was committed to founding his project of architecture on user participation, involving people at all stages of its development (definition of the problem, elaboration of the solution and verification of the results), in an open, “articulated”, adaptable and democratic process. Only by so doing can architecture fully represent its end users, allowing them to actively fulfill their roles as citizens (De Carlo, 2015).

The promotion of the participatory approach by the most important recommendations and strategic documents of the United Nations Conference on human settlements and sustainable development, has emerged above all in the three editions of Habitat, seeks to orient urban thought towards a people-oriented approach (Siddi, 2017: 14). This introduces two very important issues of contemporary city making: First of all, the importance of participation and participatory approaches at the base of the genesis of public spaces and the second is linked to how these processes develop. On the one hand, in fact, public space is the place of representation of the community, and

at the same time becomes the place of participation. This becomes a practice that binds its becoming to public space. A vision so determined leads to the concept of prosumer, a direct and proactive actor, where skills and objectives, produce and use of space converge.

Our main focus of concern is of course social change: the community as a whole must develop a collective awareness, acting and managing space autonomously, rather than expecting others to take responsibility. Participatory practices presuppose a variety of different operational approaches, in which inhabitants take on an active player role in the progress of their city, creating a dynamic system that requires the direct involvement of citizens in decision-making, thus going beyond the passive vision of systems that merely represent and delegate. There are two complementary factors at work here: a vertical structure that starts from the bottom (bottom-up), as opposed the top-down typical of traditional dynamics of action, and a horizontal dynamic conceived to explore the possibilities of imagining and building in a collaborative and inclusive way.

It's an approach that involves multiple forms of language and skills; on the one hand, specialized knowledge and on the other, the tacit and mutual knowledge of the users that participate. (Maciocco, Tagliagambe, 1997: 277). Nevertheless, this knowledge often remains trapped on different levels. One reason for this problem is that communication channels between experts and non experts are never transparent. The "informal" modes of action are very eloquent, as they determine in various ways the active involvement of citizens, often only partially to the institutional dynamics Tactical Urbanism (M.Lydon, 2012), DIY Urbanism (Sticazzi), Handmade Urbanism (Rosada, 2012).

The digital revolution pervades urban spaces

The unstoppable spread of digital technology has led to a paradigm shift that has spawned the "network society", based on "cheap information input", on a new networking rationale (Castells, 1996: 75), instigated by the development and application of information and communications technologies. Kazys Varnelis has taken the definition a step further, calling the phenomenon a "culture of networks" (Varnelis, 2013), a cultural model, which operates in the economy, in society, public life and at the individual level: everything and everyone is connected and interdependent. At the heart of this transformation lie the digital technologies that have amplified the flow of communication and information, distributed and shared through the medium of the Internet.

In contemporary cities, digital networks are all pervading. We are witnessing a new kind of urban environment, where nonphysical processes are as important as actual spatial forms. "For the first time in the history of humanity we live in two spaces simultaneously: a physical space and a network space" (Varnelis, 2013: 32). Digital technology has therefore enabled us to break down every space-time barrier and this leads us to consider this simultaneity as a new reality. The product of this extension is the "architecture of connectivity" that brings together the three spatial contexts in which we live today: the human mind, the physical world and the network together negotiate and manage the thresholds between mental and virtual spaces. It all comes together in the cyberspace generated by the Internet and the World Wide Web (de Kerckove 2001: 7).

Technology significantly conditions both the immaterial contexts of our culture, knowledge and social relations, and the material relations played out in urban space; its capacity to transform is ever-increasing. Digital infrastructure has consolidated its connection with space through the web 2.0 and social media, systems of location awareness and sensors and digital layers in which cities, in recent years, have been immersed. Through the convergence of the two elements of sensing and actuating, they make space more tangible (Ratti, 2012), enabling us to gain a renewed understanding of how cities function from a real-time perspective.

The Internet has become the backbone of most communication, trade and work activities. The innovation in the creation of social bonds made possible by ICTs has given rise to the concept of "Collective Intelligence" (Levy, 1994); an increasingly widespread intelligence that constantly progresses. It is managed in real time and is based on developing horizontal relations, on mutual learning and on working towards common goals. Furthermore, important opportunities are being provided by mobile internet and geo-referencing tools, which together enable us to simultaneously combine a digital identity and a physical space, thus generating a "located collective Intelligence" (di Siena). Referring to a circumscribed geographical area, it provides a much more powerful tool of action than does the mere exchange of information and feedback through social media and affords a concurrent physical meeting place for all participants in public spaces.

Lévy's ideas have been taken up and further developed by Derrick de Kerckhove (2001), who discusses the evolution of the concept of "collective intelligence" into one of "connective intelligence". The difference between the Internet and all previous forms of media is the role which it attaches to people; millions of connected people form a connected intelligence, a social digital network, whose synergy and interconnection amplifies its potential to innovate and resolve problems. To prosper it is necessary to share (de Kerckhove 2001: 78). The connection,

the network, the web, namely the coming together of different intelligences, highlights the “relationship” that they form with each other; a proliferation of intelligences fostered by this connection.

Cyberspace is the new public space, where individual users are at liberty to mould their personal content to fit in with the common ground, also producing a strong impact on the physical form of the city. The principle of democracy recognizes the connective nature as a new political entity, based on the principle of individual responsibility exercised by each person online. As new tools and planning strategies increase, architects and planners will have to face new and exciting challenges.

Objectives

With the exponential increase in the use of the Internet, the world of architecture is experiencing a transformation that affects the way it operates at its very core. Project culture sees this as an extremely powerful resource as it incorporates substantial and potentially limitless contributions from all subjects involved in the design process. Digital infrastructure pervades physical space, modifying the ways in which people interact with each other in space or with space. This increases the involvement of citizens in the creation of projects for the transformation of a city.

This process of opening up to the community is made possible by the integration of digital technologies in and for physical space; virtual space is a tool for the conception, implementation and management of physical space. This determines systems capable of reacting and interacting with the digital information produced, collected and organized. The input of this information can be used to generate non-coded, therefore open and free action and interaction, in which citizens are called upon and actively respond by providing their contributions, making them available, as happens in any process of free software development. This modifies the ways in which the design practice is defined, both in the participated processes of urban transformation, and in the conception of spaces that react in real time to the modifying impulses generated by the data acquired and processed. The research investigates the potential of ICT as a tool to increase the participatory potential of the community in urban transformation processes. How participation can fit into the Urban Design process; what are the tools and methods that are recognized as useful and what are the real potentials in terms of effectiveness? What are the ways in which, in operational terms, the pervasiveness of the digital infrastructure and the tools indicated become able to channel the wills and transformative capacities of citizenship? How, in operational terms, the pervasiveness of the digital infrastructure and the tools indicated become able to channel the wills and transformative capacities of citizenship? And again, what are the real incremental effects of the participatory potential both in terms of process improvement and in terms of the characteristics of the spaces so determined? What are the new features and configurations that emerge in public space?

Methodology

Theoretical Participatory models_ crisis and recovery

To understand how, collectively, we can conceive, coordinate and define urban transformations, the methodology proposed involves a trans-disciplinary approach, analyzing the reference literature mainly borrowed from urban planning and from the governance and management of territories and the variety of theoretical-operational frameworks and methods of analysis (54 models). Such methods are designed to identify ways in which to better understand participatory dynamics in order to modify the forms and significance of constructed space.

One of the most interesting classification criteria is the “Scale of Civic Participation” (Arnstein, 1969), a schematic representation of the complex social relations between citizens and administrations. This consists of eight steps, divided in turn into three basic categories, placed in ascending order. The lowest level is that of Non-Participation, the intermediate category is referred to as Degrees of Tokenism, and in the highest category there are the three values that guarantee power to citizens (Degrees of Citizen Power). Pedro Prieto Martín (Martin, 2010: 41-44) points out that, contrary to what most important international organizations say, over time there has in fact been an involution of the categories initially proposed by Arnstein. (Fig. 1)

Paradoxically, in 1999 the International Association for Public Participation (IAP2) devised the “Spectrum of public participation”, a simplified version of Arnstein’s scale. It was made up of five levels of participation - informing, consulting, involving, cooperating and empowering. This simplification saw the removal of both ends of the scale, since the idea of citizens taking full control as a valid form of participation was excluded. Likewise, the lower end of the scale, i.e. the Non-participation category was also eliminated. Thus, any reference to public administrations manipulating or ignoring citizens’ opinions disappeared.

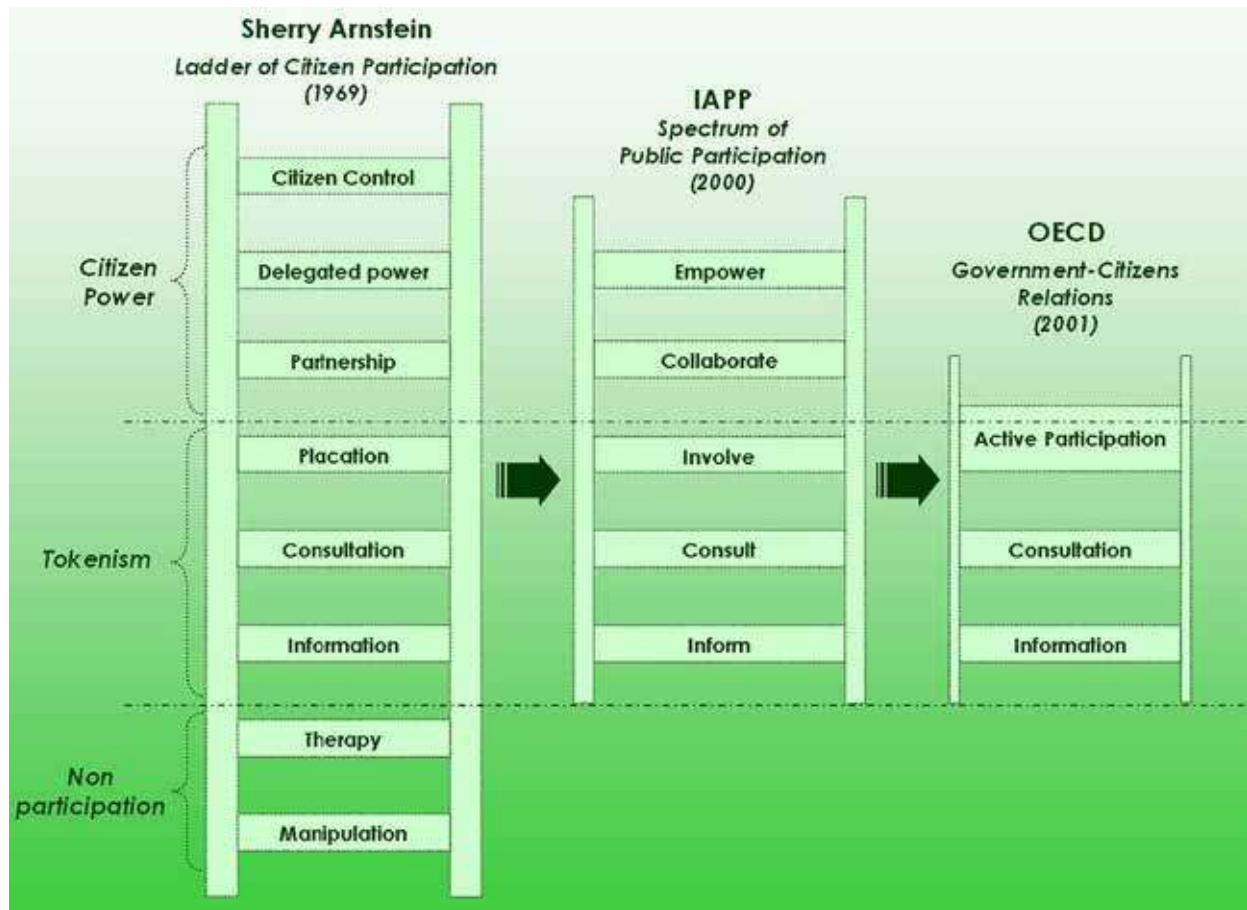


Fig. 1: Pedro Prieto Martín (2010)_Changing Views on Participation. Comparison between the "Ladder of Citizen Participation", the "Spectrum of Public Participation" and the "Government-Citizens Relations".

According to Martin, however, a further step backwards was taken by the OECD with the publication of its "Government-citizen Relations" memorandum (Gramberger, 2001: 15-16). It was in fact a further simplification of the model, eliminating the two higher levels of the Spectrum, suggesting that the whole participatory phenomenon be reduced to just three levels: information, consultation and active participation.

The first step, of "active participation" corresponds to the Consultation phase of the original scale, and contains everything that does not fall within the narrow categories of information and consultation. It is curious how what Arnstein denounced as "false" is now regarded as the essence of participation; the excessive simplification implemented by the OECD thus views citizen power as an unattainable utopia. The digital revolution and the diffusion of Internet, web 2.0, social software and location awareness tools has also led to an important change in the notion of participatory models.

What is commonly affirmed is that web 2.0 can strengthen citizens' resources, promoting a greater propensity for active civic awareness and participation. As a result of this phenomenon, terms such as e-Democracy, e-Participation and e-Government soon began to be used in the administrative field.

In this respect, e-participation is now seen as a way to exploit the power of new technology (digital means of communication) to encourage the active participation of citizens in the decision-making process. This includes consultation, local representation and self-organization among groups of citizens.

In 2002, Richard Kingston (Kingston, 2002: 4) published the "Ladder of e-participation" (Fig. 2) consisting of seven steps in ascending order; the first two see interaction as being one-way, while the next five, in increasing order, posit a two-way interaction, and therefore effective participation mediated by the web.

This model shows the change of course determined by the use of ICTs, belonging fully to the notion of participatory practices and gave new impetus to the possibility of involving citizens in decision-making. Alongside participatory processes, the research on reactive spaces opens a new reference channel, which sees the possibility of interacting and modifying the physical character of the spaces themselves. In this sense, architecture becomes a means within which participation takes shape in real time and brings with it dynamic and changing characters. The spaces so characterized have a potential of implementability that substantially transforms the typical temporalities of the architecture.

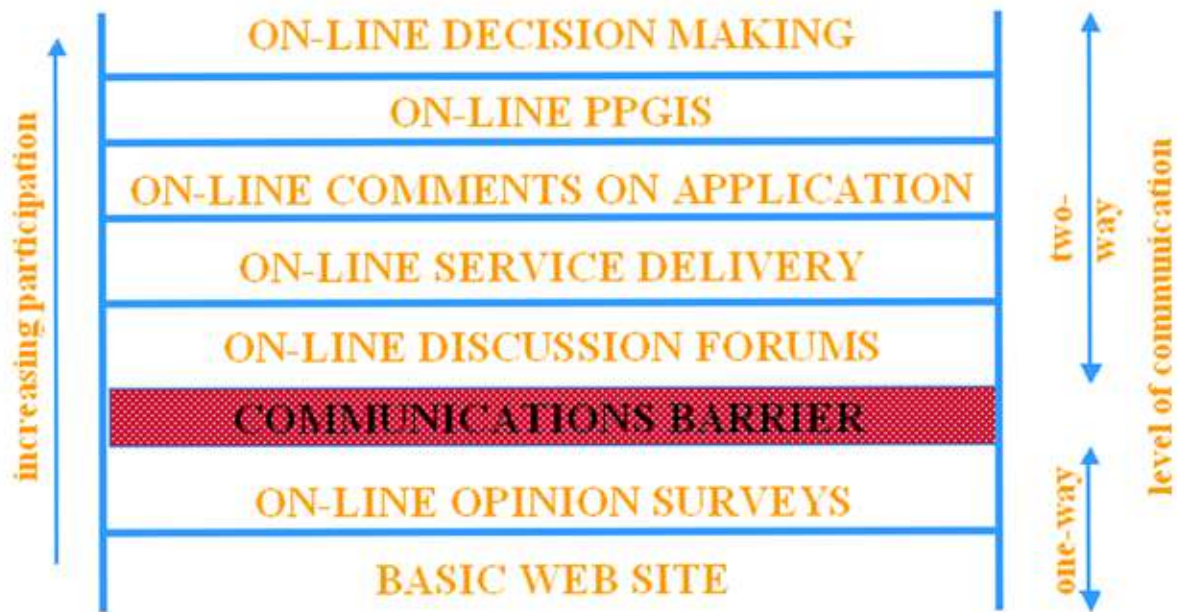


Fig. 2: Richard Kingston (2002)_“E-participation Ladder”

The selection of case studies

With case studies (Fig.3), seeks to demonstrate that, starting from Martin’s critical analysis, with the advent of the digital revolution there has been a resumption of the participatory potential.

By systematising the various models (in particular the “Spectrum of Public Participation” and the “E-participation ladder”), we want to demonstrate how the 4 “active” steps of the “Spectrum of Public Participation” are satisfied. The selected case studies are therefore commonly characterized by participatory propensity and by the use of digital technologies as a medium, with a variety of possibilities that defines a gradient of inclusiveness and participation. The last case study is instead a true example of reactive space, sensitive to user input and able to modify its physical characteristics in real time. The choice of this specific example is determined by the character of innovation that has characterized it from the moment of its construction, defining a new vision in which architecture is a living element.

Active citizens_ Consult

Cityswipe DTSM

CitySwipe is an application developed by the non-profit organization Downtown Santa Monica Inc. to consult, facilitate feedback and make the Downtown Community Plan (DCP) process more transparent, inclusive and efficient. DCP is a document that will guide the future of the center city for the next 20 years. Cityswipe DTSM is a program to improve mobility, affordable housing options, open public space and many other urban issues. The interaction allows users to express an opinion about current characteristics or potential future scenarios proposed by scrolling left for “no” or right for “yes” depending on the rating. It is also possible leave comments.

Active citizens_ Involve

PPGIS for self-organized urban development: the case of softGIS in Pacific Beach (California) (Schmidt-Thome et al., 2014)

The research was conducted by a group of researchers from the Aalto University (Finland) in Pacific Beach (California). The aim of the project was to demonstrate that a PPGIS application can facilitate self-organized urban development and prove to be an aid to urban planning. The experimented PPGIS application is called “softGIS”; this collects and processes geocoded and georeferenced data on some urban aspects, deriving from the compilation of online map-based questionnaires that told the citizens’ urban experience.

The experimentation had its partner a local community organization, Beautiful PB, which played an important supporting role, above all facilitating the citizens’ approach to participation, the acquisition of data and the discussion phase of the results obtained.

The questionnaire was divided into four main phases.

- _ basic information and location of the current residence on the map.
- _ signifies the places visited every day and the routes considered important.
- _ indication of the perceived environmental quality, which marks the positive and negative attributes, following four main themes: functional possibilities, social life, appearance and atmosphere of the environment.
- _ ideas and suggestions for possible interventions, locating them in the map

After the implementation of the data, the association Beautiful PB was able to legitimately start a process of urban transformation and this has demonstrated the utility of PPGIS systems as a facilitator of self-organization and catalyst of social and spatial transformation.



- 1_Citsiwipe DTSM
- 2_softGIS in Pacific Beach
- 3_decide Madrid
- 4_El Campo de Cebada
- 5_Digital Water Pavilion

Fig. 3: The case studies

Active citizens_Collaborate

Decide Madrid

The city of Madrid has for some years defined a mode of participation linked to the collective conception of urban transformations through participatory budgeting, a democratic process through which citizens can directly decide for what purposes to use part of the municipal budget. The process is based on portal decide.madrid.es.

All residents of Madrid aged over 16 can, through the web or personally, propose and vote for an urban transformation project for the whole city or for a specific district.

In 2017, 60 million euros were allocated (36 million for proposals located in the 21 districts and 24 million for large urban projects). The procedure is divided into 4 temporally defined phases:

- _ collection of citizens' proposals. In each district are allocated, spaces for debate and for the collective construction of projects;
- _ support of citizens, through the online portal, of the proposed intervention proposals;
- _ evaluation by the city council technicians on the legal validity and on the economic aspect of the most voted proposals;
- Final validity of the valid proposals, of which the estimated cost is also known, through the portal.

The final result of the process will be obtained, once the voting is complete, by ordering all the proposals in each list (of the whole city and each district) by votes, and selecting the most voted.

Active citizens_Empower

El Campo de Cebada

El Campo de Cebada (ECDS) is an urban space located in the historic center of Madrid, in the neighborhood of La Latina, where previously was the public swimming pool and the sports hall.

This is an example of how public space management can take new forms, overwhelming traditional hierarchies. A process of new signification of site has generated an inter-connected participatory management model, formed by horizontal relationships, where each user has equal rights of use of the space.

One of key activities developed in this program have been the creation of a communication network between citizens, supported by digital (web and social networks). This is a real-time connection tool for facilitating the appropriation of space and the involvement of citizens in defining daily activities and spatial transformations based on emerging needs.

It is a case of totally self-managed action, a great example of collective intelligence, in which it is of fundamental importance to take into account all the opinions originally reflecting the desires of the society that creates it. It is very important the support of different groups of architects (Exyzt, Zuloark, Basurama).

The Comisión del Área de Gobierno de Desarrollo Urban Sustainable of Madrid announced on April 18, 2018 the definitive approval for the special restructuring plan of the Plaza de La Cebada. The inherited plan provides for the privatization of the area. The Special Plan contrarily, thanks to the participatory process developed since 2011, provides for the recovery of the existing building for the construction of a neighborhood market and the construction of an integrated system of public spaces.

Active citizens and reactive spaces_Empower

Digital Water Pavilion

Designed by Carlo Ratti Associati (CRA)⁴ in 2008 for the Saragoza Expo, it was an innovative building boundary between the world of physical and digital architecture. The topic of the Expo was water; regulated and digitally managed from the interaction with users, water is the key element of this architecture. In the project all the walls were made of water.

A sensor system, reacting to presence and movement of people, opened the wall of water to let visitors in. The interior of the building also had an interactive character: the rooms were adjustable according to how many people was present.

At the end of the day, the pavilion could also be closed lowering the roof to the ground and causing the building to disappear.

Results

In a current and future vision where technology and digital networks are profoundly altering the way in which we perceive reality, the dynamics of urban regeneration have undergone significant changes over the past two decades. The study showed how the use of ICTs favors and enhances participatory processes by allowing a real and incremental involvement in the dynamics of how urban transformation comes about. They have strengthened the role of citizens through democratic decision-making processes, identity creation and community development. This also allows new interpretations of the city and helps users and planners in achieving process synergy. Important opportunities are now being provided by mobile internet, location awareness and geo-referencing tools.

Using digital tools in a context of real time and space and being able to elaborate huge amounts of information, increases the ability to generate opportunities and synergies between the people who make use of such platforms. It is a model of a city based on a technological / social ecosystem where knowledge, collective action and interaction between people and space are enhanced by exploiting the possibilities offered by this union of physical and digital elements.

The concept of open source (Ratti, 2014) in relation to public space projects is proving to be of the utmost importance. Open source architecture recognizes the fundamental role of all the participants in every project phase. Consequently, citizens assume the role of active protagonists in the transformation of the city, thanks to a more open management of decisional and planning processes. Citizens can directly contribute to processes of collective creation and transformation of urban space, creating control and feedback devices that enable them to take stock and become fully aware of the effect of actions. An open source city means free access to all, so makes data available (Open Data), thereby transforming the city.

Furthermore, the integration of digital technologies and physical space means creating space that is tangible, characterized by the functional interaction between physical elements and users (Ratti 2013). Behind this vision there is a system made up of two components: a sensing component, i.e. a compilation of information, and an actuating component, implemented as a result of the information obtained. Through sensing, one is connected to objects; having access to information can give rise to a behavioral change that modifies a system, through a bottom-up involvement process. The actuating phase, which has greater potential, is designed to change the behavior of the elements reacting to the information collected. We are facing a revolution, that of convergence between bits and atoms, destined to become the most radical and disruptive change that has ever affected design (Ratti, 2016: 51). Focusing on participatory, collaborative and evolutionary potential, the communities, interacting with the reactive spaces, will have the tools of decision and transformation that facilitate the appropriation, thus increasing the sense of identity and belonging to the places. It is also interesting to think about what may be the effects on a series of heterogeneous urban cases, which presupposes the use of this type of approaches in different contexts of necessity. There is therefore a double level of results.

The first is linked to participatory processes, increasingly focused on involvement, both in terms of quantity, characteristic determined by the opening granted by digital technologies, and in terms of quality, defining different degrees of participation. The second shows how the spaces themselves could contain, in their physical nature, the participatory potential to translate citizens' requests. The ways in which these spaces can change their temporary characters, is determined by the type of information to which they are sensitive (for example environmental characteristics, presence and proximity or specific contributions, represented by defined information that citizens can provide).

This last scenario represents the one with the greatest participatory potential, since it contemplates well-defined and customizable possibilities of change, favoring an interaction and transformation from below, capable of accommodating individual and collective needs, which can somehow concretely resolve social and spatial conflicts.

Conclusion

Implementing changes within participatory models is necessarily the result of a historical, social, economic and cultural evolution, in which new paradigms alternate and with them collective demands are renewed. In operational terms, participatory practices have undergone a renewed impulse, deriving from the cultural and pragmatic upheaval determined by the "network society" and from the resulting profound alteration in our ways of perceiving, connoting and viewing reality.

The need to analyze how participatory approaches see the role of ICTs and what their valuable and potentially incremental contributions might be on the dynamics of spatial transformation, which is the essence of architecture, entails making a complex series of considerations deriving from the study of methods, tools and practices. Such a contribution aims merely to provide a classification and a point of view (Fig. 4).

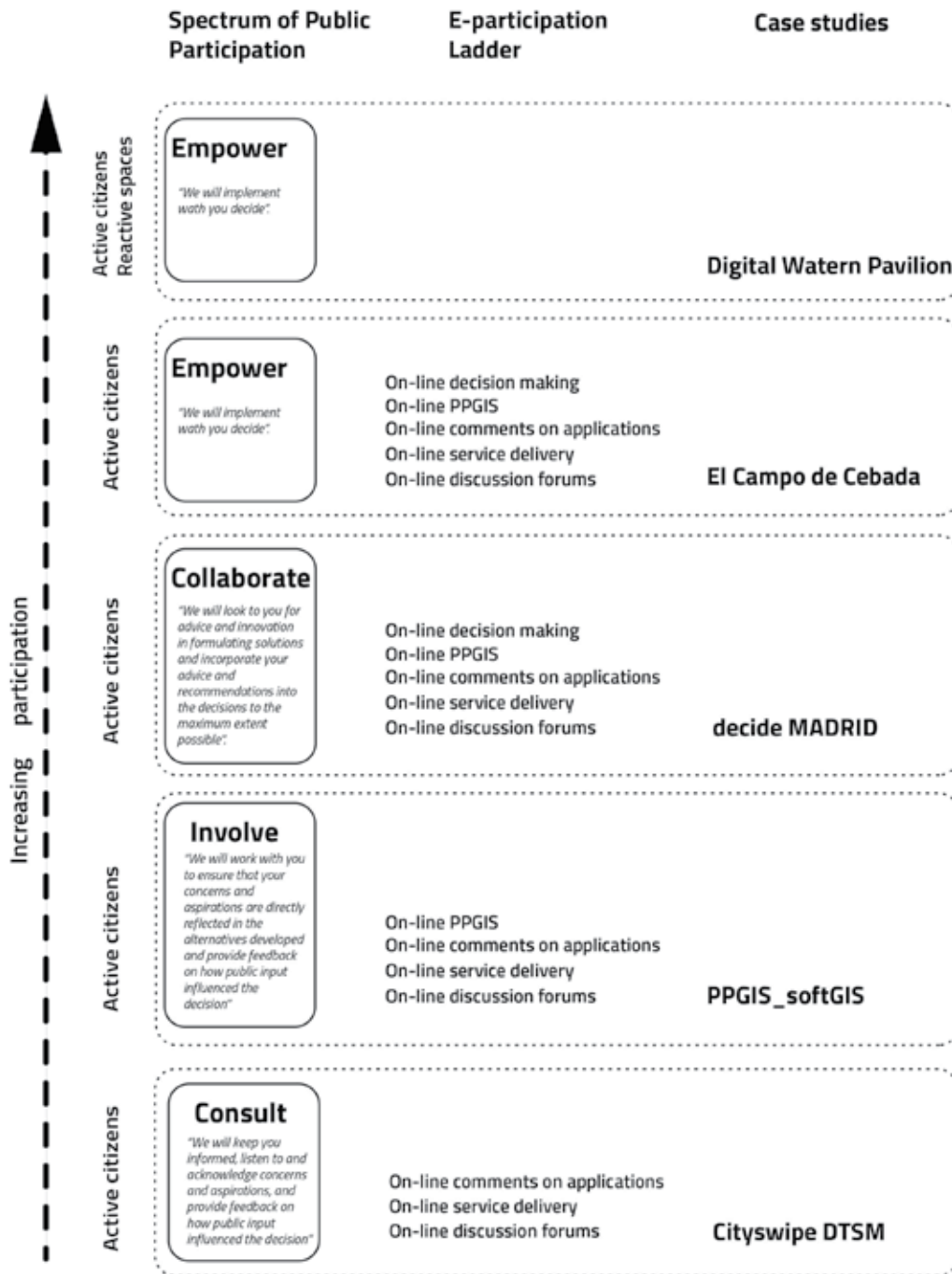


Fig. 4: Systematization of the "Spectrum of Public Participation" and the "E-participation Ladder"; identification of case studies in each category. It can be seen that "reactive spaces" wasn't anticipated by Kingston.

If we understand the value of contemporary public space and we consider the needs related to the production of urban space, we can define the directions to be taken for any project which, by combining the physical potential with the digital and the immaterial, exponentially increases its capacity as a urban catalyst for the construction of important synergies between citizens and their places. Architecture, active and retroactive mirror (Emery, 2010: 23), sees digital technology as an extremely enriching tool for future developments of the Urban Design.

Acknowledgements

My path at the Doctoral School in Civil Engineering and Architecture of the University of Cagliari, within which this research is found, welcomes essential intellectual and human contributions. My first, heartfelt thanks goes to Professor Cesarina Siddi, a substantial and indispensable guide to passion, rigor and foresight. To Professor Giovanni Battista Cocco for the continuous and consistent scientific support and to Fiammetta Sau, example of passion for research, dedication and professionalism. A special thanks goes to Chiara Salaris, a pervasive presence; vital, stimulating constant incentive to do better.

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[TEC/02]



Co-Evolving In The Anthropocene: An Oriented Analysis To Raise Awareness Through Architecture And Serious

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abstract

We're currently living in the Anthropocene, a geological age in which human-environment interaction utterly affects the biosphere balance. As stated by both Paul J. Crutzen (2000) and Christian Schwägerl (2014), with the term "Anthropocene" we refer not only to a new environmental condition but to a new paradigm in which nature and culture are seen as a component of the same system and not anymore as independent categories.

Although in the last decades the environmental consciousness has significantly increased, we are still in need to develop new strategies to face the actual critical global condition characterized by lack of resources, progressive temperature increase and sea level rise. From our perspective to increase the effectiveness of sustainable practices and processes, a higher level of social awareness and civic engagement has to be reached. With this in mind, we propose a two-sided analysis based on the approach of ecological thinking through serious gaming and bio-digital prototyping to generate new bottom-up strategies. The category of serious game (Ulicsak & Wright, 2010) represents a still relatively understudied space of opportunities to develop new tools for scientific analysis and methodologies regarding urban design and planning strategies and to involve different actors in developing more significant problem-solving means. On the other side, bio-digital prototyping, through the hybridization of organic and non-organic matter, opens new research fields to induce new behavioral patterns through human interaction and, therefore, to generate a sense of empathy between anthropic and biological environment.

Alongside the theoretical frame, we will present two case studies - "Solve the Crisis! An alternate reality game to tackle Cape Town's water crisis" and the biomimetic structure "Physarum Shelter" - to highlight how serious games and bio-prototyping can be used to empower the ecological consciousness and lead to more integrated design strategies.

keywords Ecological Thinking, Social Awareness, Civic Engagement, Serious Gaming, Bio-Digital Prototyping

Introduction

Anthropocenic entanglement: bridging the gap between anthromes and biomes

The concept of the Anthropocene represents a significant paradigm shift in Human and Earth history, promoting a new way to conceive the relationship between man and nature.

The term, originally coined by the biologist Eugene F. Stoermer during the early 1980s, has received ever-increasing attention in the scientific community since the Intergovernmental Geosphere-Biosphere Program (IGBP) held in Mexico in 2000. While many geologists and biologists kept referring to our geological era as the Holocene, Nobel Laureate Paul J. Crutzen publically declared that the massive human intervention on earth system and nature utterly affected the biosphere balance leading us to a new geologic era: the Anthropocene.

The transition from the Holocene to the Anthropocene, even if still not officially recognized as a geological epoch, entails the redefinition of the human-environment relation. Many scientists agree to date the beginning of the new era in the late Eighteenth Century: since the Industrial Revolution, in fact, man has undeniably altered the biosphere, often in an irreversible way. In this perspective, environmental and drastic climate changes are strongly related to human actions and can be considered as anthropogenic products. This concept leads to new reflections on the boundaries between the natural and the artificial realms: in an era during which men constitute a dominant force shaping and influencing biological balance, can we still talk about nature and culture as distinct forces?

Bruno Latour argues that contemporary matters of public concern, such as global warming or emerging biotechnologies, are not meant to be seen as entirely natural or artificial phenomena, but as hybrid outputs resulting from the interaction between these two complex fields (Latour, 1993). The idea of untouched wilderness is obsolete and promotes a “getting back to nature” philosophy that does not help us move towards the much-needed paradigm shift. Moving from the idea of an environment that simply contains us in a relationship of subordination to a more interconnected one, means embracing the radical cognitive transformation produced by ecological thinking and recognize that we are knots networked into a global system of relations, mutually connected to each other (Capra, 1997). As human beings, we can adapt to new environmental conditions and to shape our habitat, which cannot be considered as a glass cabinet to protect and preserve. We should rather imagine our relationship with the environment as a complex “entanglement” (Ingold, 2000) in which nature and culture are conceived as constitutionally linked, merging into a meshwork and stimulating a cognitive switch in human perception.

In this evolving scenario, scientific process and new theories, in particular those from biology, biotechnology and cybernetic, are the leading factors to address the research towards “an emerging new nature that will make earth more humanist rather than just humanized¹.”

Bridging the gap between anthromes and biomes, and shifting from a reductionist model to a systemic one, can help people perceiving themselves as active, integrated, participant actors to global changes. While the protectionist model was based on a set of imperatives, the new anthropocenic paradigm asks for self-responsibility and promotes a new concept of nature based on the intersection between biosphere and technosphere.

Nevertheless, rethinking human presence as strictly embedded with natural ecosystems, and not only as a mere observer is the key to switch from a reductionist to a bio-systemic approach and to tackle the global ecological crisis. As designers, we can improve human consciousness and cognition on the environment by converting the destructive human presence into a constructive force through our creativity. The aim of this theoretical shift is proposing new design strategies that stimulate human-nature interaction and increase social awareness and civic engagement on environmental problems.

The relationship between citizens and environment can generate design solutions that embody metabolic and ecological processes, expressing an ideal symbiosis in which human and non-human inhabitants can relate through interactive devices. The active presence of the user through his body experience, can activate processes of feedback loops, based on user-environment relationship, and stimulate the embodied cognition of natural and environmental processes. We believe that this more profound, emotional connection with the environment can lead to a more empathic understanding of ecological problems.

Objectives

Our objectives are threefold. On the one hand, we propose a two-sided analysis that addresses ecosystem issues - related to human activities - and climate change through the lens of serious gaming and playfulness, helping other designers to benefit significantly from having more design methodologies at hand, thus improving lateral thinking (De Bono, 1970). To do so, we will present an Alternative Reality Game (ARG) - “Solve the Crisis! An alternate reality game to tackle Cape Town’s water crisis - that sets the scene for Capetonians to deal with the severe water crisis that affects their city. On the other hand, we deal with a specific design experiment regarding a computationally designed urban canopy to show how to tackle the climate change crisis with digital technologies, smart environments and responsive interfaces to prove new conceptual and operative tools to discuss and reflect on how to facilitate long-term planning processes. As we do so, we aim to contribute to an ecological design agenda to architects, designers and game scholars in specific. We argue for multiple design approaches that can empower multiple stakeholders towards more integrated and inclusive design strategies, and initiate a dialogue between game scholars and architects.

From our perspective, human and nature not only co-exist, but they can also co-evolve in a symbiotic and productive way.

Methodology

Serious Games. A brief overview

Serious gaming (Ulricsak & Wright 2010) represents a still relatively understudied space of opportunities to develop new tools for scientific analysis and methodologies regarding urban design and planning strategies and to involve different actors in developing more significant problem-solving means.

In the last decades, serious games and gamified applications - centered on the use of specific game features to incorporate ludic qualities (Deterding, Dixon, Khaled & Nacke, 2011) - have been widely employed within design

and participatory planning processes. Many studies have shown that their use can be beneficial in situations where these tools could be implemented as part of the planning phase (Ampatzidou, Gugerell, Constantinescu, Devisch, Jauschneq & Berger, 2018) and if their development phase is based on co-creation with multiple stakeholders and participants. Design research is a transdisciplinary academic field that integrates elements from interaction, experience, service, product and graphic design, as well as other design-related disciplines such as architecture and urban planning. The design of games and playful interactions can undoubtedly offer a contribution to design research, as recently remarked by Lankoski and Björk (2015) and Lankoski and Holopainen (2017).



Figure 1. David Thomas Smith, "Three Mile Island Generating Station", Middletown, PA, USA (2010-11). As part of the "Anthropocene" series, the purpose is to reflect upon the complexity of landscapes as hybridization between natural/artificial fields

Nevertheless, Research through (Game) Design has already shown promising results "for the objective of making complex situations more understandable and accessible for researchers and stakeholders alike [such as] in the Hackable City project, [where] games were not simple "deliverables" but an integral part of the inquiry process" (Schouten, Ferri, De Lange, Millenar, 2017; Ampatzidou, Bouw, van de Klundert, de Lange, de Wall 2017; Ferri & de Waal, 2017).

A fundamental question, at this point, is to discuss what the category of 'serious games' itself actually means and which are the positive claimed effects of such games in the fields of urban planning, design thinking, and citizen engagement practices. Some researchers have argued that, even though the term "serious games" has become more popular, there is no current single definition able to give an exhaustive understanding of this field of study (Susi, Johannesson, Backlund, 2007). Therefore, it is clear that before we can seriously task the issue of what a (serious) game based research agenda for ecological thinking could be, we must define what the term means. A brief survey of the already existing literature shows that there are as many definitions available as there are many different researchers involved, but most of them agree on a core that "serious games are (digital) games used for purposes other than mere entertainment" (Susi, Johannesson, Backlund, 2007).

The Serious Game Initiative, emerged in 2002, describes serious games as it follows:

The SGI is based on uses for games in exploring management and leadership challenges facing the public sector. Part of its overall charter is to help forge productive links between the electronic game industry and projects involving the use of games in education, training, health, and public policy.

Even though other definitions argue for serious games to be more of a movement than a defined area of its own, we believe that the chance to experiment with novel tools and technologies, such as digital apps and gamified environments, are valuable efforts to diversify the typologies of media involved to trigger citizenship engagement and empowerment. With this paper and the examples reported in it, we aim to support the development of lateral thinking design methodologies, based on serious games and gamified applications, to reach a different and innovative result and tackle specific design issues related to various fields (Rowe and Frewer, 2000; Shipley and Utz, 2012). To do so, our Alternative Reality Game example (ARG), is based on Zyda's (2005, p. 26) more formal definition of serious games where the entertainment phase is considered the main ingredient:

Serious game: a mental contest, played with a computer in accordance with specific rules, that uses entertainment to further government or corporate training, education, health, public policy, and strategic communication objectives.

This explanation also points out the importance of pedagogy arguing for a strong-based learning phase that can be associated with a series of benefits for participation and civic engagement. According to the strong concepts we have been highlighting, our deployment phase for the ARG aims at providing new conceptual and operative tools to discuss and reflect on how games facilitate long-term design/planning processes, where citizens themselves could take their responsibility and contribute to durable solution to tackle one major contemporary crisis for contemporary environmental balance.

Avert the crisis! An interactive narrative game to tackle Cape Town's water crisis²

As stated in the "Hack the Cape Town water crisis" website (hackthewatercrisis.org), the City of Cape Town is struggling to face a severe water crisis that affects the entire urban population. The dams, currently Cape Town's primary source of water, have dropped to a historic low due to a prolonged drought combined with a variety of political, human migration, climate and other factors. To address this issue, the municipality has been implementing an aggressive program to help its citizens drop their water consumption rapidly, while also working around the clock to bring alternative sources online. Day Zero, when the water supplies will completely shut down, is more just an ephemeral concept and the city strongly needs to find quick and effective ways to solve this upcoming issue.

With this in mind, during the 24th and 25th of February, a worldwide hackathon³ took place to develop new ideas and solutions for this crisis. Our aim, as designers involved in the event, was to set the scene to include Capetonians themselves in taking an active part in the process and illustrate the complexity of urban matters with a serious gaming-based approach to make this issue more tangible to be tackled.

We deployed a visual narrative game (Avert the Crisis) that could help the different stakeholders involved to trigger actionable interventions in the Alternate Reality Game. Our primary goal is to generate an emotional connection to Capetonians and their current struggle that would foster meaning-making for a global community of citizens and innovators to respond to.

The 'WWW_Day Zero' Alternate Reality Game challenges players to imagine themselves on the brink of a severe water shortage that will affect their entire city and to propose measures that could curb this impending doom. The city has just one month of water left if inhabitants remain within the daily average of 50 liters of water per resident per day. Players are tasked with documenting their journey, ideas and discoveries along the way, and to share this on any public social media platform. This stream of crowd-sourced solutions is linked to a web platform, and curated daily by the game's designers, with the best suggestions for earning themselves a spot in the official ARG narrative as it unfolds.

The narrative structure of the game is based on three different storylines to reach different goals: engage people from an emotive standpoint; develop social connections between the different players involved that represents all the different social classes of South African society; improve the currently poor sharing of resourceful information and to prepare the foundation for starting a brand new design phase to tackle the crisis.

The game interface was developed with TyranoBuilder Visual Novel Studio⁴, a software that allows you to design multi-platform visual novel stories and to mix different kinds of graphics and media inside the same plot (images, sounds, footages, etc.).

Some private sessions have been played in Amsterdam, where the research team is currently based, to highlight issues and incongruences in the game dynamics and mechanics, and the public diffusion of the game was set to take place between April and May 2018. Following the different gaming events, all ideas will be stored in an online database of potential solutions made freely available to any city-hackers out there.



Figure 2. Screenshot from the ARG – Avert the crisis! - interface (2018)

We are well aware that ecosystem and ecological challenges are much more complex than what a single game can portray but this attempt and further schematizations are necessary simplifications that can hopefully become generative for new design solutions. We believe that serious games can allow learners to experience situations that are impossible in real scenarios for reasons of safety, cost, time, etc. (Corti, 2006; Squire & Jenkins, 2003), but they are claimed to have positive impacts on the players' development of some different skills (Susi, Johannesson, Backlund, 2007).

Further implementation of the game will include co-creation design sessions in which different stakeholders will be involved. The results will be analyzed with the use of Liisa Horelli's⁵ (2002) methodological scheme for participatory planning, an evolutionary process consisting of five major points in which different tools are used to facilitate transactions between all the participants. A latter phase will continue concerning the proposal of some design artifacts based on the strong-principles that emerged during the design process and will be proposed to the Cape Town municipality as speculative solutions to tackle the water crisis.

2 / "Avert the crisis! An interactive narrative game to tackle Cape Town's water crisis" is an ARG – alternative reality games – developed by Valerio Perna, PhD candidate in Design and Theory at DiAP, Sapienza – University of Rome and Adam Van Herdeen, PhD candidate in Platform Design for Smart Cities, Eindhoven University of Technology, Department of Industrial Design, Systemic Change. The ARG was developed as a side experimentation within the STEC – Smart Technologies, Empowered Citizens – project (NWO Funded Research Project 2017-2021).

3 / According to Wikipedia a hackaton is a form of problem solving. People come together to engage in creative discussion to solve real world problems. It emerged from the computer industry although today its usage is far broader.

4 / https://store.steampowered.com/app/345370/TyranoBuilder_Visual_Novel_Studio/

5 / Horelli's methodological scheme is made up of five major points: i) initiation of the project. ii) planning and design, iii) implementation, iv) evaluation and research, v) maintenance.



Figure 3. Storyboard of the ARG developed during the Hackathon by V. Perna and A. van Herdeen (2018)

Bio-digital design: the biomimetic approach

Embracing the Anthropocene era does affect not only the way we perceive and interact with the social and natural environment, but also the way we design it. Bio-digital architecture ties in the more general framework of the so-called systemic design, a procedural approach to urban and architectural design that tackles three cultural and ecological issues: the limited resources available on the planet, the need to shift from an anthropocentric environmental ethic to a biocentric one and the new instances introduced in the current paradigm by complexity sciences (Baldissara, 2018). If this specific design strategy indeed roots in the informatics paradigm (Saggio, 2007), the advent of the Anthropocene definitely determined a significant shift towards a more bio-oriented one: indeed the evolution of the ecological knowledge, alongside with the continually increasing computational power available, is leading more and more often to the hybridization of organic and non-organic matter in design processes.

In this ever-changing scenario, Bio-digital architecture can be identified by the presence of five main features (Saggio, 2014). First, it is the result of a genetic approach: thanks to computational design methods, Bio-digital architecture is a process-oriented product. The design artifact is algorithmically compiled by the architect to generate a species of designs and not a finite, concluded shape (Estevez, 2003). Bio-digital design grants compatibility and fosters synergy: learning from the way natural ecosystems works, architecture should be not only capable of rooting itself in the existent system without interfering with its cycle, but should be able to generate new, virtuous relationships among its components. A bio-digital architecture is synthetic and connective: moving from a reductionist scenario to a complex one is a key element to motivate designers to shift from an analytical approach to a synthetic one. By adopting an ecological and transdisciplinary thinking, this kind of design opens to the implementation of the so-called hidden connections (Capra, 2001) that shape our world. Another important feature for the bio-informatics paradigm is adaptability: taking advantage of the possibility offered by automation processes, architecture can now pursue a homeostatic balance and gain the capacity to re-shape some of its element to react to external inputs. Finally, Bio-digital architecture has to behave like a proper ecosystem, without producing waste and being able to recycle any component in a closed loop in a zero-waste system.

There are many ways to achieve these goals, which may or may not involve the use of actual biological components in the building process. In the last years, one of these research fields has seen an exponential growth: the biomimetic approach. The terms biomimetics has been first used by Otto Schmitt during the 1969 symposium "Some interesting and useful biomimetic transforms", even though it has been recently brought to the broad public through the work of several authors such as J. Benyus (1998), M. Pawlyn (2011) and P. Gruber (2011). Biomimetics (or biomimicry) is a discipline that, through the strategic research of biological models, produces solutions of

sustainable design emulating forms, processes and natural systems in an environment of computerized ecology (Baldissara, 2018). It is a complex discipline that imitates biological organism at three main levels: the formal one, in which case is characterized as 'shallow biomimetics', the behavioral one, the so-called 'behavioral biomimetics' (Radwan e Osama, 2016) and the systemic one, 'ecosystems biomimetics'. Depending on the depth and the object of the analysis, the designer can either extract from the organism a complex strategy, a design process or a proper shape. Regardless of what approach is chosen, every biomimetic experimentation goes through several phases: the identification of the biological characteristic to emulate, its translation into mathematical and computational terms and its implementation in the final design (Baumeister et al., 2011).

As biomimetics belongs to the broader field of complex disciplines, exact procedures and design processes are hardly defined by a step-by-step method but are more likely to be understood through the following case study.

Physarum Shelters, an adaptive device to promote ecological thinking.

The first step when approaching a biomimetic design is to understand to which biological organism it is related and which of its characteristics it embodies. The Physarum Shelter is a small architectural installation, designed on the behavioral patterns of the Physarum Polycephalum, also known as slime mold. The slime mold is a unicellular protist that, despite its simple biological composition, shows highly interesting behaviours: a basic form of spatial intelligence, shown in the ability to resolve simple mazes and to find optimized paths in several kinds of networks; a surprising form of spatial memory, thanks to the protoplasm that he secretes; the ability to memorize and therefore predict or adapt to changings in environmental conditions. All these emerging qualities have been analyzed, translated into mathematical patterns and computed into a digital genetic model to create a new morphogenetic process able to embody the main characteristics of the slime mold.



Figure 4. Physarum Pavilion design diagrams. Design: Matteo Baldissara (2018)

The interest in the Physarum Polycephalum has grown through the last years, since Heather Barrett founded the Slime Mold Collective, and many experiments and studies have been conducted on this simple organism. Therefore, many mathematical models that describe or approximate its behavior are available in literature and on the web. For this specific piece of design, we used the General Stern Tree and the A* algorithms to reproduce and expand the behavioral patterns of the Physarum Polycephalum. These algorithms, both belonging to the more general theory of graphs, were implemented within the well-known parametric development environment Grasshopper, and the intensive use of Agent-based-modelling plugins. As complex as a computational model

can be it is pointless unless it can determine a precise correspondence between digital data and environmental ones, with the aim of implementing them through the design process. To do so, we established a strict correlation between the path network that the Physarum model can describe and a structural system that can be 3D printed or built through robotics extrusion of fibrous material. This relation is driven by environmental factors such as the density of the net that is adjusted to radiance values and can be computed to fit in any environment. This correlation determines different levels of density in the structure and different level of shading inside the shelter. The result of the process is a dense network of thin, fibrous elements which describes a well-defined space, capable of hosting up to two people. The enclosure of this tiny architecture is realized with a thin layer of ETFE, a plastic, transparent and utterly recyclable material that can be sewn to fit the external structure properly. This inner layer can be inflated by an air compressor connected to a proximity sensor and activated only when someone is in the proximity of the pavilion. This simple form of interactivity can be used to encourage civic engagement and to create proper ludic installations. If the Physarum Shelter was to be built in series and installed in a public space, it could create a network of communicating spaces that, without the presence of citizens, would appear crystalized, and that could be only activated by the proximity of visitors.

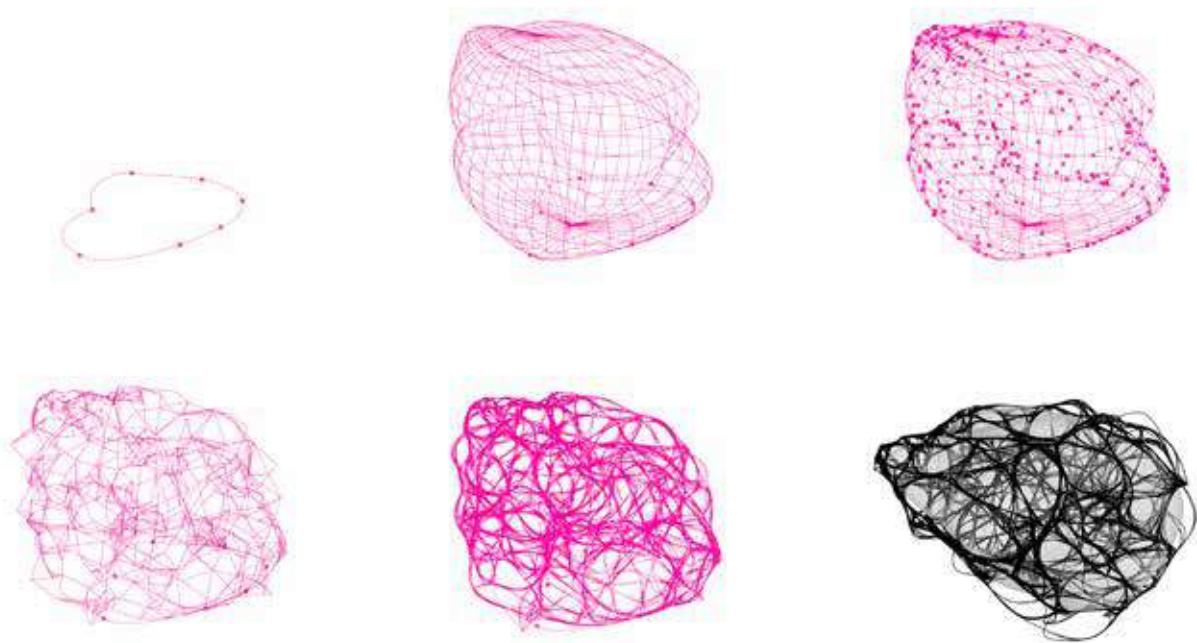


Figure 5. Physarum Pavilion. 3d view. Design: Matteo Baldissara (2018)

Conclusions and discussions

Inspired by Action Research (Foth & Brynskov, 2016) our research strategy's purpose is to solve a particular problem and to produce guidelines for effective practices. We found inspiring to address the ecosystem topic starting from different theoretical frames and delivering various and heterogeneous design solutions. We are all engaged in design and architectural design education from different perspectives, and we found the differences in our approach inspiring through our design work.

All the deployment studies presented in this paper are currently still in development and have only been tested in private sessions or through computational simulations. This is why, in lieu of a conclusion, let us finish the paper with a reflection on our experimentation so far, and on what we expect this paper could set the scene for the ecological research agenda.

From the get-go, we did not want to frame the selected topic from a one-way perspective, but we aimed to sparkle a wider dialogue to include not only architects but experts coming from different fields, to facilitate a lateral design thinking phase that could link to more effective and long-term solutions.

We looked at the topic through the lens of the "Research through Design" (RtD) approach (Zimmerman, Stolterman, Forlizzi, 2007, 2010). RtD is one of the many methodologies and epistemologies that are leveraged in the broader field of design research and has to do with the use of design practice as a form of scientific inquiry. In other words, an RtD approach involves the designing of experimental artifacts as means of raising interesting scientific

questions and answering them: as John Zimmerman noted how design is a process but also a form of research. Following Donald Schön's (1983) assumptions, we strongly focus on design as a reflective practice where the designer critically reflects on the action to improve design methodology and thinking. Indeed, the design phase is a process but also a form of research, and the design of games and playful interactions in relation to architecture and urban development can undoubtedly offer a contribution to address the contemporary crisis in the urban fabric. The examples presented in this paper clearly show how biomimetic computational design processes can comfortably co-exist, thus be enhanced, by the use of interdisciplinary novel tools such as digital media, serious games and open platforms.

Furthermore, the domain at the crossroads on ecological thinking, urban planning, civic media, activism, and game design is becoming more and more critical (Nijholt, 2017; Tan, 2017; Gordon and Mihailidis, 2016). For this reasons, we honestly felt the need for a more comprehensive research approach that could, on the hand, provide new conceptual and operative tools to deal with the topics of coexistence and co-habitation, and on the other side be able to set the debate for shaping and support architectural and game design decisions. Nevertheless, in the last decade, we have seen the rise of urban play as a tool for community building and city-making (Tan and Portugali 2012; Tan 2017), and Western society is actively focusing on play/playfulness as a way to approach complex challenges and emergent situations and to foster civic engagement through participatory/co-design tools (Brown & Chin, 2013; Irvin & Stansbury, 2004; Tonkens, 2014; Bødker, Grønæk & Kyng, 1993; Spinuzzi, 2005).

In sum, with this work we argue for a more inclusive design process and to set an open dialogue for a new ecological design research agenda that could benefit from new speculative research fields in order to explore unexpected solutions, address the challenge of biological diversity and manage the Earth's resources sustainably in the decade to come.

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[TEC/03]



The Impact Of Surface Technological Devices In The Climate Adaptation Tactics For Urban Vulnerability Reduction: A Review

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abstract

Climate change, environmental pollution, loss of life essential conditions, biodiversity decrease, etc., are just some of the consequences due to the human being activity affecting the whole biosphere since the early nineteenth century. This activity has seriously earth in environmental, social and economic terms. Besides mitigation strategies, adopted to stop environmental degradation, others recent international experiences show how, through an adaptive, interdisciplinary and multi-scale approach, it's possible to obtain important results in terms of sustainability and resilience.

The paper investigates how adaptation tactics, applied to the Public Space (PS) interventions, could improve urban resilience, analyzing and evaluating in particular how Best Management Practices (BMPs) affect resilience indicator, reducing the risk and improving finally urban resilience.

First, scientific research will be analyzed to define the concept of urban risk, urban vulnerability and resilience indicators. Second, over 100 international best practices will be analyzed, focusing on adopted urban regeneration strategies and technological devices, to identify innovative technological strategies and devices, that will be described inside a synoptic framework. Third, scientific research that estimate the impact of BMPs in terms of resilience indicators will be analyzed and compared. Finally, based on this data, results will be discussed.

Based on the review of case studies and scientific research, our work aims to highlight the importance of open space interventions and to quantify the efficacy of some technological systems in reaching urban resilience.

The work points out new trends in architecture and shows how new virtuous experiences satisfy contemporary design without missing a resilient approach.

keywords Bmps, Landscape, Public Space, Resilience Strategies, Technological Device

1 Introduction. Climate change, urban settlement vulnerability and resilient development

Climate change has evident impact on urban settlements that appear to be vulnerable systems, unable to provide the maintenance of essential conditions for human life (Clément 2005). Atmospheric phenomena, such as heat waves, torrential rainfall and extreme and prolonged periods of drought, are harming cities environment with an estimated consequent damage of 25 billion euros per year (ISPRA 2017).

The adopted mitigation measures, even if necessary, are insufficient and unable to counteract the extreme environmental phenomena. The key for a solution is the combination of sustainability and resilience, defined as "the ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner, including through ensuring the preservation, restoration, or improvement of its essential basic structures and functions" (IPCC 2012). This development model is based not only on mitigation actions, but also on adaptation strategies, able to prevent shocks and stress and to respond quickly and flexibly to the new environmental, social and economic needs (Ahern 2011) (Bulkeley, H.A 2013) (Adams & Watson 2010) (Madanipour et al. 2014).

Changing our cities into resilient urban system by applying the Green Cities Approach (ERBD - Banca Europea di Ricostruzione e Sviluppo 2016) has become a priority recognized by the international community, PPAAs and research centers. In order to develop knowledge about these issues, the European Union is funding urban transformations and research. Projects and strategies such as Cities of Tomorrow, 2030 Climate and Energy Policy

Framework, SDGs show, in fact, how the theme of adaptive design has become a central goal. Even Administrations and Local Authorities are developing innovative Plans and Tools for the governance of the territory. These plans are based on strategies for resilient urban development, that generally introduce Best Management Practices (BMPs) into the design process of Public Space (PS) (European Commission 2013).

Examples such as NY, Chicago, Rotterdam, Copenhagen, Paris, Zurich, Barcelona, are some virtuous realities that started to apply this approach since the first years of 2000 with the aim to reduce urban vulnerability.

Next to these experiences, in scientific field, the research starts to: evaluate how green infrastructures affect urban problems (Chenoweth et al. 2018); codify mitigation strategies (Gago et al. 2013); analyze the role of materials and innovative technologies (Doulos et al. 2004) (Ahiablame et al. 2012) (Santamouris 2013) (Efthymiou et al. 2016) (Francis & Jensen 2017); define urban resilience indicators (Carpenter et al. 2001) (Normandin et al. 2009) (Iavarone et al. 2017); evaluate how technological components and resilient strategies affect urban vulnerabilities (Temprano et al. 2006); (Jia et al. 2012) (D'Ambrosio & Leone 2015) (Hua 2016) (Battista et al. 2016); develop new simulation models (Lindberg et al. 2018).

While studies and examples of best practices show how the renovation of urban open space could generally improve the urban resilience, it is still interesting to analyze the impact of surface's technological devices in the climate adaptation tactics concerning the real urban vulnerability reduction.

2 Objectives, Research Limits, Methodology and Originality

This work fits inside that research sector and investigates technologies in terms of reduction of urban vulnerability and contrast to the climate change. It focuses on open urban environment (PS) and investigates specifically the role of technological devices defined as Best Management Practices (BMPs) in order to reduce urban vulnerability and improve urban resilience.

To achieve those results and specifically in order to define, first, a synoptic framework of the main technological systems related to urban strategies for climate change and, then, to assess its performances, our work:

- A. identifies main urban risks and vulnerabilities and related resilience indicators from literature review;
- B. selects strategies and technological devices (BMPs), adopted to reduce urban vulnerabilities from literature review, defining a homogenous BMPs clusters;
- C. analyze built international Best Practices to understand diffusion and main application of BMPs;
- D. selects scientific studies that evaluate the impact of BMPs on urban resilience, specifically to two urban vulnerabilities, Water Risk (WR) and Thermal Risk (TR), comparing and discussing results and data obtained from literature review with resilience indicators to assess the BMPs performance.

The original contribution of the research consists in identifying some resilience indicators in an organic synoptic framework and defining their field of validity, through the comparison with experiments reported in the literature.

3.A Urban Risk, Urban Vulnerability and Resilience Indicators

The Intergovernmental Panel on Climate Change (IPCC 2012) defines the concept of Urban Risk (R) as "the probability or frequency (F), in a specific time period, of severe alterations of the normal functions of a community or a society (D), caused by dangerous physical events interacting with vulnerable social conditions (V), which lead to the spread of negative effects in the human, material, economic and environmental, which require immediate emergency responses in order to meet essential human needs and media". R varies with frequency and vulnerability, defined as a non-linear correlation between intensity of the stressor or magnitude (M) and damage (D).

$$R = f(F, V); V = f(M, D)$$

To reduce R it is therefore necessary to reduce F, preventing some phenomena from occurring, i.e. reducing the possibility (F) of floods with appropriate water cycle management, or reducing its intensity, i.e. reducing flood damage (M and D) by mitigating its effects through appropriate excess water management.

Based on these assumptions, recent studies define a complex framework of urban vulnerabilities and introduce specific indicators (Resilience Indicator, RI) in order to quantify and measure the effects of adaptation and mitigation strategies.

Table 1: summary of the main urban vulnerabilities and of their Indicators.

Reference	Urban Risks, Environmental Vulnerabilities and Indicators					
	Hydro-geological risk (WR)	Thermal risk (TR)	Air pollution risk (APR)	Water pollution risk (WPR)	Energy risk (ER)	Biodiversity reduction risk (BR)
(Normandin et al. 2009)	PER	GHG	GHG	P	-	PER
(Iavarone et al. 2017)	POR, PER	PER	P	P	PER	PER
(Brudermann & Sangkakool 2017)	POR, PER	TA TS	P	P	W	NB
(Lindberg et al. 2018).	PER	SVF, PER, AH, TMR, TS,	-	-	W	-
(Lobaccaro & Acero 2015)	-	TA, TS, TMR, PET	-	-	-	-

Indicators		
TA	Air temperature	°C
TS	Surface temperature	°C
TMR	Mean radiant temperature	°C
AH	Anthropogenic heat	W/m ²
PET	Physiological equivalent temperature	°C
POR	Final Capacity	m ³ /secondo
PER	Pervious percentage	%
P	Pollution	Ppm concentration
W	Energy	W/m ²
NB	Biotope quantity	n
GHG	Greenhouse gases concentration	Ppm concentration
SVF	Sky view factor	

Within this framework, the present study limits the field of investigation to those vulnerabilities, reported in Table 1, which can be addressed by working on the SP, such as the thermal risk defined by heat island phenomenon. In particular, the study will analyze two of the main urban vulnerabilities, water risk (WR) and thermal risk (TR), evaluating the main adaptive and mitigation strategies adopted by virtuous realities.

3.B Best Management Practices: definition and classification

The need to define new adaptive development models able to respond to the described vulnerability, has pushed many European administrations (Rotterdam, Barcelona, Copenhagen, etc.), American (NY, Chicago, etc.), Chinese (Qunli New Town, Qinquangdao, etc.) to adopt innovative management and governance tools (i.e. Rotterdam Climate Proof) for urban settlements and innovative adaptation strategies characterized by innovative technologies devices (i.e. BMPs). In particular, this approach involves technological devices (TD) mainly based on natural systems (NBS - nature based solutions) applied to the urban system to rethink existing city or new settlements as resilient organisms. This approach is based and supports "other closely related concepts, such as the ecosystem approach, ecosystem services, ecosystem-based adaptation/mitigation, and green and blue infrastructure", recognizing the importance of nature and requiring "a systemic approach to environmental change based on an understanding of the structure and functioning of ecosystems, including human actions and their consequences" (European Commission 2015). These strategies, mainly defined in literature as Best Management Practices (BMPs)¹, include several technological devices able to increase the environmental quality of cities (Kabisch et al. 2016). All these

1 / The term best management practices (BMPs) refers to a complex set of technological systems capable of improving the environmental quality of cities. In the literature these systems are also defined in another way, depending on the cultural context or according to a particular set of technologies. In particular, we find: Sustainable Drainage Systems (SuDS), Green Infrastructure (GI), Integrated Urban Water Management (IUWM), Joint Committee on Urban Drainage (JCUD), Low Impact Development (LID), Low Impact Urban Design and Development (LIUDD), Storm water Control Measures (SCMs), Water Sensitive Urban Design (WSUD)

TD are characterized by the common aim to improve a sustainable and resilient urban development and the capability of ensuring multiple co-benefits for health, economy, society and environment. Moreover, they can represent “more efficient and cost-effective solutions than more traditional approaches” (European Commission 2015).



Figure 1: BMPs examples. In particular, a-b show Swales and Infiltration basins (Ecological Park, Saint Jacques, France, Bruel Delmar), c shows Infiltration basins + trees (Nansen Park, Oslo, Norvegia, Ramboll Studio Dreiseitl), d shows Phyto-purification systems (Presquile Rollet Park, Seine Maritime, France, Atelier Jacqueline Osty) and e shows Water film (Place Mirroir, Bordeaux, France, Corajoud).

Based on the literature review (Kellagher et al. 2015) (European Commission 2015) (Raymond et al. 2017) (IPCC 2012) (Kabisch et al. 2016) and on the analysis of the case studies, the TD have been classified in four homogeneous cluster useful for the research goals. The four clusters have been defined by surface material and main vulnerability addressed. In particular:

- A. Artificial surfaces, defined as a TD which implies the activity of transformation of the human being through a more or less complicated process;
- B. Natural Surfaces, define as a TD characterized by a predominantly biotic or natural component;
- C. WR Systems, defined as a TD that mainly affects the urban vulnerability of Water Risk;
- D. TR Systems, defined as a TD that mainly affects the urban vulnerability of Urban Heat Island.

Table 2 resumes the main BMPs technologies founded in literature review and in the case studies analyzed, classified in cluster.

Table 2: the table defines a summary of the main BMPs technologies.

A. Artificial surfaces	B. Natural surfaces	C. WR Systems	D. TR Systems
1. Draining asphalt	1. Grass	1. Green roof - wall	1. Trees
2. Draining cement	2. Soil	2. Swales	2. Natural pergolas
3. Draining pavement	3. Stabilized ground	3. Infiltration basins	3. Artificial pergolas
4. Grassed pavement	4. Grilled pav. + grass	4. Filtering tanks	4. Photovoltaic pergolas
5. Photocatalytic pav.	5. Grilled pav. + gravel	5. Phyto-purification	5. Water film
6. Cool materials	6. Wood	6. Storage tank	6. Water tanks

3.C Through European good practices to the definition of adaptive tactics and resilient technological devices

In order to define trends concerning BMPs system applied to improve urban adaptation, a wide range of good practices, identified among realized PS projects, research projects and planning policies (over 100 experiences

analyzed) have been analyzed, implementing previous studies (Orsini 2015). Among these experiences we can mention the realities of Barcelona, Paris, Lyon, Copenhagen, Rotterdam, Zurich, etc. The selection of case studies was based on their qualitative value recognized by the scientific literature of the sector (scientific publications, awards, etc.).

Table 3 shows, by way of example, the classification structure of the analyzed case studies. In particular, the case studies have been classified according to the following categories:

- PS urban typology (Street, Square, Esplanade, Garden, Park);
- State of the Project (Realized, Research project, Administrative tool);
- Dimensional and physical data (Surface, Cost, Surface-cost);
- Climate contest (Temperate climate, Tropical climate, Mediterranean climate);
- Landscape (City project, River project, Waterfront project);
- Scale (Metropolitan scale, Neighborhood scale);
- Urban vulnerability (WR, TR);
- BMPs applied (see Tab 2).

Table 3: exemplification of the parameters used to classify the case studies into homogeneous categories.

Case study	reference	PS Typology		State of the Project		Dimensional data		Geographical Contest		Climate Contest	Landscape typology	Scale	Urban risk		Technological devices adopted										
		Street	Square	..	Build	Research project	Urban tool	Year	Dimension (m ²)	..	European contest	Extra European contest	Temperate climate	..	Hinterland - EN	..	Metropolitan scale	..	Thermal risk	Hydro-geological risk	Artificial technologies	Natura technologies	WR system	TR system	
..	..																								
MOF Park	Zimmermann, A.s (2011).	x			x			2002	6.000	x			x		x				x		x				x
..	..																								

Based on this case studies matrix, several observations have been raised:

- concerning the general diffusion of BMPs, in the analyzed project, it is possible to observe (Fig. 2) the high implementations of Water System TD (see Tab.2, C1-C5) and some Natural System (see Tab.2, B1, B3, D1), respect the Artificial ones;
- concerning the diffusion of BMPs linked to the PS typology (Fig. 3), it is possible to observe how:
 - street and square typology are mainly characterized by a large use of impervious surfaces mitigated by some BMPs as the C3, C4, C5;
 - garden, esplanade and park are mainly characterized by TD as B1, B3, C2, C3, C5, D1;
- concerning the urban scale, it is possible to observe how larger scales implement more TD than smaller scales;
- concerning the relation urban risk-climate contest and BMPs implementation, it is possible to observe how continental climate project implements more Water TD than the Mediterranean ones.

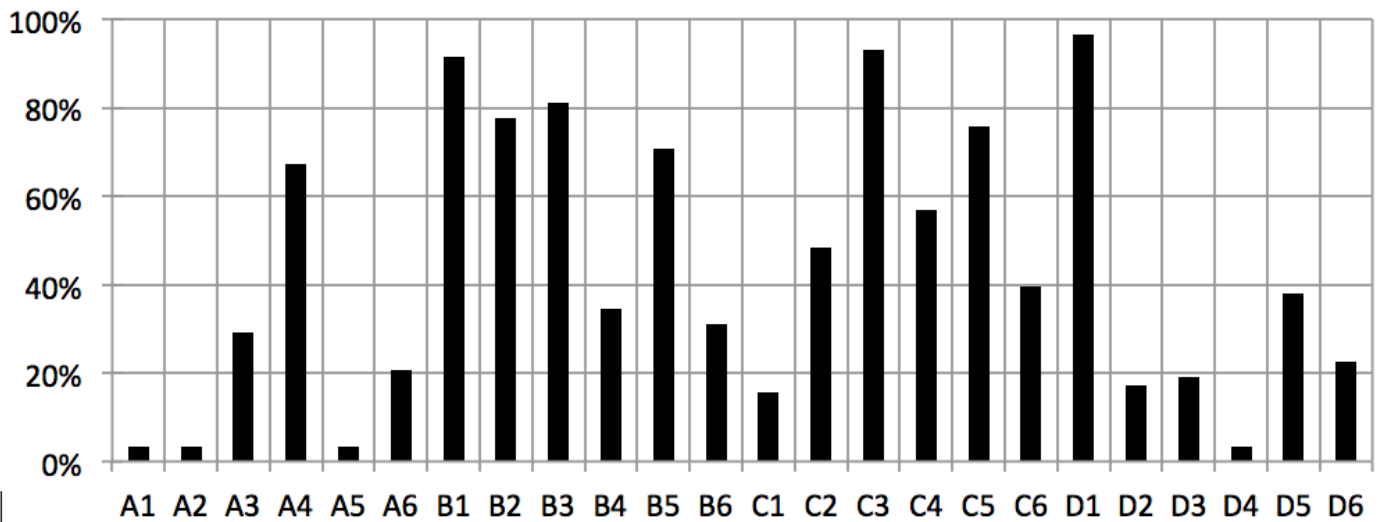


Figure 2: general main diffusion of BMPs.

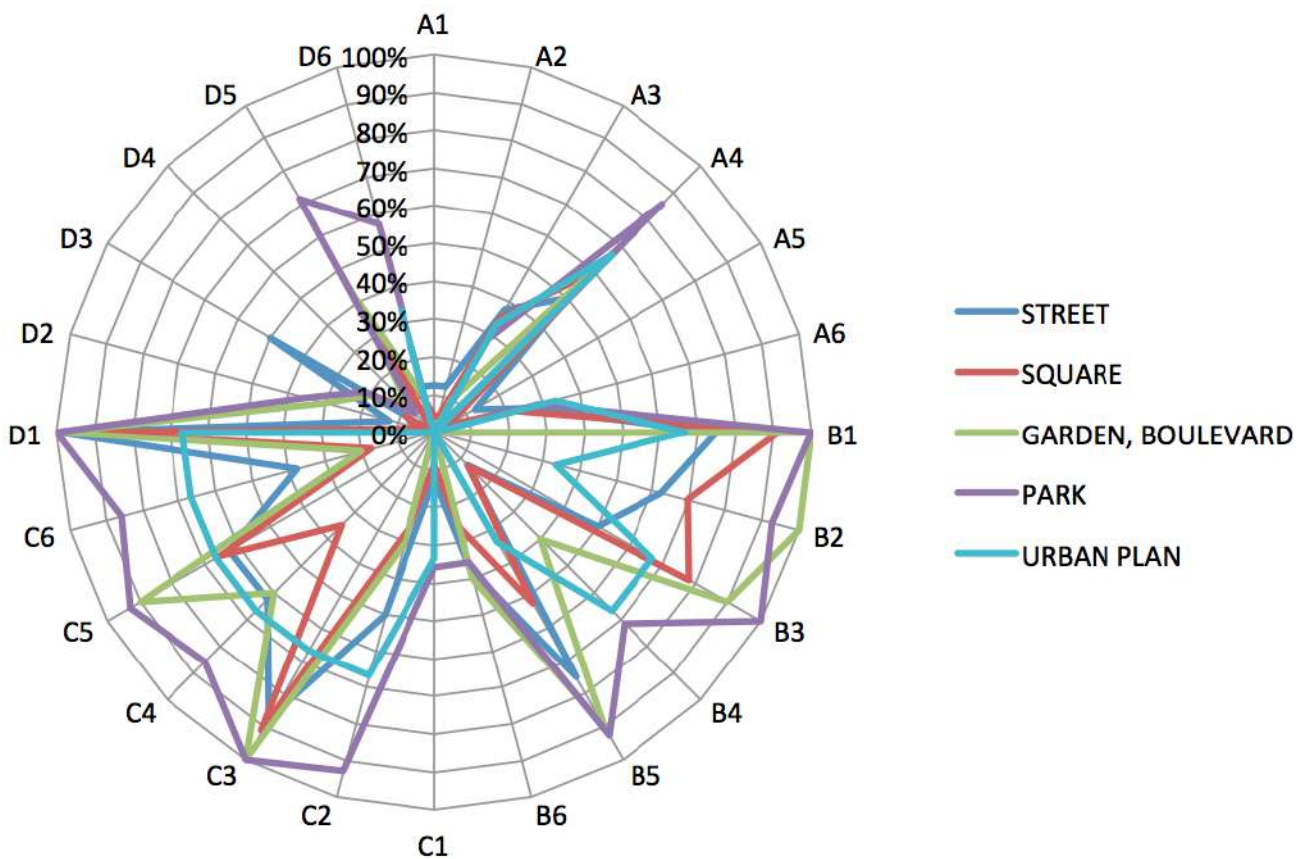


Figure 3: main diffusion of BMPs concerning the PS Urban Typology.

3.D Impact of BMPs on the resilience indicators. Comparison between recent scientific literature

The analysis of literature review and moreover than 100 case studies allowed to define the main BMPs applicable to the SP to reduce urban vulnerabilities. Several researches have been developed to analyze the impact of the BMPs in terms of urban resilience. The study will present some of the more recent researches, focusing on the relation between TD and RI.

A first line of research focused on materials and surface technologies, trying to evaluate how some properties, such as albedo and reflectance, affect indicators such as TA, TS or TMR (Doulos et al. 2004), (Synnefa et al. 2011), (Salata et al. 2015). These works highline how TD can affect differently RI respect the color, the roughness, the size, etc. of the chosen TD. Another line of research focused on the role of nature respect to the Urban Heat Island Phenomena and Thermal Risk (Wang et al. 2015), (Lobaccaro & Acero 2015), (Morakinyo et al. 2016), (Park et al.

2017). Other authors use simulation tools to evaluate the impact of different scenarios on the TR (Martins et al. 2016), (Chatzidimitriou & Yannas 2016), (Alchapar & Correa 2016), (Battista et al. 2016). Other authors analyzed the capability of BMPs respect the WR, using simulation tools (Jia et al. 2012), (Gülbaz & Kazezyilmaz-Alhan 2014), (Sun et al. 2014), (Tobio et al. 2014), (Rosa et al. 2015), (Jain et al. 2016) or experimental data (Versini et al. 2015). Other authors, using simulation software, focus on the capability of BMPs to reduce at the same time WR and TR, comparing different scenarios characterized by different TD solutions (Orsini & Marrone 2018). Below (Table 4) we present a framework of that recent researches that, based on instrumental studies and simulation models, analyze the impact of BMPs (Table 2) according to some indicators (Table 1).

Table 4: technological systems and their performances through some indicators.

Reference	Vulnerability	Typology: S- experimental N- numerical Software	BMPs systems Analyzed, Contour Input	TA (°C)	TS (°C)	TMR (°C)	PET (°C)	FLOW (m ³ /sec)
(Doulos et al. 2004)	TR	S	B1-B2-B3-B4-B5-B6	--	10-30 °C	-	-	-
(Synnefa et al. 2011)	TR	S	B6	5 °C	12°C	-	-	-
(Salata et al. 2015)	TR	S N Envimet	B6+B1	0.3 – 0.7 °C	-	6-8 °C	-	-
(Wang et al. 2015)	TR	S N Envimet	D1	1.0 °C	-	-	-	-
(Lobaccaro & Acero 2015)	TR	S N Envimet	B1 D1	0-1°C	11- 14°C	10-15°C	2-7 °C	-
(Morakinyo et al. 2016)	TR	S N Envimet	D1	1.5 °C	-	2-37°C	-	-
(Martins et al. 2016)	TR	N Envimet	B1+D1+D6	-	-	-	1-7°C	-
(Chatzidimitriou & Yannas 2016)	TR	S N Envimet Radtherm Fluent	+ + B1+D1+D5	-	-	-	to -28 °C	-
(Alchapar & Correa 2016)	TR	S N Envimet	A6	10% albedo - 0.5 – 0.75	-	-	-	-
(Battista et al. 2016)	TR	S N Envimet	B1+D1	1-2°C	-	-	-	--
(Park et al. 2017)	TR	S	B1+D1	1-2°C	-	-	-	-
(Jia et al. 2012)	W R	N SWIMM BMPDSS	+ C1+C2+C3+C6					27%
(Versini et al. 2015)	W R	S+N SWIMM	C1					35%
(Gülbaz & Kazezyilmaz-Alhan 2014)	W R	N SWIMM	A3+C2+C3 (5% of the whole area)					11-13%
(Jain et al. 2016)	W R	N SWIMM	Nd					30%
(Sun et al. 2014)	W R	N SWIMM	A3 C3					3% 33%
(Rosa et al. 2015)	W R	N SWIMM	Several devices – Rain - TR 100					negligible advantage
(Tobio et al. 2014)	W R	S+N SWIMM	C3					25%
(Orsini & Marrone 2018)	W R TR	N SWMM Envimet	A3 +C2+C6 A3+B1+C2+C6 A3+B1+C2+C6+D1 A3+B1+C2+C6+D4	0-1 0-1 1-2 1-2.5	14-16 14-16 18-22 20-24	7-8 7-8 10-12 22-24	-	-10% A3+B1+C2 - 50% C6

Table 4 links technological systems and their performances showing the general good impact of BMPs. In particular it's possible to observe the importance of some TD as trees and green surfaces in order to reduce TR, and the capability of WR Systems to reduce the flow with an average reduction of 30%.

Discussion and conclusion

Cities have to cope with new environmental problems arising from climate change. For many administrations it's necessary to develop adequate tools and resilient tactics as, for example, applying BMPs systems for the regeneration processes of PS. The present work investigates the role of such systems, evaluating their performances through some resilience indicators. First, state of the art analysis allows to identify urban vulnerabilities and resilience indicators. Second, based on literature review and on analysis of about 100 case studies a synoptic framework of the main available technologies has been defined. Third, recent researches have been analyzed to understand how BMPs can reduce urban risk using Resilience Indicators (as Air temperature, Surface temperature, Mean radiant temperature, Water Final Capacity, Pervious percentage, etc) as measuring instruments. Finally, the obtained results have been compared and analyzed, evaluating the performance of some BMPs.

In general, analyzing the data about more than 100 case study analyzed, it is possible to observe as:

- all recent urban projects adopt BMPs;
- the percentage of pervious surface is usually more than the 50% of the total area of PS, except for streets and square characterized by hard and impervious surfaces;
- generally, projects characterized by huge impervious surfaces, as streets and square, adopt diffuse infiltration basin to reduce the WR;
- in temperate climate it is possible to observe a prevalence of Water DT (Tab. 2, C);
- Water film system (D.5) are less used than other solutions despite the benefits they can bring in terms of TR reduction.

In particular, analyzing how BMPs affect RI, the conducted work highlights:

- the fundamental role of BMPs;
- their ability to increase environmental quality, as demonstrated by the positive values of urban resilience indicators achieved;
- their ability to help the rebalancing of urban environmental cycles (water cycle, energy cycle, etc.) to reach a new balance between the anthropic system and the biotic system;
- their ability to reduce the impact of urbanization towards natural environment.

In conclusion, the review of BMPs confirms literature data, proving the importance of these systems for the development of resilient urban settlements.

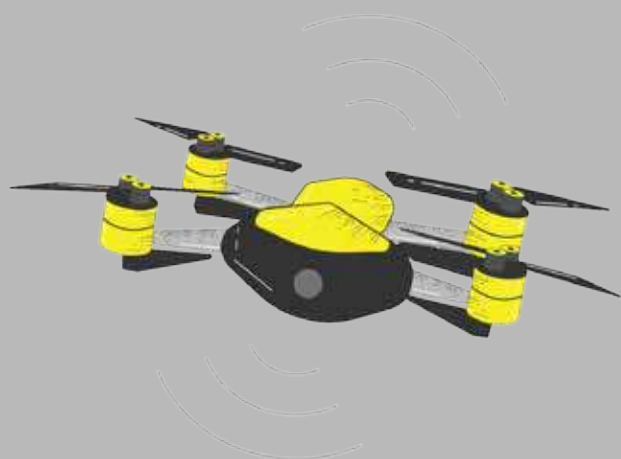
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[TEC/04]



Place-Based Tools For Participatory Urban Planning: The Potentialities Of Soft GIS

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abstract

Since several decades public participation and participatory urban planning are considered important issues to be taken into account in public decision-making. At the same time, research methods have developed new tools aimed to support and stimulate citizens' participation in planning activity. Within this wide repertoire, the technological development allowed the creation of several participatory GIS practices, able to integrate geo-referenced spatial information together with citizens' knowledge and voices. Participatory GIS tools allow an investigation on residents' insight of their living environment that can be utilized along the planning process. As a tool of place-based experience, participatory GIS are nowadays object of updates. The paper presents the potentialities of SoftGIS, investigating on its further utilization in the welfare field of studies, pointing out – at the same time – some questions about their capacity to affect public decision-making and place-based research approaches.

keywords GIS, Soft-GIS, Participation, Collaborative Planning, Social Inclusion

Introduction

This paper presents some considerations relating to a lecture held by Marketta Kytä¹ at Milan Polytechnic during the final seminar of the cycle on Open Space(s) Design². The topic is that of participatory GIS (PPGIS and SoftGIS) practices to stimulate “human knowledge” in the urban planning field. In particular, the lecture covered three main topics: (i) a place-based approach to the study of urban experiences and participatory planning, (ii), an argument about whether and how a place-based knowledge can be useful in the urban planning and development fields, and (iii) a focus with few case studies in Helsinki metropolitan area, with an eye to the development and usefulness of Participatory GIS practices, with an eye to the latest SoftGIS tools, based upon web-based application that lead to reach a wider number of people into planning activity through a process of participatory mapping that has been strengthened over the last two decades.

Based on this preliminary topic and without deepen how to use the software, the paper stresses the potentialities of SoftGIS utilization following the large literature provided in the academic debate and taking into account also the latest market-led practices that can strongly improve the diffusion of the tool. Furthermore, the essay tries to point out some further debates that can be synthetized in the following questions: whether and how SoftGIS affects the public policy-making? Is it just a tool for surveying or it can concretely exploit place-based research approaches and their relations with public choices? Moreover, is it possible to add a new theme of SoftGIS use, looking for a further development for its utilization for welfare issues? To answer, a description of the history and development of SoftGIS is provided, introduced by the theoretical framework, and followed by a discussion on the further perspectives to increase and strengthen the place-based knowledge with SoftGIS, also in other field of studies.

GIS software is the foundation of softer practices. GIS is a system designed to store, capture, analyse and manage geographic data for graphical outcomes in a large number of disciplines. In the academic field, it is used a geo-information system, providing spatial information relying on specific databases. However, the paper does not ground its reflection on the shifting and differences between GIS and SoftGIS rationales. Rather, it describes participatory GIS as a challenging topic, as well as practice, per se, regardless of its foundational basis, which must be seen as the scenario that lie behind participatory mapping.

1. Setting the framework: SoftGIS as a tool for participatory urban planning

A place-based approach is here identified as a way of introducing citizens' experiences and knowledge about their living place into the planning activities aimed to improve the physical environment. Thus, the contents of this essay grounds their reflection into the current pathways in participatory planning approach, enhancing the capacity of SoftGIS and PPGIS – seen as place-based tools – to link together users' knowledge (i.e. citizens' knowledge) and planning solutions.

Participatory urban planning has a long historical tradition, characterized by several contributions, at least over the last four decades, which defined different models to cope with participation in urban planning. During the 1970s', Paul Davidoff (1973) advanced a debate about "advocacy and pluralism in planning", and some years before, Charles E. Lindblom purposed the idea of "the science of muddling through" (Lindblom, 1959) with further development around the model of "partisan mutual adjustment" for decision-making in public planning. More recently, some other scholars dedicated several importance to the issue of participatory practices for an inclusive and more democratic urban planning. In this sense, Emanuela Saporito (2016) summed up three main models of participative planning: the first one is the "conflictual" model, based on Neo-Marxist and Foucauldian perspectives (Flyvbjerg, 2002), where important contributions are those of Susan Fainstein and the concept of "Just City" (2009; 2010), and also that of Chantal Mouffe (2000a, 2000b), with the concept of "agonistic democracy". The second model is the "consensual", also identified as a communicative (or collaborative) model of planning theory (see also Backlund & Mantysalo, 2010). The main thinkers of this model are Forester (1999, 2008, 2009) with the concept of "deliberative planning", Healey (1997, 2007) and Hillier (1993) with the idea of collaborative planning, as well as the consensus-building model proposed by Susskind et. al. (1999) until a third, recent way of looking at the participatory urban and spatial planning: the "trading zone" model (Galison, 1997, 2010), quite recently developed in the field of urban planning (Balducci & Mäntysalo, 2013). Regardless of this clear and useful breakdown into three models, public participation is nowadays considered as a key element of urban planning practices in Western democracies (Friedmann, 1992; Healey, 1992), able to arise the plurality of voices that form the "social fabric" of urban contexts. Horelli (2002) defines the participatory planning as a social, ethical, and political practice in which individuals or group, assisted by set of tools, take part in varying degrees at the overlapping phases of the planning and decision making cycle that may bring forth outcomes congruent with the participants' needs and interests (Horelli, 2002).

Looking into this field of studies, the use of SoftGIS in research, seen as the latest development of Participatory GIS practices, can be seen as an innovative tool (given that it is a digital software) for participatory planning practices, adaptable to a wide variety of fields (such as sustainability, ecosystem services and green infrastructures, mobility perceived safety, everyday service networks, etc.) and at various scales, from the local neighbourhood-scale to cities and regional ones. Basically, SoftGIS is designed for the analysis of "soft" geographical information, provided by citizens' experiences and knowledge, together with the "hard" GIS knowledge, that is very consolidated in urban planning and urban sociology fields. SoftGIS has been developed to get over some inadequate and inconvenient participation methods, such as public hearings and written statements (Healey, 1997; Innes & Booher, 2004; Kahila-Tani, 2015; Kingston, 2007), with the aim to affect and improve the quality and the effectiveness of participation in planning processes. In other words, SoftGIS is the response to the demand of a more systematic evaluation process for participatory planning practices on one hand, and to the need of reaching the voice of citizens on the other hand. Participation also means involving persons or groups that do not routinely take decisions (Newig & Kvarda, 2012) and in this sense, can be seen as a device able to enhance the "capability for voice" (Bifulco, 2015; Bifulco & Mozzana, 2011; Bonvin & Farvaque, 2006; Sen, 1992, 2010) of inhabitants through a participatory tools aimed to involve them in specific projects related to their urban living place.

2. Setting the topic: PPGIS and SoftGIS development

2.1 Some preliminary distinctions about participatory GIS

To describe SoftGIS and its utilization, an overview on the entire pathway of participatory mapping development is necessary. Participatory GIS embrace the field of participatory urban planning acting as a place-based participatory tool. Over the last two decades, literature on PPGIS practices has constantly increased and at the same time PPGIS methods have been spread thanks to dozens of regional and environmental and urban-based studies (Brown & Kytä, 2014). In the European framework, PPGIS found one of the most significant fields of studies and application in the Finnish context, where the latest web-based developments allowed its application on several territorial contexts in ten Finnish cities of medium dimension, until the recent survey related to the building of Helsinki 2050 Masterplan (Kahila-Tani, 2015b; Kahila-Tani, Broberg, Kytä, & Tyger, 2016)³. Generally speaking, participatory GIS can be identified as "enabling tools" (Horelli, 2002) that provide geo-referenced statistical spatial data.

The term "public participation geographic information system" (PPGIS) was conceived for the first time in 1996 at the meeting of the National Center for Geographic Information and Analysis (NCGIA) in the United State to describe

how GIS technology could support public participation for a variety of applications with the goal of inclusion and empowerment of marginalized populations (Brown, 2012). Despite its increase both in the academic and public debate, the definition of PPGIS is still nebulous, or rather, different methods and variety of applications, brought to a partition of participatory GIS. Many labels have been used over the years to describe them: participatory GIS (PGIS), public participation GIS (PPGIS), community-integrated GIS (CIGIS), bottom-up GIS (BUGIS) (Talen, 2000) or, considering one of the most recent labels, SoftGIS (Kahila & Kyttä, 2009), much closer to the recent developed web-based software. Anyway, over the last decades different backgrounds and contexts have brought diverse vocabularies to the field of PPGIS (Tulloch, 2008), and some other labels have been used such as “volunteered geographic informations” (VGI), which are different from PPGIS. VGI are described as tools that can be harnessed to collect a large variety of geographical information, from base maps (e.g. Open Street maps) to information regarding community engagement, focusing of some sort of local needs that could not otherwise be addressed via geographical information (Kahila-Tani, 2015). To make a clearer distinction, it can be stated that whereas the PPGIS studies mainly target to collect data to some research question, as these are mostly used in research projects, the VGI tools are developed to create, assemble and disseminate voluntarily produced geographic data on any topic public finds relevant (Goodchild, 2007; Hall, Chipeniuk, Feick, Leahy, & Deparday, 2010; Kahila-Tani et al., 2016).

Differently from VGI, Participatory GIS (PGIS) and Public Participation GIS (PPGIS) (Brown, 2012; Brown & Kyttä, 2014) comes from the need to collect objective data regarding some specific topic for research purposes, or rather to pursue a more inclusive decision-making process. Both PPGIS and PGIS promote «the inclusion and empowerment of marginalized or under-represented populations in the development and use of spatial information» (Brown & Kyttä, 2014, p. 125).

Table 1. Characteristics of PPGIS, PGIS and VGI. Source: (Brown & Kyttä, 2014)

	PPGIS	PGIS	VGI
Process emphasis	Enhance public involvement to inform land use planning and management	Community empowerment, Foster social identity, Build social capital	Expand spatial information using citizens as sensor
Sponsors	Government planning agencies	NGOs	NGOs, ad hoc groups/individuals
Global context	<i>Developed</i> countries	<i>Developing</i> countries	Variable
Place context	Urban and regional	Rural	Variable
Importance of mapped data quality	Primary	Secondary	Primary
Sampling approach	Active: probability	Active: purposive	Passive: voluntary
Data collection	Individual, e.g. household sampling	Collective, e.g. community workshops	Individual
Data ownership	Sponsors of the process	People and communities that created data	Shared, e.g. data commons license
Dominant mapping technology	Digital	Non-digital	Digital

1 / Professor at Aalto University, in Open Space(s) Design sixth seminar, she presented the lecture Human aspects and urban open spaces, 27th February 2017.

2 / Open Space(s) Design cycle of seminars, organized at Milan Polytechnic by Professors Andrea Arcidiacono and Eugenio Morello with the contribution of PhD candidates from 32th cycle in Urban Planning, Design and Policy. More info: <http://www.openspacesdesign.polimi.it/>

3 / In Finland participation plays a key role in public policy-making since at least three decades, when in 1980 it has been legally acknowledged in various parliamentary Acts. Land use and planning began around the first 1990s' to informing local people of decision-making and land use planning. The Land Use and building Act (1999) emphasizes participation, collaboration and transparency in planning practices, aimed to ensure the involvement of all relevant participants in planning activity. The Act has been overhauled in 2013 (Kahila-Tani, 2015b).

Tulloch (2008) described public participation GIS (PPGIS) as a «field within geographic information science that focuses on ways the public uses various forms of geospatial technologies to participate in public processes, such as mapping and decision making». Whereas PGIS is used as a development tool to encourage community identity, empowerment, creation of social capital, and also to promote social justice and equity (Brown & Kyttä, 2014), PPGIS appears less related to socio-economic marginalization (although this may be present), but is more related to the enhancement of participation processes that can improve the quality of land use decision.

In the light of this aspect, social capital building and community identity may result from the PPGIS process itself, albeit as secondary element compared to the quality and representativeness of the data (ibidem). A more detailed overview of the main differences among PPGIS, PGIS and VGI is provided in Table 1.

In general, participatory mapping practices may include four main objectives: (1) the description of current or rather historical connection of place(s), (2) the identification of place qualities, values and conditions, (3) the identification of current behaviour patterns or everyday practices in specific settings or topics, and (4) the investigation on inhabitants' preferences for future land use and management.

Knowledge of residents' perceived quality and use of their living places is considered here as particularly useful though this sort of information is still not normally given credit by professional planners (Kahila-Tani, 2015b). To the opposite, some institutional barriers affected the self-serving assertion around public participation, which is still sometimes used to confirm political legitimacy or as a need to be taken care just during the end of planning processes (Kahila-Tani, 2015b; Vicari, 2005). Traditional public participation processes may still favour interest groups and active minorities, especially development interests, while under-representing the "silent majority" of public stakeholders (Brown & Kyttä, 2014). One of the latest methods in the field of participatory GIS is based on PPGIS experiences, with the aim to move forward on the inclusive pathway, as a way to allow residents' to characterise their local environment in a bottom-up manner (Talen, 2000). This implies a process of knowledge creation that relies on localised and experience-based information provided by the individuals, improving the already well-developed PPGIS. These recent tools are labelled as "SoftGIS" (Kahila & Kyttä, 2009).

2.2 SoftGIS: a bridge-builder method for participatory planning

Several PPGIS methods have been used in Aalto University, where the development of the SoftGIS methodology has been ongoing since 2005 in close cooperation with planners. The development of the softGIS method emerged in Finland as a distinctive, urban-focused internet tool for participatory mapping with the goal of identifying the relationship between environmental factors, and local experiences and everyday behaviour (Brown & Kyttä, 2014; Kahila & Kyttä, 2009; Rantanen & Kahila, 2009). Its methodology is an example of an Internet-based PPGIS methodology that allows residents to communicate localized experiential knowledge (Kahila & Kyttä, 2009; Kyttä, Kahila & Broberg, 2011). SoftGIS leads planners and researchers to investigate on citizens' everyday lives: how they are organized in their living place, what are their perceptions about the quality of life, what can be improved where they live. This is made possible through a collecting process of place-based both positive and negative experiences (Manzo, 2003) residents have about their physical environment. The main potentiality of SoftGIS is its internet-based application that can facilitate the use and diffusion of the tools, although some parts of population could be still under-represented, i.e. the elderly people who are less familiar with the use digital instruments.

Table 2. Key principles of SoftGIS methods. Source: Kahila & Kyttä, 2009

1	Operationalization of perceived knowledge is grounded in the theories of humanistic geography and environmental psychology.
2	The perceived knowledge is gathered through scientifically valid, reliable and ethical methods.
3	SoftGIS methods are developed in cooperation with urban planners, who can use this novel knowledge in their planning practices.
4	The database makes systematic GIS and statistical analyses possible.
5	The methods provide a user-friendly internet platform for residents to evaluate their everyday living environment.

However, the web-based feature allows a more user-friendly research method, because IT and software knowledge are not needed, whereas an internet connection is basically the only mandatory request. SoftGIS methods are built on the principles summarized in Table 2 (Kahila & Kyttä, 2009), based upon the purposes typical of the whole PPGISs. Finnish scholars and researchers (Kahila & Kyttä, 2009; Kahila-Tani, 2015; Kyttä, Broberg, Tzoulas,

& Snabb, 2013; Kyttä et al., 2011) identifies SoftGIS as a “bridge-builder” that thanks to web-based GIS application creates connections and field of participation between residents, researchers and urban planners.

These methods promote the sharing of residents’ experiences and behaviour concerning their living environments. The first softGIS prototype was launched in 2004 in Järvenpää, Finland. By fall 2007 five different softGIS methods had commenced in six different Finnish municipalities (Kahila & Kyttä, 2009).

The history of SoftGIS development can be synthesized into four main steps (Figure 1), which have conducted until the latest upgraded versions of web-based softGIS (i.e. Maptionnaire, by Mapita Ltd.; see Chapter 3). The qualifying term “soft” refers to the subjective and qualitative nature of the mapped attributes as a contrast to the “hard”, spatial data layers usually associated with GIS tool. Although the participatory mapping method appears similar to other PPGIS internet applications, an important point of distinction is that softGIS methods have been used in the town of Lahti to map children’s experiences and behaviour (Kyttä, Broberg, & Kahila, 2012). Today softGIS tools include administrative pages that allow the creation of a new PPGIS survey easily and include online data visualization tools (Brown & Kyttä, 2014).

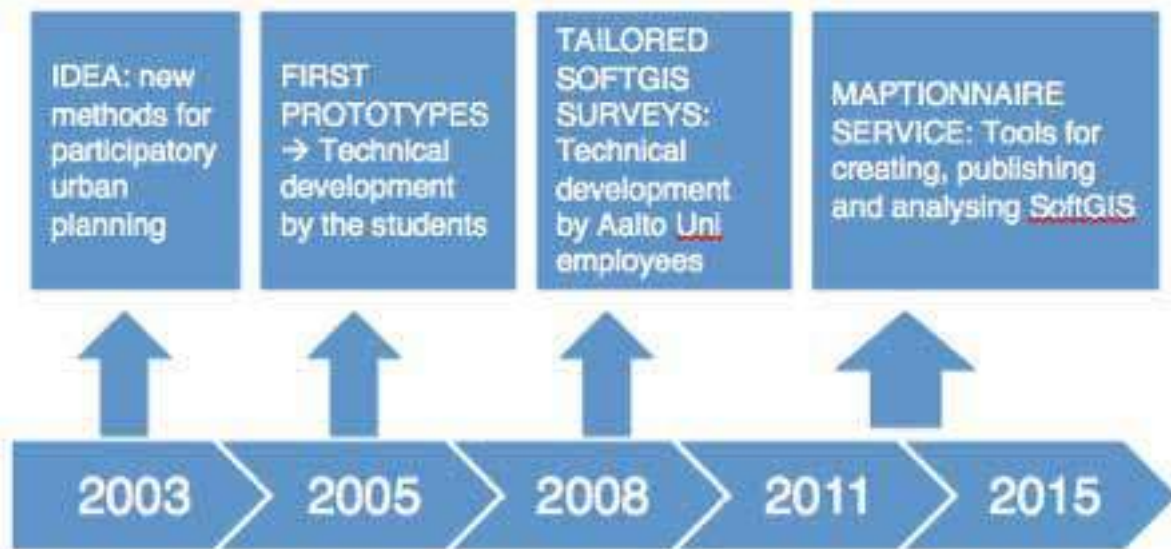


Figure 1. Timeline of SoftGIS development. Source: author’s construction based on slide provided by Marketta Kyttä at Open Space(s) Design Seminar n. 6, 27th February 2017

The development of SoftGIS was aimed to cope with some unsolved issues related to participation in urban planning, even after the Land Use and Planning Act (1999). These unsolved knots, also noticed by PPGIS researchers, were the following: (1) handful of people participating in PPGIS practices; (2) a timing of participation affected by delay; (3) the weak influence of participation in planning processes; (4) the concentration of resisting changes; (5) invisibility of data collected, and (6) an increasing demanding of citizens participation. SoftGIS development has been identified as a solution to these issues, finding its focal point in the web-based approach, but not only. In addition, “soft” methods can be today exploited to study a wide range of topics, such as perceived safety, urban mobility, quality of life, or experiences concerning the green environment. In each case, relevant research literature and expert researchers should be consulted before to produce valid, reliable, theoretically and practically well-operationalized methods (Kahila-Tani et al., 2016).

With the help of SoftGIS techniques, the perceptions of the residents are combined and analysed along with the information concerning the physical structure of the city, for example, the density, the type of land use, the amount and quality of the green areas, the connectivity of urban structures etc. (Kahila & Kyttä, 2009).

The potentiality of SoftGIS can be found in their ability to provide tangible means to help planners, policy makers and citizens of varying backgrounds build consensus about the design and development of a place (Kingston, 2007). In this sense, a twofold meaning of SoftGIS utilization can be identified: on one hand, it can lead to increase citizens’ participation designing pathways of active citizenship that enable people to achieve a multitude of benefits by becoming more actively engaged in their communities (ibidem). On the other hand, it leads planners and researchers to ask how the everyday lives of the residents are organized, what kind of place-based positive and negative experiences (Manzo, 2003) residents have and how they behave in their physical environment. This knowledge is collected through user-friendly internet-based applications (Kyttä and Kahila, 2006; Rantanen and Kahila, 2008). Furthermore, it remains crucial the hard, spatial dimension of SoftGIS methods. Figure 2 describes through four different layers the experienced, lived and physical environment that characterize the application of SoftGIS programme. The active role of all the participants to a SoftGIS project, has significantly changed over the last years, when web-based practices to improve the active role of citizens’ have been designed.

2.3 Further development of SoftGIS: Maptionnaire

Recently, SoftGIS practices found a significant field of development in the already mentioned web-based mapping tools, in order to reach the widest possible crowd to be engaged and included in participatory planning practices. In this way, participative mapping looked a growing of its qualitative feature, indeed, compared with the traditional 'hard' GIS data, all SoftGIS data are qualitative by nature because they are based on the residents' experiences and behaviour.

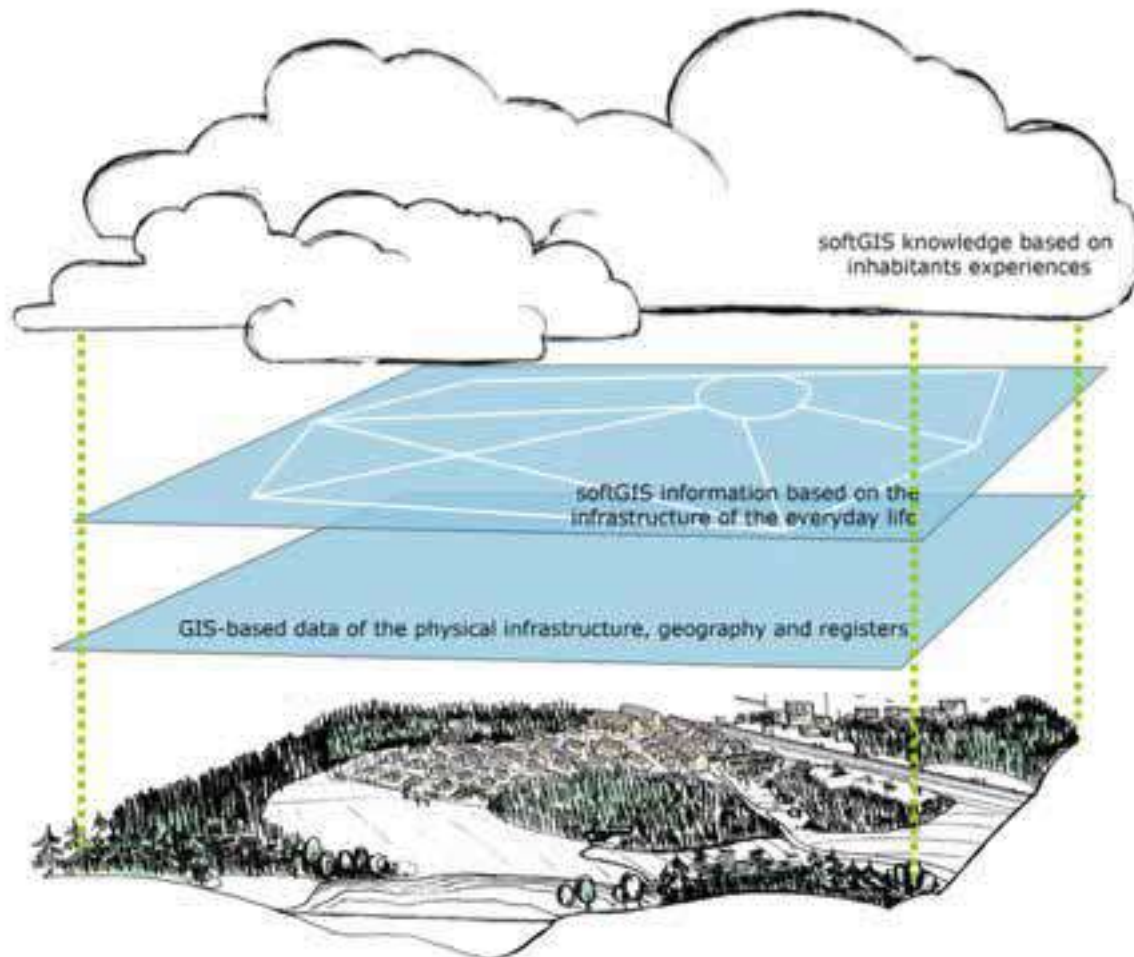


Figure 2. Sequence of layers. From everyday life and individual experiences to physical environment. Source: Kahila, Kyttä (2009)

Only later, they can be analysed into quantitatively (with the classified, closed questions), even maintaining a qualitative part (with the mapping of "stories" or experiences that the residences attach to their meaningful places). Web-based SoftGIS are aimed to increase the role of citizens' knowledge and perceptions in further planning activities based upon the mapping activity. In other words, the individual knowledge that we all have can turn to public understanding through crowdsourcing. As such, this knowledge that can accumulate in the wisdom of crowds through formal or informal procedures – making participation more effective – can be better reached through the knowledge-informed, by connecting the instrumental and deliberative action planning approaches. Web-based SoftGIS enables to cope with the issue of citizens' participation providing a solution to a constantly thorny key issue. As current participation methods inadequately support democratic participation possibilities (Healey, 1997; Kingston, 2007), web-based methods can make participation more democratic, because they free participation from the limits of time and place and they can potentially reach large numbers of inhabitants anonymously. Face-to-face meetings and conversations are certainly needed, but internet-based methods have an increasingly important role in the communicative planning processes (Kahila & Kyttä, 2009).

A more systematic development took shape with the web-based process, that continued at Mapita Ltd, a company established because the researchers wanted to allow cities to use SoftGIS in their urban planning practices more frequently (Kahila-Tani, 2015b). This development process in respect of the editor tools for SoftGIS and PPGIS tools was put in place and subsequently named "Maptionnaire"⁴, and its headquarters is based in the city centre of Helsinki. Maptionnaire could be used as a research tool but also as a participatory tool (PPGIS). It is much more user-friendly and technologically advanced compared to the preliminary experimentations. In a way, Maptionnaire

creates an interactional trading zone (Balducci & Mäntysalo, 2013; Galison, 2010; Gorman, 2010; Kahila-Tani, 2015b; Saporito, 2016) where urban planners, researchers and citizens' interact in a dynamic dimension and find a sort of interlanguage, a shared way of communication where SoftGIS is a material medium.

On this basis, The development work at Mapita Ltd has taken the form of an interlanguage trading zone because of the more stable and ongoing relationship between developers and the customers that has enabled the co-evolution of a new technology (Gorman, 2010; Kahila-Tani, 2015b). On the website, Maptionnaire presents the activity as a four-steps pathway (see Figure 3). Maptionnaire has been utilised in several studies in the whole Finland, but right now the most significant investigation is that for support Helsinki Masterplan 2050 (Kahila-Tani, 2015b; Kahila-Tani et al., 2016), where with Maptionnaire, residents' insight on their living place can be reached along the planning process. Over the last five years, Maptionnaire has been used to design and create surveys for different aims in eleven Finnish cities, after a prototype trial version used in Vaasa. A first experimentation has been carried out in the town of Lahti, to evaluate whether it is a "child-friendly" city.

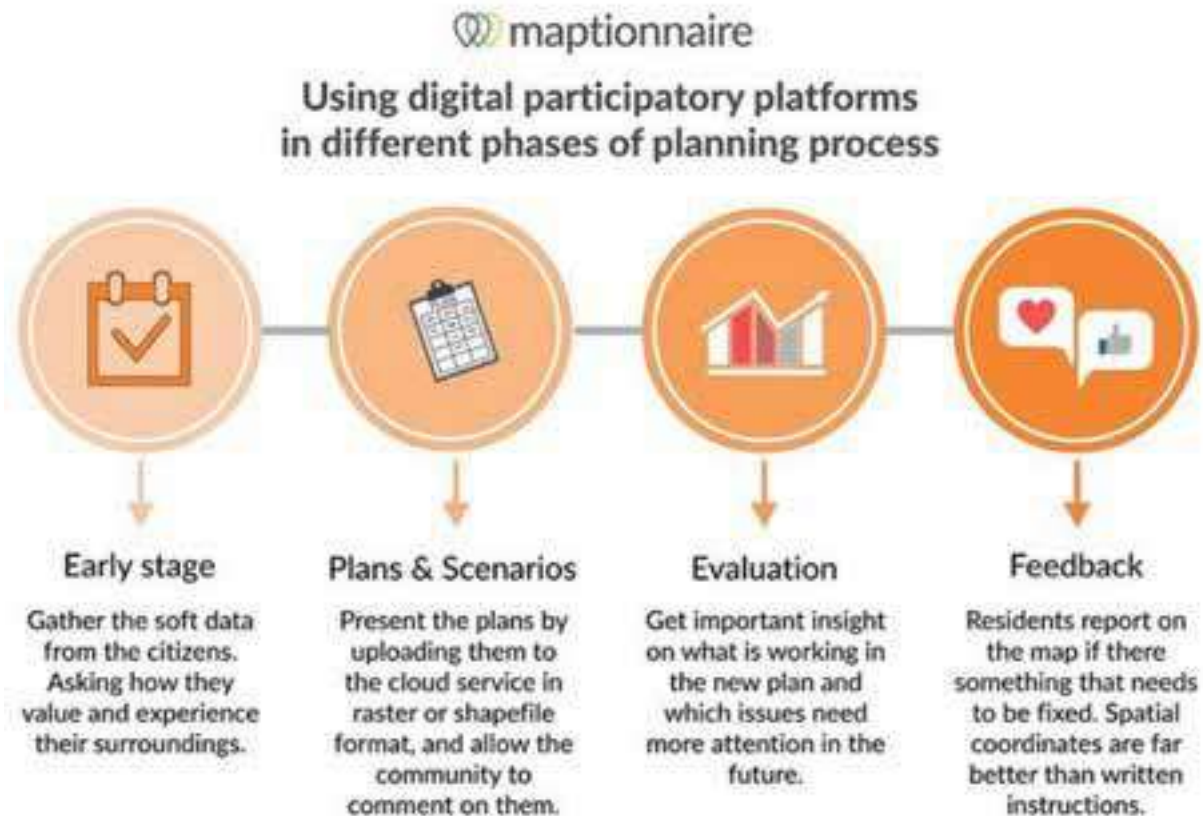


Figure 3. Maptionnaire, phases of planning process in SoftGIS. Source: maptionnaire.com

Subsequently, four more surveys have been developed in Lahti. Kouvola, Riihimäki and Kirkkonummi are the other three cities where more than a single mapping project has been advanced. In Turku and Porvoo, Maptionnaire has been used for objectives related to the Masterplan, whereas in Joensuu, the mapping was aimed to catch the ideas for a park planning. Without any doubt, Finland represent the best field of experimentation of SoftGIS in Europe, and other Nordic countries, Sweden in particular, are going to be involved in Maptionnaire use. Overseas, the American city of Denver represent a virtuous case.

Maptionnaire set out a pricing list for the utilization of their services, and to have a first sight on how it works, a trial version is provided on the website. This market-led attitude is due to the need to sustain their research and planning activity, but it transformed SoftGIS as a reachable tool for both researchers and public administrations.

3. Further questions

In order to encourage local knowledge, participative mapping tools address specific urban situations, as introduced in the brief overview of Finnish experimentations. Nevertheless, the investigations about specific plans (such as in Helsinki, for the the 2050 Masterplan) or cities' promotions (such as Lahti as "child-friendly" town) do not tackle

particular urban situations, but rather they are encapsulated in specific wider debates. On the contrary, SoftGIS utilization is applicable to concrete urban settings and conditions, in order to achieve a better understanding of the societal needs within specific urban areas. Based on what argued by Corburn (2003), for instance, the encouragement of local knowledge through participative mappings can be helpful in improving urban planning for communities facing environmental and health risks, pursuing an interplay with the professional knowledge. Along with this, SoftGIS tools are suitable for the collaborative mapping of local resources within traditionally vulnerable urban areas. For example, the research group "Napoli Monitor" carried out "MappiNA", a participative mapping project in the traditional fragile areas of the historical city center of Naples. I argue that this effort would receive benefits from an integration with SoftGIS practices, to bridge the local-expert knowledge interplay. The identification of places for "sociality" in fragile and poor city neighbourhoods would respond to a twofold objective: enhance citizens' inclusion and cohesion in a socially vulnerable area on the one hand, identify the local resources for the inhabitants, on the other hand. In a time where social cohesion and citizens' inclusions are fashionable promoted issues, collaboration should be fostered and encouraged in manifold ways.

By tackling environmental risks, collaborative mappings could address specific problems, particularly in densely inhabited urban areas. In Northern Milan area, for instance, the underground river Seveso frequently floods when storms occur, causing damages and diseases to the whole area. An effort to identify the most critical areas, i.e. the "core places" of floods, noticed by inhabitants, could bring to tangible outcomes if carried out through specific participative mappings, where citizens would pin down the most critical areas.

In this respect, before to conclude, a discussion is needed in order to look at the further development of Maptionnaire, together pointing out fields of utilization. In August 2017, I had the opportunity to meet in Helsinki Festa Isufi, sales & marketing officer of Mapita Ltd, to discover something more on Maptionnaire, and to find an answer to the following questions: can Maptionnaire be used for a mapping project related not only to strictly urban issues, but also for welfare aspects? To what extent is difficult the inhabitants engagement? Would you be interested to support a SoftGIS utilization in an Italian context? The reactions have been positive, and can be synthesized in the following points:

1. There are no limits for Maptionnaire utilization. Welfare issues are strongly related to the urban environment therefore it is definitely possible to cover more topics in a mapping project. The main issue here, is to build a very clear questionnaire and to specify what "welfare" means, maybe focusing on a single topic with a survey, and later collecting other surveys.
2. Inhabitants' engagement is always at stake. For Helsinki Masterplan 2050, just around 1% of inhabitants participated to the survey, but the most important thing is not quantity, but rather the quality of data, that with SoftGIS is very innovative.
3. SoftGIS is growing, and each country is welcome to interact with Maptionnaire researchers. There is an indicative pricing list, that is actually aimed to make it clear to the local administrators that is not a free-service or an open source, but rather a web-based and open-to-all investigation tool.

As regard to the first point, an entering in the local welfare field of study can be helpful for SoftGIS development, also in order to strengthen the improvement pathway, that must therefore be trans-disciplinary, and the practical knowledge of different actors of urban planning must be applied therein (Kahila & Kytta, 2009).

At this stage, some other unsolved questions, also on the theoretical side, are still outstanding issues. On the final pages of his doctoral thesis, Kahila-Tani (2015) points out that additional empirical evidence is required to clarify whether these tools make participation process more transparent, effective, support learning and produce innovative solutions and, in the end, effectively enable the creation of high quality living environments. It is important to understand whether and how SoftGIS tools, considering their place-based feature, can influence the public policy-making on the local scale (i.e. the urban scale coincident with a Municipality). Their usefulness is unquestionable, albeit it is still not enough clear whether they can be seen as concrete tool of planning, or rather as a survey tool that can be helpful for public administrations. I argue this is an unsolved issue, and experimentation outside of the well-structured Finnish context could give us some suggestions in this regard. Within a framework like the Italian one, where public administration is affected by a lack of resources due to the economic crisis, and citizens' participation is seen as a mere keyword not always adopted as a fundamental element, developing a mapping project to foster active participation could be helpful, also because our environment is still not very familiar with these kind of tools, still preferring the traditional web-based surveys.

Can SoftGIS concretely exploit place-based research approach? Here, the central question is not who organizes participation but instead how the different participation practices can be linked together, and the information produced adapted more specifically to the planning process. SoftGIS can design a pathway, even in Italy, for proper partnership where residents and urban practitioners can jointly engage in real innovative process of collaboration (Kahila-Tani, 2015b). In this sense, the explorers of new public participation methods should put more emphasis

on the evaluation of the success and effectiveness of the process and outcomes to validate the use of these new participation methods (Kahila-Tani et al., 2016). SoftGIS can be seen as somehow a way to support a kind of “agonistic planning”, striving to hear the plural voices of society entails the emergence of divergent and conflicting views as well (Backlund & Mantysalo, 2010). The place-based nature of SoftGIS can also enrich, in a way, the current debate in the field of participatory planning research, which is highly critical of a top-down model of planning system that does not leave space for genuine participation (Kahila-Tani, 2015b). With a place-based approach, a more detailed attachment to the local needs can be possible, reaching the voice of residents by emphasizing different opinion and making them interact with the institutions. The very place-based nature of urban planning encourages the adaptation of GIS techniques also to communicate with the public and decision-makers (Nedovic-Budic, 2010). According to the Finnish experiences, including those from Maptionnaire, urban planners seem to be keen to have place-based experiential knowledge integrated into their systems (Kahila & Kyttä, 2009).

Conclusion

This contribution presented a brief description of PPGIS instruments, focusing its attention on the most recent SoftGIS practices and strengthening their potentialities on the investigation processes on citizens’ need and residents’ knowledge on their living place. More important, Participatory GIS enriched the debate about participatory urban planning, providing an additional tool to increase citizens’ participation. Participatory GIS are supposed to improve the extent of active participation and citizens’ inclusion within the urban planning field, and considering the most recent web-based improvement, they can reach a broader number of people, although elderly people risk being excluded from their utilization due to their low knowledge of IT systems. In this sense, the use on Internet can perhaps facilitate the use of SoftGIS by people non-expert in technology. Web-based GIS services have a lot of potential to become established information frameworks for city authorities, urban planners and lay people in the future (Kahila & Kyttä, 2009). The main issue, as described in the previous chapter, is on the possibility of SoftGIS to be concretely part of planning process, and not only a tool of investigation. As regard of this, the discourse can be shifted on the issue of participation and inclusion, leaving in the background, the geographic configuration of Participatory GIS data.

Nevertheless, further utilization of these methods has to be encouraged through scholars, bridging different gaps: the diffusion of Soft techniques beyond the expertise “enclaves”, such as Finland, on the one hand, and the different IT knowledge in GIS software beyond scholars with different research profiles. In this respect, the field of planning can act as a “bridge”, as it can boost the long-standing debate on the participatory planning process (cf. Forester, 1999). Furthermore, in more practical hand, advancement of mapping techniques able to provide direct information from inhabitants and non-experts, is an important step toward a closer relationship between research and practice, or rather, between policy-analysts and policy-makers.

The future challenge for the development of PPGIS tools and methods will be to provide opportunities to achieve discourse and collaboration, rather than simple collection of spatial data. For example, if web-based PPGIS tools collect spatial data from a regional population, that spatial data can provide the foundation for smaller-scale, interpersonal engagement and discourse in the planning process (Brown & Kyttä, 2014). As stated in the first part of the paper, PPGIS can be identified as a way to enhance the “capability for voice” (Sen, 1992, 2010) of residents about their place of living. This theoretical concept can justify the possibility to adapt SoftGIS tools to a mapping research on welfare issues. It could be a great field of development for Participatory GIS to legitimize their already discussed usefulness.

Acknowledgements

This paper has greatly benefited from the seminar held by Marketta Kyttä at the Polytechnic University of Milan on February 2017, the informal meeting in Helsinki with Festa Isufi from Mapita Ltd on August 2017, and the PhD dissertation by Maarit Kahila-Tani. The author is responsible for the form and the contents of the contribution and he would like to thank the organizer of “[Co]habitation tactics” conference for the acceptance of this paper and the fruitful review of it.

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[TEC/05]



Sustainable Prefabrication for the social housing shortage in Albania

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abstract

After the end of WWII, housing shortage in the East European countries was solved with the implementation of the (precast concrete) large-panel building technology that revealed very efficient in terms of costs and time of construction compared with traditional building solutions. Despite being implemented in a restricted scale, in Albania this experience has been largely considered unsuccessful because of the poor building quality and lack of indoor achieved. Nowadays prefabrication technology has evolved in a variety of building systems such as cross-laminated timber panels (CLT), also well-known for their high energetical performance. The growing demand for social housing, cannot be reduced as a matter of budget and public land available, as long as there is not any alternative building system that can be time and cost saving, too. The Social Housing Strategy 2016-2025 and the National law for the energetic efficiency Nr. 116/2016, highlight the willingness to develop good housing but further actions are needed to facilitate the supply.

keywords Albania, Prefabrication, Social Housing, Sustainability, Informality

Introduction

The paper is structured in three parts. In the first part is described the implementation of prefabricated technology in in Albania. The second part will focus on the social housing situation in Albania with an analysis of the most critical points. Respectively, the third and fourth parts are dedicated to the necessity to rethink social housing supply by listing the necessary conditions and synergy among institutional actors to achieve important outcomes and the possibility to implement cross-laminated timber panels (CLT) for the supply of social housing in the future, by comparing a 8-storey social housing project in Britain with a 8-storey concrete structure in Albania both for social housing.

Prefabricated dwellings in Albania

Post-war period was traumatic for the socialist countries because housing shortages were not only concerned with those who had lost their homes during the conflict but it became even more critic when the housing demand grew because of the population growth in the most important urban centres in particular. Constrained by the emergency and need of a rapid reconstruction, large prefabricated concrete panels system as the best time and cost-saving solution. Large concrete panel systems accounted for 60 % of all housing in the German Democratic Republic in 1970, 50 % of all housing in Finland in the 1980 and a remarkable 75 % of all housing in the Soviet Union by the 1990. (Ulrich Knaack, Sharon Chung-Klatte, Reinhard Hasselbach, 2012, p. 22). In Soviet Union, the typical five-storey high prefabricated building was the Khrushyovka¹, developed after Nikita Khrushchev appointed architects and urban planners to elaborate a housing typology that could be built very fast. Despite being exported to almost all the socialist countries' block and giving shelter to millions of people, this typology was abandoned in the 70s because it did not permit a high urban density and implied to much land consumption.

During Socialism, housing in Albania was influenced by the two main countries of the Socialist block worldwide: Soviet Union and China. In particular the Chinese assistance facilitated the implementation of prefabricated construction technology in Albania but after the fall of socialist system in Albania in early 90s this technology

was not implemented anymore. Prefabrication in the country occurred through the Chinese assistance, because of the strategic partnership among the two countries. Indeed, the so called Parafabrikate (see Figure 3), where no less some Khrushyovka's but with the only difference that they were produced under the assistance and graphical details were brought from China. Since 1978, in Tirana (the capital of the country), was established the factory of "the two-thousand dwellings", because of having as main goal the construction of that number of dwellings per year. The centralized production, highly constrained their distribution in the national territory as long as transportation costs were very critical for the government at that time because of having a centralized economy and almost limited foreign financial sustain. These constraints were also mirrored in the urban agenda of the government, as long as the impossibility to sustain population growth in the most important urban center and consequently the necessary housing supply, was followed by depriving Albanians to easily move from rural centres toward the urban ones. According to the national statistics, from the 507,180 dwellings in Albania 22,945 made by prefabricated panels (Novikova, et al., 2015, p. 36), representing a small amount in comparison with the other East-European countries. Furthermore, heating plant was not provided because designers found not economically-convenient as long as colder days were fewer. Fall of socialism in early 90s stopped their construction because that the economy model changed. In the same time people living in the prefabricated dwellings had the chance to buy heating/cooling units that in terms of indoor comfort brought evident improvements but in terms of energetic performance it highlighted the poor building technology of these dwellings (see Figure 3). Even though, this building technology was not implemented anymore after the fall of the socialist system, it is undeniable that it proved to an effective solution in quantitative terms because within a year and with economic resources available, two thousand dwellings per year was a very important result. One of the mayor aspects that define this experience unsuccessful is related to the low indoor comfort of the dwellings.

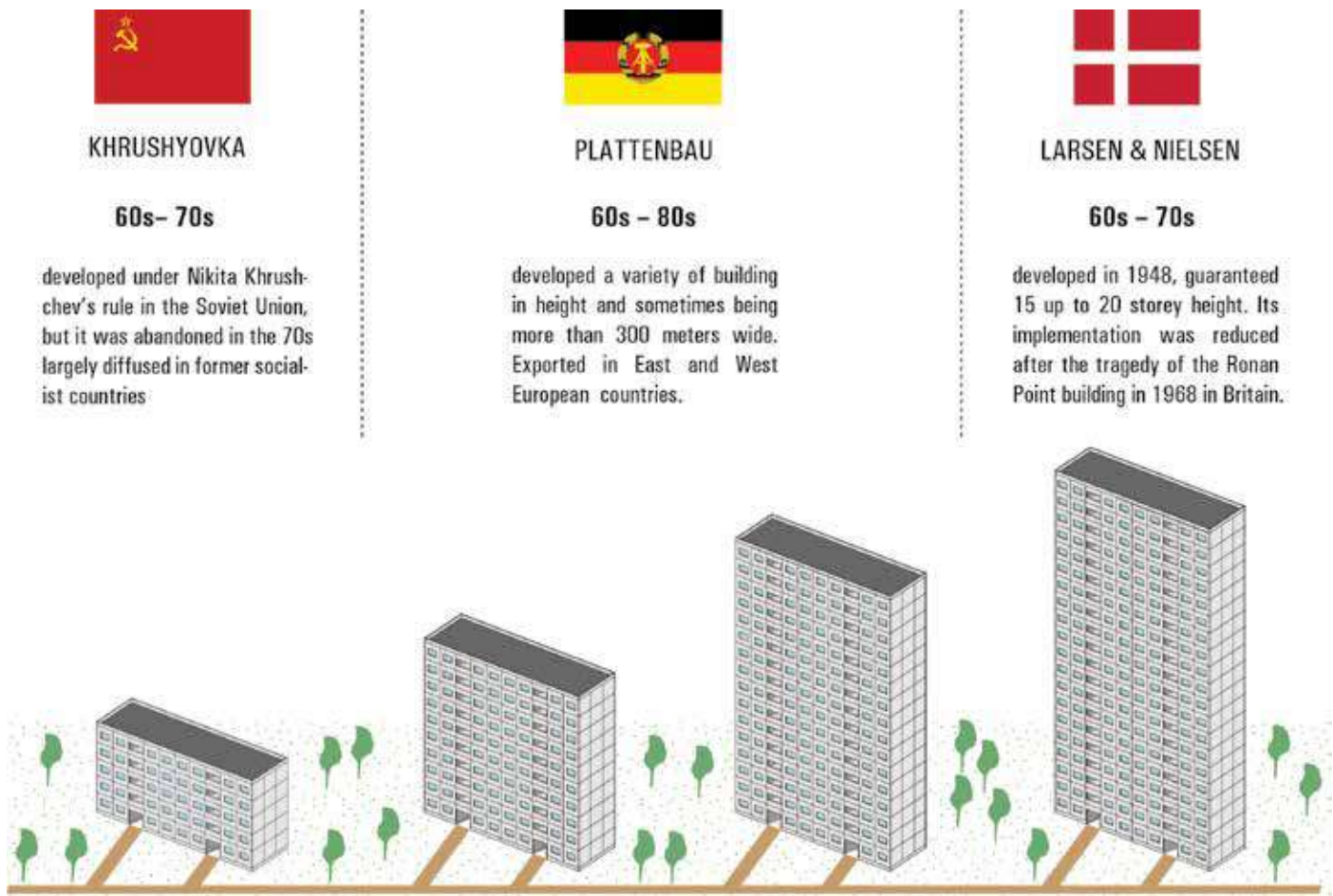


Figure 1. Concrete large-panel building typologies (source: the author)

Social housing supply after 90s

Political system changes in Albania in early 90s, affected the state-housing sector and the social housing policy, too. If in 1990, the public rental dwellings counted 35,5 % and within ten years dropped to 1,0%, which means that 97,2 % of the state-owned houses were privatized (Whitehead & Scanlon, 2007). The biggest part of the investments origin from the state budget (59.6 percent) and the remaining part from Donors and privatization funds (Dauti, 2014, p. 24).

During 2005-2014 there have been registered 35,011 applications for the four social housing programs) and it is evident that providing housing is difficult for the public administrations and is a lottery for the applicant. The Social Housing Strategy 2016-2025, which represents a clear intent to reset the current system that revealed to have limitations and anomalies, but the strategy to create the necessary budget for the supply's production has not been defined yet. The strategy itself highlights the major complain that do not facilitate the supply of social housing which are: budget and public land. If the first is directly constrained by the government, the second one is very unproportioned in relation the demand for social housing. The mean value of the vacant land owned by municipalities that can be used for building social housing units is 8,366 sqm, in the rural areas it is 77.000 sqm (Dauti, 2014, p. 41). The issue is indirectly related with the informal areas. According to the ALUIZNI², the total area of the national territory occupied by informal buildings is 19.300 hectares (ALUIZNI, 2017). The legalisation process which represents a step forward toward the recognition of these realties that have been neglected in their beginnings and now are isolated frames in the edges of the most important cities like Tirana and Durrës. Despite this original solution provided by these areas, there is a bigger threat around the corner once a dwelling has been legalized which the free market urbanization. In fact, the area of Unaza e Re³ is a well-known example were new owners are created and the possible land that could be used for social housing is choked by free market and furthermore the government has to compensate the legal land-owners, too.



Figure 3. left: Social Housing Building in Fier completed in 2016 (source: ekb.gov.al)
right: Prefabricated building in Tirana (source: the author)

Despite the assignation system is not the best there is still missing a focus on the supply and in particular of its quality housing. After the 90s, there were not given any attention toward any other alternative building system except concrete structures. In Albania the cost established from the government for social housing is ALL 39.587 /sqm, approximately Euro 298,81/sqm (EKB, 2017). One of the recent projects of the EKB⁴, the residential building in Fier (see Figure 2), contains 40 dwellings and costed ALL 89,909,005 (approx. Euro 678,558.53). With a built area of 3357,6 square meters, the cost of construction results Euro 202/sqm, 33 percent less than the approved cost by the government. There can be made many assumptions from this fact, but it is clear that the building does not have insulation and this may explain the low construction cost and furthermore it is in total contrast with the national law Nr.116/2016 on the energetic consumption. Concrete structure building seems to be the one and only alternative in the social housing perspective. As long as the housing supply will be seen as a matter of number of dwellings and not in the technical construction aspect such as time and building quality, the economic efforts to fulfil the demand for social housing will be bigger. Especially in 2013, the housing sector consumed 30% and 60 % percent of the national energy and electric power production respectively (Novikova, et al., 2015, p. 36). The main reasons of the housing sector's low performance are the poor building quality and the use of heating units like wood stoves that have a devastating impact on the environment. There have been adopted many EU directives on energetic efficiency like: the 2006/32/EC on "Energy end-use efficiency and energy services", the 2010/30/EU on "Energy labelling directive" (April 2015); the 2010/31/EU on "Energy performance of Buildings Directive" and the 2012/27/EC- "Energy efficiency directive" (November, 2015). In particular the last one, constraints Albania to save 1.5 % of its annual amount of sold energy compared to the last three years by implementing alternative solutions. Furthermore, the approval of the national law Nr. 116/2016 which is based on 2010/31/EU directive sets important

1 / Khrushyovka- nickname of the 5-storey prefabricated building built during Nikita Khrushchev's rule in USSR.

2 / ALUIZNI- abbreviation of the Agency for the Legalization, Urbanization and Integration of the Informal Buildings in Albania.

3 / Unaza e Re -[alb] refered to areas nearby the "New Ring" of the city.

4 / EKB- abbreviation Enti Kombëtar i Banesave – National Housing Agency.

targets toward the lowering of the energetic consumption of the building in Albania. For this reason, sustainability should be seen as an aspect of the total process from the design up to the construction phase because costs are not in the energetic aspect but also in the environmental one.

Rethink the social housing supply

Possibilities to implement prefabricated technology for social housing seems to be very far because of the absence of an appropriate sector in the industry, importing from abroad remains the only solution but it would be inconvenient in terms of transportation cost. As long as the problem will be seen as matter of numbers, after a couple of years it will not pay off and the main reason will be the low energetic performance because of not respecting the energetic requirements and the maintenance costs. The development of valid construction technologies for this cause, need to be part of a large debate involving three main actors: Public (government and local administrations); Academic (private/public institutions) and Private Investors. Involving the Academic institutions in this process, will be fundamental to trace the guidelines for a national strategy, framework and the actions to be taken in order to guarantee the better development of the sector by introducing efficient architectural and environmental solutions. The Public representatives should be able to convince in one hand the private investors to invest in social housing but they should focus the most in the regain the most important resource to develop housing, which is public land. If the above-mentioned analyses highlighted the shortage and the ununiform distribution in proportion to the demand, social housing should be enclosed in every planning level, furthermore by imposing it in the future transformation of the informal areas that actually are involved in the legalization process. Last but not least, private investors, as developers should be stimulated in to invest in social housing but also to implement sustainable and eco-friendly technologies in the construction of the social dwellings. Supplying of public land can reveal an important factor to establish to a productive collaboration with the government and public administration, also volume bonus may stimulate them to invest further in energy efficiency solutions.

CLT building system as a future solution



Figure 4. left: Bridport Social housing (source: europeanwood.org.)
right: Bridport Social construction site (source: www.designbuild-network.com)

Nowadays prefabricated dwellings require a low consume of energy and produce less waste. Currently, the standards or technical requirements for building technology is not facilitated and regulated by any law in the country. Timber prefabricated elements have been widely used recently and there have been built multi-storey buildings that have erased definitely their reputation for not being able to exceed two or three storeys' height. Considering that Albania has consistant forestall areas of 1,026,000 ha (Dida, et al., 2003), their management can be guided in relation to the production of timber prefabricated elements, that unfortunately nowadays is used for heating purposes and totally less in the building industry. Indirectly, this will help to manage the progressive renovation of the national forests and create new jobs in an optic of "green economy". To comprehend the difference between an 8-story high concrete structure building and a cross-laminated timber one, it was chosen the chosen 8-storey height residential building (see Figure 4) in London completed in 2010 by Karakusevic Carson Architects. Containing 41 dwellings, it took 12 months to build the main structure and the construction cost emerged £1,422/sqm (approx. Euro 1,589.81/sqm) not far from the cost of apartments and flats in the Housing

association schemes that was approximately £1,390/sqm, in July 2017. Energetic consumes are drastically reduced in this case because of the presence of insulation in the building's envelope enforces even more the timber's thermal characteristics that simultaneously has a considerable positive impact on the environment by avoiding 892 tons of CO₂ emissions (rethinkwood, 2014). This simple example highlights that how important are sustainable strategies to create affordable housing. If for a small part of the housing demand is required so much time and energy to produce dwellings that in the future will have a poor energetic performance and devastating environmental impact, government and public administrations should wonder how they will deal with the rest of the social housing seekers. CLT is only one the many prefabricated systems that are implemented but in almost all the EU countries and in United Kingdom is being implemented the most and benefits are evident.

Table 1. Comparison between Fier and Bridport projects

	Structure Construction	Construction Cost (euro/ m²)	Energetic performance	Environmental impact
CLT	12 weeks	1,589.81 (307,90)	Insulated	892 tons CO ₂ avoided
Concrete structure	24-32 weeks	298,81	Not Insulated	>892 tons CO ₂ not avoided

Conclusions

Prefabrication technology should not be perceived as a mere attempt to solve the social housing shortage, often reduced as matter of supply rather than an opportunity to rethink and redefine more efficiently the social housing supply system. The social housing challenge in Albania is more complex than expected because of the shortage of public land and budget. Obviously, the absence of the prefabricated sector in the Albanian market does not facilitate but there are possibilities to attract and encourage foreign industries to establish their activities in the country. Even though, The PAPP can discuss about the implementation of prefabricated systems, in particular of the CLT building system. Regaining land by imposing the social housing model in the future transformation of the legalized areas, can be an alternative because there will be avoided also the risk of the transformation according to the free market model. The government and the public administration should be aware that quality always pays off and if the building process is not sustainable in the economic and environmental point of view, cost will be even higher and supplying affordable housing, too.

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[TEC/06]



Technological Innovation And Urban Development: The New Architectural Envelopes Of The Urban Industrial Heritage

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abstract

The identity of the contemporary city is nowadays not only based on its physical aspects and on its historical memory, but also on the complex and often contradictory system of relationships between its formal, social and constructive elements. Beside the established city centers there are still many places in a condition of abandonment and out of the main transformation urban processes, called industrial dross-capes, that constitute a very important resource for the city because they can be an innovative link between urban development strategies and technological innovation requirements. The need for experimenting new interpretative tools and new sustainable approaches to the intervention in the existing urban structure gives us the possibility to restore the dignity of these places transforming them into a contemporary layer co-habiting with new landscape, productive and residential layers so to activate new lifecycles saving at the same time the urban territory consumption. In this scenario, alongside all the possible disciplinary contributions, the technological design acquires a particular importance not only for the possible answers to the topic of co-habitation of tradition and innovation, but mostly for its contribution to the problem of the relationship between form and constructive/structural aspects, between esthetical renewal of the buildings and ethical shared values referred to sustainability of materials, techniques and processes. This is particularly evident at the scale of the architectural envelope that becomes the main strategic device used by the design practice to define innovative interpretation in regenerating existing buildings such as the abandoned industrial constructions. Therefore, the essay aims to analyze the relationship between the urban development of the industrial heritage and the technological innovation of the architectural envelope, by identifying the actual aesthetical and ethical strategies looking at the international context and focusing on the urban industrial heritage of the city of Bari as possible places of critical technological design experimentation.

keywords Architectural envelope, Industrial heritage, Technological design, Bari

Introduction

In the last decades, within the framework of the urban transformation processes, the relationship between technological innovation and urban development has changed its outline in order to intercept and absorb the effects of some new elements that are still influencing the cultural dimension of the contemporary city. These elements, produced by the last changing social and economic demands, make specific reference to: the paradigm shift in the transformation processes criteria, passing from the concept of 'rehabilitation' to that of 'recycling'; the extension of the meaning of 'heritage', now including not only ancient constructions but also modern and contemporary disused and/or abandoned buildings; the character of 'resilience', 'adaptability' and 'transformability' of the contemporary city, nowadays required to react to any kind of physical and social changes avoiding situations of irreversible 'traumas' and at the same time adapting to new configurations and producing, in conditions of crisis, new morphological, economic and social systems or sub-systems; the radical, rapid and constant change in the information and technological innovation in its relationship with energy and environment issues.

Specifically in the 'design of existing' what happened is that the new technological approaches have changed the aesthetic and formal paradigms of the architectural heritage introducing a new interest in the relationship between conservation and transformation and between historical meaning and contemporary identity. This has led to a new cultural approach of the built environment in which the process of epistemological and systemic revision of sustainability has been reinforced and, at the same time, the historical urban identity has been enriched with new creative and participative significances.

State of art: best practices at planning and design scale

Nowadays the interventions on the existing buildings are mostly based on the 'retrofit' method. Retrofit means energy efficiency, use of renewable energy sources and innovative technologies with low environmental impact: it's a system of interventions that can be considered 'immediate' if seen in comparison with all the other actions of building regeneration, given that a simple external thermal coating can reduce the energy consumption up to 50% and with the substitution of the windows is possible to reduce the heat loss up to 60%. But it's not enough, because the industrial heritage needs to be totally taken into the disciplinary boundaries of the architectural territory.

Precisely for this reason, it must be said first of all that the objective of conservation is not against new uses and addition of new architectural forms, secondly that any kind of action should not go directly to the constructions but rather needs to be planned at the territorial scale. An example in this sense is represented by the 'Progetto Manifattura - Green Innovation Factory' (2014), a master plan for Borgo Sacco (Rovereto, Italy) where an old tobacco factory has become an industrial innovation center that, linking itself to the local environmental lifecycles, develops researches and activities on sustainable constructions, renewable energies, technologies for environment and natural resources management (Figure 1). Or the plan for the 'Manifattura di Bologna' that has created a regional technological hub for innovation with laboratories of material mechanics, biotechnology and green energy, that represents one of the best practices developed in Italy in the recent years.



Fig. 1 - Carlo Ratti & Kengo Kuma, Green Innovation Factory, Rovereto, Italy (2014).

At the design scale, the state of art is not so full of good practices, but there are some experiences that undoubtedly demonstrates how the new architectural envelope can be not just a sustainable coating. In the Prada Foundation in Milan by Rem Koolhaas (2008-2018), for example, the envelope belongs to a system of planning devices with a specific ethical philosophy asked to permit the co-existence of new constructions and regenerated building, being called upon to have a critical look at what has a value and what is not required to be saved or preserved and, last but not least, an answer to the problem of the relationship with the surroundings (Figure 2). In a similar manner, the Ermenegildo Zegna Headquarters in Milan by Antonio Citterio (2007), re-converting the 'Ex Riva Calzoni', operates an 'interpretative reconstruction' of the old industrial building in which the new architecture of the contemporary envelope defines a dialogue between historical memory and language of modern urban identity.



Fig. 2 – Rem Koolhaas, Prada Foundation, Milan, Italy (2018). Photo by Bas Princen.

The research objectives: from the general framework to the site specific issues

The urban industrial heritage

Starting from the above mentioned best practices, limited but fundamentals, the objectives of this essay are related to understand the relationship between urban regeneration of the old industrial heritage and technological definition of the contemporary architectural envelope². This relationship, that links together two topics normally separated one from each other, is intended as a specific interpretation of the concept of recycle, applied to the old industrial constructions through the contribution of the semantic investigation on the architectural envelope. The urban industrial heritage consists of isolated constructions or building complex built between the end of the Nineteenth Century and the beginning of the Twentieth Century, located between historical cities and countryside, along the main urban infrastructures. After about 30-40 years these areas started to be abandoned due to the transformation of the technological and constructive systems affecting the productive processes, remaining basically forgotten for many years until the social awareness have recognized them as fundamental elements of the urban cultural identity.

Nowadays, although a lot of important regeneration processes have been implemented³, in the urban suburbs as well as in the inner-city areas there are still too many non-residential areas and buildings in a state of abandonment that constitute a real issue for the urban policies as much as for the architectural and technological both professional and academic investigation. This is even more true since these places have acquired new cultural significance for the urban community, although they are located in old productive zones of the city actually rejected by the urban development processes and left on the sidelines of the environmental transformation dynamics. The contemporary city has decided too late to pay attention to the urban industrial heritage because actually it is in extremely critical conditions in terms of structural stability, security requirements, environmental sustainability, land use compatibility, connections with other urban sectors and infrastructures.

1 / The word 'drosscape' is defined by Alan Berger in its book 'Drosscapes: Wasting Land in Urban America' edited by the Princeton Architectural Press in 2006, and it is referred to the contemporary urban voids in a condition of physical and social abandonment.

2 / The essay contains reflections developed in the Re-cycle Research Lab 'Nuove forme abitative in processi di riconversione del patrimonio produttivo dismesso' at the D.I.C.A.R. Department of the Polytechnic of Bari, whose next objective is the definition of a strategic plan for the 'ex Gaslini' old industrial site in the city of Bari. The research group is composed of the teachers: Nicola Martinelli, Anna Bruna Menghini, Milco Montemurro and Vincenzo P. Bagnato and of the graduate students: Michele Di Cosmo, Chiara Maringìo, Dario Monsellato, Lino Rutigliano, Stefano Sangirardi, Patrizia Silecchia.

3 / In the Ruhr Industrial Basin, for example, one of the biggest industrial areas in Europe has been transformed into a cultural and sustainable environmental development system with more than 400 museums and almost 4.000 old industrial construction recovered.

In this kind of labyrinth, the way out can be led by a serious change in perspective and a new behavior towards the problem of the industrial building heritage that take into account innovative development models in which the old industrial areas could actively participate playing a central role as drivers in the physical, economic and social urban recycling processes.

Therefore, the 3R approach (Reduce, Reuse, Recycle), that in Italy comes from the MAXXI exposition in 2011⁴, passes through the German Pavilion experience at the 13th Architecture Biennale in Venice in 2012 and goes to the PRIN National Research Program 2010-2011⁵, gives an important methodological answer to the problem of 'waste zero': first of all, it offers a new ethical interpretation of the planning actions on the disused industrial structures, seen as recycle practices able to save the conditions of the industrial heritage respecting the environment at the same time. Secondly, it underlines the emerging of a new system of social values related to the industrial heritage that link together history, memory, documental evidence and authenticity of places with lifecycle renewal, energy saving and environmental sustainability.

Under a methodological point of view, it can be said that to better define an aesthetical and ethical recycling system of strategies on the disused industrial constructions is necessary to link together the planning scale with the architectural design scale. In the next paragraph this important aspect is analyzed to better explain which methodology is assumed to reach the above mentioned objectives, and how these can deal with a new interpretation of the architectural envelope as the core of design actions and the point of contact between contribution of technological innovation, new formal and social configuration of the old constructions and correct use of the space according to the actual environmental and social sustainability criteria.

A methodology for the industrial heritage between planning, technology and design

Technological innovation and new forms of the architectural envelope

The architectural envelope, with its double protective and representative function in relation to the building façade, is nowadays overcoming the idea of 'wall' intended both as 'Die Mauer' and as 'Die Wand', reaching new constructive and aesthetic typologies attributable to two different main categories: on one hand it becomes a system of parallel thin bi-dimensional sheets each of which performing a different function, on the other hand it goes back to a traditional constructive approach using a single wide layer for all the functions of the building protection. This double form can be achieved using traditional materials with a new technologically advanced productive and constructive process and/or with new materials with a streamlined building approach. In general, the contemporary envelope is made of 'modules', tends to follow fixed measures and patterns using repetitive elements. But this doesn't mean static: in fact, even in the cases of high transparency and lightness, the envelope becomes extremely flexible, as well as dynamic, integrated, interactive and multimedia, often overlapping opacity and transparency, closing panels and openings.

In order to respect the historical, morphological and formal aspects of the urban industrial heritage buildings and considering that, as in the case of the ancient archaeological ruins, also for the abandoned industrial construction there's the dilemma between conservation and transformation, the methodological reflections on the architectural envelope lead us to consider the following issues as questions that need to be asked: which is the right way to define and design a new envelope? Which ethical criteria and aesthetical approaches we should give preference to? And according to the functional requirements of an urban sector (in which an abandoned industrial site is located), how can we achieve a proper control of the building thermal behavior, the impact of sun and air (i.e. maximizing solar heat gains in winter time and solar radiation in summer time), optimizing comfort, energy-efficiency and environmental performances?

If these questions are important at the planning scale, is at the design scale that they become fundamentals. In the history of modern architecture we can find many design experiences developed by important masters of our discipline that away from the standards have demonstrated that the problem of 'sustainability' belongs to architecture and must be resolved using architectural solutions and not technical devices. Karl Friedrich Schinkel, for example, used to define the external envelope as a separated part from the structure but always maintaining unaltered its role in the architectural organism. Or maybe Louis Kahn, who on one hand used to distinguish the layers of the wall identifying a neutral space between external and internal wall panels, giving an 'architectural' (but not technical) solution to the problem of ventilation and access of air and on the other hand used a necked recessed joint to 'design' the ethical constructive relationship between structure and external coating.

These considerations and examples can demonstrate that a synthesis of the three disciplinary ambits, planning, technology and design, is physically possible and, moreover, it can be found in the territorial dimension of architecture, always related to a specific landscape or urban context. It's actually for this reason that the results

of this investigation must be identified in terms of strategies and guidelines referred to a specific site that, in this case, is represented by the industrial heritage in the city of Bari.

Industrial heritage in the city of Bari: a new relationship between regulatory framework and design actions as a plausible strategy for ethical results

The interest for the urban industrial heritage, starting a process of social recognition and progressive understanding since the Seventies, has now achieved such an important level of cultural acceptance that now we talk about 'archaeology' also referring to the old industrial buildings. International and Community regulations, as well as world cultural organization such as ICOM, ICOMOS, ICOHTEC, UNESCO, DOCOMOMO, etc., have enshrined the importance of protecting these historical records. But at national, regional and local level is not always possible to find clear strategies and conscious approaches⁶. As specified in the TICCIH Congress 2015 Proceedings⁷, in Italy between 2012 and 2015, due to a situation of general economic crisis, the industrial heritage has seen a reduction in conservation interventions, even suspending and/or abandoning projects 'in progress', as well as a worsening situation in their loss or destruction due to earthquakes, arsons and demolitions. Otherwise, the legislation situation has remained basically unchanged in all three possible directions: cataloguing, planning strategies for conservation and design criteria for recycling⁸.

Despite this, even though without a coordination with the national level and although limited to a specific local area, in Apulia Region is recognizable and important legislative initiative that is the Regional Law 1/2015⁹ which, in Article 1, "encourages the conservation and promotion of the industrial archaeological heritage in the local area, recognizing its importance for the culture and for the regional economic development" and, in Article 49, "includes the enhancement of the industrial archaeological heritage among the objectives and conservation and management plans, included in regional planning instruments". This law comes after a period, started in 2008, during which the Apulia Region has provided a deep reform in the legislation of urban regeneration. The Regional Law no. 21/2008, for example, has defined a new model of planning in which entire parts of the city or urban sectors can be culturally, economically and environmentally renewed through synergies with the local governments involving public and private actors. Then, the Regional Law no. 14/2009 has provided actions to improve the conditions of environmental, energetic and architectural quality of the existing building and heritage, and the Regional Law no. 21/2011 has indicated the areas of action, between which there are the brownfield industrial sites, and the intervention strategies through the definition of the P.I.R.U. (Integrated Programs for Urban Regeneration). These instruments are conceptually innovative because they set out a new interpretation of the relationship between integration, participation and sustainability, working at different scales.

The city of Bari, for its part, identifying the outline of the developing metropolitan area in the 'existing' city, has combined the idea of sustainable development with the valorization of its building heritage, within the framework of a new technical-regulatory system¹⁰, shifting the focus from a technical-economic requirement system to a cultural dimension, more linked to the urban identity and closer to the upgrading of the existing buildings than to the construction of new ones (Tedesco, 2007).

4 / *Re-cycle. Strategies for Architecture, City an Planet. MAXXI, Rome, 01/12/2011 – 29/04/2012.*

5 / *P.R.I.N. (Programma di Ricerca di Interesse Nazionale) 'Re-cycle Itlay. New Life-cycles for architectures and infrastructures for city and landscape', 2010-2011.*

6 / *In spite of a critical situation in terms of national standards and rules, a significant role in promoting and preserving the industrial heritage is played by some important association and foundations such as the AIPAI (Italian Association for the Industrial Archaeological Heritage), the Luigi Micheletti Foundation, the Dalmine Foundation and by some institutes and academic research centers like the DiSSGeA (Department of Historical and Geographical Science and Antiquity) at Padua University and the ISEC (Institute for the History of the Contemporary Age).*

7 / *Preite, M. (2015). TICCIH National Reports 2013-2015 – Italy, in Dufresne, G. and Douet, J. (2015). XVI International TICCIH Congress 2015, Industrial Heritage in Twenty-First Century, New Challenges, Lille, France, 6-11 September 2015, Paris: TICCIH-CILAC, pp. 115-130.*

8 / *An important rule for the existing building heritage is represented by the Standard UNI 11150-1/2005. 'Edilizia. Qualificazione e controllo del progetto edilizio per gli interventi sul costruito'. This standard encourages the definition of shared procedures and tries to develop intervention systems in order to link the single design actions together.*

9 / *Regional Law no. 1, 27th of January of 2015 - "Valorization of the industrial archaeological heritage".*

10 / *The main legislative and regulatory plans are: the Urban Territorial Thematic Plan (PUTT/Apulia), the Regional General Framework Document (DRAG), the Territorial Plan for Provincial Coordination (PTCP) and the General Urban Plan (PUG) and the Strategic Plan BA2015, a voluntary urban planning tool agreed upon by the 31 cities belonging to the new metropolitan area of Bari, developed through exchanges and discussions on strategies, policies and actions of urban renewal. The Plan, launched in 2007, is coordinated by the Metropolitan Council of Mayors and by a Scientific Committee with the contribution of a Technical Councilor and of a Research, Development and Communication Staff.*

Historically, the main industrial areas of Bari are located along the northern limit of the city, but since the 1960s new industrial plants have gone up all around the urban structure. Most of them, failing during the 1970s, have produced a lot of disused buildings and abandoned areas between city and countryside. Indeed, the construction itself of the big industrial facilities during the Sixties had led to a condition of rapid abandonment of the more ancient industrial buildings located in the central parts of the historical town, corresponding to those constructions now called 'industrial archaeology' (gasometers, storehouses, markets, etc.). (Figure 3).



Fig. 3 - Gaslini Industrial Site, Bari, Italy. Photo by Patrizia Silecchia.

The abandoned industrial areas of Bari as a whole can be divided into the following categories:

- Brownfield industrial sites (Scianatico steelworks, the Tobacco Factory, the Ferrero factory, etc.) occupying about 330.000 square meters;
- Brownfield contaminated industrial sites (Stanic, Fibronit, Gaslini Oil Manufacture, Gasometer, etc.) occupying about 140.000 square meters;
- Brownfield military areas;
- Uncompleted or unfinished old productive areas;
- Buildings with no functions in the middle of urban voids, places 'in between' city and countryside in a condition of abandonment.

This wealth and variety in the forms of the industrial heritage, along with their strategic location in the urban context, clearly expresses the concrete possibility that appropriate interventions can become the engine of recycling actions involving entire urban areas (Figure 4). Moreover, as happened in many European metropolitan areas, in Bari the presence of disused industrial areas represents a real opportunity to re-think the city and find a concrete way to regenerate entire urban sectors as well as recycling important constructions with an acknowledged historical, morphological and social value (Calace, 2013).

A temporary short conclusion

Being this essay the expression of an ongoing investigation, it can't give definitive answers or conclusions but, as a work in progress, can certainly define a first system of design guidelines for the industrial heritage that passes through some fundamental steps summarized in the list below:



Fig. 4 – Gaslini Industrial Site, Bari, Italy. Photo by Patrizia Silecchia.

Approaches (re-duce)

- Environmental, morphological and functional qualification;
- Integration with housing, services and productive functions connected to housing;
- Re-configuration of the open public spaces;
- Environmental and energetic regeneration of buildings and spaces;
- Energetic and architectural rehabilitation of buildings, context and landscape;
- Innovative technological approach intended as 'augmented tradition' (advanced traditional constructive and technological systems);
- Green façades, parks, re-construction of the lost relationship between city and countryside.

Actions (re-cycle)

- Synthesis between re-cycle of dross-capes and brownfields, re-use of disused industrial areas and sustainable environmental development;
- Demolition of elements with low quality or having critical structural condition;
- Critical reconstruction;
- Consolidation of existing structures;
- Construction of new architectural elements as external additions;
- Construction of new architectural elements as internal additions;
- Design of new architectural envelopes.

Functions (re-use)

- Social housing (co-living);
- Public equipment;
- Public spaces (cultural centers, creative spaces);
- Exposition spaces (museums, temporary installations);
- New manufacturing vocations (development of innovative technologies, creative and/or artistic activities).

This scheme, made of three ambits (approaches, actions and functions) conceptually linked to the 3R strategy (Reduce, Reuse, Recycle), represents a first abacus of instruments that constitutes a 'range of possibilities' for the industrial heritage regeneration projects. The main goal is to find the right way to transform an abandoned

industrial site into a 'urban place' with a variety of mixed-use facilities that could contribute to the revival of the entire surrounding urban areas: from this point of view, restoration and renewal of the industrial constructions, even with a new ethical relationship between old and new, is not only a meaningful objective in itself but also and above all a starting point for the complete transformation of the post industrial areas of the urban context into places with a community focus. Otherwise, the role of the architectural envelope, as described above, underlines the importance of defining new relationships between aesthetic and technological aspects of the interventions, properly using materials, sustainable and feasible technical solutions as well as finding the best decisions about transformation or removal of any element in the existing building.

At the scale of the architectural envelope, in fact, a system of guidelines for the architectural renewal of the old industrial constructions can be defined through the following synoptic grid in which the various possible interpretations of the contemporary architectural envelope are associated to specific topics and organized into three main categories, all of them belonging to the same ethical common ground.

General tactics:

- Envelope as external cladding;
- Envelope as building façade;
- Envelope as energy machine able to exchange, absorb and/or produce energy;
- Envelope as separation filter between outer and inner space;
- Envelope as interface between internal space and environmental context;

Formal and aesthetical approaches:

- Envelope between real form and symbolic form of the building;
- Envelope in continuity and in discontinuity with the building façade;
- Transparency and opacity of the envelope;
- Material and immaterial envelope;
- Heavy and light envelopes;
- Tectonic and a-tectonic envelopes;
- Envelope made of few simple elements and envelope made of heterogeneous and complex system of integrated elements;

Ethical behaviors:

- Envelope revealing and concealing the building structure;
- Autonomy of the envelope from the façade;
- Envelope with a high technology approach (eco hi-tech with low tectonic) with an environmental responsibility reducing energy consumption and producing energy itself;
- Envelope with a low technology approach (low tech with high tectonic) with a longer lifecycle, formally and functionally solid and stable.

Finally, the focus on the industrial heritage sites of Bari represents an opportunity to find out concrete proposals and critical technological design experimentations that, applying the above mentioned principles and strategies to some very peculiar urban sectors, can offer new solutions seen as tactics of co-habitation of old buildings with new contemporary uses and, more generally, of tradition with innovation.

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[TEC/07]



Digital Manufacturing For Strategic Green Infrastructures

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abstract

Urban garden practise is a self-production and social activity that acts at different scales, starting from a single family to the involvement of entire communities. It ensures food security and fights urban degradation, even in developing countries, where it is possible to find poverty and critical environmental situations.

Nowadays, the European Commission recognises urban gardens as green infrastructures that represent a strategic design tool - already inserted in several international urban policy programmes - to tackle both the soil reduction, due to the increasing of urban density, and the progressive consumption of natural resources aimed at food supply. However, the lack of space needs technological solutions that allow them to integrate urban gardens with horizontal and vertical spaces of buildings and the urban fabric. Having clarified these concepts, through the definition of some case studies, this contribution wants to outline possible guidelines to develop strategic sustainable projects for green infrastructures within the cities, integrating urban agriculture with additive and subtractive digital manufacturing tools. Moreover, because of the current digitisation, it is possible to extend the concept of community and propose the elaboration of open source projects – such as greenhouses, architectural components or design objects – to be uploaded in sharing platforms. Following this procedure, everyone could actively collaborate to modify/optimize the available digital data, in order to define constantly updated projects, which are set and customisable to different economic, environmental and social conditions. Through this democratization of digital production tools, indeed, it is possible to offer adaptable design solutions, which deviate from mass production standards with a view to achieving resilient products, which can be efficiently dropped in different contexts, optimising, at the same time, the use of resources and production costs.

keywords Digital Fabrication, Urban Garden, Urban Strategy, Sharing Economy, Resilience

Introduction

Urban agriculture is a practice for food production that is developed within civilized societies and it has always played a central role in ensuring food security for small or large urban communities, in critical periods or contexts, as developing countries. During the development and affirmation of Industrial Age, urban garden acquires additional socio-political values that are used to counteract the labour alienation, the soil reduction and urban degradation produced by urbanization, in a sustainable way (Breda e Zerbi, 2013).

Today, the importance of this activity still plays a primary role within the policies of many large cities, which it becomes an excellent tool to promote, not only environmental requalification, but also social inclusion and local economic development. To understand the importance of this phenomenon, European Commission denotes urban agriculture as an activity to be included in the strategies for environmental protection, in order to promote green infrastructures as they provide environmental, economic and social benefits through natural solutions for the sustainable development of modern cities, against the grey infrastructure of modern urbanization (Laforteza et al., 2013). Indeed, it is described as an interconnected network of green space that conserves natural ecosystem values and functions and provides associated benefits to human populations (Benedict and McMahon, 2002). The same concept is applied in the strategic plans of some cities such as Vancouver, London or Goteborg, which encourage the development of urban agriculture to facilitate the integration of nature-based solutions within urban fabrics. Consequently, they protect environmental biodiversity with new green spaces, and at the same time, regenerating both the image and the life quality of cities themselves (Andreucci, 2017). In fact, one of the

phenomena that modern society is tackling is undoubtedly the continuous loss of natural space. The constant growth of urban density causes overcrowding and a under controlled development of urban fabric, which consequently weighs on the overall green ecosystem (Kelly, 2010). This type of cultivation is used even more in emerging countries as a practice to ensure reliable year-round supply of nutritious and safe food, in order to help urban communities that are more affected both by poverty and by continuous variations of food price that compromise a healthy and balanced diet.

Also there is the problem of climate change that, nowadays, produce greater unpredictability of adverse meteoric events that can occur on our planet. They negatively affect agricultural production and urban food supply in relation with the liveability of all urban areas connected directly with these problems. Many of the world's cities rise close to water surfaces, coastal areas, or they are subject to periodic waterlogging and flooding (in particular the territories in the monsoon's area) by nature (Abash et., 2012).



Fig.1 Urban garden in Herligheten (Losæter) in Norway, one of Scandinavian cities where is more promoted social farming and commercial urban agriculture. Credits: Monica Løvdahl.

The utilization of these green infrastructures finds great potential by tackling these events through its biodiversity and resilience, whereby they can be adapted to critical environmental conditions. At the same time, they can reduce negative phenomena caused by human being, such as "heat island" effects or the water resistance of urban fabrics that are often primary cause of flooding or waterlogging. Nevertheless, the particular characteristics of this natural resource even lie on creating and offering various advantages in form of ecosystem services for the community, which produce direct benefits to the social quality of citizens. One of these is certainly the food supplying, which, in turn, generates circular and local economy processes that constitute socio-cultural advantages, but also a lasting model of food resilience (Maltz, 2015). In particular, urban garden promotes social inclusion and participation among different groups and social classes, including disadvantaged categories (Bailkey et al., 2007). It has a strong pedagogical role towards environmental sustainability, but also for cognitive and physical advancement at the infantile-adolescent level (Wells, 2000) and for the improvement psychomotor capacities at the senile level (Caspersen et al., 1991). In order to maximize the benefits (provided by green infrastructures) and to encourage the development of this activity, through adaptive architectural and urban transformations, it is now possible to associate urban gardens with new technological tools (for example hydroponics). Indeed, these systems can integrate agriculture within horizontal or vertical spaces of cities.

Thanks to the evolution of democratic manufacturing systems, such as digital fabrication, it is possible to enlarge the image of community, creating a bottom-up and multi-local system, which knowledge and tools become a public domain, through the digital network (Manzini, 2005). This paradigm creates the possibility to design open source projects that can be integrated into different realities, optimizing both the usage of resources and production costs, in order to create versatile and resilient products according to the type of context. Therefore, the contribution tries to analyse one of the possible ways for the evolution of this new urban strategy of environmental ecosystem improvement through participatory technical solutions.

Objectives

The current digital innovation, which is taking place in the field of architecture and urban planning, usually concerns the main phases of analysis (open data collection) and realisation (digital manufacturing). Often times, these stages are not effectively interrelated. Instead, the design and the production of an architectural project, whereas properly linked within a digital environment, can lead to the elaboration of innovative strategic policies to be applied at different scales with a long-term view. The advancement of digitisation could potentially improve the value of urban regeneration plans, architectural renovation projects and technical experimentations of building elements (Komninos, 2006).

This paper aims to identify possible methodologies, through the analysis of an experimental test-bed, for the integration of digital tools in decision-making and regulatory programming frameworks, with particular reference to development of green infrastructures. Following the example of high-welfare cities like Vancouver¹ or Göteborg², several municipalities are now adopting new strategies of urban governance based on the development of technologies for the use of big data and the monitoring of urban resilience (Ludwig et al., 2002: 21-48). It is believed that digital tools can also be harnessed to create new means of involving citizens in urban planning processes, as long as users bring a large amount of data that can be fully exploited for the optimization of digital infrastructures and services related to the urban environment (Hasler, 2017). These tools are key points for the implementation of the so-called Smart City models.

The present research wants to deepen a systematized future scenario in which cities, architectural projects and design products are managed through a digital workflow that includes the use of:

- sharing tools, or digital platforms, currently used for the upload of three-dimensional models of objects, which could also be effective for the simultaneous and participatory design of customized architectures. This idea is based on the example of the project Wikihouse³, a pilot project that provides low-cost housing modules -designed within a digital environment- to be shared online, buildable through digital tools, and adaptable to different contexts;
- design tools, or IT processes, that span from the virtual representation of architectural projects to the evaluation of technical feasibility along the phases of digital materialisation;
- realisation tools, which are hardware specifically programmed to elaborate digital information and turn data into matter (Gershenfeld, 2012). These instruments are mainly divided into subtractive and additive systems and are both eligible to be used for large-scale applications. In particular, subtractive systems include the CNC technology, used to shape initial monolithic volumes -through the subtraction of material- in order to obtain the desired geometric layout. On the other hand, additive systems are machines that work by using the experimental procedures of additive layer manufacturing, which consists in the addition of overlapping layers of apposite instant-solidification mixtures to reaching the volumetric result.

The use of digital tools brings substantial benefits. First, the digitisation allows the management of complex projects, in terms of performance optimisation and pioneering architectural languages. Secondly, the exact monitoring of all phases involved in the building process ensure a higher design quality, lower production costs, and faster realisation procedures (Lipson, 2013). The aforementioned subjects will be afterwards discussed through the analysis of a theoretical and repeatable pilot project, defined to combine the theme of digitization in architecture with the exploitation of urban agriculture, as a mean to improve policy-making strategies within contemporary cities.

Methodology

The following methodology is based on a digital workflow and addressed to the elaboration of an open source project. These arguments, as mentioned before, will be strengthened through the presentation of a potential test-bed. It will help to clarify the link between digital participatory planning, green architecture, and advanced building processes. In the context of the present scientific research, the expression "open source architecture" (Ratti and Claudel, 2015) refers to a collaborative process that can be updated by users at each stage, from the design, to the sharing, to the final realisation.

1 / The city of Vancouver has set strategic goals to reach high sustainability standards. For further information see: <http://vancouver.ca/green-vancouver/greenest-city-action-plan.aspx> (accessed: 20/04/2018).

2 / Gothenburg is currently adopting a strategic urban planning within the frame of the program "Gothenburg 2020", developed with the collaboration of professionals and the local municipality. For further information see: <https://stadsutveckling.goteborg.se/en/> (accessed: 20/04/2018).

3 / It is a collaborative and open source project for home buildings using digital fabrication: <https://wikihouse.cc/> (accessed: 20/04/2018).

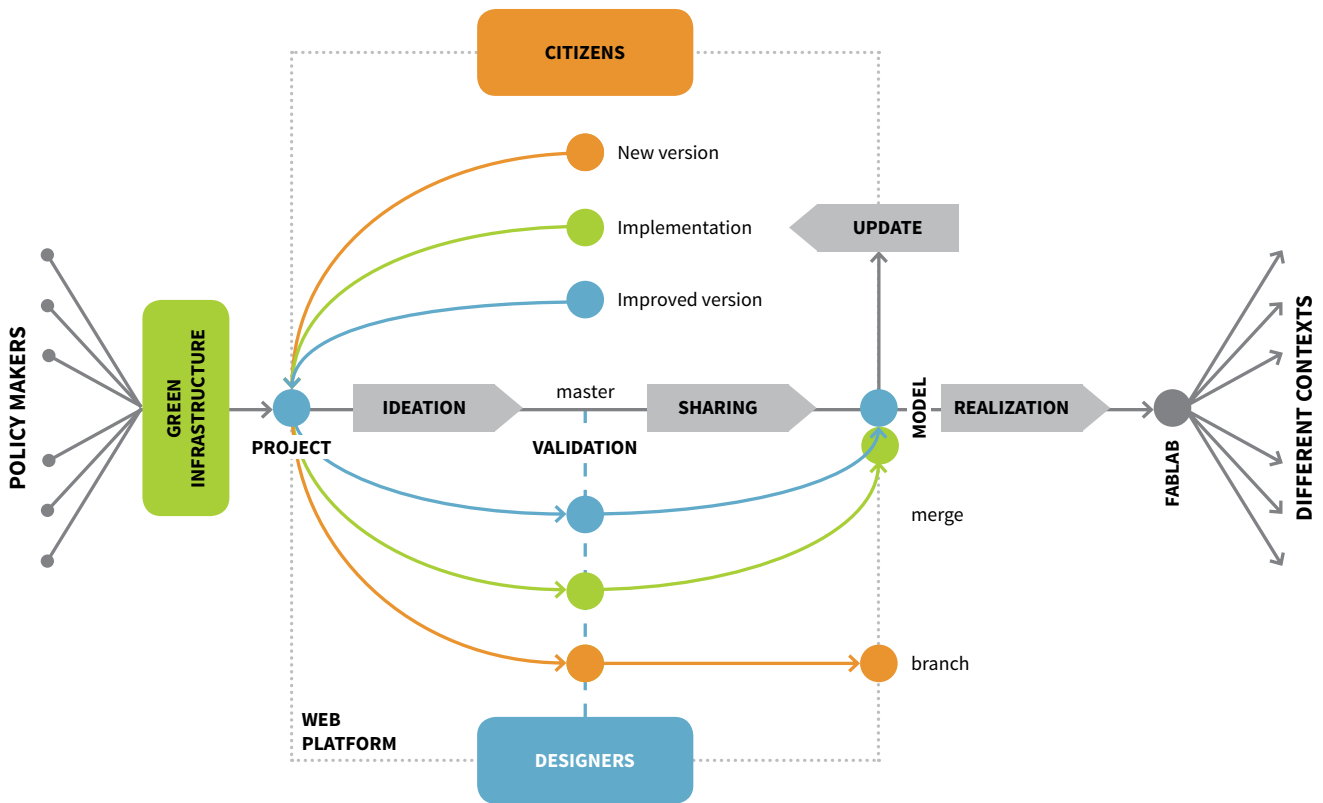


Fig.2 The methodology used to create a plan of urban green infrastructure using the collaboration of community through an open web platform and the digital fabrication model. Credits: Gian Andrea Giacobone, Sara Codarin.

1. Design

Open data – as much as environmental features, social settings, and economic limitations – represents an essential framework condition for architectural design and urban planning (Khansari et al., 2014). Data provide information about users’ behaviour within the urban environment and bring out eventual needs that suggest possible solutions. For this reason, they should be included within strategic programmes of contemporary cities, with consequent reduction of the uncertainty of the project outcome. The use of digital data fits with the possibilities offered by digital building systems, which support the monitoring of every technical/material/budgetary contribution to the design phase. Nowadays we are witnessing the development of machines programmed to elaborate digital data and use them in the physical space, at different scales. These new technical possibilities expand the design options (Bock, 2016), which result from the intersection of variables such as volume complexity to be achieved, selected materials for the construction, implementation tool features, and expected time rate. Therefore, depending on the different project requirements, the choice of the most suitable construction technology follows. Among the most advanced technologies, additive layer manufacturing systems or ALM – which definition is sometimes approximate to the expression 3D printing – have already demonstrated to be used for the realisation of structural components, building elements, and urban furniture. ALM for large-scale applications is mainly divided into powder-bed deposition (used by Dshape⁴ company) and cold extrusion systems (used by Wasp⁵ and Yhnova⁶ companies). The powder-bed deposition works through the depositing of alternate layers of a base material (generally sand or gypsum) and an inorganic binder. This technology allows obtaining free forms monolithic shapes without geometric limitations on any axis. On the other hand, cold extrusion processing is mechanically defined by three arms connected to one point or alternatively by a single arm moving in any direction within the printing area. It is equipped with an extruder designed to deposit overlapping layers of a viscous mixture (based on raw earth or concrete conglomerates) able to solidify in a short time. This procedure allows the definition of limited geometric layouts that elevation structures cannot be disengaged from the vertical axis. Other possible realisations (structural intersections, timber panels) are achievable also by using subtractive machines such as:

- CNC robotic arms (realisation of the Frames Pavilion⁷, at the Institute of Architecture and Media, Graz University of Technology);
- Forming robots (realisation of cladding panels⁸ for the façade of the Concert Hall “Le Tarmac” in France, by Bemo Systems GmbH);
- Wire-cutting systems (production of the RDM Vault⁹ at Hyperbody’s robotics workshop in Rotterdam).

In the past, they were adopted for industrial production but nowadays these technologies give an impactful contribution in the frame of digitization processes in architecture (Brell-Cokcan and Braumann, 2013). Their functioning is based on the processing of a base element of any material that can be respectively milled, reshaped or subdivided making sure that the waste of material is carefully evaluated and checked in the design phase. Designing an architectural/design object, which can be automatically realised through digital tools, means that each specific three-dimensional model can be remotely interoperable, shareable and realisable.

2. Sharing

In a collective work which even involves the following phases after ideation, the importance of this strategic model lies on the dissemination of project through internet potentialities. Indeed, network allows the distribution of the project in different world's contexts without any intermediation, leaving space for reinterpreting the ways in which a product has been historically generated, distributed and sold (Howe, 2010). In order to operate in this direction, it is important to have social capital and its participation to promote sharing of all the phases of the strategic plan.

The project aims to be part of the practices that reside in the acronym advanced by the European Commission "CAPS - Collective Awareness Platforms for Sustainability and Social Innovation"¹⁰, to identify social aggregative platforms on internet, which support environmental sustainability, through the exchange of knowledge and promotion awareness of participatory design solutions. Using tools related to digital files, the goal is to create a project to be placed on a web-based platform, so that every user can access to its source code and replicate it in their own context, in different parts of world, encouraging the development of new forms of social innovation. This process is available through the close dialogue with the policy makers. In this case, it is possible delineate the system guidelines of tools and elements that can be subsequently prepared online and shared by other communities who want use and insert the project into their development plans.

But the peculiarity of this system lies in the updating of the project itself. Taking an example from one of the most well-known collaborative platforms like Github¹¹, anyone who inserts the source code on the web, he/she can submit the file to the community, in order to receive neither an improvement of model (compared to the original file), or a forking of the same project for the development of a similar version that can be fitted to the needs of other different contexts. In this way, it is possible create a series of new versions that can be adapted to different social, political, architectural, environmental or economic contexts, without losing the trace of previous steps to the last updating or forking. It changes the design model that remains open, democratic and constantly updated; at the same time, it makes the process circular and not only linear. Also it becomes inclusive and collaborative, as anyone of the community can become active part of the process, through an evaluation and validation by the creators of the source project (in this case the policy makers), in order to allow a correct management and evolution of system. Keeping this process open and transparent, a rapid incoming into the community (in terms of technological development and know-how) is maintained, as every data on new improvements of the latest versions remains fully catalogued and immediately accessible.

3. Realisation

The digitization of development phase subsequently allows a strong relationship with the production system, as the file can be downloaded and processed directly by the machine in any place is available this technique. The network is constituted by the community of FabLab, namely a laboratory model born at MIT, as a research centre on digital fabrication and computation, now a place for sharing knowledge and democratic tools by makers, to promote the development of innovative ideas and projects. This system allows a rapid diffusion of project and makes it sustainable and inclusive. Everyone can reduce distances and transport costs, just producing the product locally in one of network points (Anderson, 2012). Costs are lowered also through the realisation step, as the

4 / Dshape is an Italian company focused on the development of additive layer manufacturing systems to be applied on the architectural scale. For further information see: <https://d-shape.com/> (accessed: 20/04/2018).

5 / Wasp is an Italian company which is developing large-scale cold extrusion additive systems. For further information see: <http://www.wasproject.it/w/> (accessed: 20/04/2018);

6 / For further information see: <http://batiprint3d.fr/en/> (accessed: 20/04/2018).

7 / For further information see: http://richdank.com/theory/tfp/TheFramedPavilion_robarch2012.pdf (accessed: 20/04/2018).

8 / For further information see: https://link.springer.com/chapter/10.1007/978-3-7091-1465-0_40 (accessed: 20/04/2018).

9 / For further information see: http://content.stimuleringsfonds.nl/files/pro/i_1392/FabricateFeringa131109.pdf/ (accessed: 20/04/2018).

10 / For other information http://make-it.io/wordpress/wp-content/uploads/dlm_uploads/2016/09/CAPS_Handbook.pdf (accessed: 20/04/2018).

11 / It is a social web-based platform for developers whom work on collective open software <https://github.com>

design is elaborated by the community, whereas digital manufacturing combines the flexibility of craftsmanship with the reduced outgoings of industrial production. Once realised, the project can even count on community for its maintenance, because the parts that need to be replaced can always be reproduced in the same network. If there were production shortcomings, the organizational flexibility would help the project to be updated, in order to solve problems, starting from the first source file. This process makes it possible to create a resilient project that is easy to transpose to other strategic development initiatives.

Results

The contribution advances the idea of a pilot project based on urban gardens, which embrace the methodology presented and acts as a demonstrator to enrich the socio-cultural debate, around forms, facilities and exploitation modalities of these possible types of strategic green infrastructure (Giacobone, 2016). The project includes itself inside the strategic plans of cities, in response to the problems and opportunities dictated by modern urban societies. The idea is developed through CAD/CAM's techniques and tools (fig.3), that are nowadays made democratic by technological development (Menichelli, 2016). The aim proposes new solutions of environmental requalification that satisfy the growing food demand, in relation to the constant loss of natural space, due to urban and demographic increase. In particular, this project wants to be distinctive because it takes into account water surface as an alternative spatial resource to be exploited. It integrates the green infrastructures within the fluvial networks of cities, which are predisposed for this type of intervention.

The research proposes a soilless cultivation method, such as hydroponics, to take direct benefit from the surrounding water environment. It wants to preserve the environmental quality of cities with nature-based solutions, without directly affecting the surrounding urban territory. At the same time, this model of urban garden tries to find a resilient design solution that can tackle environmental problems, such as flooding or waterlogging. These phenomena damage different coastal cities or places where climatic conditions allow the creation of natural disasters, sometimes creating unfavourable situations of liveability and food supply.

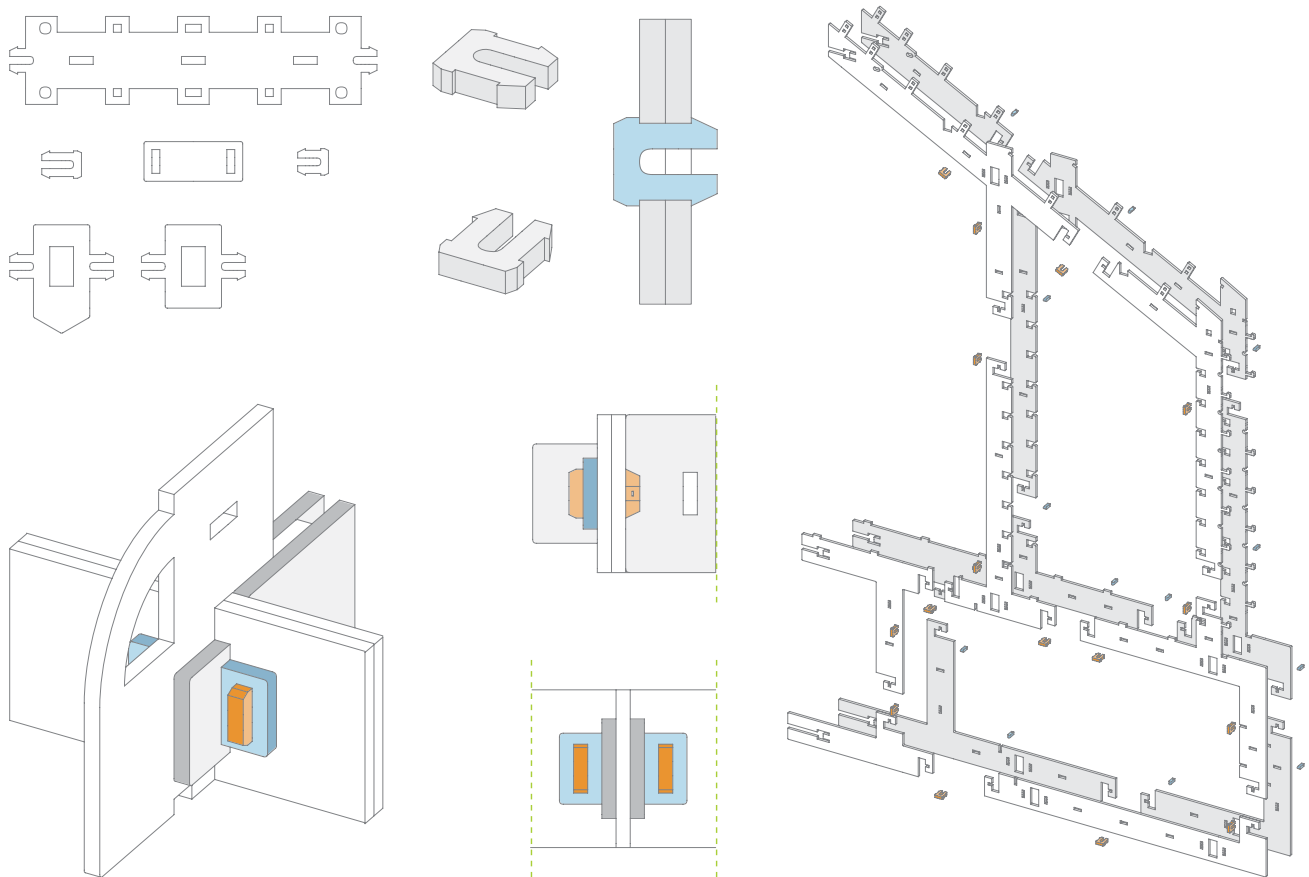


Fig.3 Technical details of the greenhouse. The project is intended to be by processing timber panels through CNC robotic systems. In addition, the scheme shows the functioning of joints in order to connect properly all the construction elements. Credits: Gian Andrea Giacobone.

The solution perfectly embraces the bottom-up and participatory model CAPS, expressed by the European Commission, for the sharing and implementation of sustainable design solutions, through the active participation of the city's communities, in all its phases of design, development, production and maintenance. In fact, the pilot project consists on: a physical part that becomes the green infrastructure on which promote urban cultivation and make the service tangible; a digital part in which the system, techniques and related knowledge, are made public and accessible by community, in order to export and replicate the green model in different social, environmental and economic contexts. This system allows the creation of an extended network within urban fabrics, creating a more interconnected and resilient strategic plan for communities. In the sharing platform it is possible: find the digital files about urban gardens; get in touch directly with other communities for resource exchanges; free access to technical and cultural knowledge for production and conservation of vegetables.

The pilot project relies on the operating model of greenhouse. The structure is made from carved plywood panels with 1200 x 2400 mm standard dimensions, because these modules are globally available and light enough for floating. Polycarbonate is chosen for the envelope, because it uses the same manufacturing process of wood and it has excellent qualities of resistance and light transmission, preventing even UV radiations. The production is made through digital fabrication whit a Computer-Numerical-Control machine. The obtained elements can be assembled to build the whole greenhouse (fig.4). This type of manufacturing shows several advantages:

- it allows to create different elements with a single processing, making the structure customizable and versatile, according to different different contexts or on pre-existing architectural structures that must be preserved;
- it is possible to create particular interlocking joints, called snap-fit, which reduce the components and eliminate the necessity for additional joining elements in different materials;
- in case of maintenance, only the damaged elements can be replaced;
- it makes the ideation of complex structures accessible to people who do not have specialized handcrafted skills;
- costs and production times are more reduced compared to craftsmanship or industrial techniques (Anderson, 2012).

Therefore, the last two points are useful for extending the project even to developing countries, where technological and economic resources are reduced. It can be done by promoting the project within the shared network of FabLab's communities.



Fig.4 Three-dimensional model of the proposed greenhouse. In particular, the cross sections show the irrigation system and the ventilation inside the architectural envelope. Credits: Gian Andrea Giacobone.

Moreover, through an open source remote-control, plant monitoring can be optimized for maximum yield and managed by non-specialized people, making cultivation more inclusive and accessible to all. This electronic system completes the synergic union between physical and digital tools, which can be easily disseminated and adopted by political organizations, to improve the quality of their green urban spaces, on different strategic intervention scales. Therefore, it is possible to define a social infrastructure in which people can promote exchanges of sprouts, garden products, work tools, experiences and stories that are extended outside the community by expanding its aggregate potential to urban society (Bussolati, 2012).

Conclusion

Thanks to new technologies and their connections through the Internet of Things, it is possible to create a model of social interaction that allows the active participation of people in all the various phases of a project, from planning to implementation and exploitation. In this way, all users are involved along the design process and they can directly require dedicated answers to satisfy their needs. Within the traditional design procedures, instead, the professionals usually consider people as a standard design variable, not necessarily active in the developing stages of a project. According to the definition given by Ezio Manzini (Manzini, 2015), the new proposed methodology implies the achievement of a milestone on the theme of social innovation, intended as an increase in users' awareness about the controlled growth or the renovation of the cities they live in. The design process itself can be divided into two main stages. The early decision-making phase is structured as a bottom-up procedure. After that, a continuous interaction between various social actors occurs, with the aim of achieving common goals, such as resolving a problem or opening a new possibility. This approach gives rise to a co-design tactic that is both bottom-up and top-down and implies a social change that leads to simultaneous benefits from the social, economic and environmental point of view. In our case, the designer does not have a self-referential role, but he is more interested in encouraging a social conversation, in which "participants intervene bringing their own particular knowledge and designing capacity" (Manzini, 2015).

World Wide Web potentials, linked to the sharing and the participatory improvement of the digital environment, facilitate the replicability of strategic results, on a case-by-case basis. The use of appropriate solutions in accordance with each context, in fact, is a hot topic within the current debate on the use of IT technologies to share and create new architectural projects. Although universal programming languages govern the most advanced manufacturing tools, the architectural practice should not be shaped only by using mathematical relations and therefore meet exclusively universal performance requirements. Indeed, the present approach can be summarized as SLOC (small, local, open, connected), which means closer to those aspects that are typical of handcraft production and, by definition, more attentive to specific demands that would not find consistent solutions by relying merely on industrial criteria. In particular, the word "open" refers to the fact that technology is "enabling": it is inclusive in reference to the possibilities it offers on an economic and knowledge level and in terms of solutions for everyone's use. Moreover, with "connected", we mean the possibility of using networks that quicken the sharing of knowledge. In the SLOC logic, a broad knowledge can be filtered to decline more specific projects on different contexts. This globalized design methodology can be readjusted, in each case, according to local knowledge on the use of green cultures, in relation to the constructive tradition that can be applied for the realisation of the supporting structure, for which the afore described greenhouse embodies a practical example of application.

The present case study represents a pilot project that has the potential to be proposed at different scales of intervention and adaptable to different environments. We want to identify it as a strategic model to improve urban regeneration through the realisation of green infrastructures. The possibility to share a project up to where online access overpass geographic boundaries, represents an opportunity to give operable tools also to emerging contexts, as a support for know-how making processes. Design process become more and more participative and accessible, where the designer is able to play the role of intermediary between community and design culture. Thanks to his/her competences as an "expert designer" (Manzini, 2015), he/she can offer his/her cultural knowledge and methodological tools to design – together with the experts and not-experts of the community – an adequate architectural language to the urban regeneration of cities, based on specific users' requirements. In this case, the designer is able to lead and support the community to develop its designing capacities, in order to orientate shared choices, within the collective operative process (Bassi, 2017).

The tools that have been discussed in this study represent a declination in architecture of the typical peculiarities of the so-called smart city (Crocchia, 2014). IT tools allow the possibility to elaborate Smart Constructions (Labonnote, 2016), characterized by advanced building envelopes which are defined through innovative and digitized processes. The idea of "advanced envelope", in this discussion is considered as an external building surface that is multifunctional, reactive to changes in internal/external conditions, and controllable in the long term. The presented case study, for example, has a reactive envelope that helps to optimize the green production through hydroponic cultivation. In fact, thanks to the technological support given by the activation of sensors in the

hydraulic plant that capture temperature/pH/EC/humidity values, it is possible to control with great precision the growth of vegetables inside the greenhouse. For example, as the internal temperature increases, the greenhouse opens automatically. When the internal humidity decreases, the irrigation system responds adequately. All of these mechanisms can be controlled remotely. From the social point of view, we want to emphasize how urban gardens represent an opportunity to activate a shareable space, by setting a dynamic mechanism that opposes the stillness, which is typical of degradation phenomena.

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[TEC/08]



Sounding Scales: Monumental Landscapes in the Networked Anthropocene

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abstract

The landscape of the 21st century city is embedded with the hidden strata of electromagnetic fields and pulses of the postdigital environment. This technosphere is not confined to the city but is a contiguous landscape that envelopes the planet's surface and extends upwards to the farthest satellite. Recent practices in sound art have increasingly engaged with this invisible electromagnetic landscape, developing tactics to reveal both its ubiquity and its nuance, an agency performed through intensive and environmental affects. The embeddedness of the networked technosphere to the discourse of the Anthropocene, spurred by the currency of landscape ecologies and the geological dimensions of digital media, implicates these sound art practices with a planetary significance. The qualities of the postdigital electromagnetic landscape which challenge cartographic agenda that seek to make extensive and map the intangible, provide intensive structures and activities which can contribute to some of the more problematic attributes of the Anthropocene. Specifically, the aesthetics of scale that are contested between the everyday and planetary and which lead to a state of 'scalelessness', might be more authentically approached through an agency that is intensive and embodied itself.

This paper will examine emergent sonic art practices, including The Chronotopes (2017) project undertaken by the author, which interrogate the postdigital electromagnetic landscape. Specifically, these practices will be framed by the temporal and spatial aesthetics typically allocated to the category of the monument, where landscape is an embodied paradigm. Employed as a technicity and a means of reaching out, monumental processes can be instrumentalised within a postdigital landscape to propagate alternative ontological subjectivities and cultural conditions. New tactics of postdigital co-habitation are mobilised, resisting conventional hierarchies of linear alignments to participate in nonlinear planetary swarm networks.

keywords Anthropocene, Postdigital, Sound art, Monument

1. Introduction

The 21st century city is embedded with hidden strata of the postdigital environment. Drawing attention to this electromagnetic landscape, recent practices in sound art have developed tactics to engage with and reveal the presence of this dynamic and turbulent environment that distributes the postdigital. These sonic practices make lively a planetary vitalism, authorising an efficacy that deliberates on cloaked global electrical and electronic infrastructure. But how might this planet-spanning network be situated against the contemporary concerns of climate change and environmental devastation, equally planetary in their scale? Global complexities propose new ontological positions for those living inside and outside of the connected world, but does the materialisation and making physical of the digital impact such proposals?

Through an investigation of sonic arts practices, this paper will engage with the monumental landscapes of the contemporary postdigital in the pursuit of alternative (non)human ontologies that attest to the scale of the planetary. With a validation of the entangled visuality that both conditions and is a condition of the Anthropocene, framed by the geological status of the postdigital landscape, this research will propose a paradigm of 'scalelessness' as a procedure of occupation. This paradigm configures the instrumentalisation of sonic art practices that stimulate the body as a site of postdigital emergence, productive of intensities that resist and evade visuality, to participate in a 'scaleless monumentality'. This research will be synthesised through The Chronotopes, an artistic research project that activates embodied performances that are situated within the Very Low Frequency electromagnetic landscape, that exemplifies new means of co-habitation with the postdigital.

1.1 The Networked Anthropocene

Arising in the geosciences to stimulate the humanities and beyond, the contemporary discourse of the Anthropocene implicates the human with a planetary agency and energises space-time entanglements that confound normal human intuition. As a species, we have become a geological agent, moving “more sediment and rock annually than all natural processes such as erosion and rivers” (Gaffney & Pharande-Deschènes 2012). The irrefutable anthropogenic circumstances of climate change and resource depletion impact the lived present – and our increasingly precarious future – responsibility lying with a complexity of activities that include corporate industrialisation, colonialism and capitalism, rather than individual everyday human endeavour (Haraway 2015).

Geologically stratified in its character, the Anthropocene is arguably struck with a distinct digital and technological dimension. Our current postdigital condition, where the digital has become ubiquitous so firmly is it embedded in our everyday lived experience, is allocated a mineral ontology, assigned by media theorist Jussi Parikka as the “geology of media” (Parikka 2015). Underscoring the aggressive cultivation of mineral resources from the planets crust and the contaminating industrial processes of refinement and manufacture that dispense the essential materiality of the postdigital, a contiguous techno-geological landscape is framed, extending from the mineralogy of the earth to the highest satellite. This is the global infrastructure for the production and distribution of the digital. Millions of miles of copper cables and optical fibres, a spectrum of microwave and satellite telecommunications, and the energy and resources that power this network, gives rise to a dense and turbulent electromagnetic landscape entangled with the material activity of its own production. This planet-spanning invisible and intangible field is enmeshed with the physical activities that occur under the extraction of rare earth elements and other processes of planetary exploitation.



[Figure 1 – “A Beehive of Satellites”. Artists impression of manmade objects in space based on density. Image Credit: European Space Agency]

Cutting across geology, technology and capitalist industrial development, the planetary regime organised by these and more interrelated ‘tentacular’ discourses (Haraway 2016) challenges the sensibility of anthropocentric or human-centred scale. Electing perceptions of deep time in geological processes, the speed of light in optical fibres and the development of quantum computing, gesticulates an inhuman sensibility of the planetary, or indeed cosmological, anterior to one’s everyday lived immediacy. Any deliberation on the Anthropocene and its allied disciplines “pose special challenges insofar as they bring together the large and the small, the near and the far, the fast and the slow, the weak and the strong, making a mess of existing scalar conventions” (Lahoud 2016). Moreover, the popular currency of the Anthropocene seems to imply if we can authentically experience the scale of the planet, perhaps we can become more responsible inhabitants of it. If the completeness of the system can be witnessed, we might be in a better position to address the problems.

However, we appear to have already arrived at this point. As confirmed in T.J Demos' "Against the Anthropocene" (2015), it is the very systems that visualise and analyse climate change and other planetary processes that allows the Anthropocene to be made visible and designated such. Giving attention to a technological trajectory that includes the use of GPS, the World Wide Web, Geographic Information Systems, increased computational power and worldwide computer networks, accessibility to high resolution satellite photography, and the distillation of democratised globalised mapping such as Google Earth, the development of digital technologies simultaneously allows an expanded visioning the world which in turn shapes our relation to the world. A condition of the pharmakon – both cause of and solution to – our relation to the world is influenced through the way in which we sense it. Notwithstanding the geological ontology of the media that allows us to view the current sum of the planet, "the thin line that exists between observation and agency when it comes to sensing, surveillance and subjectivity" (Turan 2016) is brought sharply into focus, with planetary computing complicit with the fault lines on which it resides. Moreover, the top-down or god-like theocentric gaze conforms to a category of looking that could be designated as objective and contributes to a collective consciousness of what scientific information should look like. We can already apprehend the scale of the world via the digital means that allows the visualisation of the planet as it currently is, designating the destructive processes it is currently subject to. However, it is the structuring and contingent condition of this visuality that determines and distorts how it is viewed, and therefore a barrier to authenticity.

Acknowledging the postdigital visuality of the Anthropocene, the challenge remains for a planetary sensibility that can be experienced more directly, prior to mediation by visuality. The features of the electromagnetic landscape, specifically those leaning towards the conception of a 'datasphere', infer cartographic strategies open to structuring or regularisation. Such a mapping imperative sustains subdivision, the capacity to undergo systemisation and classification leading to cooperation with visuality. Pointedly, the means by which visuality is made visible, the apparatus of visualisation, is subject to control and influence; the decisions of what is rendered visible, and by what means, are contestable. If the distribution of visuality collaborates with quantification, in the sense data is primed in a hierarchical system, manipulation is compounded and regulation inevitable. But fixed predictability of the system is not guaranteed.

It is essential to consider the protocols by which data is distributed across the global network, where increased complexity contributes to the system becoming more efficient. Through the addition of hardware more paths are added, resulting in more possible routes to distribute information as efficiently as possible, with algorithmic protocols routing billions of bits of data every nanosecond. Information is distributed in a dynamic system, an ecology attributed with an algorithmic ontology always already outside palpability. However, deferring responsibility in a reductive fashion compels the regime of reproduction as an arrangement of Russian dolls, with distribution performed by increasingly discreet processes that in themselves are quantifiable but appearing at such distance from the originary point of reference that any meaningful or authentic relation is occluded. Such a framework further reinforces the conception of scales under review and the compounds the inherent interdependencies that exist between the visuality of the Anthropocene and the networked means of its production and distribution.

2. Towards Becoming Planetary

Returning to the issue of scale this text is concerned with, a topology emerges that includes a planetary visuality, the mineral ontology of its production and an algorithmic ontology of its distribution. Any effort to quantify this complex is complicit with its institutionalising momentum. Equally, a reductionist agenda leads only to a "withdrawal" of that which is under scrutiny (Harman 2005). Reflecting upon the character of scale itself, scale is contingent; scale requires a frame of reference or a point of comparison. As contextualised by the above, the problematic of scale is any frame of reference in conformance with visuality confounding any strategy of authenticity.

An alternative framework is needed to re-approach scale itself by means of radical methodologies. As Ross Exo Adams demands: "Emerging across many disciplines are sets of objects, processes, and phenomena visible insofar as they traverse traditional scalar and temporal categories – 'hyperobjects', flat ontologies, and vibrant matter that cannot be made legible unless we abandon our inherited epistemological frameworks and invent new ones" (Adams 2016). Concerned less about a legibility which can be requisitioned by visuality, an impetus is nevertheless directed towards methodologies in abeyance of traditional sensibilities of scale, capable of traversing the postdigital condition of the Anthropocene to account for a planetary ontology; a becoming planetary.

This research draws upon sonic arts practices to explore potential processes of engagement with the postdigital electromagnetic environment. Specifically, this research attends to methodologies that motivate an embodied disposition that evades visuality. As noted above, the contingency of scale demands a point of reference to validate itself, an exteriorised framework within which is structured as a near to a far, a big to a small, a this and not this. In antithesis to external duality, this research is focused on methodologies that demonstrate an intensive

conditioning, a sensibility without measure, except for the measure of measure itself – the indivisibility of larger and smaller, hotter and colder. In this respect, sound art is perhaps uniquely appropriate, validated though the spatial and temporal qualities of sound.

2.1 Studies in Sound Art



[Figure 2 – X Marks The Spot (2012-ongoing) by Matilde Meireles. Image credit: Matilde Meireles]

Visual and sound artist Matilde Meireles, a PhD alumna from Belfast's Sonic Arts Research Centre, initiated the project X Marks The Spot (2012-ongoing)¹ to sonically map the data infrastructure of Belfast city centre. This involved the recording and subsequent analysis of the electrical drone or 'hum' emitted from public telecommunications switchboards, with individual boxes 'tagged' with posters to inform the public of the precise frequencies of audible drones emitted. Three independent but connected "modes" that include an online map, public interventions of posters, and gallery-based "re-interpretations" or sonic compositions, provide an apparatus that renders an immediacy to the telecommunications infrastructure woven through the urban landscape.



[Figure 3 – Electrical Walks (2004-ongoing) by Christina Kubisch. Image credit: Christina Kubisch]

A similar but less structured project is Christina Kubisch's Electrical Walks (2004-ongoing)², a series of participant excursions in over fifty global cities. These walks, in which participants are provided with electromagnetic induction headphones with audio coils that respond to electromagnetic waves, sonically explore the multitude of electromagnetic fields that are embedded in the urban environment. Participants can 'listen' to the sounds of not only telecommunications devices, but also street lighting, security cameras, ATMs, neon signage, mobile phones and a plethora of other electronic devices and installations. As Kubisch describes, made audible are "complex layers of high and low frequencies, loops of rhythmic sequences, groups of tiny signals, long drones and many things which change constantly and are hard to describe. Some sounds are much alike all over the world. Others are specific for a city or country and cannot be found anywhere else" (Kubisch 2017).



[Figure 4 – Cloud (2011/2017) by Christina Kubisch. Image credit: Christina Kubisch]

Also by Kubisch are the Cloud (2011/2017) series of sound installations. These gallery-based artworks rely on similar customised induction headphones as Electrical Walks, with audio reception directed towards the sculptural collections of wires and cables that are the physically manifested focus of the installations. These multi-channel sound installations use site-specific field recordings transmitted by various parts of the chaotic cable loops. The experience is comparable to the Electrical Walks, where the viewer or listener becomes an active component, creating individual audio compositions with their movement through the environment and orientation to the sculpture forms.

The work of these two artists engages with the artificially electromagnetic in subtly different modes. Kubisch delivers a mechanism that manifests a physical relationship of participant to electromagnetic sources, providing a sensation of locatedness within an invisible landscape. The dynamism and vibrancy of the invisible electromagnetic landscape is awarded a means to be experienced, where the movements of body, even the tilt of the head, can influence the sonic rendition of electromagnetism. The body becomes a site for postdigital emergence, rendering information and energy as sound through movement, an embodied audio performance that expresses an intensive condition. The turbulent fluidity of postdigital electromagnetics, from both fixed devices and broadcast signals, reified through the bodily movements are demonstrated as differences that are indivisible. The experience of this landscape is turned inward to the body of the participant, with physical position and poise giving presence to the fluidic materialisation of electrical compulsions.

In antithesis of Kubisch's intensive conditioning, Meireles might appear to demonstrate the making extensive of a postdigital mapping process. The cartographic impulse that underlies X Marks The Spot resolves a fixity and connection with place – the location of the distribution boxes – that intersplices with the contiguous electromagnetic

1 / An online portal to Meireles X Marks The Spot project is available at <http://xmsbelfast.com/>

2 / Further information on the past activities of Electrical Walks can be found at http://www.christinakubisch.de/en/works/electrical_walks

3 / For documentation of Meireles' collaborative compositions in situ at Platform Arts, Belfast, see <http://xmsbelfast.com/48hz>

landscape via the material measure of drones emitted, and their designation in a codified system of frequencies. Such cartographic activity is complicit within an institutionalising compulsion – a making-logos – that advances a structuring or Deleuzian striation of concealed space, contributing to a sensibility of regularisation. Not to deny the actual cartographic dimension offered in Kubisch's Electrical Walks, where potential routes for walks can be nominated, proposing compositional arrangements the public can 'follow' and explore. However, the autonomy and self-determination proposed in Electrical Walks, instrumentalised through the participant's body, awards a smoothing of space. The participant is a nomadic entity, territorialising the virtual electromagnetic landscape upon the physical urban environment via the composing of a sonic experience. This experience produces a 'non-scalar' intensity, a turning inward to an embodied condition that is without or prior to codification. An activity that, paralleled in the Kubisch's Cloud installations, resists capture by visibility, invoking an indivisibility framed as an interiorised sensibility of one's bodily motion in the globalised postdigital landscape; a planetary becoming.

The intensive organisation of Kubisch's artworks does not undervalue the efficacy of Meireles' tagged boxes, which act as physical signifiers of postdigital emergence. Indeed, any member of the public can roam and meander *dérive*-like through the landscape, giving attention to the audio, deterritorialising a pre-existing yet unseen codified system. These activities undertaken in the urban environment have the capacity to negotiate a psychogeographic – or more appropriately a 'psychogeophysical' – agenda, facilitating an emotive reconfiguring to one's sensibility of the urbanised electromagnetic landscape.



[Figure 5 – 48Hz (2014) at Platform Arts, Belfast. Image credit: Matilde Meireles]

However, attention should be aimed at the gallery based "interpretations" in which Meireles collaborates with other sound artists to construct sonic arrangements, using the collected field recordings as source material³. These sonic exhibitions are contextualised as 'soundscapes', a well-established milieu that privileges a spatial and environmental dimension for the compositions. These durational artworks have been installed in the gallery as a ring of inward facing speakers, inviting the gallery visitor to sit or lie within the circle. Inserting oneself in the auditory space, a reconfiguring of the field recordings, the listener experiences a more instrumental strategy of deterritorialisation.

2.2 Monumentality and Scalelessness

The intensive conditioning demonstrated by these sonic practices reveals the intangible landscape of electromagnetic emissions with the body as a site of emergence. The embodied performances enacted, the choreography of the body and the inflection of the aural experience deliver a sensibility of scale that is interiorised within the body. The sensation captured is akin to zooming in and out of Google Earth, a distinct spatial activity that informs a phenomenological position and a way with which to engage the world.

The aural experience of both Meireles' and Kubisch's projects arguably falls under the category of 'sonification', the process of rendering data as audio, using sound to convey information. Via sonification, for example, one could 'listen' to the changes of global temperature over the last one thousand years or experience what a brain

wave sounds like. Sonification charges the complex listening system of the human ear to discern patterns in excess of traditional techniques of analysis. Sonification is not restricted to the field of sound art, but has been engaged across many sciences, with astrophysicists listening to the sound of the Sun (Scudder 2017). However, the contradictions of sonification lie in the arbitrariness of its presentation, whereby the modus of its sonic processing – the mechanism or programming by which data is rendered sonic – is subject to human influence and conforms to a regime of a purely aesthetic order. It remains the privilege of the human producer to determine what it is that is heard. While data is designate of actually existing events – the change of climate over time or the dynamics of a star’s interior – sonification delivers an aurality that collaborates with visuality. In the pursuit of accessing an authentic planetary sensibility sonification is appears defiant, deferring to representation.

It is the agency of the human in a potential planetary relation that underpins this research. Arguably, Meirele’s collaborative compositions are tainted with a human bias, albeit undertaken as a deliberate decision within the parameters of the overall project. The exclusion of the human from influence in resistance to an anthropocentric position and the abeyance of representation advance a nonhuman condition or planetary becoming. Against sonification, the planet does not assert a condition upon the data it generates, only that it generates data irrespective of who may record and interpret it. Equally, the presence of the human body in an electromagnetic landscape of data and energy is indifferent, particularly when that environment is concealed. Conspicuously, the embodied movement is contingent on technological devices for activation. The customised headphones and vibrating distribution boxes are extensions of the body, imposing an other-than-human, or nonhuman, condition on the listener. Consequently, the acousmatic dynamism of the body in motion, capable of constructing a composition, musical or not, can be described as a nonhuman impulse. More pointedly, the impulse to construct a composition, nonhuman in compulsion, challenges what it is to be human, asking what is being listened to. Under this assertion it is possible to locate Mierele’s soundscapes as giving parity to a nonhuman condition in deliberating where the human is located in the sonic experience.

As stated earlier, the apprehension of scale is contingent on some exterior feature against which to be validated. In mitigating an exterior circumstance thorough the intensive turning inward onto the interior, the sonic practices described above have motivated a non-scalar condition. In lieu of an external frame of reference, intensity stimulates embodied sensations where any frame of reference is unfolded from an interior position. The abeyance of an exteriority on which to resolve the measure of scale produces a condition of scalelessness; the desire for scale might be epistemologically comprehended, yet bereft of any exterior features, the sensibility is free floating and elastic, without any contiguous actuality to anchor it.

In anticipation of a resolution for the problematic of scale, this research is concerned with how such an outcome might be instrumentalised across a given milieu. As extrapolated above, the postdigital condition is made manifest by and through the distribution of data at a planetary scale, with potential ontologies arising from the multi-layered geological stratification of the condition. In contemplation of the patterning of distribution that supplements the ontological signification, this research will consider the capacity for the postdigital to not only distribute data but distribute the circumstance of scalelessness which the sound practices described above have exploited. Following a function of distribution, it is at this point that the category of the monument will be introduced in the pursuit of nonhuman and planetary ontologies. Under spatial and temporal arrangements where intensity is set against exteriority, the monumental can be contextualised as an exteriorised materialism with a distinct spatial and temporal function calibrated under socio-political and ideological frameworks that form part of a given milieu. As will be set out in the following, the category of the monument will become a key faculty under which sound practices can be processed with planetary ontologies.

The historical and contemporary status of the monument is complex and contested. The term monument is eternally interchangeable with memorial, its purpose to enact a memorialisation, “a function to recall, to animate the past, whether an event, person or other significant occurrence, in order to visualise the future” (Ashton 2016 p.47). From prehistory, monumental sites include natural and manmade landscape features, stone arrangements and other archaeological architectures. The function and use of these monuments is not as fixed as their materiality might imply and changed over time in response to social developments. Indeed, the varying configurations that developed over time indicate how domestic activities, hierarchical structures and the treatment of the dead shifted. But ostensibly these sites were for the transmission of rituals and other recurrent activities that included “prescribed postures, gestures and movements [...] characterised by a restricted vocabulary” (Bradley 1998 p.89), from one generation to the next for their careful preservation. The significance of maintaining such knowledge, whatever its character, designates a socio-political purpose to the prehistoric monument, through the conservation of social order. In more recent history, monuments assert a more deliberate political function, aiming to “commemorate important personages or patriotic events and memories” (Michalski 1998 p.8). Such acts of memorialisation are imbued with an ideological status, through what it is that is remembered, how it is remembered and how that remembering acts upon the present and the future-to-come. A monument enacts a narrative of history through the (re)telling of a past, deploying fact and/or fiction, to make visible a state’s ideology

and story of nationhood; the cementing of a mythology for the future citizen “to guarantee origin and stability as well as depth of time and space” (Huysen 1996).

The temporal character of the monument provokes a spatial topology with two interconnected layers. The first advocates the above ideological posture, whereby the continuity of the monument in time exerts a conditioning over the space in which it is deployed, attested by the inhabitants that sustain it. This territorialisation, sustained through a relational milieu, exhibits a cartographic tendency in the occupation of space by social means. A second layer is drawn from the arguable astrological function of certain Neolithic monuments that are subject to spatial alignments, through landscape interventions, forming expanded apparatus that capture people with celestial bodies. While the first layer imposes a decidedly social status to the monument, which appears to exclude the nonhuman, it is the second layer that provides the conditions for the first layer to arise, and in doing so designate it with a nonhuman capacity.

Apprehending the cyclical spatial arrangement of stellar bodies – spinning planets orbiting stars – in which day becomes night, the seasons turn year after year, provides the foundation of a perceived temporality in which rituals and remembrance occurs. While not all monuments exhibit a specific function of astronomical alignment, the impetus to remember – whether through collective activities or more individual responses – is contingent on temporality, collaborating with a wider monumental function. In positioning the human in a direct dialogue with the astronomical, the category of the monument has the capacity to signify sites of emergence of an entangled ontology (Barad 2007), where planetary becomings can be subjected with an ideological significance.

To resolve the contribution of sound art practices, it is essential to secure a proper geological status for the postdigital electromagnetic landscape and clearly isolate the monumental paradigm being proposed. Drawing a sonic experience from electromagnetic influence is by no means a recent development and the possibility was first encountered by Thomas Watson, assistant to the inventor of the telephone Alexander Graham Bell, when listening to the first test telephone test line. Hearing ‘natural radio’, what sound theorist Douglas Kahn designates as the ‘Aelectrosonic’, these were the sonification of atmospheric events such as lightning, and other natural electromagnetic discharges (Kahn 2011). Kahn draws attention to this electromagnetic landscape as a natural atmosphere distinct from artificial sources.

However, there is no fundamental difference between naturally and artificially generated electromagnetics. But Kahn does contradict himself, claiming “climate change has also diminished whatever fulsome meaning ‘nature’ once may have had by eradicating the possibility of being separate from human and human influence” (ibid p.43). Under this context, we are reminded that radio and television signals have been broadcast for over a century with transmissions travelling now through interstellar space. These electromagnetic signals, while increasingly diminished as they spread and ripple out from our planet, nonetheless achieve an authentic status within deep time. The postdigital strata described above, traversing from planetary crust to orbiting satellites and beyond, conforms materially, spatially and temporally to a geological scale in which the category of the monument is arranged.

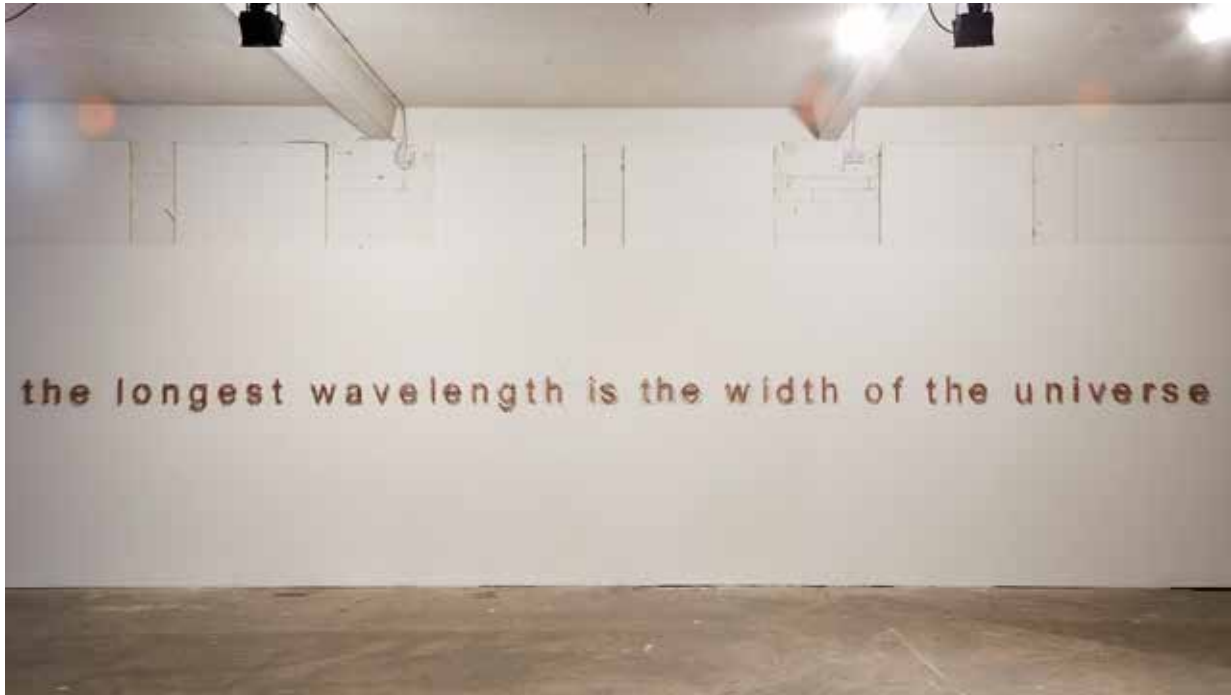
Located in a postdigital landscape that spans interstellar space, the sonic practices of Meireles and Kubisch are deployed as strategies with a discursive monumentality. Materialising the spatialisation of a plurality of temporalities contiguous with the lived present, the sonic artworks are monumental processes that insinuate an alignment or synthesis with the dynamic geological ecology of the postdigital. Delivering the sensibility of this vibrant landscape and underscoring an entangled co-habitation with data and energy, these monumentalisms eschew exteriorised striations in favour of intensive performances.

The nonhuman arrangements produced are not structured by prior conditions but are emergent from embodied processes, activated through the sonic artworks. Conceding the capacity for all monumentality to be subjected with an ideological significance as outlined above, this is not enforced by the striation of visibility, but emerges from the event of monumentalisation itself.

The specificity of Meireles X Marks The Spot awards a monumental contingency to the distribution boxes through their tagging, identifying them as devices within the urban landscape to which the postdigital public are always already aligned. While these totems express a cartographic fixity, the rhythm of the data and energy carried by the objects is in constant flux. Assenting that “energy may not be programmable, but currencies that represent energy expenditures can be” (Bratton 2017 p.29), the electromagnetic landscape throbs to the rhythm of globalisation and other postdigital infrastructures complicit with the Anthropocene.

Prior to a conclusion, this paper will contemplate a final sonic monumentalism. The Chronotopes (2017) is an expanded artistic research project undertaken by this paper’s author, and includes sound installation, sculpture and text-based artworks that took as its core syntax Very Low Frequency radio emissions. This project was developed to instrumentalise the initial findings that have been laid out above, and further test and draw to a conclusion the concepts proposed.

2.3 The Chronotopes



[Figure 6 – The Chronotopes (2017), installation shot. Image credit: Dave Loder]

Very Low Frequency (VLF) is designated for radio frequencies that occur between 3 and 30 kilohertz, corresponding to wavelengths between 100 to 10 kilometres respectively. Due to their large wavelengths, VLF transmissions diffract around large obstacles such as mountains, and can propagate as ground waves that follow the curvature of the Earth.

The primary uses for VLF is for radio navigation, time clock signals and military communication with submarines, due to the ability of the waves to penetrate salt water with broadcasting requiring extremely large high energy antennas which can be up to a mile across. More recently, VLF waves have been found to artificially create a bubble around the planet, through the interaction with high-energy radiation particles to provide protection from solar flares and coronal mass ejections (Koren 2017). The VLF bandwidth is also rich with natural occurring electromagnetic signals such as lightning and other atmospheric events, and geophysicists monitor VLF to measure electromagnetic conductivity across the surface of the Earth. The above exposition has anticipated a dynamic environment across all electromagnetic frequencies, but VLF designates a specific region of this landscape that is arguably more attuned to planetary processes.

A portable VLF receiver was custom-built for The Chronotopes project, a loop antenna fabricated from several hundred metres of copper wire coiled on a timber frame and a bespoke variable capacitor circuit with audio output. The antenna functioned similar to Kubisch's customised headphones, but with greater sensitivity to transmissions in the VLF band. However, in contrast to both Meireles and Kubisch, the apparatus was deployed in rural environments, specifically a number of Neolithic sites in County Down, Northern Ireland that included barrow mounds and stone circles.

The assumption might be, in antithesis to an urban vitality, that to survey the rural would be muted event. The actual vibrant experience demonstrates the ubiquity of the artificial electromagnetic spectrum, but nevertheless provides a 'quieter' environment where more discreet events can be witnessed.

Strapped to a rucksack and shouldered, the antenna was deployed as a posthuman prosthesis delivering an enhanced mode of listening to the postdigital. Similar to Kubisch's methods, the technologically augmented participant engages in a performance, the surveying encouraging a movement through the Neolithic sites, exploring the dynamic electromagnetics signals, at times delicately, at others times more robustly. The audio produced is perhaps different in 'flavour' to urban transmissions due to less exposure to localised sources such as street lighting and distribution boxes and the receptiveness of the antenna to long-range signals gave a distinct aesthetic. Among the layers of sonified activity can be found the repeating tones of navigation signals, echoes of terrestrial radio, bursts of static, drones, patterns of whistles and other indescribable effects. Dancing, weaving and spiralling through this exotic scenery, the performer endeavours to choreograph a sonic composition in the pursuit of VLF activity. But what is apprehended is without scale; no conceptualisation of the distances these signals might have travelled is available. Where Meireles' tagged distribution boxes provide a sense of locality, the Neolithic situations reinforce a sensibility of the planetary.



left: [Figure 7 – The Chronotopes (2017), surveying at Ballynoe stone circle, County Down. Image credit: Dave Loder]
right: [Figure 8 – The Chronotopes (2017), installation shot, antenna detail. Image credit: Dave Loder]

The specificity of the Neolithic sites gives focus to the monumentalism expounded previously, and indeed a valid agenda can be claimed for the surveying, investigating if there was any authentic radiological significance to the sites. Albeit the analysis to this end was cursory, no discernible pattern could be readily identified. Speculatively, the temporality of the site could be out of sync with contemporaneous surveying, with perhaps some electromagnetic significance detectable when the sites were in use in the Neolithic era. Nonetheless, the performativity of the surveying certainly emphasises the ritualistic dimension of the site. Arguably, the surveying could have been undertaken at an arbitrary site in an empty rural setting, and not predetermined a monumental significance, mitigating the ritualistic aspect, but not completely. These ruminations lead to the circumstance of alignment, in both time and space, with which monumentalism has been attributed.

As indicated earlier, the efficacy of monumental alignment is a concern with a planetary ontology. The sound practices discussed above have been located as a means of exploring or aligning oneself to the postdigital electromagnetic landscape, a planetary regime which is spatially and temporally dynamic, and complicit with a geological condition. This landscape functions with a distinct materiality, not only through its invisible and intangible forces, but its relation to the lived and experienced physical world. The dynamism of this ecology, distributed by the postdigital technological medium stratified by geology, is productive of an alignment that is vibrant and fluid. While the electromagnetic exists in simultaneity with the physical, the points at which they interfere are slippery, manifesting an alignment that can be apprehended as continually unfolding in the lived present yet in a dynamic which is planetary in condition. In its deployment upon Neolithic sites, *The Chronotopes* draws attention to this slippage.

As suggested earlier, Meireles' tagged boxes can be interpreted as markers to which the public can align themselves, analogous to the standing stones, both being conduits for territorialisation through alignment. However, where the materialism of the standing stones delivers the visibility of alignment, the embodied electromagnetic performance gives signification to the mineral ontology of data distribution, the means of distributing visibility. The Neolithic monuments display visibility, whereas the monumentalism of the electromagnetic distributes visibility. In the circumstances of the Neolithic, visibility – that which shapes the way the world is viewed – is exteriorised, whereas the electromagnetic landscape is interiorised. The becoming planetary of the Neolithic is extensive, whereas the sonic practice's becoming planetary of the postdigital is intensive and in abeyance of the visual. More pointedly,

the monumentalism on display is less concerned with physical monuments, but the embodied condition where performativity takes place. While *The Chronotopes* developed from the acts of both surveying and ritual, the impetus of the performance was to make or disclose an alignment. But exclusively, the ritual of the postdigital is unrepeatably and continually unfolding, where the Neolithic is cyclical and designed for repetition.



[Figure 9 – *The Chronotopes* (2017), installation shot, speaker detail. Image credit: Dave Loder]

3. Conclusion

The aim of this research paper is to investigate potential methodologies capable of delivering an authentic sensibility of the planetary, pursuing the demand by Ross Exo Adams to invent new epistemological frameworks that can account for scalar conventions under siege by the discourse of the Anthropocene. The central feature of the challenge concerns visibility, as that which mediates the discourses of the Anthropocene and by which the planetary is contingent. However, rather than uncovering strategies that might disrupt visibility, revealed is an entangled complexity where visibility is complicit with its own distribution. The visibility which determines the conception of the Anthropocene, is itself planetary in its distribution. But via the mode of monumentalism instrumentalised by the sonic art practices discussed, it is possible to motivate a planetary becoming which can reconfigure visibility intensively. Under this monumentalism, the feature of alignment is compounded with an ontological significance, under which the planetary is always already exposed to the socio-political through territorialisation. Extensive alignment is complicit with a cartographic impulse under which visibility is invoked, however intensive alignment can be deployed which is continually unfolding, in abeyance of a cartographic impulse. The continual unfolding, or smoothing, of postdigital ecologies through intensive methods, motivates the conception of scalelessness.

The significance of contribution of a scaleless monumentality lies in the fractured stratification that occurs between dynamic geology of the postdigital and the everyday lived milieu, and potential strategies of navigation across these strata. Specifically, the demise of the nation state that currently being witnessed can be attributed to the growing chasm between the distributed postdigital landscape and the historical socio-political conception of territorial scales. Where previously, there existed “an authentic ‘fit’ between politics, economy and information, all of which were organised at a national scale [...] [a]fter so many decades of globalisation, economics and information have successfully grown beyond the authority of national governments” (Dasgupta 2017). The capitulation of

regulation to the free market, made increasingly efficient by the postdigital, has allowed for the distribution of wealth and information to be excised beyond what national borders had traditionally kept in check. The capacity of the postdigital to be structured in contradiction of centuries established hierarchies of nationhood, dissolves conventional sensibilities of terrestrial scale under the same conditions that conceive of the Anthropocene. It is here that the category of the monument is most fittingly deployed. Where previously the traditional category of the monument which is complicit with ideology, supporting stories of nationhood, the scaleless condition for monumentality that has been developed can respond to a territorialisation which is without scale, as attested by the postdigital condition.

4. Acknowledgements

The development of The Chronotopes research project was kindly supported by the Arts Council for Northern Ireland. The presentation of this research at Tirana Architecture Week 2018 was supported by the Glasgow School of Art.

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[TEC/09]



Enhancing Structure Expression And Aesthetic Aspect Using Perforated Shear Wall Panels In High Rise Building Facade

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abstract

This study is oriented to and is part of the research on possible methods towards enhancing the integration of aesthetic and rational co-design process. More specifically, in this study will be addressed the structural systems that do have the potential to enrich the aesthetic vocabulary and visual character of tall buildings through using perforated shear wall panels. The purpose of this study coincides with the research in revealing structural behavior and the potential criterion for judging the aesthetic value of a structure. There have been also clear statements made by different authors about several structures which have been considered artful, as well as rational and efficient, and also being admired for their aesthetic qualities. The aim is to give a referee approach that can exhibit shear wall elements putting on façade of tall buildings not only as rational features, but as important visual components that afford opportunities for creative expression. The initial hypothesis raised in this text is that perforated shear wall panels behave very much close to shear wall elements without openings. So, this study aim to present a considerable interest for numerical investigation of seismic response of perforated shear walls panels taking into account several openings. The following methodology divides this study in two main parts: the first is dedicated to several case studies quite interesting for perforated concrete exterior shell used in high rise buildings such as O-14 Tower Dubai – design by RUR Architecture, COR Building in Miami by Oppenheim Architecture and Mikimoto Ginza 2 in Tokyo with different arrangements of openings in the concrete shell façade of the buildings which do confirm a better understanding with regard to the performance of shear walls/shell elements in this study in terms of perforated shear wall; the second is by modeling different 2- dimensional elevation perforated shear walls analyzed by ETABS program. The investigated case studies and the models will lead to a verification of the initial hypothesis, which results will be presented in the paragraph of the conclusions.

keywords Architectural Requirements, Structural Behavior, Tall Building Façade, Perforated Shear Wall, Opening System

Introduction

Executions of concrete shear wall panels along the exterior perimeter of slender high rise buildings enhance the efficiency of such buildings to resist the seismic forces. Also there do exist uncertainties referring the demandable architectural openings in the exterior views of such buildings (Hamdy H. A). So, this study presents a considerable interest for numerical investigation of seismic response of shear walls with different arrangement of opening system mentioned as perforated shear wall panels.

A shear wall is a concrete wall composed of shear panels to counter the effects of lateral load acting on a structure. Shear walls are vertical elements of the horizontal force resisting system. Wind and seismic loads are the most common loads that this vertical structural elements are designed to counteract. It is noticed that in the absence of shear walls, in the building are shown more damages and further in the presence of this structural element the damages have been smaller. This type of construction has been practiced since the 1960s in urban regions for medium to high rise buildings (4 to 35 stories high). Shear wall buildings are usually regular in plan and in elevation (Murty 2004).

Also shear walls are the main vertical structural elements with a dual role of resisting both the gravity and lateral loads. Wall thickness varies from 140 mm to 500 mm, depending on the number of stories (Moroni O. M. 2002). In general, these walls are continuous throughout the building height; however, some walls are discontinued at the street front or basement level to allow for commercial or parking spaces. Usually the wall layout is symmetrical with respect to at least one axis of symmetry in the plan. (Murty 2004).

Properly designed and detailed buildings with shear walls have shown very good performance in past earthquakes. The overwhelming success of buildings with shear walls in resisting strong earthquakes is summarized in the quote: "We cannot afford to build concrete buildings meant to resist severe earthquakes without shear walls." Shear walls are efficient, both in terms of construction cost and effectiveness in minimizing earthquake damage in structural and nonstructural elements. Shear walls provide large strength and stiffness to buildings in the direction of their orientation, which significantly reduces lateral displacements of the building and thereby reduces damages to structure and its contents (Ji, et al 2007).

The emergence of tall buildings in the late 19th century was possible by using new innovative materials and also by separating the role of structures from the traditional load-bearing walls. While traditional masonry structures on the building perimeter did the dual roles as both structures and façades, the skeletal structures performed only as structures. Therefore, façades in skeletal structures were supported by the structural frames, and this newly developed façade concept began to be called curtainwalls. With these new concepts of curtainwall façades overcoming the limitation of the traditional masonry structures for tall buildings, the new building type has evolved rapidly. Among the walls freed from their structural roles, façades are of conspicuous importance as building identifiers, significant definers of building aesthetics, and environmental mediators (Kyoung Sun Moon, 2018).

Without the technological breakthrough of skeletal structures and curtainwall concept, the emergence evolution of tall buildings would not have been possible. Many different types of efficient structural systems for tall buildings have been developed since the invention of the early skeletal structures in conjunction with the advancements of structural materials and other related technologies. Façade systems for tall buildings have evolved from the early primitive curtainwalls to today's dramatically advanced systems including double skin façades of various configurations. While these two key technologies have continuously been evolving, architectural design of different nature than technologies has played crucial roles in how to integrate these two. Today's tall buildings are still designed and constructed based on the original concept of skeletal structures and curtainwalls.

There do exists also another way to look at the evolution of tall buildings, as the author Dario Trabucco states in one of his journal papers. He named it "An evolution still in progress" which covers the analysis of the history of the service core in high rise buildings. After the first skyscrapers that appeared in New York and Chicago, the structures of tall buildings evolved toward a more effective use of materials. Therefore, the author believes that the structural schemes for tall buildings may be divided into internal and external structures, according to the position of the elements that carry the lateral loads. The historic analysis of the evolution of the service core of tall buildings presented in his study is the introduction of a more comprehensive analysis on this part of a skyscraper. The service core is a distinctive feature of a tall building and its design plays an important role in sustainability of the whole structure. (Trabucco D. 2010).

In the designing of a shear wall element, the first step that should be taken in consideration is the definition of its shape and dimensions, according to the stiffness, building geometry, bending plan and the shear force. In the figure below there have been presented some of the most common shear wall geometries.

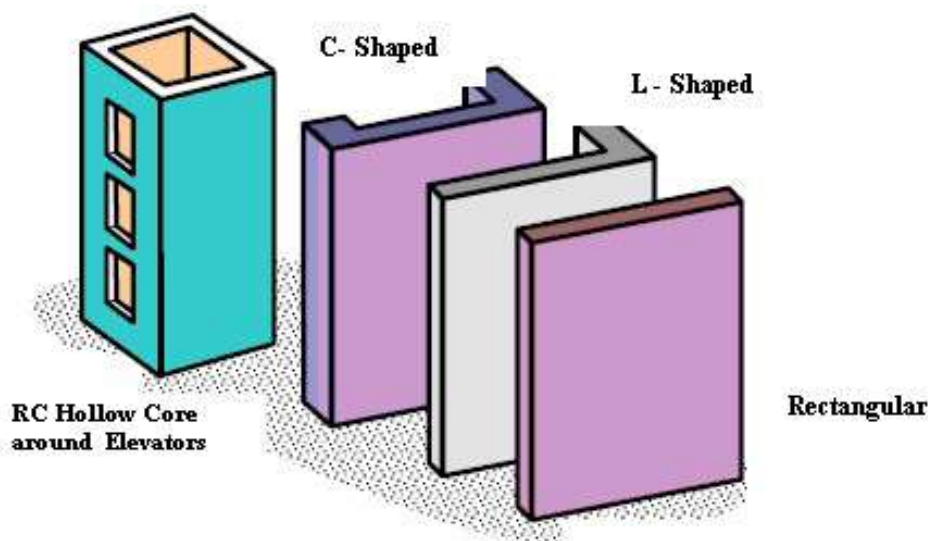


Figure 1 - Different geometries of shear walls in reinforced concrete buildings (Paulay and Priestley 1992)

In addition to this, several main types of shear wall referring to its form in plan and elevation are given in the figure below.

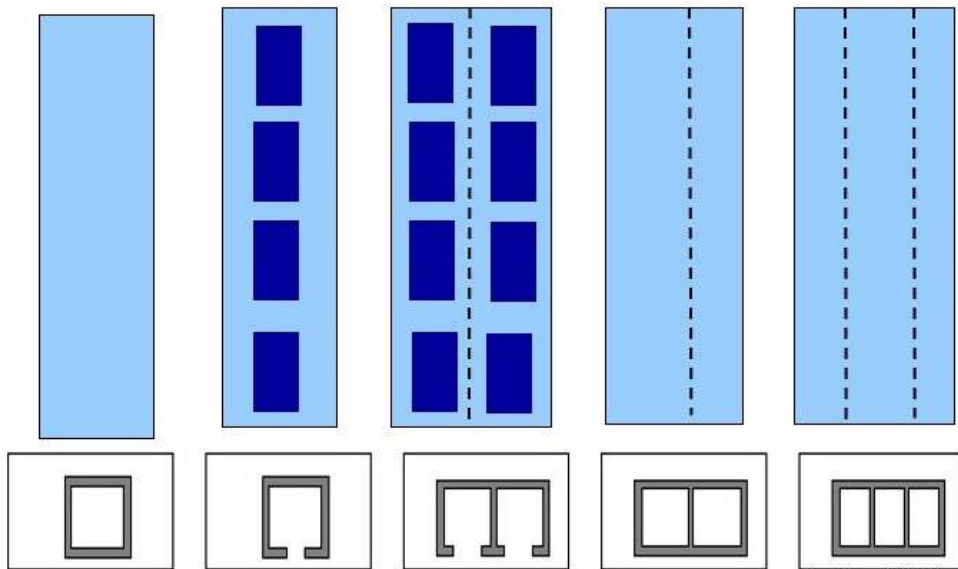


Figure 2 - Basic types of shear walls in plan and elevation (Anwar 2009)

Modeling shear walls is a very important issue for static and dynamic analyses of building structures. This study consist with the design of a shear wall with shell element with different opening system by using the ETABS design program. By modeling the shear wall in different ways it is going to find how they defer from each other in terms of resistance, strength and their total bearing capacity. The aim is to get an appropriate and efficient result, bringing compatibility with the real behavior of the wall in these specific cases. Using shell elements for shear walls was enhanced after the extensive researches done in the last decades for stable and compatible shell formulations with the three dimensional finite element models.

Objectives

The purpose of this study is in revealing structural behavior and to judge on the potential criterion for the aesthetic value of high rise buildings by using perforated shear wall. The goal is combining the rational and efficient structures with aesthetic qualities. In this context, the main objective would be in giving a referee approach that can exhibit perforated shear wall panels putting on façade of high rise buildings not only as rational features, but as important visual components that afford opportunities for creative expression.

Another objective is related to the main hypothesis raised, that of perforated shear wall panels behaving very much close to shear wall elements without openings. So, this study aim to present a considerable interest for numerical investigation of seismic response of perforated shear walls panels taking into account several openings.

Case Studies



Figure 3 O-14 Tower Dubai, COR Building Miami and Mikimoto Ginza 2 Tokyo

In order to better explain the topic of this study three innovative sustainable tall buildings are taken in consideration. The aim is perceiving through this cases the potential of perforated shell elements in enriching the aesthetic vocabulary of such buildings. With these tower typologies the structure and skin have flipped to new area of tectonics and space. The concrete shell provides an efficient structural exoskeleton as in case of O-14 that frees the core from the burden of lateral forces and creates highly efficient, column-free open spaces in the building's interior. The perforation of shell seeks to attenuate the monotony, while still preserving a sense of the sublime. Modulation of pattern works like camouflage, becoming disruptive and de-materializing the tower block. The shell's pattern changes referring to viewer location and in conjunction with additional patterns of light and shadow which produces a sort of virtual form (Jesse Reiser, 2010). Because of the effects of his virtual form, the actual form of the building can be simplified and become subject to logics of designing methods of structural analysis and calculation.

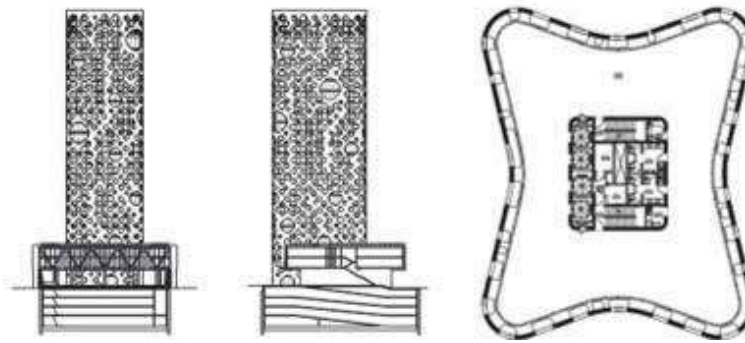


Figure 4 O-14 Tower in Dubai, elevation view and typical floor plan

COR Building in Miami represents a dynamic synergy between architecture, structural engineering and ecology. The building structure is composed of polka dotted of exoskeleton shell that provides thermal mass for insulation, shading for natural cooling and enclosure for terraces. (www.archdaily.com, 2010).



Figure 5 COR Building, the parking level and the elevation view of perforated shell

“Mikimoto Ginza 2” is wrapped in four thin walls which create a tube structural system. There are no internal columns and the floor slabs are a stack of nine homogeneous layers. The façade planes are divided in seven triangle shapes which derive the geometry of the openings of the building. This design follow a structural expressionist approach, becoming possible for the first time through the use of structural analysis technology known as the “finite element analysis method”. (openbuildings.com/buildings/mikimoto-ginza-2-profile)

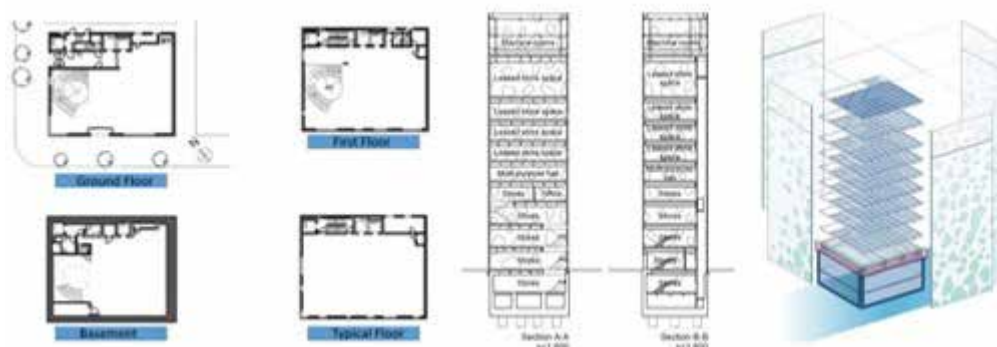


Figure 6 Mikimoto Ginza 2, the basement, ground floor, first floor, typical floor and the elevation view

Methodology

Nowadays the 3D modeling is widespread and its analysis by using finite elements method with shell elements. Shear wall modeling requires a mesh division in order to get realistic behavior. The advantage of using shell elements is the ability to model very long, interacting and complex shear walls within the three dimensional model. As it is mentioned before shear wall can play a significant role to reduce the earthquake force.

The methodology of the study is based on the purpose with the main focus in revealing that perforated shear wall panels behave very much close to shear wall elements without openings in dual systems. For this case, it is obtained a 14-storey vertical structure in elevation, a combined system of frame and shear wall. The design and analysis is performed by using ETABS Ultimate 16.20.0 software. Analysis are based on the size of the partition (mesh) of the wall and mathematical formulations of finite elements conducted from the software itself. Through modeling of a shear wall by four different models, the data will be taken for each of these models and will be compared in order to understand the reaction of this vertical structure under the effect of a design spectrum and to analyze the differences between models. The first model is a shear wall without openings (A1); the second model is a shear wall with opening system in tetris shape (A2), the third one is a shear wall with opening system in small squares shape (A3) and the last a shear wall with opening system in vertical lines shape (A4). The 14 story building is going to pass the conditioned that Eurocode asks for the period and displacement of the building. After that from the result of stresses and forces of shear wall at the base, will be done the comparison of the data that would be generated for each case and the results will be presented in graphical view, in order to show some perceptible conclusions from this study. The data and key parameters that are going to be extracted in order to be analyzed and compared to corresponding results are:

- a) The natural period of vibrations;
- b) Displacement at the top of the structure;
- c) Shear Forces and Stress values at the base of shear wall
- d) Gathering information and data

The shear wall is part of a 14 story vertical structure mixed with frame + perforated shear wall panel. Other data on structural elements and of entire structure are taken as below:

- Type floor height ----- 3 m
- Height of first floor ----- 4 m
- Number of spaces under the direction X ----- 4 m
- Distance between spaces ----- 5 m
- Wall thickness (Shear wall) ----- 30 cm
- Cross section of columns ----- (60x60) cm
- Cross section of beams ----- (30x50) cm

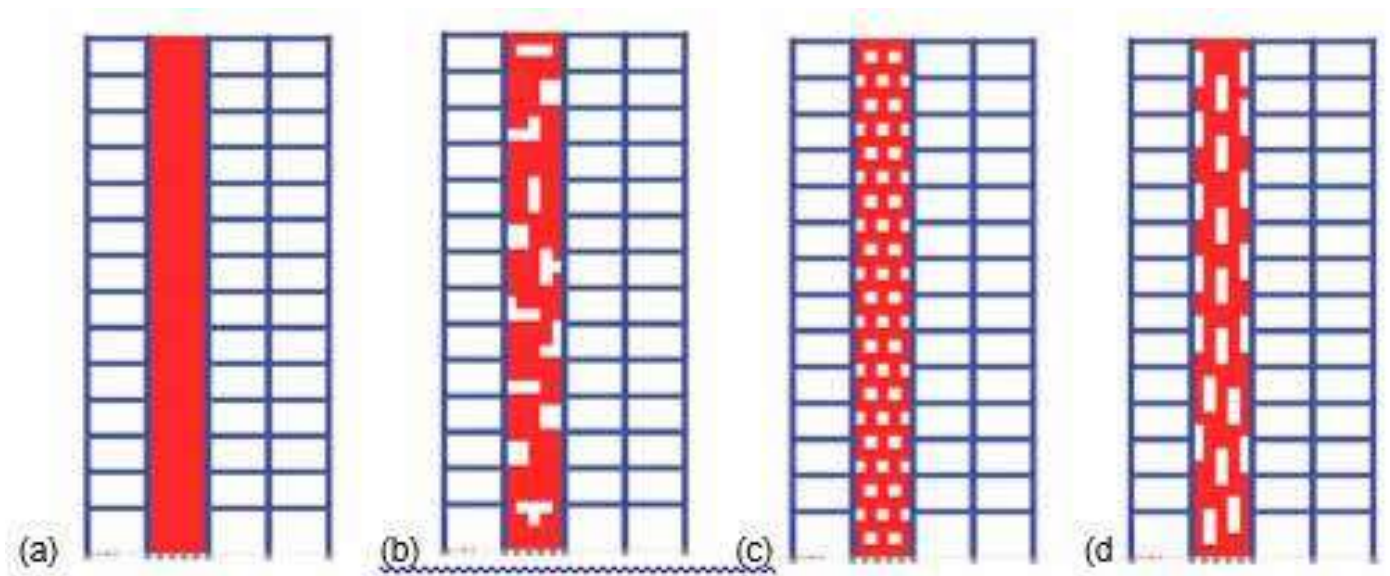


Figure 7 - Models of dual systems

- a) The model without opening (A1); b) The model with opening system no.1 (A2);
c) The model with opening system no.2 (A3); d) The model with opening system no.3 (A4)

Discussion of Results

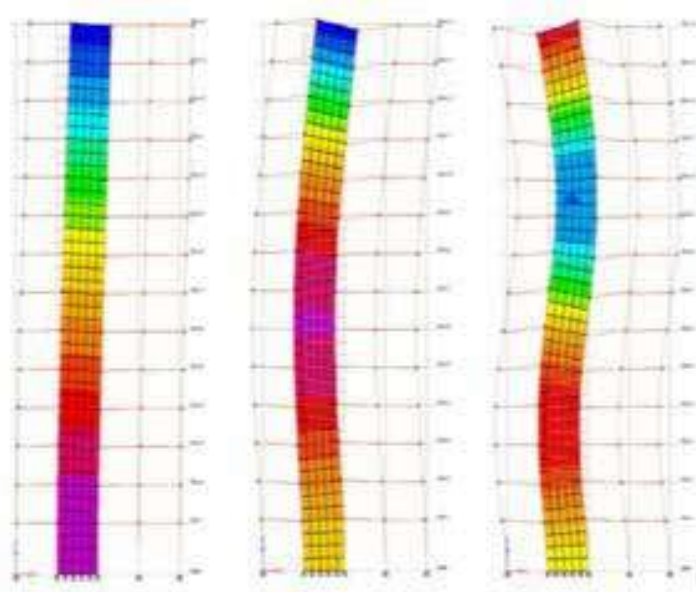
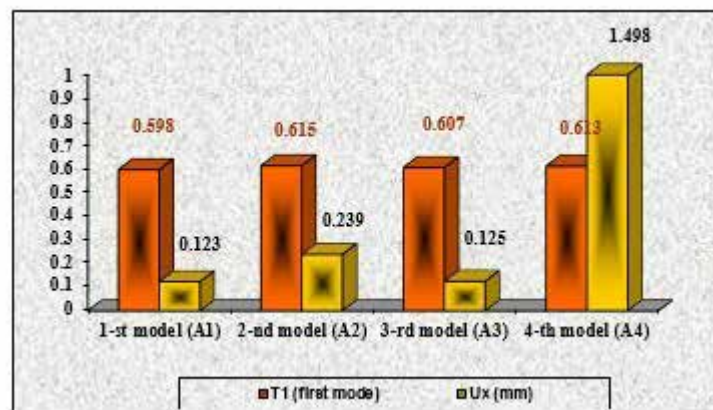


Figure 8 - The first three periods of the natural vibration of the structure – shear wall without opening system (A1)

Identification of the major periods of vibration of the structure is very important in linear analysis. In addition, it should be noted that the first period of vibration of the structure defines the horizontal forces acting on each floor. In linear analysis, three main periods of vibration are given for the four different models of the shear wall. For the first period, as it is apparent from the chart below, the biggest difference that is observed between the models (between model A1 and A2) does not exceed 2.8%. There is also a relevant value between models A2 and A4. For the second period and the third one, the difference goes to 9.8% and 15.5%. It should be concluded that the values are fairly close to each other considering the fact that the maximum value does not exceed 3% for the first vibration period of the structure.

Graph 1 Vibrations periods for 4 models of the shear wall system



A very important step at this point constitutes in the comparison of periods. Referring to Design Codes (Eurocode 8), the first period of vibration of a given structure shall not exceed the following value:

$$T1 = Ct \times H^{3/4}, \text{ where:}$$

Ct - is a coefficient that depends on the type of Structures and $Ct = 0.05$ for dual-systems;
 H - is the total height of the building from the foundation up to the top. (in this case, $H = 43\text{m}$)

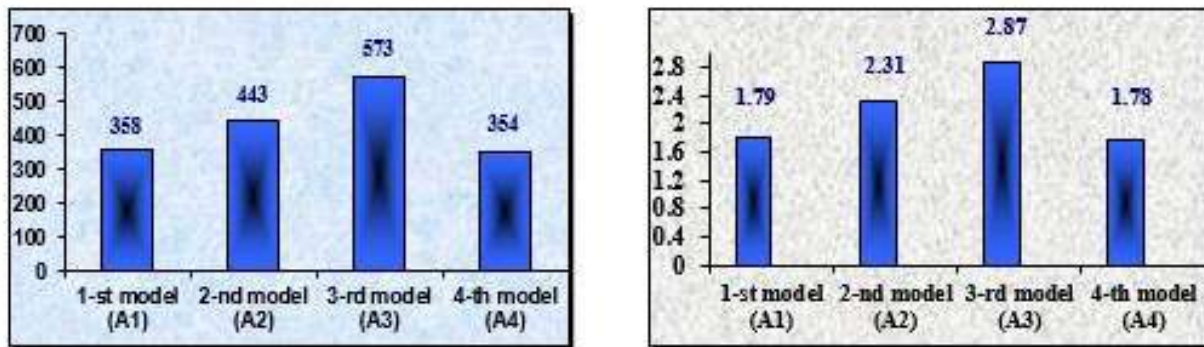
Replacing these values in the above formula:

$$T1 = 0.05 \times 43^{3/4} = 0.8396 \text{ sec}$$

As it can be seen this condition is fulfilled for the four models. Another check is done referring to the values of internal forces (shear forces and shell stresses) at base of shear wall panels. The values of internal forces is

generated by spectral analysis. Results are shown in the following graphs. The conclusion that can be drawn from the comparison of these data is that the models A1 and A4 show approximately similar values. The same it can be said for the other two models. The models with the closest value to model A1 (shear wall without openings) are the model A2 and A4. In terms of relative differences expressed in %, the difference between model A1 and A2 is 23.4% for the shear forces at the base of the wall and 29.5% for the shell stresses also calculated at the basis of the wall. The values for the comparison of two model A1 and A4 are 1.3% for the shear force and 0.6% for the stress. It can be concluded that the fourth model (shear wall with openings in vertical lines) show the best results.

Graph 2 Shear forces (values in kN/m) and the maximum shell stress (values in MPa) at the base of the shear wall for the four models



Referring to stress distribution for the four cases it can be seen that the third model show the higher value of 2.87 MPa or 292 T/m². Also the values of stress are taken from the base because there are the maximum values (Požani 2003).

Conclusion and Recommendations

This study aims to give a better understanding with regard to the performance of shear walls with different arrangements of openings in the slender high rise buildings under seismic excitation. The influence of opening system does not bring a significant impact on the values of the internal forces. It can be stated that, based on the results obtained from the analysis that has attended the structure, model A4 shows a relevant value to the model A1. Also the models A2 and A4 show almost similar values between them. Moreover, the staggered arrangements system of openings has slight effect on the resulting base shears in the shear walls compared with that induced in the shear walls without openings.

The effects of shear forces and shell stresses are bigger at the bottom section of the wall. Ground floor and the connection of the wall with the foundation are considered as critical areas. For this reason it is given great importance to these areas that are taken into consideration during the designing. Based on results, further investigation in this field should be done in better arrange the opening system. Based on results and discussion over them presented in this paper, it is recommended to use a solid shear wall panel without openings in the lower floors and perforated shear wall panels in the upper floors of the building.

The design team must conduct a numerical analysis of such buildings subjected to seismic loads taking into account the staggered arrangement of opening in shear wall panels in order to choose the suitable dimensions and reinforcement in this vertical structural elements and the necessary reinforcement around the openings too. Finally the arrangement of openings in shear wall panels are suggested to be applied in engineering practice mainly in tall buildings façade since they satisfy both the architectural and seismic requirements.

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- <https://en.wikiarquitectura.com/building/mikimoto-ginza-2/>

[TEC/10]



Smart Materials and Components: a revolution in the built environment

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abstract

Building sector has recently undergone a real revolution, becoming fertile ground for experiencing new materials and technologies equipped with high-performance, reduced dimensions and unconventional features, to properly address current needs. Also thanks to the rise of automation, architectural ideas and their physical manifestations have been directed not only to the production of sustainable artifacts, but even towards a new generation of smart buildings, capable of react to the external variability of the boundary conditions and to the ever-changing needs of end-users. In this transition from a “traditional” to a “fully-integrated” smart building, building envelope plays a significant role, primarily due to new possibilities that smart materials and technologies opened in this field.

However, it has to be said that in the meaning of “smart” could stand smart materials and technologies but also components made of apparently traditional materials, able to provide in an unconventional way a smart and adaptive behavior; so, even components designed and realized to acquire new features, thanks to the integration of single materials or heterogeneous components, can be considered smart as well.

Hence, the paper, after investigating the concept of smart in architecture, will discuss smart materials for architecture, including manners and quality of their operation. Complementary goal of this contribute is to show how the relationship between advanced materials, technologies and architecture could become a key driver for innovative building design concepts, thus resulting in the expression of a new global language, able to co-habits with tradition while generating new formal paradigms, determined by the establishment of the abovementioned innovations in current building practices.

keywords Architectural Technology, Building Envelope, Building Materials & Components, Smart Materials.

1. Introduction

Novelties introduced by technological progress' advancements have produced, even in architecture, new and important innovations, thanks to materials and techniques no longer deriving from building traditions but often resulting from technological transfer processes from other sectors, where research in the field of materials with high-performance is a prerequisite for the development of increasingly efficient products and systems.

Within this domain, building envelope's concept has evolved in turn, as a result of both the energetic and environmental issues and the new dynamics that radically changed project's demands as well.

This challenge, endorsed by the digitalization era we are experiencing¹, made available a so wide range of technological solutions that determined a sort of distortion in consolidated design paradigms on which building process was currently based on.

Thus, if a while ago, building materials were selected only on the basis of their performance, economic, formal and aesthetic features – accepting their performance limits and criticalities – nowadays, the relationship between architecture and materials' science has become increasingly close, boosting a new generation of innovative materials and technologies with noteworthy performance, definable Smart Materials, whose demand is increasing over years. (Fig. 1)

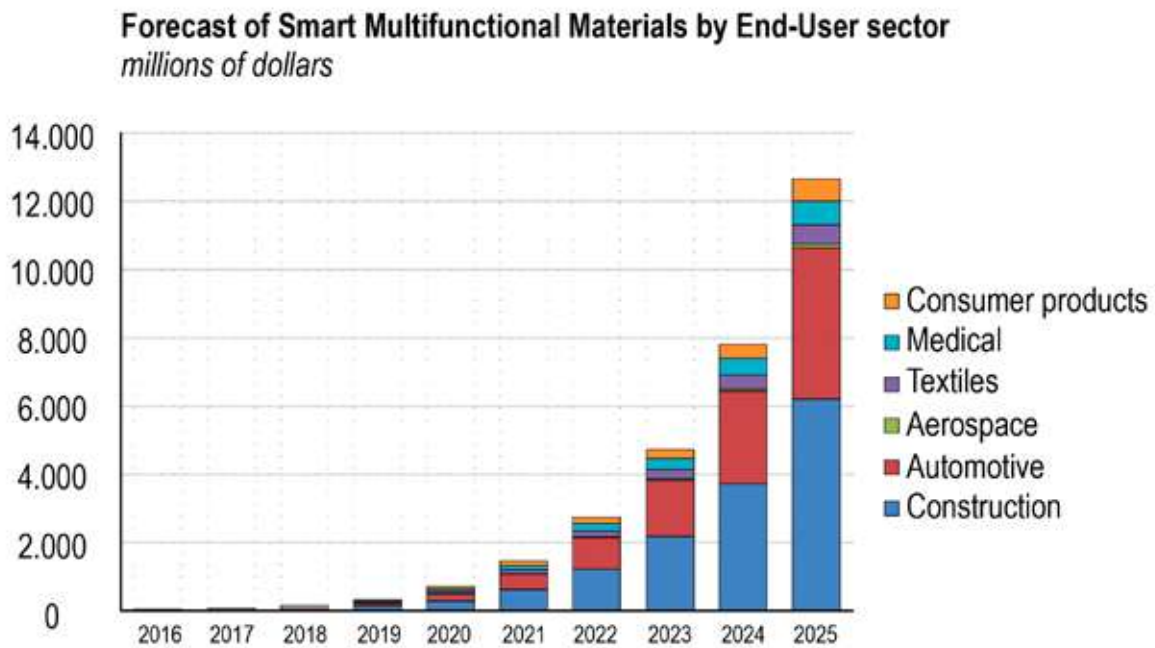


Fig. 1 – Forecast of Smart Multifunctional Materials, author's editing on n-tech Research data (2016). The graph shows how the coming decade will experience significant revenues (in terms of millions of dollars) generated by Smart Materials with multiple functionalities; within this report is worth mentioning the opportunities these technologies are creating in construction, the leading area among the investigated end-user sectors.

2. Objectives

The present contribution aims to discuss Smart Materials for architecture, including manners and quality of their operation within building envelope systems.

Complementary goals of this paper are:

- to investigate the concept of Smart in architecture, relating its meaning not only towards building materials but even to building components and systems in their whole;
- to provide a definition and classification of Smart Materials suitable for building applications, with particular attention towards materials that could offer performance implementations of building envelope;
- to show how the relationship between advanced materials, technologies and architecture could become a key driver for innovative design concept;
- to observe opportunities that the adoption of such innovative technologies gives in generating a global architectural language, able to co-habits with tradition while establishing new formal paradigms.

3. Methodology

After giving an overview about the framework in which the issues under investigation have emerged, the paper will provide an analytical study of types of Smart Materials currently available and suitable for building application, giving an insight into them useful for further architectural design inspiration.

Clearly, it does not intend to be comprehensive of the multitude of technologies actually ascribable under this taxonomy, but rather to provide a general overview within the state-of-the-art of Smart Materials and technologies for building envelopes.

Thus, papers' objectives were achieved through the following phases:

- study of the relationship among architecture and (Smart) materials;
 - classification of Smart (materials, components and systems) into that taxonomy;
 - analysis of property and behavior of Smart Materials;
 - application of Smart Materials and innovative technologies in building envelope practices.
- Finally, critical challenges and future research directions will be addressed.

3. Smart concept definition in Architecture

Even if the idea of “smart” is far from being newly born, due to the fact that it takes in its basic form inspiration from nature, where all living organisms possess stimulus response abilities (Rogers, 1990; Apurva, Tailor and Rastogi, 2017: 520), the application of this concept to the architectural field is quite recently, having appeared in literature only at the end of last century (J. Kroschwitz, 1992) to define materials and components that present unconventional features or selective and specialized performances, opposite to traditional ones.

However, due to the multitude of existing definitions about what smart² senses, coupled with the fact that, especially in architecture, this concept appears still fluid, Addington and Schodek formerly in 2005, recognized that it can be employed without a precise definition of its meaning, because it appears surprisingly difficult. So, today, Smart Materials are frequently classified as technologies highly-engineered, able to respond in an intelligent way to the context in which they're inserted if subjected to external stimuli, and to vary their properties, change their structure and/or form or to assume different functions (Drossel et al., 2015).

Thus, referring to Smart Materials and technologies means speaking about something with a dynamic response, by its own nature juxtaposed to “traditional” materials and technologies, generally equipped with mainly static performances.

Nevertheless, it has to be said that there is a very fine line that divides “smart” materials from “conventional” materials (Bogue, 2012; 2014) because a lot of existing materials are able to “react or respond to some stimulation” (Oliveira et al., 2018: 270) so to behave in a smart manner; this is even more true in architecture, where buildings' global performance largely depends by the overall behaviour of a set of heterogeneous components. So, in the specific field of technologies for architecture, different interpretations of such concept seem possible, that go from the single building material to the component – in which heterogeneous materials and products relate each other in a “smart” way – up to the building envelope system as a whole, in which different components work together to provide a dynamic and tailored performance response, according to the variability of boundary conditions.

Therefore, “smart” concept has not to be intend only as the integration of different or unconventional features in a given material, component or system, but it can also be attributed to the intelligent application of something within building system in its whole or, again, to the intelligent management of a complex organism such as the building one. So, it is clear that, especially in the specific domain under investigation, several and complementary definitions of the concept of “smart” seem possible and suitable for the different application-scales that mark out building process.

4. Smart Materials: classification and typologies

Frequently, advanced materials employed in buildings have derived from technology transfer processes among industry areas characterized by strong innovation forces (such as aerospace, automotive and biomedical). This progress, pushed by such mutual interactions, have multiplied the potential perspectives even in architecture.

1 / *The so-called 4th Industrial Revolution, expression of the adoption of enabling technologies, interconnections and collaboration among cyber-physics systems and Internet of Things.*

2 / *See, for instance, the definitions provided within: Addington and Schodek (2005), Smart Materials and New Technologies for the architecture and design professions, Oxford: Elsevier Architectural Press, such as:*

Chapter 1, pg. 1, «Defined as “highly engineered materials that respond intelligently to their environment”, smart materials have become the “go-to” answer for the 21st century's technological needs».

Chapter 1, pg. 3, «Smart materials are often considered to be a logical extension of the trajectory in materials development toward more selective and specialized performance»; and, again, [Smart Materials] «their properties are changeable and thus responsive to transient needs».

Chapter 1, pg. 4, «Whereas standard building materials are static in that they are intended to withstand building forces, smart materials are dynamic in that they behave in response to energy fields».

Or, again, the following:

«smart materials and structures are those objects that sense environmental events, a process that sensory information, and then act on the environment» J. Kroschwitz (1992), The Encyclopedia of Chemical Technology, New York: John Wiley & Sons.

«Smart materials are designed materials that have one or more properties that can be significantly changed in a controlled manner by an externally applied field value, such as stress, temperature and electric or magnetic fields. This behavior is reversible and consequently enables these materials to fulfill actuation and sensing functions in one component», W.-G. Drossel et al. (2015), Smart3 – Smart Materials for Smart Applications, paper presented at CIRP – 25th Design Conference Innovative Product Creation and published in CIRP 36 Procedia 211-216.

However, it has to be said that not all materials and technologies that can be defined as Smart Materials are useful for implementing building performance; for this reason, after a first preliminary examination of Smart Materials' types and features, only materials and technologies suitable for buildings applications have been described in the present dissertation.

4.1 Main features and benefits of Smart Materials' application in constructions

Due to their outside-the-box performance, Smart Materials' application in construction field implies a wide range of benefit, thanks to the possibilities offered by the use of more capable, effective and resistant materials (Malekizadeh B et al., 2014).

These materials indeed, offer increased resistance, formability, durability and other unconventional features (Golabchi et al., 2011) also from an aesthetic point of view, because of their appearance sometimes very attractive. In addition, thanks to their ability of feeling environmental events, they are able to react to the surrounding conditions (Sadeghi, 2011) and to process information obtained by external inputs, useful for further implementations. So, such different benefits (even potential) deriving from their application in constructions, Smart Materials seem able to significantly improve building performance, reducing at the same way maintenance and management costs.

4.2 Classification

Despite of multiple definitions that can be given about what a Smart Material is, the five fundamental features that distinguish it (from a traditional material) can be resumed as follow (Abeer 2017, Addington and Schodek, 2005, Iranmanesh et al., 2013):

- immediacy, defined as the ability to respond to real-time solicitations;
- transiency, defined as the ability to respond to more than one environmental state;
- self-actuation, defined as the intrinsic ability to respond to external stimuli;
- selectivity, intended as the ability to respond in a discrete and predictable way;
- directness, due to the fact that generally the response is local and consequent to an activating event.

Therefore, available Smart Materials can be distinguished according to different classifications; most common are those that divide them on the basis of:

- their intrinsic properties, such as nature, appearance, chemical composition, mechanical and physical properties, etc.
- the performance they are able to guarantee; distinguishing among materials with fixed performance (materials' properties that remain constant under normal conditions) and materials with variable performance. Fixed-performance materials could be structural advanced materials, thermo-structural materials or surface-properties materials while variable-performance materials can be in turn divided between property-changing or energy-exchanging materials;
- their modes of operation:
 - passive, if activated in response to temperature or lighting variations;
 - active, if electrically regulated, by means of artificial stimulus;
 - intelligent (or self-regulating), if able to autonomously adapt to the surrounding environment, coupling both the above-mentioned manners.

Another classification – that descends from previous ones – distinguishes Smart Materials according to two categories: from one side materials that vary one of more of their features (chemical, thermal, mechanical, magnetic, optical or electrical) depending on the changes of the external conditions or by means of direct stimuli; while from the other, materials that – following various inputs – change energy into another form (Abeer, 2017; Addington and Schodek, 2005; Aggour and Soliman, 2013; Iranmanesh et al., 2013; Malekizadeh et al., 2014; Ritter, 2017; et al.)

First-class materials are called property-changing materials and include: thermochromics³, electrochromics⁴ and related technologies, mechanochromics⁵, chemochromics⁶, phototropics⁷, magnetorheological and electrorheological⁸, thermotropic⁹, shape-memory¹⁰, phase-changing materials¹¹ and adhesion-changing materials¹².

Second-class materials instead, even defined as energy-exchanging materials, include: light-emitting materials¹³, photovoltaics, electrostrictives and magnetostrictives¹⁴, Light Emitting Diodes, thermoelectric¹⁵ and piezoelectric¹⁶ materials, piezoresistive¹⁷ and thermo-responsive materials¹⁸. (Fig. 2)

If, in both cases, changes are direct and reversible, first-class materials are those altered in their molecular structure while seconds remain the same due to the fact that it's only energy that will be converted into another form.

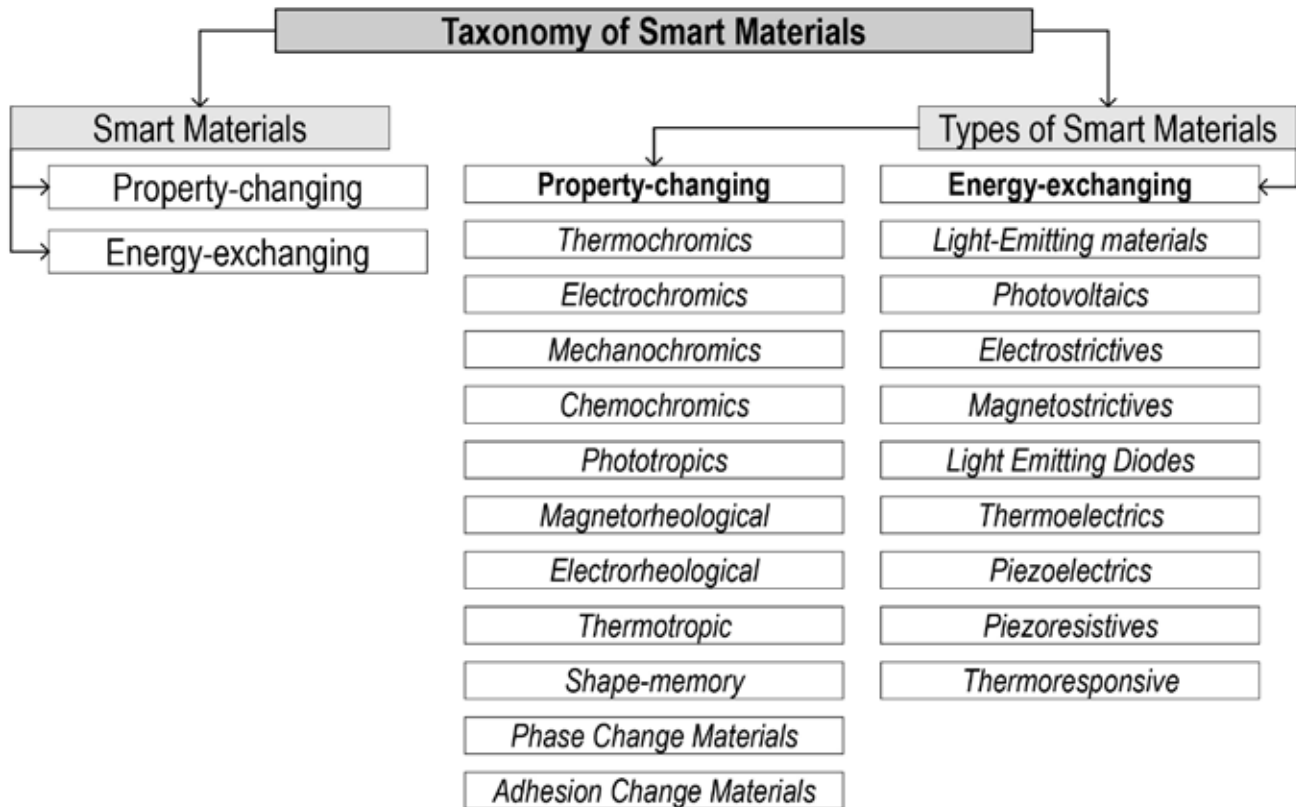


Fig. 2 – Taxonomy of Smart Materials, author's editing on the basis of A. S. Y. Mohamed, *Energy Procedia* 115 (2017) 139-154.

5. Smart Materials and their application potential in Architecture

Smart Materials' application potential in Architecture is surely wide, due to the fact that they can perform different and sometimes juxtaposed roles thanks to the almost uncountable possible combinations among them, thus suitable for a high-number of purpose.

In the context of technologies for architecture, and especially with respect to building envelope's performance, it

3 / Materials that change their color after thermal energy inputs.

4 / Materials that change color when a voltage is applied. Related technologies include liquid crystals and suspended particle devices that change color or transparencies when electrically activated.

5 / Materials that change color due to imposed stresses and/or deformations.

6 / Materials that change color when exposed to specific chemical environments

7 / Materials that change their color when exposed to light.

8 / Materials – generally fluids – in which the application of a magnetic field (or, for electro-rheological, of an electrical field) causes a change in micro-structural orientation, resulting in a change of the viscosity of the fluid.

9 / Materials in which an input of thermal energy (or radiation for a phototropic, electricity for electro-trophic and so on) alters their microstructure through a phase change. In a different phase, most materials demonstrate different properties, including conductivity, transmissivity, volumetric expansion, and solubility.

10 / Materials in which an input of thermal energy (that can also be produced through resistance to an electrical current) alters the microstructure through a crystalline phase change. This change enables multiple shapes in relationship to the environmental stimulus.

11 / Materials that use chemical bonds to store and release heat.

12 / Materials that change the attraction forces among their atoms or molecules when exposed to lights or to an electrical field.

13 / Materials that convert energy into an output of radiation energy, in the visible spectrum; they include: photoluminescents, where input is radiation energy from the ultraviolet spectrum; electroluminescent, where input is electrical energy, and chemoluminescent, where input is a chemical reaction.

14 / Materials in which the application of a (respectively) electrical or magnetic field produces elastic energy in the form of a strain that deforms material's shape.

15 / Materials in which an input of electrical current produces a temperature differential on the opposite sides of the material itself.

16 / Materials in which an input of elastic energy generates an electrical current. This technology is most of time bi-directional which means that input can be switched thus an electrical stimulation will induce a mechanical deformation.

17 / Materials in which the application of a mechanical stress will induce an electrical resistance variation.

18 / Materials that change their shape according to a temperature variation (such as Shape Memory Alloys).

is clear that Smart Materials with variable performance are those equipped with the greatest potential, since they seem able to face variations of boundary conditions that can affect building performance.

In this domain fit chromogenics, technologies that find fertile ground especially if related to glazed systems, due to the opportunities they offer to control incident solar radiation; phase change materials, able to storage latent heat and to release it further exploiting phase transition phenomena; and nanotechnologies, technologies of interdisciplinary scope defined as the design, characterization, production and application of structures, services and systems through shape and dimensional control at nanometre scale (The Royal Society & The Royal Academy of Engineering, 2004:5).

Since innovative building materials and, more in general, components and systems currently on-the-market available that can be inserted within this category, constitute a very heterogeneous sample, it was decided to report only a sample of promising technologies, considered significant by virtue of the contribution they offer in implementing building envelope performance.

The selected products have been described according to material properties as it is generally done for building materials, whether traditional or not.

5.1 Recent developments in Smart Materials for Architecture

Timber-based products

Although timber products with unconventional features are not so spread in Architecture – mainly because wood is generally employed for particular characteristics that signify it – materials treated with surficial coatings able to improve their cleaning abilities and resistance towards atmospheric agents, as well as towards biological and chemical attacks, are possible (Zacchei, 2011).

A product that is worth considering as well, is the translucent wood¹⁹ (Fig. 3), apparently comparable to a common polycarbonate-sheet but actually equipped with the original properties of a timber-base support. Thanks to a particular chemical process indeed, researchers managed to remove lignin from it, making it almost colorless; the product obtained was then impregnated with a transparent polymer that allowed uniform optical properties, making it suitable for window fixtures or for increasing the efficiency of solar cells in photovoltaic components.



Fig. 3 – Prototype of transparent wood obtained by researchers from Stockholm KTH – Royal Institute of Technology, Peter Larsson
Source: <https://www.kth.se/en/forskning/artiklar/kth-forskare-har-uppfunnit-genomskinligt-tra-1.638511>

Ceramic products

Ceramics' sector, thanks to the great variety of products that groups, is the one that has concentrated over years the largest number of experiments and investments in research.

In addition to well-known self-cleaning products²⁰, innovations in this field are generally aimed at coupling positive aspects that distinguish ceramics with original features.

Interesting products are, for instance, tiles able to regulate moisture degree within confined spaces, such as the Japanese Ecocarats²¹, made of a particular clay with microporous surface able to absorb the exceeding water-vapor within rooms to further release it when the air-moisture level changes.

Speaking about smart ceramic materials, you cannot mention concretes with improved performances, that goes from well-known HPCs²² and photocatalytic concretes, to fibro-reinforced concretes or, again, to recent technologies, such as:

- smart concrete, with carbon or optical fibers that allow the monitoring of the structure integrity thanks to an electricity transfer (Abeer, 2017; Chen and Chung, 1993);
- fluorescent concrete²³ (Fig. 4), able to re-emits light after its absorption thanks to a micro-structural modification aimed at rendering the compound jellified, thus suitable for lighting public spaces without recurring to electricity;
- bio-receptive concrete²⁴, with magnesium phosphate that allows the bio-colonization and growth of photosynthetic micro-organism, able to produce oxygen and absorb CO₂ and pollution;
- self-repairing concrete²⁵, in which the presence of bio-chemical additives with dormant bacteria and other organic compounds – packed in particles of porous-expanded clay – allows the triggering of self-repairing mechanisms able to seal cracks smaller than mm. This concrete, durable and sustainable, is suitable for applications in all humid contexts where corrosion tends to compromise the durability of traditional products.



Fig. 4 – Fluorescent concrete employed in a cycling path in place of a traditional lighting system. El excelsior ph. Source: <https://www.uniglowproducts.com/glow-in-the-dark-concrete-and-cement/>

In the field of glass-based products several experiments are currently underway as well. They started with those aimed at confer glasses self-cleaning abilities, making their surface able to repel dirt thus reduce maintenance issues, and have later oriented towards the development of systems able to selectively control the amount of solar radiation within confined environment, to avoid undesired overheating during hot seasons exploiting it, at the same time, during cold seasons.

Technological developments in this field, have ranged from products with static properties – such as low-emissive, reflective and selective glasses – to dynamic products equipped with variable performance, the so-called “smart windows”, that generally exploit chromogenic technologies to modify glass’ optical and thermal features according to solar variations, electrical inputs or other solicitations that occur in the surrounding environment (Fig. 5).

19 / Developed within the KTH – Royal Institute of Technology, in Stockholm, by a team of researchers led by Prof. L. Berglund. (<https://www.kth.se/en/forskning/artiklar/kth-forskare-har-uppfunnit-genomskinligt-tra-1.638511>)

20 / Hydrophobic or photocatalytic, both based on different techniques that modify, at the nanometre scale, the adhesion angle among the surface and the water droplets on it

21 / For further information, see producer’s company website: <http://ecocar.at.ph>

22 / High Performance Concrete (Y. Malier and R. Lacroix, 1980), defined as «concrete meeting special combinations of performance and uniformity requirements that cannot always be achieved routinely using conventional constituents and normal mixing, placing, and curing practices». American Concrete Institute Terminology, available at:

<https://www.concrete.org/topics/inconcrete/topicdetail/high%20performance%20concrete> (Accessed: the 20th of June, 2018)

23 / Developed by Dr. J. C. Rubio Avalos within UMSNH, University Michoacan of San Nicolas Hidalgo, Spain.

24 / Created within the Biotechnology & Architecture Lab, at The Bartlett School of Architecture, University College of London.

25 / Developed by a team of the Delft University of Technology (<https://www.tudelft.nl/en/2015/tu-delft/tu-delft-self-healing-bio-concrete-nominated-for-european-inventor-award/>)



Fig. 5 – Berkshire Residence, Olson Kundig (2014), Berkshire, Massachusetts (USA). Private residence designed as low-tech smart home, symbolic of the smart definition given in the contribute. In this project indeed, facades are able to transform without recurring to advanced technologies but just by means of a complex system of cranks and levers. Benjamin Benschneider ph. Source: <https://www.olsonkundig.com/projects/berkshire-residence/>

Metallic products

Within metallic field ongoing experimentations are mainly oriented towards the development of alloys with increased resistance and handle capacity, suitable for high-precision processes; last generation products indeed, are corrosion resistant, ductile, of easy processing and with great adherence towards surficial treatments. Most wide-spread are: light alloys, metallic foams, composite steels, shape memory alloys and metallic wires or tissues. Among them, a special mention deserves the boing micro lattice²⁶, an extremely light metallic foam (even lighter than aerogel, with a density of 0.9 mg/cm³) originally developed to realize aerospace components; it has a three-dimensional open-cell structure, made of hollow metal nano-tubes with a polymer matrix and a reticule composed of about 99.9% of air, such as to provide it with characteristics that are completely unusual for a metal. Thanks to its extraordinary lightness and high capacity of absorbing mechanical energy indeed, it could be used in architecture as insulating material, suitable for applications in floating floors, paneling or in particular components subject to impact, for which particular mechanical resistance is required.

Polymeric products

Polymers are quite diffuse in architecture, employed in different forms and for various purposes due to their lightness and aesthetic value above all. Recent developments in this field are directed to increase polymers' performance in terms of resistance, insulations, durability and maintenance terms.

Products that seem most promising for architectural purposes are membranes or tissues, resins soaked to confer them great improved resistance.

Generally, textile materials suitable for building applications are distinguishable according to the amount of polymers employed for their realizations and are: multicomponent products (such as polyester tissues, PVC, PTFE) or mono-component products (expanded PTFE or ETFE plastic films).

Other interesting products are those equipped with unique aesthetic features, such as reflecting, fluorescent and shimmering polymers, sometimes with light-filtering abilities, or those reinforced with fibers that confer them extreme resistance and flexibility.

In the field of polymer-based products, it is worth mentioning the fabric produced by SEFAR²⁷, highly-transparent conductive tissue made by weaving micrometer-size conductive metal wires and transparent polymer fibers, usable as transparent conductive electrodes in electronic applications for OLEDs, solar cells, electroluminescent devices and electrochromic glasses.

Another component equipped with interesting ability is PNIPAN²⁸, a special polymer developed at ETH-Zürich, used for the creation of a breathable mat designed for cool-roofs. In case of atmospheric event the mat will absorb the water and then release it once the temperatures rise again, extracting heat from the inside of the building, thus reducing energy consumption of about 60% during summer months.

5.2 Frontiers of Smart Materials in Architecture

Downstream of these considerations, it is clear that Smart Materials can be effective in address environmental crisis issues thanks to their proper application in Architecture which can positively affect building operation and maintenance.

Materials of such a kind indeed, seem able to perform differently and alternative roles, thanks to smaller sizes, lower assembly time and larger life cycles, by means of their enhanced properties.

However, it has to be said that if traditional materials have a well-established use and, therefore, a sufficiently in-depth knowledge, as well as long and extensive application expertise, innovative materials and technologies imply a different design approach because they overtake the, we can say, simplification of traditional architectural solutions, made by the assembly of flat linear and regular elements, thus leading to the development of more evolved shape, once unthinkable, thanks to unconventional features of resistance, flexibility and duration (Fig. 6).



Fig. 6 – Torre de Especialidades, Hospital Manuel Gea Gonzales, elegant embellishments, Daniel Schwaag and Allison Dring (2013), Mexico City. The second skin module, realized in and coated with a titanium dioxide, performs a smart role in reducing air-pollution while daylight activated, acting at the same time as sun shading system; their specific design non repetitive and inspired by fractals, obtained with thermoformed plastics, contributes to the maximization of their effect.

26 / Artificial structured material with electromagnetic properties, whose features depend not only to its molecular structure but also to the geometry in which it is shaped and employed.

27 / Source and other information on Material ConneXion library, SEFAR © TCF, Sefar AG, MC 6408-12, https://www.materialconnexion.com/database_italy/640812.html. [Accessed: the 22nd of March, 2018].

28 / http://www.ethlife.ethz.ch/archive_articles/120102_schwitzende_daecher_fb/index_EN.html

So, even if they are certainly able to allow significant optimization in building sector, new approaches to manage this design complexity are needed, to best meet current buildings' performance requirements.

Besides, it is worth mentioning the fact that barriers facing their adoption are still present and range from cost's issues, liability to market cycles and a lack of established reliability for some products, as well as a lack of coherence and consistency in the measurement of their success is existing (Abeer, 2017).

Despite the technological challenges we face, these materials and processes will open up huge opportunities to design and configure buildings able to cope with these issues, broadening the horizons of architects and designers.

6. Conclusions and discussion: new paradigms for Architecture

The will to adequately face actual changing demands – allowing the interactions among architecture, surrounding environment and user-needs – has rapidly triggered a revolution in formal paradigms by now consolidated, giving birth to a new generation of buildings in which the technological component plays a significant role in the definition of the architectural language, becoming investor not only of performance requests but even of all communicative issues concerned.

Application's possibilities of Smart Materials – endorsed by strong advances in science and technology that mark out era in which we live – have generated new complex and fluid shape, sometimes determined by single material's properties and assisted by computer aided design and printing technologies that allowed flexibility and dynamic of forms and aesthetics (Bogue, 2014), easy devices' integration as well as the possibility to obtain multifunctional materials over flexible and large areas.

Now, materials have become functional elements that could perform an adaptive behavior, effective in each stage of building operation.

So, adaptive envelopes, will therefore be the next big milestone of the technology for architecture (Gallo and Romano, 2017) thanks to their ability in giving to buildings the possibility to dynamically control and filter factors that act on them, becoming at the same time iconographic supports able to evolve in relation to the use they made of innovative materials and components (Romano, 2013).

In this way, a mutual symbiosis between technology and architecture become possible, generating at the same time a new global language, suitable to a multitude of needs and able to find a new relationship, previously unthinkable, with local traditions even if innovated in form and vocation.

Functional and technological elements thus acquire a new aesthetic-formal value, becoming drive-force behind the development of new architectural ideas and forms (Moulaii et al., 2011), able to co-habit with traditions while fulfill ever-changing requirements of a hybrid contemporaneity, from a performance, aesthetic and environmental point of view.

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[TEC/11]



Materials Deterioration, A Key Factor On Reducing The Energy Efficiency

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abstract

In our country, Albania, there are many masonry building mainly with brick walls, built in the 50s, 60s, 70s and 80s. All these structures have been subject to different kind of damages during these years because of: structure deterioration, seismic loads, atmospheric aggressive conditions, corrosion, accidental events, etc.

One of the main damages is the one caused by materials deterioration; the reduction of their physical-mechanical properties. This deterioration is the responsible for the reduction of the thermal comfort. The principal factor for this reduction is the coefficient of thermal conductivity, since it determines the amount of the energy loss in buildings. But, how much has this coefficient been reduced? Is the present value equal with the theoretical values that was This research analyses a building's deterioration mechanism and presents different ways of energy retrofits targeting an optimal value of energy loss.

This study will be focused in determining the real state of the actual energetic performance and how it has changes from the initial predicted one.

The final aim of this paper will be the retrofit for improving the energy efficiency based on energy consumption and retrofit cost. The method used for assessment of energy retrofit will be based in computer analysis of a chosen structure model will the help of DesignBuilder software.

keywords Energy Efficiency, Thermal Comfort, Coefficient Of Thermal Conductivity, Energy Retrofit

1. Introduction

It is no longer possible to ignore the Climate Changes we are facing and that carbon emissions are the responsible for them. Carbon emissions are mainly caused by the use of energy and its production and many sectors of the modern societies rely too much on energy to function. However, since 1997, with the signature of the Kyoto Protocol, a lot of actions have been taken in a tentative to control carbon emissions. In December 2015 – It was signed the Paris Agreement to hold the increase in the global average temperature to well below 2 °C above the pre-industrial levels.

Urbanization is a strong and extensive driver that causes environmental pollution and climate change from local to global scale. Urban ecosystem modeling (UEM) is defined in an interdisciplinary context to acquire a broad perception of urban ecological properties and their interactions with global change. Climate changes are determined by anthropogenic activities and have a harmful effect on the environment. Through building design we can obtain mitigation and adaptation strategies in order to face climate changes and bring into being comfort management policies. At present, the energy saving management is closely related to the environmental management.

MES (multi-energy systems) whereby electricity, heat, cooling, fuels, transport, and so on optimally interact with each other at various levels (for instance, within a district, city or region) representing an important opportunity to increase technical, economic and environmental performance relative to “classical” energy systems whose sectors are treated “separately” or “independently”.

The energy saving management and closely related the environmental management play a vital role in thermal insulation of buildings. One of the main risks in this area is the presence of moisture in the porous building material used. Damage to building envelope is mostly caused by moisture. Building envelope failures can be attributed to this aspect of moisture accumulation. Severe condensation in wall cavities has resulted in splintered masonry, the formation of a crusty deposit, and corrosion of masonry ties and precast wall anchors. The problems that influence enclosure functionality the most - moisture intrusion, air infiltration, and faulty or missing insulation - are often the hardest to identify because they can't be readily seen. There are several signs that your envelope isn't getting the job done. Early indications of problems include thermal discomfort, a moldy scent, or the presence of moisture. Energy consultants, structural engineers, and building science experts can do an investigation and make the real diagnosis. Materials can't be looked at independently. It should be recognized how the insulation interacts with the water and air control layers, the vapor permeability of all materials, and their locations relative to each other.

Energy efficiency is a top priority for EU because until 2030 EU would depend on energy imports in 70%, production and use of energy are responsible for ~ 94% of carbon emissions, EU cannot increase the offer of energy resources but it can reduce the energy demand.

Energy demand in the residential building sector represents a big challenge for Albania. In 2013, the sector was responsible for 30 % of the country's final energy consumption and 60 % of the country's electricity consumption. The quality of energy services delivered to residential buildings is low. Albanian homes are only heated partially, for just a few hours a day, while the continued use of outdated woodstoves results in numerous environmental and health problems.

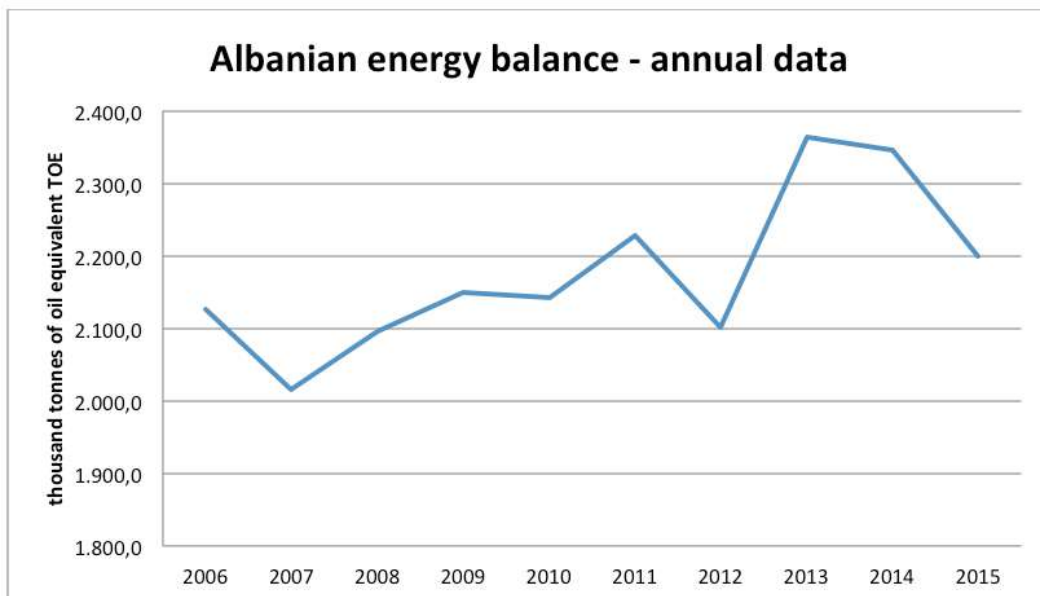


Diagram 1 - Albanian Energy Balance
Source of data - Eurostat

The total number of residential buildings in Albania was 598,267 according to the 2011 census, for a population of 2,821,977 (53.5 percent of the population live in urban areas and 46.5 percent in rural areas) (INSTAT 2011, 2013 and 2014a). The number of dwellings was 1,012,062, of which only 709,865 were inhabited. The number of private households in inhabited dwellings was 722,262.

Masonry building are in a high number in the overall building stock in Albania, which are built in different timelines. During the time of their occupation they have suffer a lot of damage, mostly because of material deterioration, aggressive atmospheric conditions, corrosion, accidental explosions, mistakes in project implementations etc. For these reasons these buildings now don't fulfill the demand for the new energy efficiency codes. In Europe, most of the countries have already intervene in improving the energy efficiency according to the new codes. In Albania there in not done much in that case, it is still in the phase of implementation.

In Albania, until the end of the communist era in 1990, these type of building were still being build by using standard project. The masonry was used for residential and public buildings because it was low cost for that time. Nowadays, these type of buildings are still in use.

It has past a lot of time since they have been built and there is not any kind of rehabilitation made for them. Most of these buildings are in bad conditions and they have no good energy efficiency so they have a high cost to the

families. Reducing the loss of energy we also can reduce the emissions of CO₂. Taking in consideration the huge number of these type of buildings we can say that energy retrofitting of these buildings would have a huge impact in economy, energy and environment.

Table 1 - Albanian residential building typology
Source- Simaku, Thimjo, and Plaku 2014b









	1. Detached houses Dtch	2. Semi-detached houses Sem_Dtch	3. Row (or terraced) houses Row_Terr	4. Multi-family apartment Mult_Fam_Ap
A before 1960	 Dtch_20-60	 Sem_Dtch_20-60	 Row_Terr_...60	 Mult_Fam_Ap...60
B 1961-1980	 Dtch_61-80	 Sem_Dtch_61-80	 Row_Terr_61-80	 Mult_Fam_Ap_61-80
C 1981-1990	 Dtch_81-90	 Sem_Dtch_81-90	 Row_Terr_81-90	 Mult_Fam_Ap_81-90
D 1991-2000	 Dtch_91-00	 Sem_Dtch_91-00	 Row_Terr_91-00	 Mult_Fam_Ap_91-00
E 2001-2011	 Dtch_01-11	 Sem_Dtch_01-11	 Row_Terr_01-11	 Mult_Fam_Ap_01-11



Figure 1 - Wall degradation caused by material deterioration
Source - Merita Guri

2 Objectives

This research analyses a building's deterioration mechanism and presents different ways of energy retrofits targeting an optimal value of energy loss. This study will be focused in determining the real state of the actual energetic performance and how it has changes from the initial predicted one. The final aim of this paper will be the retrofit for improving the energy efficiency based on energy consumption and retrofit cost.

3 Methodology

3.1 Statistical data on construction materials

The majority of the building stock is constructed from brick or stone (88 percent), and 5 percent is prefabricated. Even though the number of prefabricated buildings is lower than that of masonry buildings, they are usually multi-storey buildings that contain many dwellings. Most of the apartment buildings constructed after 1960 were built using this technology. "Other" construction materials include clay and adobe



Diagram 2 - Construction Materials
Source - INSTAT 2001

3.2 Factors that influence in material deterioration

Chemical and biological deterioration in bricks and mortar caused by water that contains acid environment, sulfate, pollution and chemicals released by growing plants. Corrosion in steel components in masonry walls like steel bar, like chemical deterioration. Bricks and mortar erosion from particles from water and wind, from frost and degradation from salt. Strain effect caused by: foundations movement, basement consolidation, overloads, movements by brick moisture, thermal movement and movement from the growing of plants. As a result of cracks water can be infiltrated and influence in the structure. Mold and microorganisms diffusion. Vegetation presence can be found in the area around the walls. The presence of water from precipitations can influence in the vegetation grow. This is the main factor causing cracks.

3.3 Questionnaires related energy efficiency in Albania

POLIS University and Co-PLAN participated twice in the Fair "Energy the Future Challenge" organized by Tirana EXPO Centre and the Ministry of Energy and Industry. During the Fair, at the stand of POLIS University and Co-PLAN, the community had the opportunity to be introduced to various implemented projects in the field of energy efficiency and renewable resources. The stand was very active all three days, as there were involved the community, where they filled in a questionnaire regarding characteristics of their buildings. We calculated on real time their energy losses and energy savings, if they will thermo insulate their building. As the aim was to reach as much as possible community interest, we converted energy savings into financial savings and calculated the payback period of the investment. Some of the questionnaire results are as below:

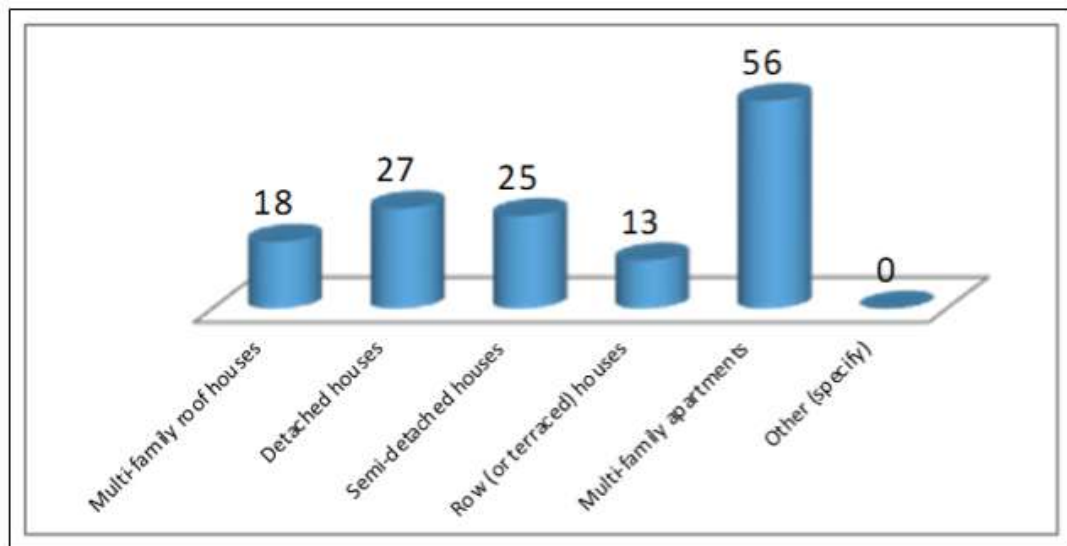


Diagram 3 - House typology

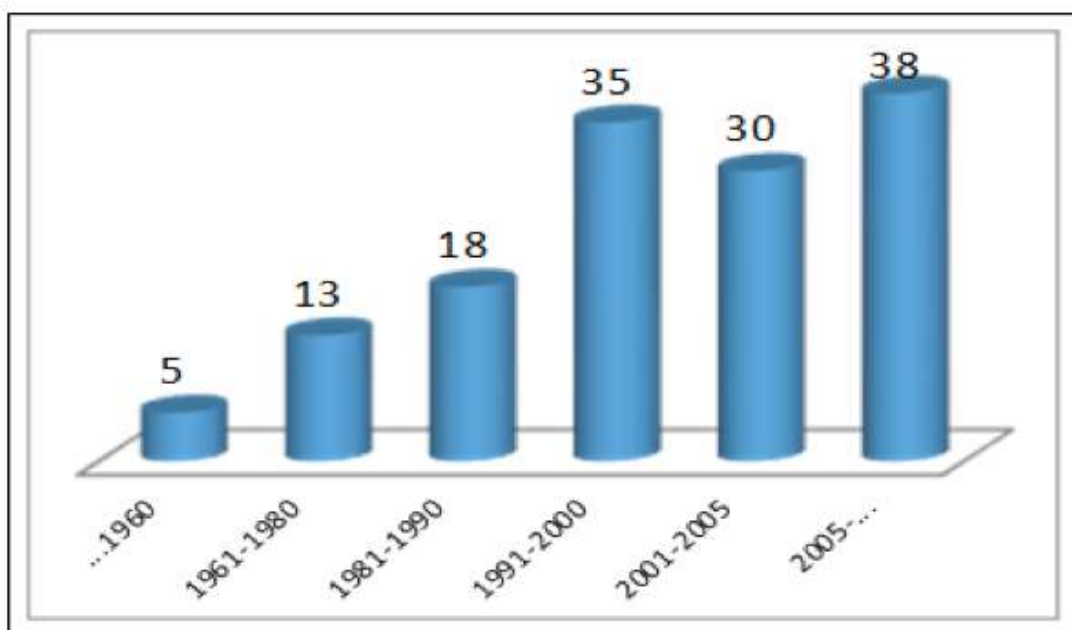


Diagram 4 - Year of construction

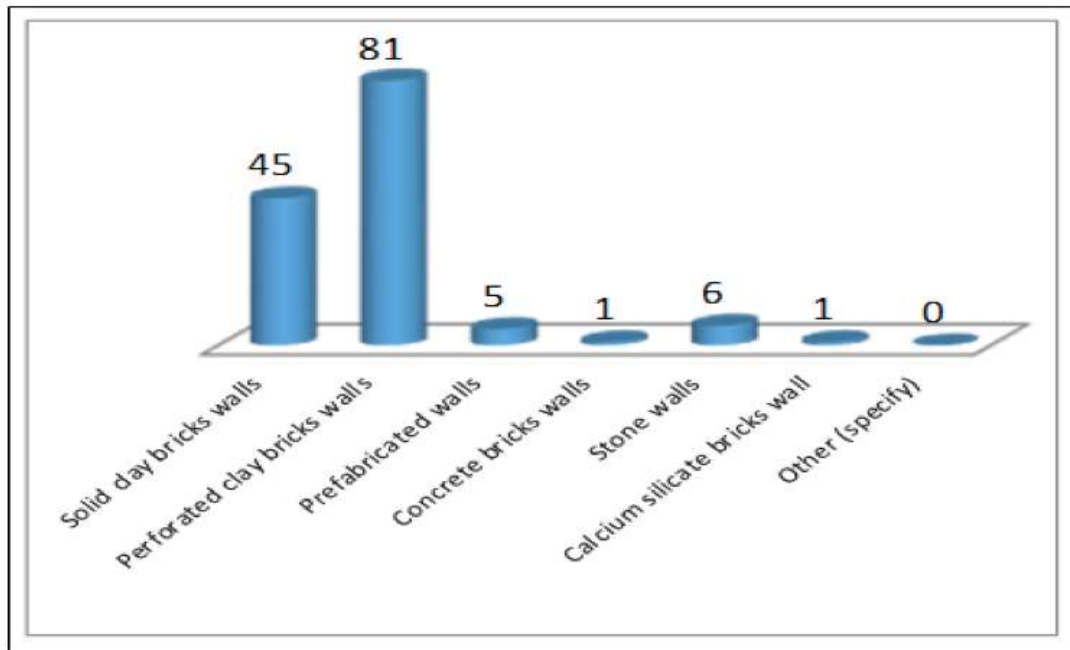


Diagram 5 - Construction Materia

All the upper mentioned findings go in line with those provided by official sources, the majority of buildings are multi story buildings made of bricks or pre fabricated.

3.4 Actual energy performance

In order to get a general overview of the energy performance of the residential building stock in Albania, we conducted a study about the energy performance of the masonry building stock, namely 74/4 one of the most used typology of housing. In order to generalize the situation, the energy performance is calculated for their existing situation (five story buildings), two story and one story:

Table 2 – 74/4 energy consumption

Energy performance	74/4
Existing situation (5 story building)	436.41 (kWh/m2 year)
Two story building	249.2 (kWh/m2 year)
Single story building	180.84 (kWh/m2 year)

3.5 Seismic retrofit

Before doing the energy retrofit we must check the seismic performance to control if the buildings can handle the new load from energy retrofit or not. The material deterioration can reduce not only energy efficiency, but also the overall structural stability of the building. For this very specific type of building, 74/4, was done a study for assessment and improvement of seismic performance. (Studies for contemporary techniques for masonry building reinforcement, Merita Guri). The study showed good results in reinforcing the building with modern techniques such as with GFRP , TRM and CFRP . It was done with “pushover” analysis that is based in determining the capacity curve with SAP2000 v15.1 software in accordance with FEMA440 and ATC40. The reinforcement with these techniques helped in raising the seismic performance so that building, 74/4, can withstand extra new load that will come from the energy retrofit.

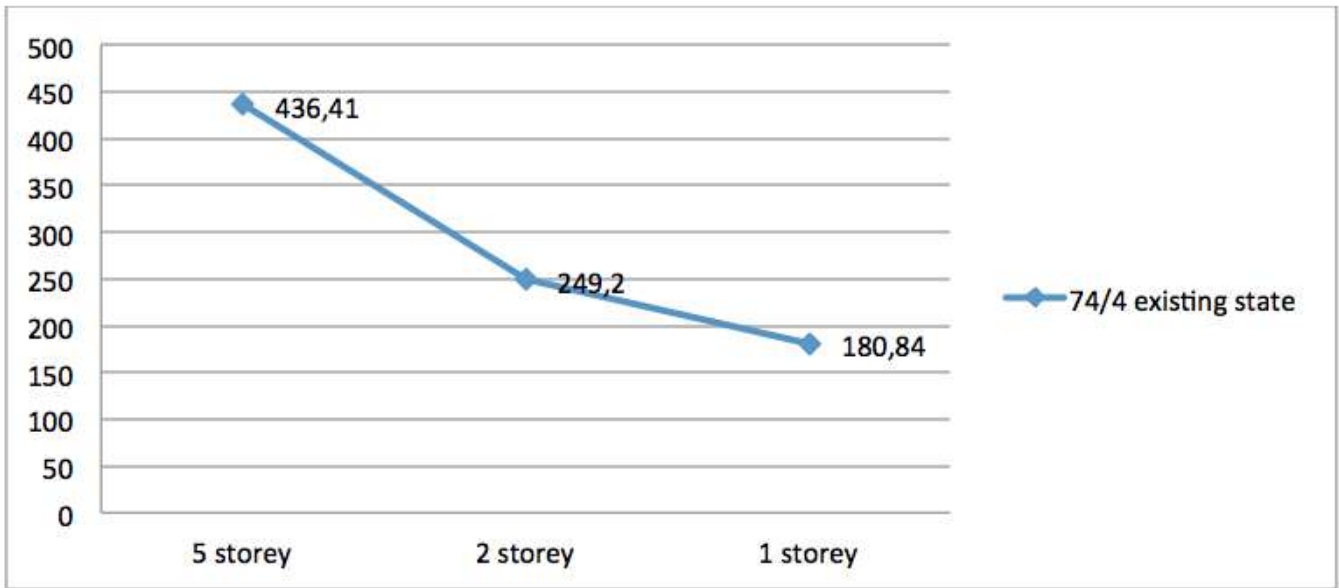


Diagram 6 - 74/4 energy performance

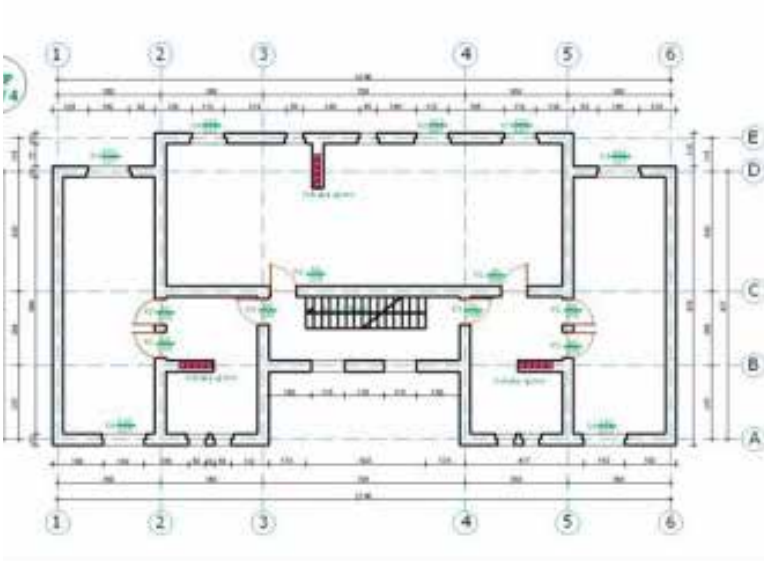
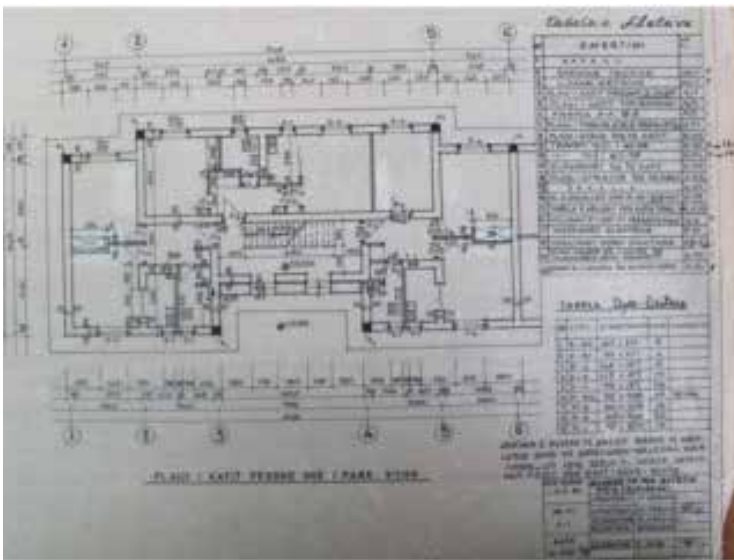


Figure 2 - House typology 74/4
Source - Merita Guri

3.6 Energy Retrofit

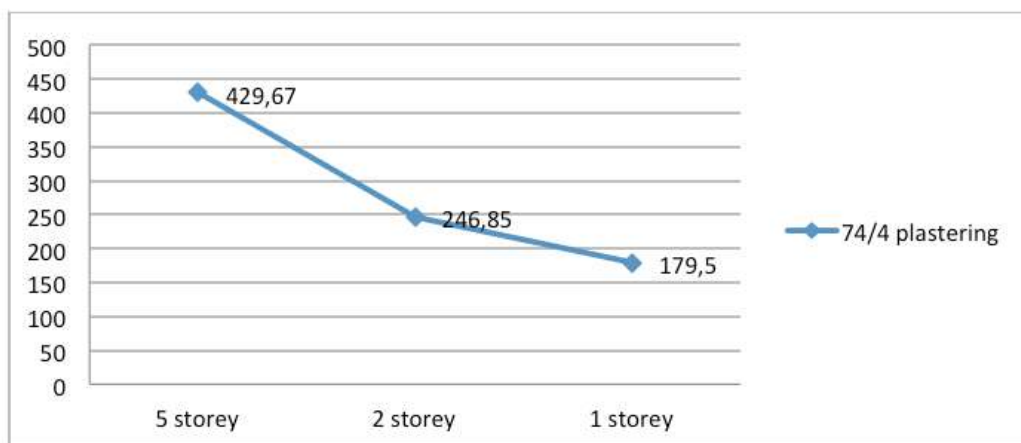
For this typology of buildings are proposed 4 scenarios of energetic retrofitting: plastering 2 cm, coating with 5 cm of polystyrene, coating with 8 cm of polystyrene and coating with 10 cm of polystyrene.

Plastering 2 cm

Table 3 – 74/4 energy consumption after plastering 2 cm

Energy performance after PLASTERING	74/4 (After plastering)	74/4 (before plastering)
Existing situation (5 story building)	429.67 (kWh/m ² year)	436.41 (kWh/m ² year)
Two story building	246.85 (kWh/m ² year)	249.2 (kWh/m ² year)
Single story building	179.5 (kWh/m ² year)	180.84 (kWh/m ² year)

Diagram 7 – 74/4 energy performance after plastering 2 cm



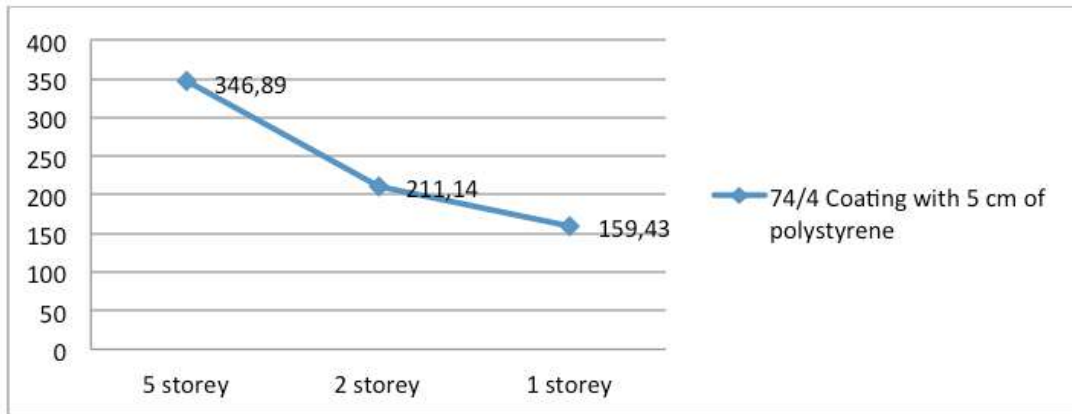
Here we see that the influence is very low in the overall energy performance, only 1% of improvement after 2 cm of plastering.

Coating with 5 cm of polystyrene

Table 4 – 74/4 energy consumption after coating with 5 cm of polystyrene

Energy performance after 5 cm coating with polystyrene layer	74/4(After intervention)	74/4 (before intervention)
Existing situation (5 story building)	346.89 (kWh/m ² year)	436.41 (kWh/m ² year)
Two story building	211.14 (kWh/m ² year)	249.2 (kWh/m ² year)
Single story building	159.43 (kWh/m ² year)	180.84 (kWh/m ² year)

Diagram 8 - 74/4 energy performance after coating with 5 cm of polystyrene



Here we see that the influence is very high in the overall energy performance, about 30% of improvement

Coating with 8 cm of polystyrene

Table 5 - 74/4 energy consumption after coating with 8 cm of polystyrene

Energy performance after 8 cm coating with polystyrene layer	74/4(After intervention)	74/4 (before intervention)
Existing situation (5 story building)	318.73 (kWh/m2 year)	436.41 (kWh/m2 year)
Two story building	202.2 (kWh/m2 year)	249.2 (kWh/m2 year)

Diagram 9 - 74/4 energy performance after coating with 8 cm of polystyrene



Here we see that the influence is very high in the overall energy performance, about 32% of improvement.

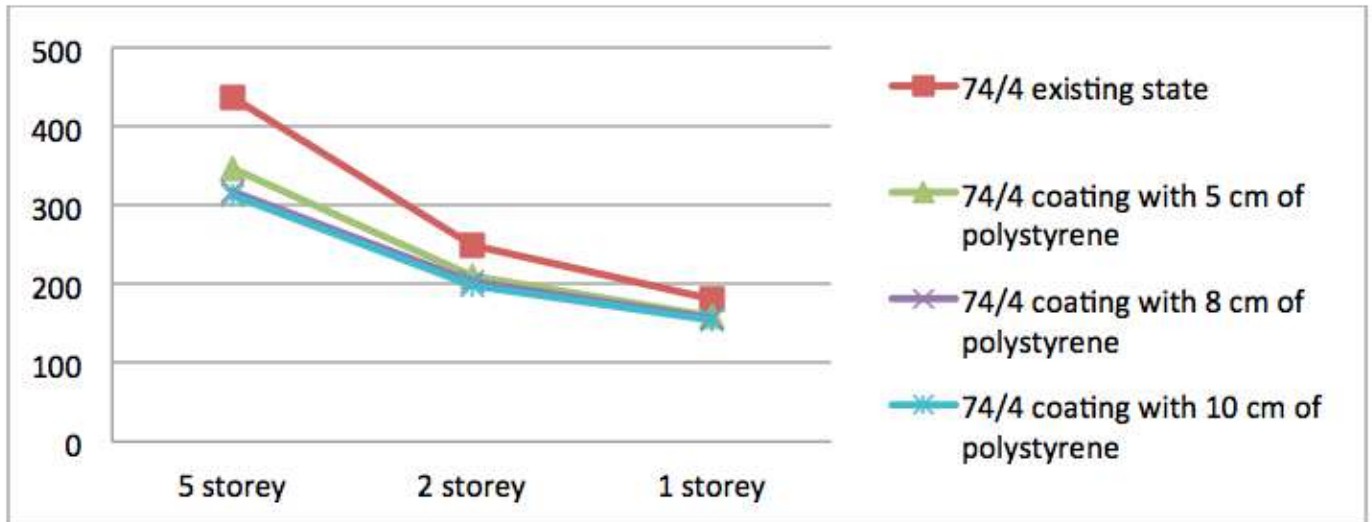
Coating with 10 cm of polystyrene

Table 6 - 74/4 energy consumption after coating with 8 cm of polystyrene

Energy performance after 8 cm coating with polystyrene layer	83/7 (After intervention)	74/4 (before intervention)
Existing situation (5 story building)	313.15 (kWh/m2 year)	436.41 (kWh/m2 year)
Two story building	199.56 (kWh/m2 year)	249.2 (kWh/m2 year)
Single story building	154.03 (kWh/m2 year)	180.84 (kWh/m2 year)

Here we see that the influence is very high in the overall energy performance, about 33% of improvement.

Diagram 11 – 74/4 energy comparison after retrofitting



In overall the difference for the case of thermo insulating the building with polystyrene in Tirana, the difference is not that significant between 5, 8 and 10 cm.

3.7 Cost analysis

The analysis will be done only for the three types of intervention that have a significant impact on energy retrofit, so we did not take in consideration plastering.

Table 7 – 74/4 energy consumption cost

Building energy performance before intervention	436.41 kWh/m ²
Annual cost for the building	9732 Euro
Annual cost for a family	486 Euro

Coating with 10 cm of polystyrene

Table 8 – 74/4 energy consumption and material costs

Building energy performance after intervention	313.15 kWh/m ²
Annual cost for the building	6983 Euro
Annual cost for a family	349 Euro

Coating with 8 cm of polystyrene

Table 9 – 74/4 energy consumption and material costs

Building energy performance after intervention	318.73 kWh/m ²
Annual cost for the building	7108 Euro
Annual cost for a family	355 Euro

Coating with 5 cm of polystyrene

Table 10 – 74/4 energy consumption and material costs

Building energy performance after intervention	346.89 kWh/m ²
Annual cost for the building	7631 Euro
Annual cost for a family	381 Euro
Cost of material	12 Euro/m ²
Facade total area	843.27 m ²
Cost for the building	10120 Euro
Cost for a family	506 Euro

4. Results

By the energy retrofit we see that retrofitting with 2 cm of plastering the influence is very low in the overall energy performance, only 1% of improvement.

When we do the retrofitting with polystyrene coating by 5, 8 and 10 cm, the influence is very high in the overall energy performance, about respectively 30%, 32% and 33% of improvement. In overall the difference for the case of thermo insulating the building with polystyrene in Tirana, the difference is not that significant between 5, 8 and 10 cm.

5. Conclusion and recommendation

By the investigation made on field we came in conclusion that the overall energetic performance of the building stock build before 1990, is not good at all. They have a high cost to the families that live there because of the energy loss. This loss of energy came as a result of material deterioration caused by different factors such as: Chemical and biological deterioration, corrosion, bricks and mortar erosion, mold and microorganisms diffusion, etc..

Before doing the energy retrofit we must check the seismic performance to control if the buildings can handle the new load from energy retrofit or not. The material deterioration not only reduce energy efficiency, but also the overall structural stability of the building

The results of energy retrofit show that plastering with 2 cm has no significant influence in the overall energy performance, so it is not recommendation to use for retrofitting.

The retrofit done with polystyrene coating shows good results in improving the energy performance. Taking in consideration the analysis cost and since it was no significant difference between 5, 8 and 10 cm in energy improving, it is recommended to use as energy retrofit polystyrene coating by 5 cm since it has the lowest cost to the families and no big difference in energy savings form 8 and 10 cm coating.

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[TEC/12]



The fixed scene of human events

Space, time and perception of the urban metropolis

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abstract

Today there is a theatre made of scenes that does not have a "real architecture" (using the scientific term expressed by Aldo Rossi): "Base or structure of human events that will occur inside or outside it", so what role does the architecture have in today's urban landscape?

Someone would think (wrongly): "secondary", since the city does not need it only, some of the functions (which architecture once played) are nowadays delegated to a simple "touch" on the screen of some technological equipment.

In the contemporary metropolis there is not only the need for "urban facts of a primary nature", since we can (partially) satisfy the feeling of inhabiting certain spaces by transferring ourselves to another form of city, i.e. the immaterial one. Therefore, we need a dynamic project for the urban periphery, that does not have the aim of conforming it to the "historical center", the periphery remains today an organism to frame and to be framed.

The contemporary urban project will therefore have to put into practice three aspects of the city: the formal city, the mechanical city and the (recent) immaterial city, it will be the aim of the architects to ensure that these aspects of the city will be linked in order to constitute the vision of the new contemporary metropolis

keywords Urban, Immaterial City, Retrofitting, Residential

Introduction

In tracing the meaning of "theaters", in light of today's urban dimension, it is necessary to consider its notion, starting from the observation made by Leon Battista Alberti that see them as: "[buildings] reserved for comedies, tragedies, etc. [and called] given their importance, theaters" (Alberti, 1452).

By projecting this definition on the contemporary city, it is very appropriate to compare the essence of the theatre scene with what contemporary cities performs on a daily basis, through images and graphical information; which are produced and displayed inside physical factors and not: architecture, infrastructure, IT devices, etc.

Objectives

It is thanks to the legacy of Aldo Rossi, and his studies on the city, that we can conceive urban morphology as a continuous progressive process which, from the second half of the eighteenth century on, has exceeded the spatial limits perceivable on a human scale, creating urban sites (some characterized and others still not well defined) and other "forms" of space.

The new "forms" of space to which we refer, derive reflections from some considerations already endorsed by Mitchell W.J. who stated that: "these new types of settlement will turn the classical categories like a glove and will



Figure 1: Michele Bagnato, the snails of the cities, picture, 2017

reconstruct the discourse to which architects have bound themselves from the classical era to the present". Finally, dwelling on the city, he will say: "It will be a city eradicated from any definitive point on the earth's surface and configured by the limitations of connectivity and bandwidth, rather than by the accessibility and value available to properties, largely asynchronous in its operation, inhabited by incorporeal and fragmented subjects that exist as collections of aliases and electronic agents. The soils will be constructed virtually by the software and not physically by stones and wood; these places will be connected by logical links instead of doors, landscapes and roads" (Mitchell, 1995).

Methodology

The contemporary man who lives (and makes himself inhabited) from the urban space, "consumes" part of the city's images through electronic devices, in which (using the term expressed by Aldo Rossi) «there is no theatre and there is no architecture» (Rossi, 1981); such technologies allow therefore to carry out some events that, formerly,



Figure 2: Michele Bagnato, fragments and events, picture, 2017

were particularly entrusted "to the architecture of the city"; that according to Aldo Rossi, who sees it under formal and temporal relationships, consists of: «primary elements around which buildings are aggregated» (Rossi, 1966). Therefore, it becomes necessary to reflect on the new urban dimension that surrounds us and sees us as protagonists, urging (taking up some of the ideas from Rossi's work) a "New Treaty" where beyond architecture, sociology, psychology, urban economy and computer engineering, «will take greater account, or simply can take into account, the physical environment, or the architecture of our cities» (Rossi, 1966).

Urban morphology that today is competing with the informal city. From the juxtaposition among the parts, such as: aspects of the formal city, mechanics (largely inherited from previous centuries) and aspects the immaterial one (only recently manifested), can reinvigorate that fascination of the architecture profession, which par excellence has had - and will always have - the burden and duty to anticipate the future of the urban morphology.

It will be a privilege for the architects to ensure that these three aspects of the city are linked in a constant dialogue in order to constitute the vision of the new contemporary metropolis, since they represent the holders of the aptitude for drawing (with various techniques) that, from the necessities of the project and revision of the city, increasingly assumes the meaning of: «creative imagination of an urbanistic or architectural organism [...] the solid base on which the design action rests, and on which it will always rest in the future» (Quaroni, 1977).

Therefore, investigating both the visible and the immaterial fields, which denote the physiognomy of the contemporary city, we notice that terms such as: "characters", "urban sociology", "urban morphology", "building

1 / "al suo livello più elementare, infatti, la fotografia prima ancora di ogni considerazione rappresentativa, appartiene essenzialmente all'ordine dell'impronta, della traccia di una variazione di luce riflessa da un oggetto reale fissata chimicamente su un dispositivo sensibile." (Simona Pezzano, <<L'immagine digitale, una vera falsa "nuova immagine">>, in *Leitmotiv*, n.4, anno 2004, p. 71. (www.ledonline.it/leitmotiv/)).

typology", "historical centre", "limit", "monuments", "residential areas" etc. and the term "city" itself, appear as remote and restrictive words, not exhaustive enough in classifying the intimate structures with which the places of contemporary living are gradually formed.

In contemporary times, where the impulse of images is no longer coming exclusively from the physical city, but rather, has become preponderated (under human observation), an infinite expanse of images descended from the immateriality of the digital, now that the same, instead of resembling the real, they simulate it, or even produce it, giving life to the era of digital images.



Figure 3: Michele Bagnato, view of the "decumano" in the Expo Milano 2015, picture, 2015

We know that, to our conscience, however limited it may be, it must - necessarily - pass through the image; image that no longer has the character of "imprint"¹ as it has been (and continues to be) the photography. The connotations that (today) it assumes, aim - mainly - to make sure that the photography is no longer a "copy" of an object that really occupies space in reality, but (real revolution of the image) immaterial model that drags the real objects (and therefore also the architecture) to imitate and simulate it; in order to be easily understood, accessible and communicative (as in fact it is also the digital image in its instant nature).

The turnaround, which sees in the - quick and instant - relationship: digital image (first) real -world (after), the true nature of "production, of social relations, of the conception of the same reality, then of the space"² means that it is natural to ask ourselves whether the current trend of architecture and the city is to be a real "simulacrum" of the digital image; probably the city itself is changing its appearance (derealising or hyperrealising itself) to not "succumb under too much reality" (Baudrillard, 1998).

In order to understand the dynamics that link the image to architecture and therefore to the city, it seems appropriate - and dutiful - to resume the essays which, in various ways and with different case studies, have treated the theme of the image; but specifically under the aspect of architectural images. In a recent "writing" of Professor Gianfranco Neri, image and communication are investigated as to today, playing a decisive role in the construction - continued - of urban morphology; in fact, (quoting textually some parts of the essay), Professor Gianfranco Neri says: "communication and [...] image, as is known, has produced in the last twenty years [to today more than thirty] a reversal of tasks and aims of architecture. A reversal that bases its foundations on new digital technologies that, in addition to radically change the production and organization of the work systems, have definitely deeply changed the consumption habits of millions of people, their way of living and communicating"³. The example - more common - tangible (perhaps banally expressed), which in fact testifies to the changed condition of living, of communicating and of consuming, and the lay the foundations of new digital technologies, is that of the "image-interface", that appears every time someone "unlocks" a mobile device; this image allows

us to access - subsequently - (with a touch) the apps (installed), each of them characterized by a specific icon; this process of “entering into the image” is a “new” aspect that the image has assumed for the last ten years, with the further addition that, thanks to the use of it, we are allowed to completely fulfil a more certain functions, once entrusted exclusively to the real space of architecture and of the city⁴.

This common “mono-directional” and “mono-sensitive”⁵ experience of interacting and living - daily and constantly - digital space (in our own way) is also strongly influencing the perception (and design) experience of contemporary architectural and urban space; the visual experience - instantaneous, superficial and atypical - coming from the bulimic consumption of digital images, tends to be reverberated even in urban space.

Conclusion

If it is true that: “The architectural image is therefore the image of a society” (Purini, 1989). At the end of the philological reflections (shown above) it could be argued that contemporary architecture (and the experience of living the space) tends to incarnate, derive, “cite” and build itself starting also from virtual images and not only, then, from the real city . The critical position to take in the next few years will be to check if architecture - as well as the city - is increasingly taking on the value of “simulacrum” of the digital image, the latter: preconstructed and functioning; analyse this against the trend that is affecting the contemporary architectural “scene”, synthetically expressed by the relationship: “from the image (digital) to the model (urban morphology)” and no longer “from the model to the image”.

“What we lack, today, is [...] the ability to accept that the world
is not only the place of the possible and of all possibilities but also the place of the impossible,
of the unexpected image. The world is not created, according to cause and effect,
but is the infinite creator of images.

If someone is able to put himself at the level of such a thought, then poetry
[and the understanding of all human arts] is that knowledge capable of exposing oneself to the infinite creation
of images, that is, to the world”. (Ferrari, 2013)

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2 / Gianfranco Neri, “Oltre il vuoto il tempo?”, soon to be published (for kind concession of the author)

3 / Gianfranco Neri, “La messa-in-scena delle città”, in Enrico Ansaloni, *op. cit.*

4 / We refer to the possibility of buying anything on the internet (therefore thanks to the digital image), avoiding physically traveling the urban space in order to satisfy a need.

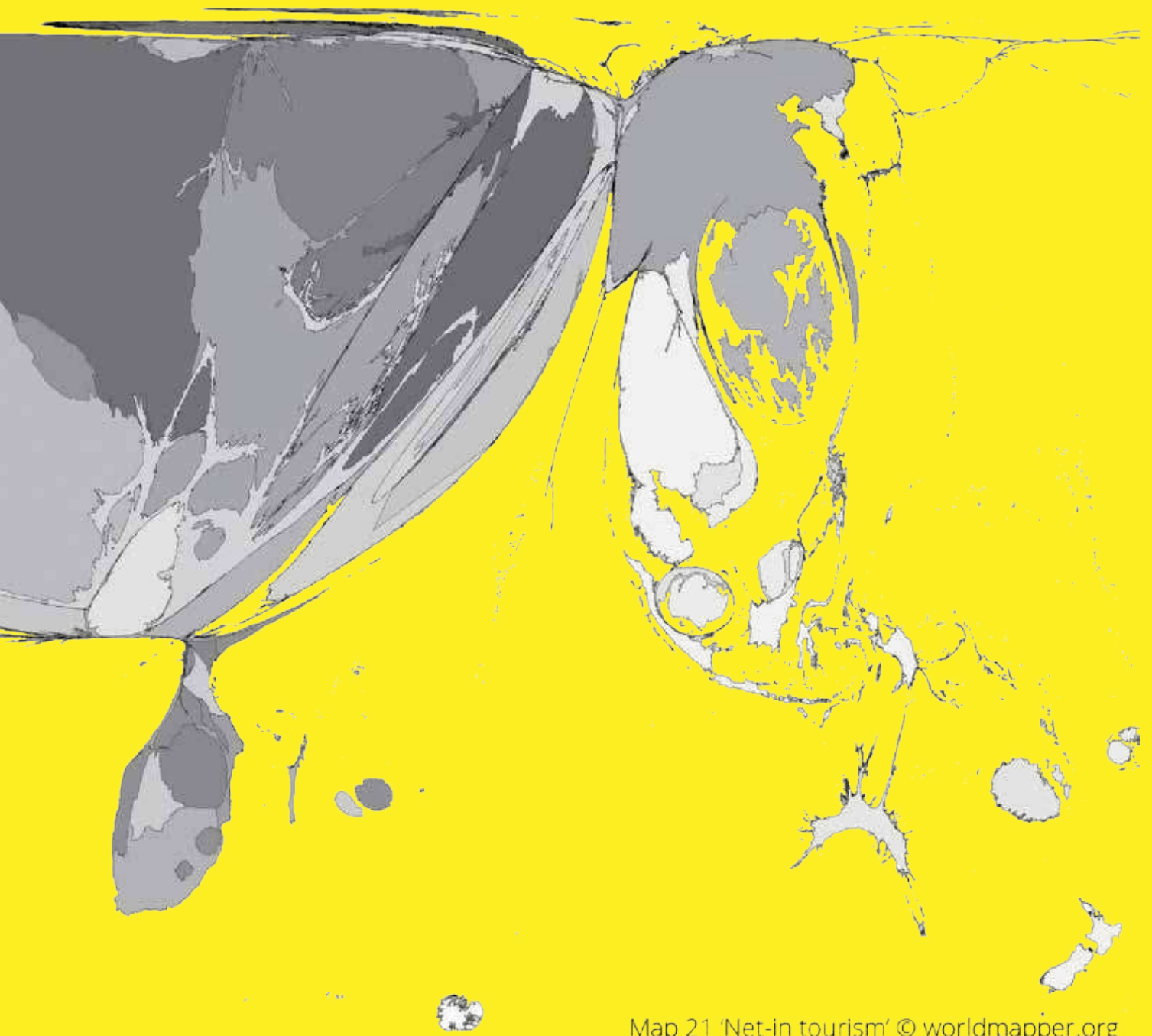
5 / “The unstoppable rush to the exuberant technology that, from modernity, has put us in a position to focus our attention particularly on one of the five senses: the view [...] of communicating and expressing oneself, with the tendency to do so in a way as quick as possible” (Enrico Ansaloni, *S(p)et City*, PhD Thesis defended at Architecture Faculty of Reggio Calabria, A.Y. 2005-06, p. 305.)



[tourism]

in **2016** more than
1235 million tourists
travelled around the world

[unwto.org]



Map 21 'Net-in tourism' © worldmapper.org

Tourism is a strongly impacting global phenomena, which represents both an opportunity and a risk for societies and territories. Touristic fluxes challenge architecture, cities and landscapes, by pushing the limits of reception capacity and influencing the economic, social and ecological conditions of countries. Through evaluation, comparison, and integration approaches toward tourism, this session aims to explore and observe the impact of tourism on cities and landscape from a multi-disciplinary perspective. Researchers are invited to contribute to this session through relevant tourism studies, providing an in-depth understanding of the touristic phenomena in a specific place or region, and focusing on its impact on the relationship: tourism-citizen, tourism-city, tourism-landscape and tourism-architecture.

[TOU/01]



Rethinking Benicàssim future: transforming a tourist municipality according to the City Concept

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abstract

The transformation of a coastal rural municipality into a tourist one is a recurrent process in a large part of the Spanish Mediterranean municipalities, since the tourism irruption in the sixties of the last century. The associated urban transformation, with a strong expansion of existing built space, modified not only the urban shape but also the way of relating to the surrounding rural space (both with the coast and the inner territory).

Benicàssim is one of these municipalities, and it has been developed by the real estate sector, having residential tourism as its main economic activity. The small historical population nucleus, located at a certain distance from the coast, had barely grown over the centuries, but it has expanded in recent decades to conform a built-up continuum, occupying the entire seafront with slabs isolated in its plot, and later the inland area with a typology of single-family houses. This rapid expansion has generated an urban space that lacks the elements that would provide it with an appropriate urban functional structure, such as public facilities and public space.

Unlike other coastal tourism municipalities, Benicàssim has great stability as a tourist destination because most of its seasonal population during the summer months comes from neighbouring municipalities, mainly from Castelló de la Plana, the capital of the province. Faced with this reality, we postulate that the solution to eradicate the urban problems of Benicàssim in the medium and long term should be based on interrelated urban interventions aimed at providing the characteristics that identify the City Concept.

keywords City Concept, Benicàssim, Urban Intervention, Tourist Destination

Introduction

The irruption of tourism in the mid-twentieth century was a phenomenon that generated a great expansion of the urban space in some places “discovered” for rest and leisure within small urban centers scattered throughout the rural areas of the Spanish Mediterranean territory. In these municipalities, a great contrast appeared between the preexisting built areas and the new developments promoted by an economic activity that grew exponentially (Sánchez Cabrera, 2011).

These large urban growths and the monopolization of economic activity based on tourism was generalized over the rural municipalities of the Spanish Mediterranean coast until the “explosion” of the real estate bubble in 2007. Throughout this period, many coastal municipalities turned into tourist destinations have gone through different phases (Butler, 1980), the last of which will lead to its decline if interventions aimed at renewing its tourist assets are not carried out.

However, if we consider these coastal municipalities not only as tourist destinations but as inhabited and habitable urban spaces, the interventions to be carried out would not be focused solely on meeting the needs of the visitor but also, and to a greater extent, the needs of the resident.

Given this fact, we postulate that, in order to renew their tourist attractions and improve the quality of life of residents, the development model needs to be revisited according to the characteristics of the City Concept, that is, those necessary to consider a specific space as a city, and incorporate new economic activities in order

to attract permanent resident population. Therefore, the aim of this paper is to analyse the coastal municipality of Benicàssim and propose an intervention strategy that would help its transformation and urban improvement.

Objectives and methodology

The aim of this paper is to analyse the tourist municipality of Benicàssim regarding the characteristics of the City Concept, and proposing an intervention strategy accordingly. To achieve these objectives we have deepened the knowledge of the municipality through its historical evolution and the detailed study of the current urban space. This analysis was carried out through geographic and photographic computer tools (Qgis, Bing maps and Google maps) and on-site visit to the municipality. The analysis is reflected in different drawings (height of the buildings, location of public facilities and public spaces, offer of tourist accommodation, etc.).

The reality of the tourist towns resulting from their evolution over time

There are different theoretical models that explain the evolution of tourist destinations. The three with greater acceptance (Miossec, Chadeaud and Butler) agree that this evolution is made through consecutive phases and that tourist destinations reach a point of saturation from which it is necessary to make interventions on them to renew their tourist attraction (Vera Rebollo, López Palomeque, Marchena and Antón Clavé, 2013). According to Butler's model (1980), the life cycle of a coastal municipality as a tourist attraction routes it inexorably, by its very nature, to the loss of attractiveness from the moment it exceeds its carrying capacity, and at that point the negative consequences derived can only be alleviated with the continuous intervention in the population nucleus of the agents involved. Therefore, the urban and territorial model on which the development of the tourist municipality is based pushes it to its own destruction as a destination for tourists. In addition, it can be only alleviated the problems, not corrected the causes, because the main problem is the model itself and, therefore, the results obtained are sooner or later consubstantial to it (Donaire and Mundet, 2002).

There are two main problems generated. On the one hand, in those cases in which the historical nucleus was inside the territory, a great urban expansion has taken place in the rural area in contact with the coast that has given it completely the back to the historical core. On the other hand, the great urban growth has had a strong and almost unique residential character with the aim of generating accommodation for tourists (Ferrer Marsal, 2002). This urban development is carried out almost exclusively with second homes that are underutilized because they are only used during weekends and holidays (García Nart, Llauger and Socias, 1991). In addition, this growth has not ensured the minimum standards of public space and facilities corresponding to the population that may be able to endure during the peak tourism months (Perlado and Elorrieta, 2007).

That is why the model that supports most of the consolidated tourist municipalities of the Spanish Mediterranean presents undesirable and perverse effects, is destructive of the values on which it is based (the environment, the landscape ...) and, consequently, it is unsustainable in the long term.

Faced with this described reality, we consider that there exist -in the field of theory- three options to avoid this announced collapse: (1) the maintenance and consolidation of the residential function; (2) the elimination of the last decades urban growth or (3) the transformation of the model by increasing its complexity and introducing the characteristics of City Concept. We opted for the third option because the first one does not assume the problems generated and, therefore, it cannot provide a solution, and because the second option is impracticable.

We must start from two essential conditions in order to carry the third option out. On the one hand, the limitation of the action of urban regeneration to the existing constructed area (Tuset and Temes, 2015) and, on the other hand, the substitution of the most propitious residential buildings for elements that are lacking in the urban nucleus (public space, green areas, public facilities or local commerce).

The seven intrinsic and essential characteristics that identify the City Concept, which should be achieved in tourist towns to transform the model, are: (1) having public space that spreads and orders the urban nucleus in the different urban scales (block, neighborhood and city); (2) offering minimum services (sewerage, water supply, ...) and the necessary facilities for everyday life (institutional, educational, health, cultural, religious, sports and leisure); (3) having a variety of land uses (residential, commercial, non-residential and tertiary) distributed throughout the urban fabric; (4) having elements of centrality (public facilities and open public spaces) that organize and hierarchize the urban structure; (5) considering the citizen as the unit of measurement in the different scales of the city; (6) existing a public transport network that connects the different neighborhoods; and (7) making the pedestrian protagonist of the public space (Oliva i Casas, 2006).

Benicàssim: The urban appropriation of the intermediate space by residential tourism

Benicàssim was during seven centuries a rural town with little population and an economy based on the primary sector in which, taking into account the takeoff of mass tourism in the middle of last century, it was decided to make this sector the economic activity par excellence. For this, it was developed an urban-tourist structure of linear

and intensive nature, conditioned by a stationary residential demand in the summer months and characterized by a generalist offer with little specialization (López Olivares, 2002; López Olivares and Ferreres, 2012). Therefore, its economy has been based on construction, real estate activity and trade, with a highly developed second homes that contrast with the little economic weight of the hotel sector (Mazón and Huete, 2005).

These characteristics (the linear development, the predominance of the second residence and the strong seasonality of tourism) have caused that the main urban problems would be those related to the lack of facilities and services in the entire residential-tourist area between the traditional nucleus and the sea. (López Olivares and Ferreres, 2012).

1. The urban conformation of the current tourist municipality

Although the population nucleus, located 1 kilometer from the coast, has its origin in the so-called Christian Reconquest (1232-1245), its urban space remained unchanged over time and practically uninhabited for long periods until the middle of the 19th century, when several houses were built on both sides of the road that connected Valencia with Barcelona (Quereda Sala, 2006; Ortells Chabrera, 2006).

The arrival of the North train in 1872 boosted the urban growth of Benicàssim. On the one hand, the construction of the train station with its adjacent square outside the historic center, in the area close to the coast, became the focus of attraction towards which the urban nucleus grew. However, the railways themselves would become over time a barrier that would limit growth towards the sea (Santos Ganges, 2006). On the other hand, the train also led to the urban settlement of Las Villas (whose name appears in the gazetteer in 1887) in contact with the sea (Arnandis and Obiol, 2009).

The historic core will have a growth in continuity with what was built with two different dynamics (the connection with the station and the axis of the national road), while Las Villas ex novo core will expand along the first line of the seafront. The connectivity provided by the railway and the climatological and topographic characteristics made this coastal core an attractive place for the wealthy society of the nearby large cities (Castelló and València). However, until 1960 the municipality continues to be based on a rural economy with the particularity of having a tourist space in Las Villas. It is from 1961 when they begin to build apartment buildings to accommodate visitors during the summer. Although it is tried to put order through the PGOU 1963 (General Plan for Urban Development), the buildings that were made before 1980 did not respect any height criteria to give uniformity to the urban skyline, which generated a great visual impact, especially in the area of Las Villas due to the contrast that occurred with respect to them. This building permissiveness provided two realities. On the one hand, the first seafront line was colonized by apartment buildings of up to 17 floors with a zig-zag disposition that allowed the sea view from the second-line blocks, and, on the other hand, this building typology was transformed into single-family homes as we move away from the coast (López Olivares, 2002; Quereda Sala, 2006; Ortells Chabrera, 2006).

Therefore, the current municipality is the result of the union of the traditional nucleus with the ex novo one that emerged in contact with the sea, which, once colonized the first coastline, extended into the interior to fill the rural space existing between both urban nuclei. This is a clear example of the coastal municipalities of the Valencian Region, which have been transformed into residential municipalities, in which its concern is not to satisfy the tourist demands, but lies in how to manage the land, which is the resource that allows to continue growing (Vera Rebollo and Ivars, 2002).

2. Particularities of Benicàssim as a tourist destination

Benicàssim is currently a municipality that has turned all its economic activity in tourism, with the particularity of being a city of replacement during the summer as the majority of its temporary residents, eighty percent, come from the neighboring municipality of Castelló de la Plana, which is the capital of the province. This characteristic of the origin of the apartments and single-family homes' owners, which use them as a second residence, gives it greater stability as a tourist destination compared to other coastal municipalities, Spanish or foreign, as its power of attraction does not depend on the initiatives or strategies of the tour operators (Quereda Sala, 2006; Arnandis and Obiol, 2009).

The situation of Benicàssim regarding the City Concept

If we compare the characteristics that we have identified as own and essential to catalog an urban space as a city with Benicàssim, we observe that almost none of those are met, especially in the tourist zone. It exists absence of centrality elements that structure the urban fabric due to the lack of day-to-day public facilities and the residual character of the public space; monopolization by residential use; and dependence on private cars to move around the interior of the municipality. All this shows, at the same time, that the citizen has not been the unit of measurement used to conduct the urban expansion of the last decades (Table 1).

Table 1: Comparison between Benicàssim and the characteristics that identify the City Concept / Source: Own elaboration from Oliva i Casas (2006).

Characteristics that identify the City Concept	Description of the characteristic	Does it meet the characteristics?
Public space	The public space structures and orders the urban set in its various units (block, neighborhood and city). It is a relationship space that can accommodate a wide variety of uses. It has a dimension that gives it monumentality.	No. Only in the historical nucleus
Services and Public facilities	It has the minimum services of sewage system, water supply, garbage collection, etc.	Yes
	It has the necessary facilities for everyday life (institutional, educational, health, cultural, religious, sports and leisure).	No. Only in the historical nucleus
Variety of uses	It has a variety of uses (residential, commercial, non-residential and tertiary) distributed in the urban fabric.	No. Only in the historical nucleus
Centrality elements	Elements of centrality (facility or open public space) that order and hierarchize the urban structure.	Only sports facilities
Human scale	The citizen must be the unit of measure for projecting and evaluating public spaces and their relation to the constructed, the existing distances between the different daily functions, etc.	No. Only in the historical nucleus
Public transport	Existence of a transport network that connects the different neighborhoods of the urban area.	Yes. A private company has two regular lines
Pedestrian prominence	The pedestrian is imposed on the public space over private vehicle. Foot travel and proximity social relations are promoted.	No. Only in the historical nucleus

Therefore, if we analyze Benicàssim as a whole, we observe that it complies with a unique characteristic to be considered a city (the interurban transport provided by a private company). However, if we analyse the historical nucleus independently of the rest, we would observe that it complies with all the characteristics. In this case, this area shows that, although it has all the complexity of the city, it does not have the scale that it is presupposed since the short distances between the furthest points in its interior make the use of public transport unnecessary. On the contrary, it becomes essential to connect the entire municipality as a whole. Thus, this analysis shows that the historical nucleus is self-sufficient while the expansion linked to tourism is strongly dependent on it, although due to its spatial continuity it forms a single urban nucleus.

With regard to the existing facilities in the municipality, most of them are located in the consolidated urban core, which is promoted as a service provider space (López Olivares, 2002). In the tourist-residential area, only the health centers and the churches could be well located, in our opinion, since they are distributed in all their extension. However, these health centers are only operational during the summer season, highlighting the seasonality of the municipality. Regarding the transportation facilities, which have had a great influence on the growth of the municipality, the diversion of the railway to eliminate the barrier generated between the historic core and the tourist-residential expansion area has caused the expulsion of the new train station to the outskirts of the urban space, propitiating the urbanization of the rural space between both.

As we have pointed out, the historical core possesses the complexity of the city, but it does not have the scale to be considered as such, for which reason all actions aimed at providing the municipality with the characteristics

of the City Concept should be carried out in the tourist area. So few citizens living the whole year in the urban nucleus does not allow the construction and maintenance of the necessary facilities for daily life that could attract new residents. For this reason, the interventions of revitalization of the urban space to give it a continuous use during the whole year can only come from the scope of the local government, through integrated actions that allow reaching this objective in the medium or long term.

Proposed interventions to transform the model of the municipality

Before starting with the interventions, it is necessary to establish the urban limits within which the urban space must be contained. In the case of Benicàssim, as in many other population centers of the Spanish Mediterranean, these limits are not restricted to the municipality itself, since urban expansion has exceeded administrative limits and urbanization has extended in continuity with the built on the term of Castelló de la Plana. If we did not limit the intervention area to the already built space, the use of the peri-urban space would be the easiest and least contested solution by private interests to take care of the deficiencies detected. If it was made, it would generate an increase of urbanized space and the consolidation of a structure of poor public space that currently does not structure the existing built space.

Therefore, once the perimeter is fixed, it is essential to provide the peri-urban space with structure and identity so that it serves as a transition between the urban and the rural and so that it becomes an attractive natural space for citizens, integrating it with the inner green element and public spaces of the urban area.

Regarding the urban space, it should be noted that the promoted building typology, characterized by the existence of isolated buildings in a plot surrounded by green areas for private use, hinders the consolidation of a public space with vegetation network that structures urban fabric because it does not exist the perception of having a lack of the green element. That is why, perhaps, the solution for Benicàssim should focus on creating the network of centrality elements by including the facilities of daily use and the enhancement of the existing public space. To do this, the passage of vehicles through certain streets should be restricted to pedestrianize them, enhancing the displacements on foot. In these streets, in addition, it would be interesting to promote commercial activities, which would act as an attraction focus. Therefore, these pedestrian streets should form an urban plot that facilitates and encourages the displacements on foot through the municipality and the pedestrian connection between the inner urban space and the sea.

For the location of the facilities that are lacking in the tourist-residential area, it should be taken advantage of empty lots, as well as degraded or existing obsolete areas scattered throughout the urban fabric. In the case that in an area with lack of facilities there were no such spaces, one should opt for the purchase of a single-family home for its implementation. The decision to opt for single-family homes is due to their lower acquisition cost compared to the apartment blocks; its greater ease of management, having to negotiate only with an owner; and its location in the municipality, since being in the second seafront line, they have a centrality condition with respect to the width of the built space. On this residential area of single-family homes, it would also be interesting to increase the density by replacing some of these houses with multi-family blocks that would bring the commercial function at street level.

Plan 1 shows the proposed intervention strategy. It also indicates the existing facilities (except the tourism and leisure ones) and the existing urban green areas for public use, since on these existing elements the strategy will be sustained. This strategy proposes to enhance a pedestrian network of longitudinal and transversal routes that structure the city. On the one hand, we propose four longitudinal routes: two in the residential-tourist area (Seafront and Jaume I) and two in the historic center (the axis of confluence between the two growths and the Castelló Avenue, which in the North breaks and connects diagonally with the sea). In the case of the Seafront axis, it is proposed its bifurcation in two elements: one that runs parallel to the coast and another that is parallel to Jaume I Avenue and that connects with an educational facility. On the other hand, the transversal routes seek to reinforce the relationship between the coast and the interior of the urban nucleus.

In this plan, opportunity spaces have also been identified within the urban space that could accommodate the detected lack of facilities, public space or green areas. These spaces have been differentiated into two types. On the one hand, the plots, sites subject to the urban plot that are not built. On the other hand, those sites that already have a use (residential, services, commercial, etc.) but that due to their characteristics (having few owners and being located in areas with great lack of facilities and public space) can be used to alleviate these scarcities and to create and strengthen the urban structure of the municipality.

Finally, among opportunity spaces detected, locations are proposed where the facilities deficiencies (educational, health, administrative or cultural) could be resolved or new public space created. The selected sites respond to

the condition of being in contact with existing public spaces or with the proposed pedestrian routes, so that in this way centralities are generated and the urban structure that is the backbone of the urban space of the tourist-residential zone is made up.

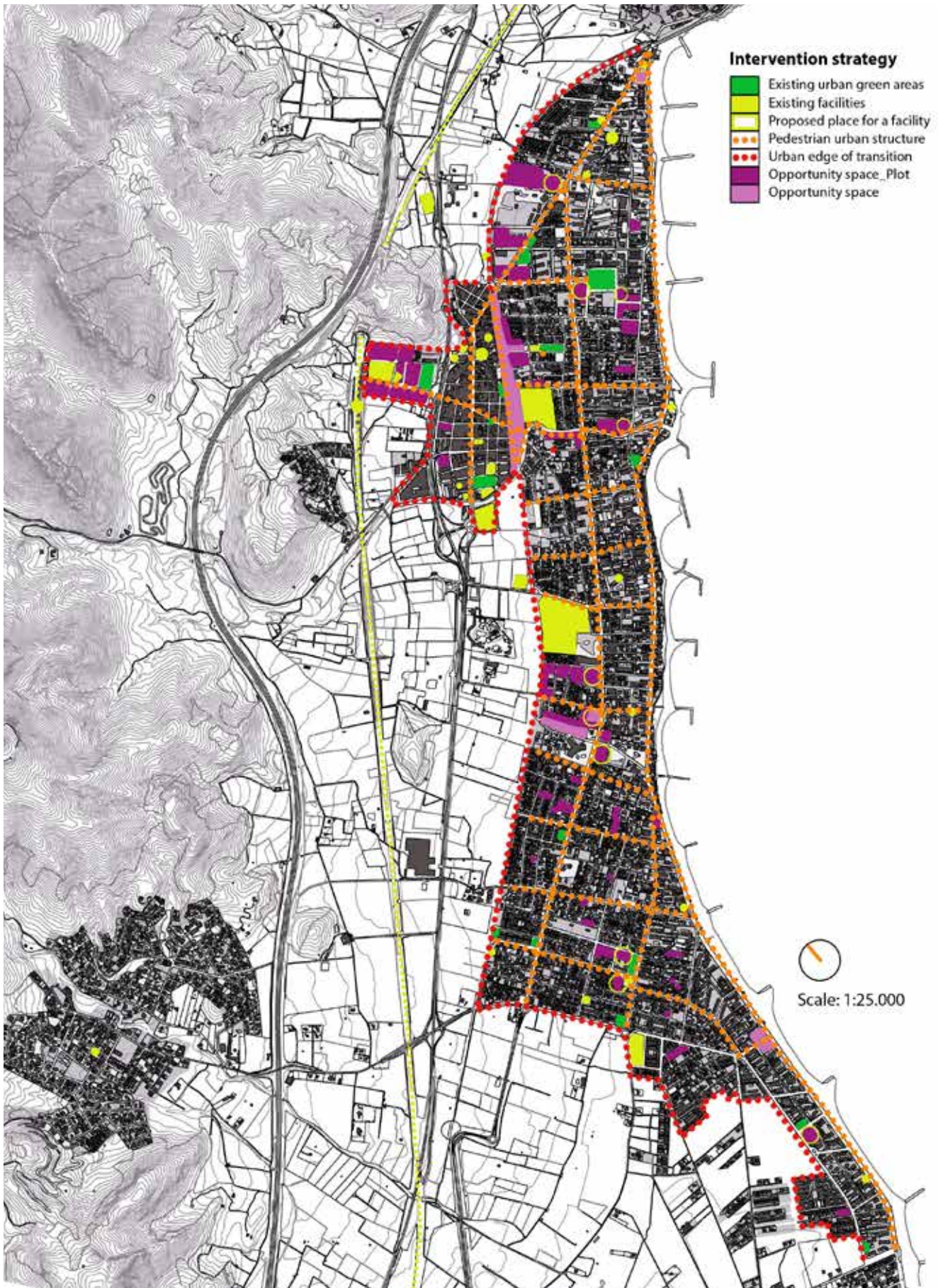


Figure 1 / Plan of proposed intervention strategy.

Conclusion

To renew a coastal urban nucleus as a tourist destination and break with the seasonality characteristic of most of these Spanish Mediterranean towns, it is not enough to influence the tourist scope, but rather to act on the physical space through urban interventions. These ones should be focused on introducing complexity in the urban fabric through providing it with the characteristics that identify the City Concept. This not only diversifies the tourist offer of the "sun, sea and sand" product with the offer of the urban fact, but it can also improve the urban nucleus and alleviate the deficiencies detected. In this way, it would be encouraged the increase of the permanent resident population and with it new economic activities may appear, breaking with the strong dependence on the seasonality of tourism and revitalizing the shared physical space.

In the case of Benicàssim, it is a longitudinal urban nucleus parallel to the coast formed by the union of the historical nucleus and the urban expansion of the ex novo nucleus that emerged in contact with the sea. The municipality abandoned traditional economic activities to throw itself into those derived from residential tourism: the construction and sale of second homes for seasonal use. Although this is a dynamic strongly extended by the Spanish Mediterranean, the particularities of the municipality (housings are used mostly by the owners themselves and a large number of them have their permanent residence a few kilometers away) allow us to sense a greater ease to attract and fix permanent residents by transforming these homes into first residences. To propitiate that, it would be necessary to provide the municipality with the characteristics of the City Concept that it lacks, through urban interventions in its tourist-residential zone. These should focus on the introduction of the non-existing daily use facilities, public space and/or commercial use. All these elements would be interrelated to create and consolidate an urban structure that would organize the urban space. In this case, vacant lots and degraded areas are ideal sites to host these functions. Only in completely built areas, it would be essential to replace buildings to solve the lack of facilities.

Although the proposed interventions would improve its tourist attraction and their urban space, with the beneficial consequences of improving the quality of life for its residents, we must bear in mind that the transformation of a tourist municipality into a city is a complex phenomenon. It necessarily requires the confluence of three factors to achieve the goal: political will to lead the actions that are necessary to eliminate urban deficiencies detected, citizen awareness of the need to change the model of development and enough time to be able to execute the necessary interventions.

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[TOU/02]



Urban Tourism, Impacts and strategies

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abstract

In 2030 the World Tourism Organization (UNWTO) expects 1800 million international tourist travels around the world. This volume, in comparison to the 25 million that travelled in 1950, reveals an exponential growth in tourism, not only resulting in great economic advancement, but also in impacts that become ever more evident. The post-modern city has turned out to be touristic, leaving behind its industrial form, learning to manage its own success, but struggling to find a balance. The increase in tourism flows through air, road and sea making tourism an economic tour de force that has spread across cities and reaches out to almost every neighbourhood.

Tourism and tourists have become a part of every city, and its presence doesn't go unnoticed. Their undeniable impact on aspects such as housing, public space, commerce, and mobility has made cities become more creative and resilient with their strategies. The case of Barcelona works as an urban laboratory for this matter, on one hand for its international touristic success, as well as for the recent measures undertaken.

This article will make use of that, comparing local strategies with other measures implemented on some of Europe's most visited cities, such as Amsterdam, Berlin, London, Paris, and Rome. The various impacts of tourism, resulting from the growing flow of tourists, are a common issue in such cities where each one has found their own balance. The comparison will give us a base to propose some recommendations.

keywords Tourism, Urban Tourism, Barcelona, Urban Planning, Strategies

Introduction. The dimensions of the phenomenon

Tourism is a relatively modern phenomenon that impacts a large number of cities. Economically, according to the World Tourism Organization (UNWTO, 2016:3) it represents 10% of a country's Gross Domestic Product (GDP), employs one in every eleven workers, moves 1.5 trillion dollars in imports, represents 7% of international exports and accounts for 30% of all services all over the world.

However, as can be seen in Figure 1, the distribution of tourists and their receipts is very uneven. Europe is the most popular destination, receiving one in every two tourists, where Spain receives one in every seventeen. Asia and Pacific receive half as many as Europe does, but follow closely in international receipts.

On an urban scale, according to 2015 data provided by MasterCard (2015:7), the main tourist cities in the world appear to be grouped in two main areas (Figure 2). One group is located in Europe, with the largest agglomeration, and the other, on the Asian coast.

Most strikingly is the little weight urban tourism has on the American continent; where the only two cities appearing are New York and Los Angeles. In Europe, the main centre pivots between London and Paris, with 18.9 million and 16 million annual visitors respectively. Asia follows the European path very closely, moving positions in the ranking of the "Global Top 20 Destination Cities by International Overnight Visitors (2015)", where they occupy 8 positions (Mastercard, 2015:8)

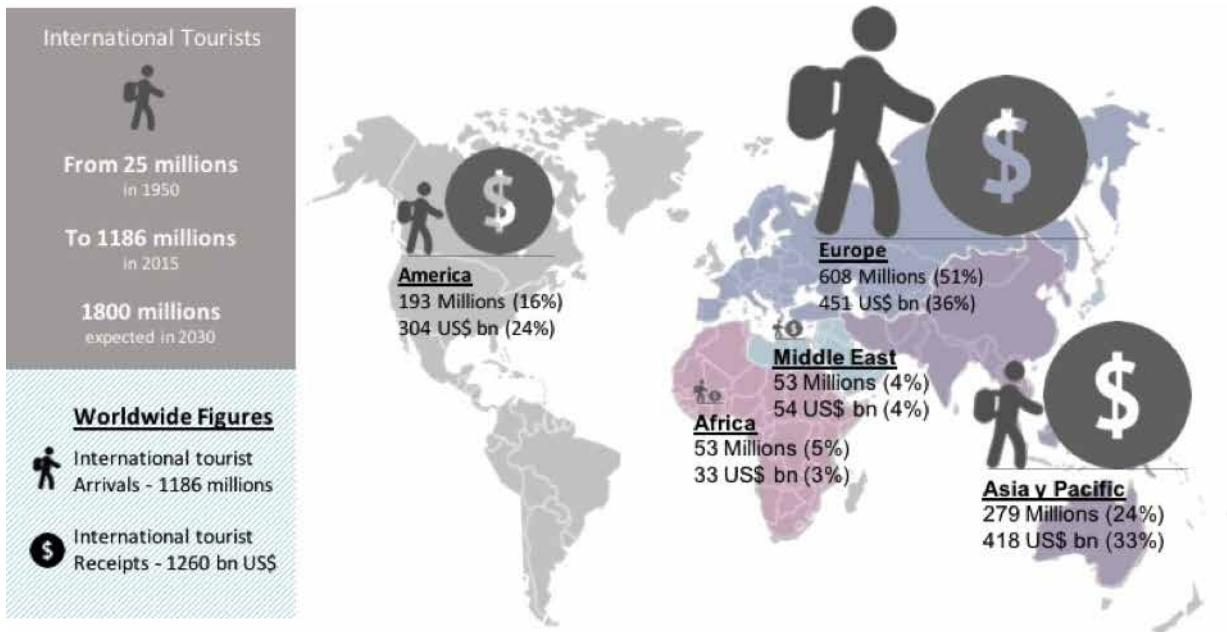


Figure 1 International tourist distribution on a global scale. Source: Elaborated by the authors, based on UNWTO (2016)

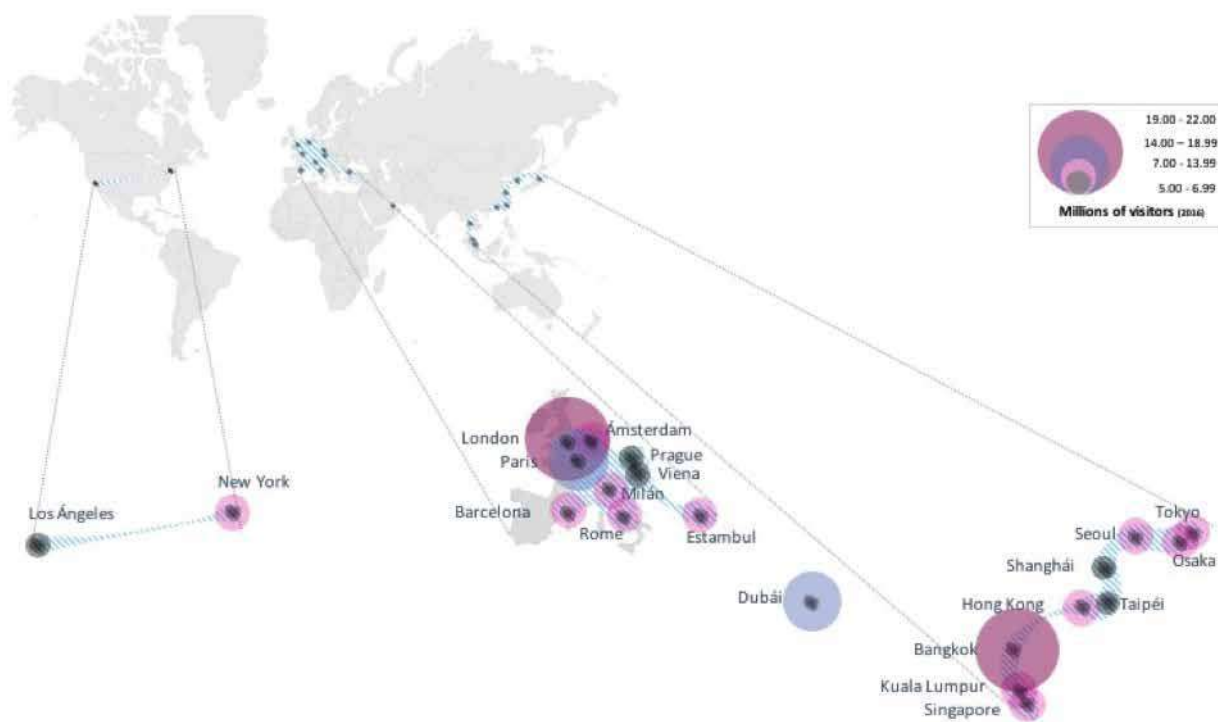


Figure 2 Main touristic cities in relation with the number of visitors. Source: Elaborated by the authors, based on UNWTO (2016)

The continuous increase of these numbers calls upon reflection of the impacts, resulting from 1186 million international tourists, and the strategies that governments have to follow to diminish the pressure on their cities and citizens. With regard to urban planning, tourism has been one of the most important urban development phenomena in the last 50 years. While the industrial city has grown, urged by industrialization, commerce or housing; on the coast, the tourist city has been driven by consumption, entertainment and landscape; as for urban tourism, the attention revolves around the city as a whole, promoting all its attractions, emphasizing on the “must see” and the “authentic”. In less than half of a century, the forms of urbanization have gone from focusing on work and production to leisure and consumption.

The transformation of the city, and the gaze of its citizens and tourists, are directly related with the passing of Fordism to post-Fordism, which took place at the end of the C. XX and early C. XXI. The tourist goes from buying a cheap but massive product to requesting a much more personalized one. Thanks to the emergence of low-cost airlines and the opportunities offered by digital booking systems, tourists can choose and organize a trip to their liking. The impacts of low-cost were different to what we see now. Low-cost companies aimed for a

reduction of the basic costs - airport and personnel- using the secondary network of airports, reducing waiting times, increasing the rotation of the airplanes, offering direct flights point to point in short and frequent routes, and using standard materials to facilitate maintenance and management. At the same time, in terms of personnel, costs were reduced on services such as direct sales and boarding, using the online reservation centre, reducing, or even eliminating entirely, free services, and offering high salaries linked to goals. In other words, the low-cost offer became affordable.

The internet, with the help of new platforms, has changed the classic contracts which, nowadays, can be done directly from customer to supplier. The Internet facilitates the direct sale of the most classic services, that is, hotels, hostels, tours, etc; making them available to the market outside regulated circuits. These platforms not only announce an "a-legal" offer, which in tourism is usually called an extra-hotel offer, but they have also opened up a new market, protected under the label of collaborative economy.

The success of rental platforms has given visibility to the extra-hotel offer, which did not previously have a showcase to offer internationally. It also multiplied the collaborative offer in the form of flats and rooms. This visibility has led to an exponential growth in this type of offer in the last five years. Homeaway, which started by acquiring several sites and consolidated them into a single marketplace, reached over 190 countries, 1 million owners, and increased its revenue by 28.9% in 2014, (Homeaway.es, 2015). A year later, the company was bought by Expedia for 3.9 billion (NYtimes, 2015). On the other hand, Airbnb, which according to Forbes 2014 is valued at around \$10 billion dollars (El Economista, 2014), offers accommodation in more than 34,000 cities and locations around the world. The company projections, according to Fortune (2017) is to earn (before interest, taxes and depreciation) as much as \$3.5 billion a year by 2020.

Growth caused by this phenomenon has changed the rules of the game. The appearance of portals has made it possible to convert the home, that until then was destined to residential rent or second residence, into tourist accommodation. So far, in most places, the minimum condition to turn a place into a tourist destination is to have a sufficient catering service. From now on, everything is potentially touristic as long as there is a landlord willing to become a host and an airport attractive enough to low-cost airlines.

Changes with respect to the previous period, Fordism and mass tourism, are evident. On one hand the market has exploded, crumbling into a thousand pieces. Although the majority demand continues to be vacational, the emergence of low-cost and new contracting portals has opened up to more selective markets. The natural-tourism / city-work contrast has been diluted. The most important new feature is urban tourism, where the city is no longer the enemy.

As a new ally, the city will receive a greater number of visitors; and its presence will have certain consequences on the transformation of public space, the demand for housing, the type of commerce, mobility and the environment. These changes, directly and indirectly resultant of the flux of millions of visitors, demand new, creative strategies from every administration, that must measure and relate to each case.

Objectives

The objective of this article is to show some of the strategies implemented by certain European cities in order to compare them to those approved in Barcelona. Its analysis will not only show us the initiatives but the tendency of those cities regarding policies on housing, public space, and lodging, etc. It's evident that the weight and impact of urban tourism has set several strategies in motion worldwide, especially in the most visited cities, all without any particular recipe.

These five cases show us how the urban practice has sought the solution acting on operators and travel agencies, on modes of transport used by tourists and on the tourist attractions, looking for incentives or penalty formulas that reduce pressure, divert flows or avoid the risk of collapse in advance. Their main idea is to deflect the side-effects by looking for alternatives before forbidding anything. The balance of the city relies upon assuring diversity and the equilibrium of its use.

This article calls for a debate on urban tourism strategies, discussing more than determining the maximum figure of tourists for each location, but the necessity of focusing on indicators, tourism flows, and dynamics that allow the regulation of processes without the need of final numbers.

Methodology

The article uses the policies and strategies analyses done by some of the most visited European cities in order to compare it with the strategies set in Barcelona. The review of policies in Amsterdam, Berlin, London, Paris, and Rome is done with information available on the city website, to contrast it with the strategic touristic urban plan- PEUAT put into effect in Barcelona. With that information as a base, the conclusions result in the form of recommendations.

For the analysis of strategies, we use the report of, P. Díaz (2017: 11-13), which has gathered specific information for every city, and is annexed in her final report. With the data obtained, from urban regulations related to tourism, each city is analysed and then set in a comparative way. The websites of reference used in each of the cities are:

Amsterdam:

- Municipality: <https://www.amsterdam.nl>
- Tourism: <http://www.iamsterdam.com>
- Housing and environment: <https://www.amsterdam.nl/wonen-leefomgeving/>
- Regulations: <http://www.regelgeving.amsterdam.nl/>

Berlin:

- Municipality: <http://www.berlin.de/>
- Tourism: <http://www.berlin.de/tourismus/>
- Planning: <http://www.stadtentwicklung.berlin.de/planen/pla-nung/>
- Housing and construction: <https://service.berlin.de/dienstleistung-gen/wohnen-bauen/>

London:

- Municipality: <https://www.london.gov.uk/> y <https://www.cityoflondon.gov.uk>
- Tourism: <http://www.londonandpartners.com/>
- Planning: <https://www.london.gov.uk/what-we-do/planning> y <https://www.cityoflondon.gov.uk/services/environment-and-plan-ning/planning/Pages/default.aspx>
- Housing: <https://www.london.gov.uk/what-we-do/housing-and-land>

Paris:

- Municipality: <http://www.paris.fr/>
- Professionals of tourism: <http://www.paris.fr/professionnels-du-tourisme>
- Urbanism and architecture: <http://www.paris.fr/services-et-infos-pratiques/urbanisme-et-architecture>
- Change of use for residential homes: http://www.paris.fr/services-et-infos-pratiques/urbanisme-et-architecture/demandes-d-autorisa-tions/exercer-une-activite-dans-un-logement-172#locations-meubles-touristiques-ce-qu-il-faut-savoir_12

Rome:

- Municipality: <http://www.comune.roma.it/pcr/>
- Tourism: <http://www.turismoroma.it/>
- Lodging as an activity: <http://www.comune.roma.it/pcr/it/newsview.page?contentId=NEW784633>
- Urbanism: <http://www.urbanistica.comune.roma.it/>
- Housing: http://www.comune.roma.it/pcr/it/dip_politicheabitati-ve_pg.page.

Analysis

1. Tourism in the most visited European cities

The impact of tourism on the contemporary city is sudden and, in some aspects, devastating. To evaluate this phenomenon P. Díaz (2017) analysed the official municipality websites, and other diverse information, in order to compare urban planning regulations for tourism in Amsterdam, Berlin, London, Paris, and Rome in 2016.

According to Mastercard (2016:6), the ten European cities with the most visitors, between 2012 and 2016, are: London, Paris, Istanbul, Barcelona, Amsterdam, Milan, Rome, Vienna, Prague and Madrid. Paris and London lead the ranking with nearly 20 million each, figures that almost double those that follow them (Figure 3). London and Paris maintained these positions even before 2012, having exchanged the first place on 2014. In the second group in terms of visitors, we have Istanbul, Barcelona, Amsterdam and Milan, with a total of seven to fourteen million visitors. The last three - Roma, Vienna, Prague and Madrid - receive around seven million.

The relationship between tourists and residents, based on the offer of tourist accommodation, concentrates on one of the most influential platforms on the market: Airbnb. In order to study the impact of Airbnb we have used the data from Inside Airbnb (2016), in which you can see the number of tourist rental homes offered, either as a full house or shared room.

The summary of the report is presented in Figure 4, which shows how Paris has more than 30,000 shared rooms listed on their website, and as far as homes are concerned, a similar number to Barcelona; while in London the number of shared rooms is equivalent to that of full homes. According to this data, London and Paris are still the natural leaders of European tourist cities.

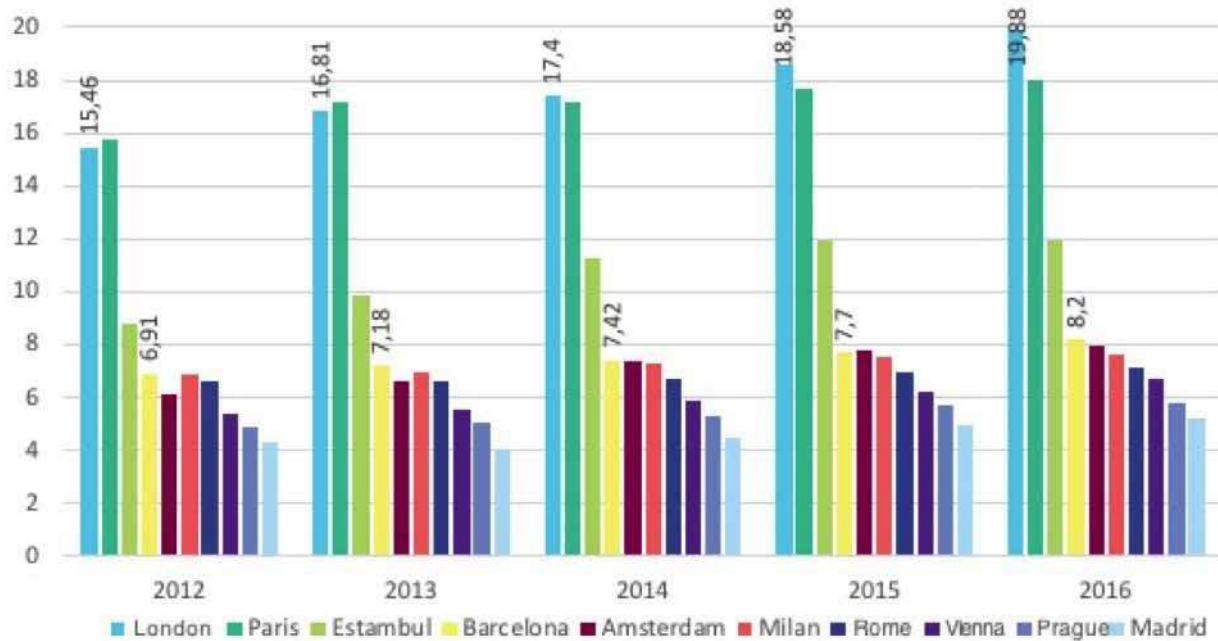


Figure 3 Comparison of the main European tourist cities, according to number of visitors. Years 2012 to 2016. Source: Elaborated by the authors, based on Mastercard (2016:6)

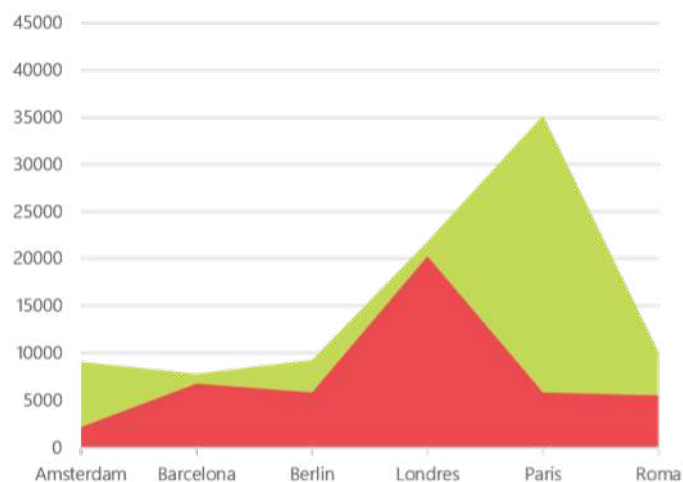


Figure 4 Types of tourist accommodation in Airbnb. In green, the rooms available, on red: full house rentals. Source: Elaborated by the authors based on Inside Airbnb and Tomslee.net

The entrance of tourist rentals onto the housing market, especially in certain neighbourhoods, has forced extraordinary measures to be taken in the municipal administration. Díaz has investigated these initiatives through each municipality's official websites, resuming it in tables. In Table 1, the measures related to the loss of housing, tourist rental price regulation and the action of taxation are grouped.

In Paris, Berlin and London the measures to prevent the loss of residential housing is done by limiting the change in use. These measures are not designed solely to protect residential use from tourist use, but against any other circumstance. In these cases, normally, the change of use is only possible if a new and equivalent residence is provided.

In Paris, the change of use is possible if it's offset by an equivalent area, and in Berlin, in some cases, it is admitted when the exchange is monetary. In London the strategy is not directly compensated by the promoter, but by an urban plan reserved for this type of manoeuvre.

With regard to housing, in the case of Berlin and Paris, non-residential uses can be reconciled with that of housing as long as the area used for non-residential does not exceed 50% of the home. In these cases, the non-residential use must be provided by the person registered and should not cause nuisance or risks to the neighbours or the community. To summarise, in these cities there is no specific policy to defend residential use, but there is one to avoid losing the existing residential offer. Therefore, it is prohibited for the resident to temporarily rent part of his property, if a primary residence is lost as results of such actions.

Regarding regulations, the most common are the limitations and conditions established for tourist rentals, in terms of time spent, number of lodgings or surface area per visitor. In most cases, time is limited: sixty days in Amsterdam, four months in Paris, or one hundred and twenty days in Rome. In addition, in some of these cities, as in Amsterdam, the number of people who can be accommodated at the same time is limited, and very harsh penalties are applied to offenders. With regard to taxation, in four of the five cases analysed, a specific tax is applied: the tourist tax. In London, a local rate per night is paid, and in Amsterdam and Berlin, an agreement has been signed with Airbnb in order to let the company collect these taxes.

Table 1 Comparative table of strategies and policies taken, in relation with tourist rental homes, taken by five European cities.

Source: Elaborated by the authors, Translated from Diaz (2017:51)

Strategies and Policies	Measures	Amsterdam	Berlin	London	Paris	Rome
To control and prevent the housing withdraw from the market	Transformation of the whole house to other uses, only with compensation		Same area as the residence or same monetary value		Same area as the residence	
	Limit the area of the first residency, for other non-residential use		Less than 50% for professional or commercial activity done by the resident		Less than 50% for professional or commercial activity done by the resident	
	Limit the transformation of use			Depends on urban regulations. Only allowed with plans that consider a similar residential area		
Regulations for tourist rentals in private homes	Limit the renting time	60 days/year		90 days/year	4 months /year	120 days/year. Minimal stay 3 days for apartments and touristic homes
	Limit the number of people that could rent the residential unit	4 people at a time				
	Establish minimal conditions regarding areas					Minimum of 14m ² with an additional kitchen area
	Dissuade sanctions		Fines up to 100.000€. Immediate eviction in case of non-property owners		Fines of 50.000€ and up to 1000€/night. Criminal measures in case of falsification of data provided	
	Public diffusion of renting conditions	Informative flyers	Specific information on the web		Informative flyers	
Taxation	Establish conditions that result in benefits for the city	Cooperation with Airbnb to recollect tourist tax. Tax over the benefits	Tourist tax	Municipal tax over rent	Cooperation with Airbnb to recollect tourist tax. Tax over the benefits	Tourist tax

In relation to hotels, commonly identified as responsible for conflicts in public space, the strategies revolve around three different assumptions: the limitation of the hotel offer, incentive given or improvement (Table 2).

Table 2 Comparative table of the types of actions taken by five European cities, regarding hotels. Source: Elaborated by the authors, Translated from Díaz (2017:52).

Strategies and Policies related to Hotels	Measures	Amsterdam	Berlin	London	Paris	Rome
Limits on hotel offer	Forbid new hotels	In city centre				
	Conditions for new hotels	Integration into the neighbourhood. Public consult. Should be innovative and sustainable		In the City. Only when they don't represent competition to the primary business activity of the neighbourhood		
Promotion of hotel offer	Plans to increase bed numbers			40.000 more beds by 2036	12.000 more beds by 2020	
	Location strategies			Outside the City. Close to centres, attractive and well communicated areas.	Boost neighbourhoods with economic potential and ease of access	
	Facilities for construction				Proposal of new hotel units in municipal properties, to the promoters	
Improve of the hotel offer	Impulse of quality projects	Innovation and sustainability for the environment		yes	yes	
	To favour accessibility of people with special needs			10% wheelchair accessibility		

Amsterdam is the only city that proposes prohibiting the opening of more hotels in the downtown area, with a policy that themselves define as "not unless". In London and Paris the creation of new hotel places was encouraged, trying to achieve a more homogeneous distribution, and in peripheral areas of the city. In Rome and Berlin there is no concrete strategy beyond the usual regulations in any city. In the case of Paris, the City Council offers public space to promoters to encourage hotel development in areas considered of interest. In the three cities, quality improvement is sought, either by providing innovation, as required in Amsterdam, or by facilitating accessibility for all, as sought in London.

Despite town councils concerns for conflicts that occur in public space because of the tourist invasion, none of them have taken significant initiatives. Amsterdam is the most worried and has announced a package of immediate-action measures, some of which have a study or proposal character. Among them, is a regulation for opening hours and limited vehicular access to the centre.

The character, form and even the powers over urban regulations, differ from one country to another (Table 3). However, large cities seek to share solutions and experiences, resulting in several policies with points in common. To all, the current debate focuses on the offer of private homes for tourists, a rapidly expanding modality that affects the housing prices and ends up expelling local, often long term residents.

The revised regulations show a tendency for cities to distinguish cases in which rent is a complement to the usual residence (therefore, compatible with the main use), and those in which there is a loss of residential offer. In the first case, shared activity is allowed, regulated and limited to the periods in which it can be developed, or the size of surfaces that can be occupied; and in the second case the option is to ban it outright, considering it as a change of urban use that is only possible if compensated with a new home. According to P. Díaz's analysis, tourism is not

seen as a negative activity for the city, but as an opportunity that needs strategies to boost the economic benefits generated and appropriate policies so that everyone can benefit from it.

Table 3 Comparative table of measures and regulations taken by Amsterdam, Berlin, London, Paris and Rome. Source: Elaborated by the authors, Translated from P. Diaz (2017:48)

City	Actions in relation to tourist rentals in private homes	Actions in relation with the hotel offer	Actions in relation of use of public space
Amsterdam	Control, Regulations and taxation of tourist rentals	Limits of hotel growth	Order of tourist flows and concentrations
	Give information to citizens		
Berlin	Forbid the tourist rentals if represents a loss of homes. Sanctions to dissuade		
	Information to citizens and tourists promoting licensed alternatives such as hotels, apart hotels or camping		
	Tax		
London	Limit renting time	Encouragement and support	Decentralization and diversification of the offer
		Limits on the City	
Paris	Forbid the tourist rent if it causes the withdrawal of housing from the market	Impulse of hotel development	
	Information to citizens and tourists		
	Tax		
Rome	Control, regulation and tax		

2. Barcelona´s urban planning for metropolitan tourism

The urban regulation of uses, related to tourism, is experiencing a new episode with the recent approval of the Special Plan for Tourist Accommodation (PEUAT, its acronym in Spanish), approved in March 2016. This plan covers the entire municipal district of Barcelona, establishing regulatory conditions for the whole city and to all kinds of tourist accommodation.

This plan (Figure 5) delimits areas of de-growth, maintenance and growth based on indicators such as the degree of concentration of tourist establishments (according to different types), the floating population versus the resident, the pressure on public spaces, the continuity of neighbourhoods with high saturation or the sensitivity to tourist pressure. Finally, certain areas in need of specific treatment are defined. It is important to note that these areas are defined according to the study and do not correspond to the administrative division of the city (neighbourhoods, districts, ...), reinforcing the idea that urban tourism doesn't only move in specific districts or areas, but treats the city as a whole unit, requiring comprehensive plans. What is being resolved through this urban tool is of enormous social and economic importance. The option to mitigate the impacts of the collaborative economy depends on regulating these types of offer, strengthening the discipline, and acting on unlicensed tourist rental homes (HUT) working outside of the law.

Beyond these platforms, speculation is hidden to achieve economic returns three or four times higher than residential rent. These portals offer accommodation mainly managed by companies that have nothing to do with the collaborative economy. According to the data on Inside Airbnb, the individual host, which offers a room or temporary housing, is a minority. The offer in Barcelona shows that over 53,7% have more than one listing (C. Otto, 2016), and there is even a host that controls more than 75 places to stay (Figure 6).

It's undeniable that the effects of the false "collaborative economy accommodations" are demolishing. Not only in terms of economic competition with residential housing, but also in terms of co-existence, in the way it penetrates the residential fabric and collective housing. Unfortunately, the problem was aggravated by several legislative changes that left the tourist apartments in limbo. In Barcelona, the PEUAT is in effect, but hasn't yet achieved its expected impact.

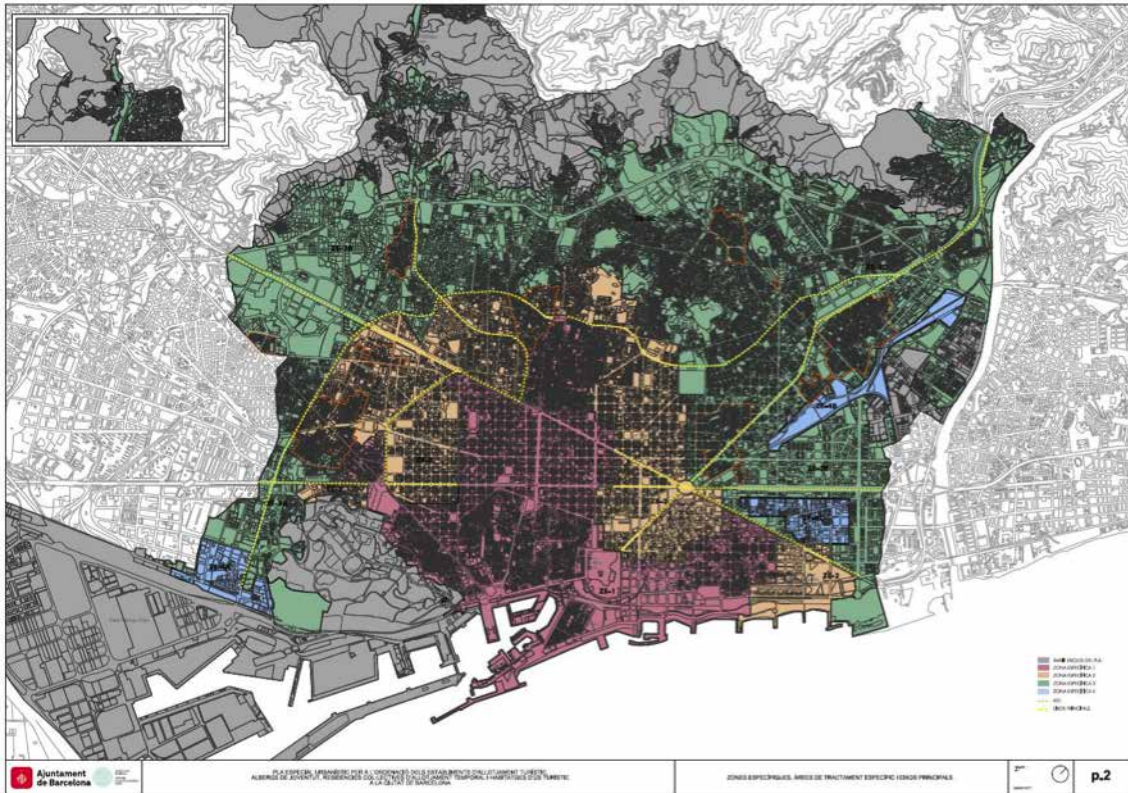


Figure 5 Areas of the Specific Urban Plan for Tourist Apartments (PEUAT). Source: w10.bcn

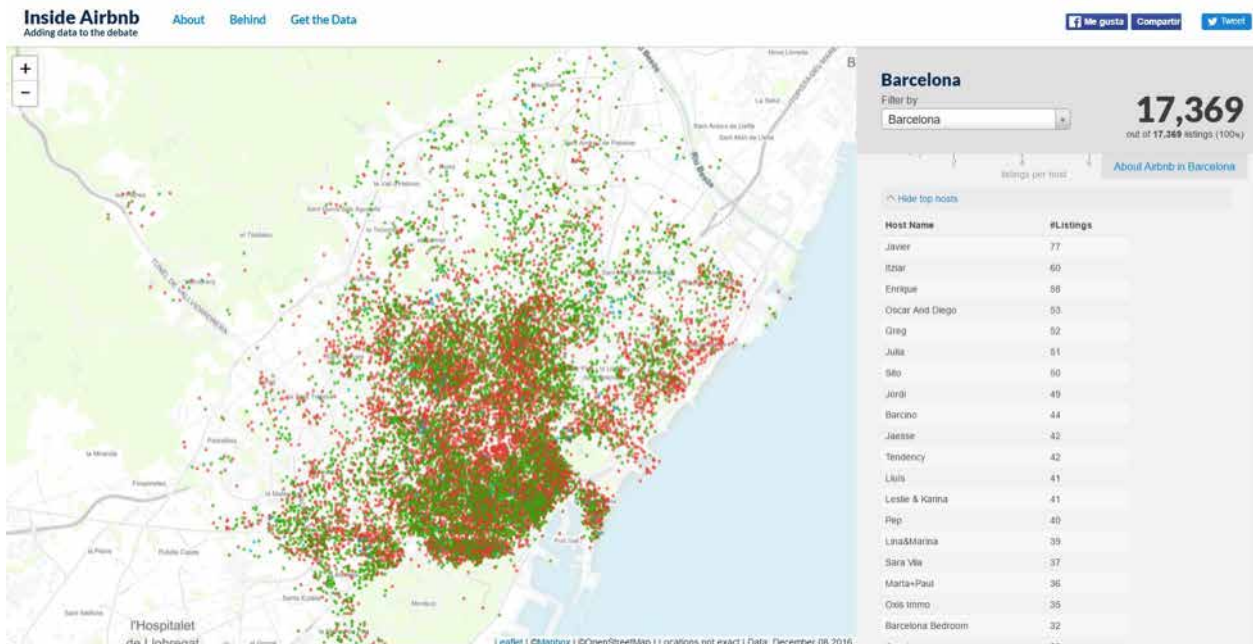


Figure 6 Airbnb tourist rental homes in Barcelona, organized by private homes and rooms, showing the Hosts with most offers (2016). Source: Inside Airbnb

Conclusions and Discussion

The two main vectors of the tourist city, in general, are the accommodation and tourist attractions, where the hotel is the basic piece. The rise of other types of accommodation, from the apartment to tourist rooms, enhanced by the increasing popularity of peer to peer and booking portals, raises the need to regulate the new map of accommodation to avoid the emergence of fraudulent offers that contribute to the expulsion of the resident population.

In the traditional tourist aggregate, since its beginnings there has been an extra-hotel offering that escaped control, but it did not affect its neighbours because there was no mix of residential and tourist uses. In the post-industrial

city, the extra-hotel offer, in the form of a collaborative economy, is indeed mixed with residential use. The conflict is either because it expels local residents simply because it's more profitable, or because it mixes users in buildings or neighbourhoods, where locals co-exist with holidaymakers. Some possible strategies are regulations in terms of temporality, limitations on the number of persons per accommodation, minimal surfaces and sanctions that are sufficiently intense to be dissuasive; with a previous and intensive task of informing operators and citizens about the conditions in which such activities can be carried out.

Urban planning of tourism must be approached from a transversal perspective, starting with the regulated tourist accommodation incorporated into the urban fabric; the planning of public spaces, where it's necessary to consider the presence of activities and tourism related movements to understanding what makes cities attractive is the urban life; the planning of ground level uses, to ensure mixed uses; and also, the integration of tourism into urban mobility plans, in order to create strategies for redirection of flows and access control.

Urban tourism, just as with other types of tourism, is an extractive economic activity because it unfolds in a mature space where tourism has so far been a marginal activity. Its uses are not conflicting by definition, but by the intensity and attitude of the tourist, and the urban nature of the space receiving the impact. The problem is balance, the sustainability of the tourist project, the type of attraction and the responsibility of the one who practices it.

The way public spaces are used, including the streets, depends on many factors: from the design of the space, the mobility through different modes of transport, the systematization of greenery and the role of ornamental elements to the activities taking place in their surroundings. It also depends on the use of low plants and the installation of terraces and kiosks.

The balance of urban tourism is spatially expressed in relation to coexistence. The city is a territory to share according to non-written rules that change over time. The appearance of the tourist is usually accepted if the rules are respected; conflict occurs when behaviour is inadequate, or the tourist invasion leads to saturation and collapse.

It is undeniable that tourism generates overpressure. The tourist uses the public space to move, conduct and develop certain activities. Overpressure occurs because the space is a point of tourist attraction or because it is part of their walks and paths. The regulation based on this analysis tends to oversimplify its findings, allocating in zones, or areas, what actually occurs on those paths. Our objective is to spread information across those paths and the tissue of the city. Understanding that classical regulations for reducing conflicts of co-existence, congestion or compatibility go beyond the problems of capacity and congestion. The typical measures based on loading capacity are a challenge for urban tourism; first of all, due to the statistical shortcomings of the sector, and secondly, by the doubts about what needs to be quantified. Urban tourism needs an integrated management plan that concentrates efforts but doesn't generalize impacts.

Rather than determining the maximum figure, we centre on monitoring indicators that allow regulation of the process without the need of final numbers. The application of this method is possible because we already have the necessary technology to do so: Big Data. The question is how such a process with legal instruments, laws and plans, designed to act in a static scenario can be handled.

The urban practice has sought the solution in controlling the particularities of each case. Acting on operators and travel agencies, on modes of transport used by tourists and on the tourist attractions, looking for incentives or penalty formulas that allow pressure reduction, divert flows or avoid the risk of collapse in advance. The idea is to deflect the side-effects looking for alternatives before forbidding anything. The balance of the city relies upon assuring diversity and the equilibrium of its use.

It is evident that the tourist city has its own rules. While in the industrial city the growth was pushed by industrialization, commerce or housing; in coastal cities, it was pushed by consumption, entertainment and landscape; when it comes to tourist cities, the attention revolves around the city as a whole, promoting both its attractions and its urban life, emphasizing on the "must see" and the "authentic", while competing for the same space with residents. It is clear then that in the tourist city the classic strategies will never work as expected, so creativity is absolutely key.

Acknowledgements

This abstract is part of an investigation "Turisme i metròpoli. Anàlisi i Recomenacions sobre els efectes urbans i territorials del turisme en l'àmbit del Pla Director Urbanístic de l'AMB" carried out with IHTT Institute of Habitat Tourism and Territory and Equip BcPN, for the Metropolitan Area of Barcelona.

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[TOU/03]



"Tourists Go Home!" – Tourism Overcrowding And "Tourismophobia" In European Cities (Can Tourists And Residents Still Co-Habitate In The City?)

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abstract

Tourism development provides numerous advantages to the host nations and places. However, more recently, indiscriminate place marketing, as well as the development of low-cost flights and the popularization of home-sharing platforms, such as Airbnb, has led to massive surges in the number of tourists visiting European cities. Swelling number of tourists creates massive overcrowding making it difficult for locals to live in the more touristy neighborhoods. Some cities, where tourists and locals battle for the use of shared spaces, are already stretched to breaking point. The questions we ask in this paper is whether or not it is still possible for residents and tourists to co-habitate under these conditions and what tactics should be employed to change tourism so as to manage its impact and make it more sustainable for both tourists and residents.

keywords Urban Tourism, Place Marketing, Home-Sharing Platforms, Tourist-Resident Co-Habitation

"This is a warning sign. Any city that sacrifices itself on the altar of mass tourism will be abandoned by its people when they can no longer afford the cost of housing, food, and basic everyday necessities." (Colau, 2014)

Ada Colau, since 13 June 2015 mayor of Barcelona

Introduction

Most people were taught that tourism is good for the economy and for the community because it brings jobs, foreign currency and helps local businesses. They believe in advertising their city/region/country to attract more tourists and the more people visit the more successful they think their city/region/country is.

Over the last few years, however, a series of protests against tourists, widely covered in the media have shocked the public. Last year, 2000 residents from Venice marched through this historical city to protest against uncontrolled tourism that is damaging and polluting the city (Anonymous, 2017b; Coldwell, 2017; Sansom, 2017). There were also crackdowns in Rome and Dubrovnik as locals were protesting against city-breakers and cruise ships (Coldwell, 2017). In Barcelona, residents protested against the proliferation of tourist apartments (Burgen, 2017). Some protesters even occupied a rental apartment and posted a banner on the balcony (Jessop, 2017) while in San Sebastian certain left-wing groups painted anti-tourist slogans on the wall, such as "Tourists go home!" (McLaughlin, 2017). Similar actions took place in Valencia, Majorca (McLaughlin, 2017), Bilbao (Jessop, 2017) and Venice (Hunt, 2017). Most of these events were peaceful. However, in Barcelona some youths attacked a tourist bus, punctured a tire and sprayed the bus with anti-tourist slogans. No tourist was harmed but they were shocked and shaken by the event (Burgen, 2017). So what were these local residents protesting against?

Research Objectives

The goal of this paper is twofold. Firstly, it will examine the main factors that have contributed to "tourism overcrowding" in a number of European cities. This part is important to understand the more recent manifestations of "tourismophobia" reported in the media. Secondly, it will try to understand whether or not it is still possible for residents and tourists to co-habitate in the "touristy" cities and what tactics should be employed to change tourism so as to manage its impact and make it more sustainable for both tourists and residents.

Background information

Transformation of cities from production-oriented into consumption-oriented

Tourism development provides numerous advantages to the host nations and places. Cities are particularly keen on developing the service industry related to leisure and tourism activities as with de-industrialization they have lost their industrial base and needed to reinvent themselves as service centers (Bramwell and Rawding, 1996). This is in line with post-Fordism which is characterized by a shift in trend from the consumption of goods to the consumption of services (Mowforth and Munt, 2009).

To make them more appealing to tourists, cities were subjected to gentrification. In fact, the relationship between gentrification and tourism development is so strong that it is often known as “tourism gentrification” (Janoschka et al., 2014). Tourism gentrification refers to the transformation of working class - or middle class - neighborhoods through the proliferation of hospitality and entertainment venues, thus making them more attractive not only to upper class residents but also to tourists (Gotham, 2005). This has had numerous social, economic and residential impacts (Nofre et al., 2017), the most important one being the transformation of neighborhoods from residential-oriented into leisure- and tourism-oriented spaces (Quaglieri Dominguez and Scarnato, 2017). Gentrification has been encouraged by local authorities through specific urban planning and regulations (Gotham, 2005; Nofre et al., 2017) and has often led to changes in the retail landscape (Nofre et al., 2017) and to displacement of residents (Gotham, 2005).

In addition place marketing has played a major role in changing the image of industrial cities (Ashworth and Goodall, 1990; Bramwell and Rawding, 1996). For example, the heavy marketing of Barcelona as a tourist destination since before the 1992 Olympics has changed its image from that of an industrial city ridden by crime and suffocated by pollution to that of a city of art, culture and entertainment (Petkar, 2017).

Lately development of low-cost flights as well as numerous internet platforms that allow travelers to book their own accommodation and plan their entire travel from the comfort of their home (Dunne et al., 2007; Egresi, 2016a) have also revolutionized the tourism industry and led to growing number of tourists (Williams, 2009). Moreover, much cheaper flights have encouraged people to travel more (especially short and medium distances on which the great majority of these low-cost airlines operate) not only for business but also for leisure (Bieger and Wittner, 2006; Rey et al., 2011). Major cities with cultural heritage and vibrant nightlife are especially attractive for city breaks (Graham and Dennis, 2010). This has led to a rise in the frequency of short travel alternative forms of tourism, mainly to other countries in the European Union (Dunne et al., 2007). An important contribution to the popularization of short travels and city breaks had the creation of economic and political blocs (such as the Schengen Agreement or the Euroland) which made border crossings faster and cheaper (Egresi, 2016d). Especially professionals prefer several shorter vacations in a year instead of or besides one longer vacation (Williams, 2009). On the other hand, the number of repeat visits is decreasing as more tourists are seeking alternative sites and attractions (Franklin, 2003).

During weekdays many accommodation units are occupied by business travelers so there is underutilized accommodation capacity during weekends which can be reserved by leisure-seeking travelers at discounted prices. Moreover, with the advent of home-sharing platforms accommodation could be much cheaper (Airbnb) or even free (Coach Surfing). Airbnb has been particularly successful (Guttentag, 2015). In Spain, already, there are almost twice as many accommodations in private apartments as in hotels (Lambea Lop, 2017). In Barcelona, while the number of hotels has increased by 83.74% between 2001 and 2014, the number of tourist apartments has increased by 258% within the same interval (Nofre et al., 2017). In fact, Barcelona is ranked fourth in terms of the number of tourist apartments listed on Airbnb (Lambea Lop, 2017). However, in many cities, a great proportion of these rental apartments function illegally. For example, in Barcelona, 78% of all accommodations that can be booked on Airbnb are illegal (Nofre et al., 2017 citing an Airbnb document).

Cities like Venice, London, Paris or Rome which in the past were visited as part of longer tours and, generally, more affluent populations have now become affordable weekend destinations for almost everyone. Due to the dramatic drop in costs, today even low-income people (including students) can afford these weekend city breaks (Dunne et al., 2007).

Emergence and development of home-sharing platforms, such as Airbnb has led to over-touristification of attractive neighborhoods situated within or close to city centers (Ioannides et al. 2018). Gutierrez et al. (2017) have analyzed the patterns of spatial distribution of Airbnb accommodations in Barcelona and compared it to the pattern of spatial distribution of hotels and with that of the most visited places by tourists. They found that Airbnb accommodations, while visibly concentrated in the central areas of the city are more scattered in those areas than hotel accommodation. This means that Airbnb listings extend the areas in the city center under pressure from tourism making life for local residents more difficult.

Rising number of tourists and tourist-resident relations

The total number of international tourists increased by 7% in 2017 against the previous year to reach 1,322 million (WTO, 2018). In Europe, the number of international tourists grew by a remarkable 8% driven especially by the extraordinary results in Southern Europe (13%) (WTO, 2018).

The number of international tourists has reached a record 84 million in 2017 and tourism accounts for about 13% of all jobs in Spain (Anonymous, 2017a). Important increases in the number of foreign tourists have also been announced in other European countries. For example, in Hvar, in the first seven months of 2017, the number of visitors increased by 20% over the same period in 2016 (Lyman, 2017).

This massive increase in the number of tourists visiting selected places in Europe brings into question the tourist-resident relations. The study of tourism impact on host communities has preoccupied a great number of researchers from a broad range of disciplines over the last four decades to become one of the main subjects of inquiry in tourism studies (Gilbert and Clark, 1997). Interest in tourist-resident relations goes back to the 1970s, when, following development of mass tourism, researchers started to be concerned with the impact of tourism and tourists on the local communities (Harrill, 2004). Doxey (1975) suggested that relation between tourists and residents will pass through a sequence of reactions as the number of tourists in the community rises. Initially residents' perception of tourism development is best characterized by euphoria. This reaction will, in time, be succeeded by apathy, irritation and, eventually, antagonism. The recent surge in demonstrations and even violence against tourists shows that the tourist-resident relation in the most tourist-sought European cities may be entering the last phase in Doxey's Irridex Scale. However, as pointed out by Faulkner and Tideswell (1997), most communities are heterogeneous; thus, resident responses to tourism stress will be different and could be both positive and negative (Jordan and Moore, 2018). In general, residents tend to accept the negative impacts of tourism if they benefit from it (Rasolimanesh, Jaafar, Kock and Ramayah, 2015).

Overtourism and tourism overcrowding

When locals and/or visitors complain about too many visitors in one place which could affect the residents' quality of life and the tourists' and excursionists' quality of experience we can talk about overtourism (Goodwin, 2017). Many locations in Europe have been identified for experiencing overtourism today; however, studies on tourist crowding in high-density destination are still scarce and most of these studies are approached from the perspective of tourists. For example, a study by Neuts and Nijkamp (2012) has concluded that, while, in general, acceptability of tourists decreases with the growing number of tourists, this depends to a great degree on individual perceptions. Similarly, based on a case study in Florence, Italy, Popp (2012) argued that in case of urban tourism there could be negative crowding (due to the stress involved) as well as good crowding (in situations in which crowding could add to the experience). She stressed that while negative crowding could be a major problem in a city like Florence there are spatial and temporal strategies that could be employed to best experience a city affected by mass tourism. Weber et al. (2017) also emphasized that while crowding could sometimes be perceived as a sign that the attraction is worth visiting, therefore attached a positive connotation, negative crowding leads to overtourism. There are few works on tourist crowding from a resident perspective. One problem is that, very often, tourist crowding is not identified as a problem for residents. It is understood as a problem only when local people start rebelling; hence, overtourism is also perceived as a social movement (Milano et al., 2017). In a study published more than 20 years ago, Montanari and Muscara (1995) posit that very often conflicts between tourists and locals in some of the world's greatest tourist-historic attractions, such as Venice, are explained in a very simplistic manner leading inexorably to the equally simplistic conclusion that the number of tourists should be limited. They argue that, in fact, tourist flows are made up by many types of tourists, each with his/her spatial behavior, perceptiveness, receptiveness and spending power and not all these types are causing troubles for the residents; hence, the authors propose that some types of tourists be actually encouraged. Similarly, Clements (1989) argued that, in order to reduce crowding, tourism marketers should target certain market segments and discourage others. Finally, Montanari and Muscara (1995) believe that, in order to peacefully co-habitate, tourists and residents/commuters should be effectively separated when using the water transport system.

Resident-tourist co-habitation and tourismophobia

The co-habitation of residents and tourists is troubled especially when boundaries between tourist spaces and resident spaces are blurred as tourists like to wander into residential neighborhoods and mingle with locals in search of more genuine atmospheres (Quaglieri Dominguez and Scarnato, 2017). Tourists are no longer seeking the extraordinary in a location but rather looking to experience the picturesque urban fabric and urban everyday lifestyle (Quaglieri Dominguez and Scarnato, 2017). This is in line with the postmodernist trend emphasizing cultural difference and fragmentation that has replaced the global culture model. This new trend explains why more and more people travel today in search of authentic culture (Egresi, 2016d).

Previous studies have identified a clear correlation between tourism “overdevelopment” and the deterioration in the residents’ quality of life in cities popular with tourists, such as Barcelona (Casado Buesa, 2017). Overtourism has been blamed for reducing the residents’ buying power and increasing congestion as well as for reducing their sense of place and sense of belonging leading to collapsing socio-cultural connectivity (Milano, 2017b). The most affected by this massive tourism development seems to be the right of residents to decent housing (Casado Buesa, 2017). This may be because, as explained earlier in this paper, tourism gentrification is more complex than classical urban gentrification and residents can be affected in more than one way. Thus, long-term residents are displaced not only because rents normally increase after gentrification but also because tourists can afford to pay more. Moreover, as more residents move out and more tourists move in, tourism gentrification will also affect the socio-economic activities in the neighborhood (such as the type of retail) and the public spaces which are invaded by tourists and visitors further alienating the residents (Casado Buesa, 2017). Further, tourists’ behavior and tourists’ encroachment on residents’ personal spaces could put a lot of pressure on the remaining residents, eventually forcing them to move out (Casado Buesa, 2017). For example, the neighborhood of Barceloneta has lost over 11% of its permanent population in just 15 years, between 2000 and 2015 (Ballester, 2018 citing documents published by the local government of Barcelona).

“Overtourism” and “tourismophobia” are often used interchangeably although the two concepts are not synonymous (Soydanbay, 2017). Yet there is a relationship between the two concepts. That is, if the troubled resident-tourist relationship caused by overtourism is not fixed, it could eventually lead to “tourismophobia” (Vainikka and Vainikka, 2018, Milani, 2017b). The term was coined by the staff of the El Pais newspaper in Madrid (Ballester, 2018) and was later adopted by much of the mass media. The concept has more recently permeated into the academic literature, particularly in Spain (see Huete and Mantecon, 2018). The concept of “tourismophobia” could be shortly defined as extreme aversion to tourism and tourists² (Donaire, 2008; Milano, 2017b). This is manifested publicly through different forms, including verbal and/or physical violence against tourists and attacks on tourism infrastructure (Huete and Mantecon, 2018). It is difficult to assess what percentage of residents are tourism-phobic. However, based on the great number of newspaper articles that were published on the subject, Abril-Sellares et al. (2015) argue that residents’ degree of tourists’ rejection is quite high. This is how a journalist described what he understood by “tourismophobia”:

“Tourism has ceased to be an undisputable manna. If once the native population welcomed visitors with open arms at the beginning of the season, now they fear their arrival. From Palma de Mallorca to Barcelona, tourists have become the annoying invasive species ‘guilty’ of overcrowding and abusive prices. Tourismophobia was born.”(Barberia, 2017; originally in Spanish, the text was translated with google translate). Ballester (2018) argued that “tourism overcrowding” and the rise in “tourismophobia” have led to nothing less than an urban crisis which can be solved only through new tourism governance. Unfortunately, lack of strategic planning and ideological contradictions can only reduce the ability to arrive to solutions that ensure peaceful co-habitation of residents and visitors (Ballester, 2018). Moreover, residents’ protests reflect not only a tourism regulation crisis but also a deeper identity crisis as these new tourism developments may have weakened the cohesion and trust between the elites who benefit greatly from tourism (over)development and the residents who do not benefit but are forced to pay the price (Baron, 2017).

Methodology

This study is based on the qualitative content analysis of newspaper articles and their reader’s comments. We have shown elsewhere (Egresi, 2017; Egresi, 2015) that qualitative content analysis of reviews and comments posted by travelers could be used as a reliable and relevant method to investigate people’s attitudes towards and perception of certain tourism phenomena and issues. However, to our knowledge, so far, there has not been any study to rely on reader’s comments on newspaper articles, although these could provide rich information and insights into tourists’ experiences that cannot be obtained through other methods (Law, 2006). The main advantage of this method is that the comments are not led by the researcher’s questions and subjects can post and interact with their online community members in a relatively uninhibited manner (Banyai and Glover, 2012). The idea for this study emerged as the author was documenting for another study and came across one article about residents of Barcelona protesting the “touristification” of residential neighborhoods. To select the newspaper articles to be analyzed for this study we employed a purposive sampling method. We used Google’s search engine to look for relevant articles using “anti-tourist protests” as keywords. We started with the first choice by google, clicked on it to check whether the document was a newspaper article and whether the content was relevant to our research topic. If it did not meet our criteria we moved on to the next document. Sometimes, the site visited would recommend similar articles published by the same or other newspapers which were also scrutinized.

In compiling our list of newspaper articles preference was given to articles with comments from readers, although some articles without any comment but which included interesting information not covered by any other articles

were also included in the list. We included only articles in English regardless of the date or year of publication, although most of the articles in our list date from 2017 when most protests took place. Since we did not use probability sampling, we did not have a definite sample size in mind. We stopped our search when we felt that we reached a point of saturation, when the information started to be repeated and no new content was produced (see Lopez and Whitehead, 2013).

The main disadvantage of this type of sampling is that it suffers from a number of biases due to the fact that the articles selected may not be representative for all articles and all comments that were written on the topic over a certain period of time. However, considering that the total number of articles and comments published online on this subject is not known and considering the pioneering character of this study, this was the only choice. Moreover, the chosen sampling method was appropriate for the purpose of our study as we did not intend to clarify exactly what percentage of the articles/comments can be classified as “anti-tourist” and what percentage as “pro-tourist”. The fact that there are articles/comments that report on anti-tourist attitudes of residents means that a segment of the local population (the size of which is irrelevant for the purpose of our study³) displays negative feelings towards tourists visiting their cities. The purpose of our study is to understand the factors that have contributed to this attitude and for this goal a purposive sampling was considered adequate (Lopez and Whitehead, 2013).

For this study we analyzed the content of 16 articles and 1880 comments. The newspaper articles examined for this study are listed in the bibliography (together with the number of comments). However, some comments were discarded from the analysis for being duplicates or for not being related to the article examined. This resulted in a number of 1845 cases and 101,862 words that were further analyzed. Codes were pre-determined and based on our research questions and the cases analyzed were mined for useful quotes to illustrate the main problems identified.

Findings

Tourist overcrowding

Based on the media sources consulted, we found that overcrowding has become a major problem in many (West) European cities. In fact, residents of Barcelona consider overcrowding to be the second biggest problem for the entire city (Roca, 2017) and according to a recent poll conducted and published by the municipality of Barcelona, the residents of this Spanish city blame tourists for causing this problem (Peter, 2017).

Barcelona received 30 million tourists in 2016, of which 12 million day-trippers, a figure that is almost 20 times higher than its resident population (Sansom, 2017). Another popular destination, Venice, an old historical city of 70,000 inhabitants receives no less than 70,000-90,000 visitors a day more than doubling its permanent population. These visitors crowd all the popular sites and even wander into the residential neighborhoods which is resented by the locals who are transformed willy-nilly into actors for the tourists' photo albums. As Valeria Dufrot, co-founder of Venezia Autentica (Authentic Venice) rightly put it: “Venice is being turned into a theme park and locals and visitors alike resent this fact” (Sansom, 2017). This explains why residents are upset. As Goundwater (2017) explains:

“No wonder there's a backlash. Surely people in Barcelona don't want to live in a tourist attraction, don't want to exist purely as a backdrop for Instagram photos. They want to live in a normal city, a place where they'll have the same neighbors next week and the week after, where they can go to the market and buy some jamon and not have to push past a group of hungover tour passengers taking photos of the tomatoes to get there.”

1 / However, Soydanbay (2017) argues that “tourismophobia” is not caused by overcrowding but is rather triggered by xenophobia.

2 / We should be aware that in the past “tourismophobia” was used with different meanings. For example, Korstanje (2011) defined “tourismophobia” as “fear of traveling”.

3 / For those readers who still want to get a sense of how widespread this anti-tourist attitude is, I will provide some numbers as a footnote. A survey conducted in 2016 on a sample of 4959 residents of Barcelona concluded that more than half of the city's residents viewed tourists' behavior positively, 29.3% considered it to be neither good nor bad and 14.5% perceived it to be bad or very bad. However, in the more touristy neighborhoods the proportion of residents with negative perception of tourists was much higher, reaching 49% in Barceloneta and 37% in the Gothic District. Moreover, we should remark the sharp increase in anti-tourist attitudes. While in 2013 almost 70% of the residents believed that the city should continue to attract more tourists this segment dropped to only 47.5% in 2016, while 48.9% opined that the city has reached its maximum capacity to service tourists (up from 27.2% in 2013). Similarly, while in 2013, 74.7% of the residents assessed tourism management in their city positively and only 10% negatively, in 2016 these proportions changed to 43.9% and 23.6% respectively (Alvarez-Sousa, 2018).

What is somewhat surprising in Ms. Dufлот's statement is that not only locals but also tourists find overcrowding to be a major problem. Indeed, a poll conducted in Barcelona revealed that 58% of tourists found that some places in the city were overcrowded (Roca, 2011). For example, this is how reader/tourist NEurGeeza describes his/her experience in Barcelona: "Me and my partner spent the last 2 nights of a Catalan holiday in Barcelona before flying home and was shocked how overcrowded and downmarket Las Ramblas had become. Also the area around the Cathedral was like a sardine can" (Hunt, 2017).

Others, who visited the European city after (or have lived in it for) several years were able to document the changes that increasing tourism activity brought to the place. For example, a reader from Australia who commented under the name "Doctor Strabismus" wrote about the changes he witnessed in the city of Florence, Italy which he visited with his wife 40 years after his last visit: "I found it as beautiful as ever, but the congestion was almost unbearable, hardly possible to move at times, and I know I will never go back, which saddens me" (Hunt, 2017). Another reader, known as "The Moustache" who has been living and working in Palma de Mallorca (Spain) for ten years concluded regarding the changes in the number of tourists:

"Over the years, Palma centre has increasingly stopped catering for those who live there, replacing regular shops with luxury brands such as Louis Vuitton, and traditional simple restaurants and cafés with pricey tourist-friendly places serving frozen paella and the like. It's incredibly difficult to find affordable accommodation for rent, such is its scarcity, and buses are now so full that it's not uncommon to be waiting for nearly an hour before one turns up which has some space on it. Bins are overflowing, despite daily collection; the volume of traffic is higher than ever before, and there's no parking; and beaches are full and littered with plastic and junk." (Coldwell, 2017)

When reading these comments it becomes clear why travelers themselves resent overcrowding of the places they visit. This, in fact, has been noticed also by Groundwater (2017) who concluded:

"In fact, 'travelers' are a major part of the issue. They want to get off the beaten track, they want to see the 'real' city - but in doing so they're breaking down the traditional tourist/local barriers, they're popping up in quiet neighborhoods, invading locals-only havens in the name of seeing something authentic. At least the tourist crowd just congregates in one spot and can easily be avoided."

Most readers commenting on the articles analyzed for this paper were of the opinion that, although there are many advantages to tourism development, unchecked growth would eventually alienate residents and destroy the very characteristics that made those places famous. For example, "Airstavros", a British resident of a "tourism-oriented" region in England stated that: "Tourists bring money but ruin everything with litter and overcrowding during the summer. Second homes force locals out and expensive restaurants replace old pubs. Tourism will become antisocial if it keeps growing" (Lopez Diaz, 2017).

Next we will examine the main factors leading to the phenomenon of overcrowding visible in most tourist-attractive European cities.

Rise of city breaks and short trips leading to a focus on a few major tourist objectives

One of the major changes that have affected the tourism industry in the last decade or so is the shift towards shorter trips and city breaks (Dunne et al., 2007). When people have only two or three days to see a place they will prioritize the most obvious tourist objectives. These are those objectives that each tourist guide classifies as "must see" in the area. The consequence is that tourists travel with a list of places they want to see and take photographs with. When they flock en masse to these objectives, these places become clogged with tourists. One reader aptly described this situation as the "Mona Lisa effect":

"I would argue a larger problem (at least for the moment) is the numbers of tourists are gigantic compared to the number of places they actually go to. Places get famous and people tend to flock to them, causing more people to follow and you end with a literal Mona Lisa effect where everyone is crowded into one small room taking photos of a single small painting that is behind glass and barriers whilst the rest of the gigantic gallery is quieter or untouched." (Coldwell, 2017)

Day trippers and city breakers, therefore tend to stay in the city center, rarely choosing to explore further afield (Coldwell, 2017). They are driven by a desire to quickly check objectives off their list, then take a few selfies and post them on social media. On the other hand, when a tourist stays in the area for a longer period of time, he/she will visit the most famous objectives in the first few days after which they will visit objectives considered of secondary importance. These tourists also spend more time on resting and enjoying life so their agenda is less dense and they tend to be more relaxed and less aggressive when visiting places. The same is true with the tourists visiting the same city several times. While the first time they may, indeed, concentrate on the primary objectives, the next times they visit they would want to see places that are less "touristy" and experience local life (Gitelson and Crompton, 1984).

Rise of cheap flights leading to a focus on a limited number of cities

With the advent and rapid expansion of low-cost airlines, the cost of flying medium-distance has dropped significantly. In fact, as one reader (“cakefordinner”) observed, “it’s usually cheaper to fly than taking the train nowadays. It’s insane!” (Hunt, 2007). This has encouraged people to travel more often and has allowed even the poorer segments of the society to participate in the tourism phenomenon.

However, because they still need to be profitable, low-cost airlines tend to fly only to a number of select destinations which are already very popular or have the potential to become very popular with tourists. By so doing, low-cost airlines channelize the flow of tourists creating hot-spots that could lead to overcrowding of destinations. We, therefore, agree with one reader’s (“waaliki”) assertion that cheap flights have changed “the scale, type and impact of tourism on most European cities [...] in the last 10-15 years’ (Hunt, 2017).

Increasing popularity of home-sharing platforms leading to the spreading of tourists within the city and displacement of residents

Although a very new phenomenon, the popularity of home-sharing platforms has skyrocketed in the last few years both among tourists and among owners of rental properties. In Barcelona, for example, there are 16,000 holiday rentals which accommodated around 9 million tourists in 2016 (Sansom, 2017) and every day new apartments are listed. Since few of these homes are newly built, this means that, in fact, residential apartments serving local population are transformed into holiday rentals to serve the needs of tourists. In the historic Gothic district already 27% of all housing is being used as tourist accommodation and there are buildings in which the number of holiday rentals has surpassed the number of residential apartments (Roca, 2017).

One effect, as already intimated in this paper, is that rents go up and ordinary residents are forced to move out. In central Barcelona, for example, rents increased by 25% since 2014 (Roca, 2017) and an ordinary apartment is rented now for €800 or more while many young locals earn €1,000 or less a month (Peter, 2017). They can no longer afford to live in those neighborhoods and are forced to find cheaper arrangements on the outskirts. This residential trend is reflected in the statistics showing that the number of residents in the central neighborhoods of Barcelona has fallen by almost one-half in the past decade (Roca, 2017).

The situation in Barcelona is not unique. Many commentators have reported similar urban problems in London, Amsterdam or Berlin. For example, “Deanna” pointed out that “investors and foreign buyers have bought most of London driving up prices and rents, with Airbnb adding to it” and believes that “[...] uncontrolled greed is the reason and unless governments put their foot down and make laws and implement them nothing will change” (Lopez Diaz, 2017). When people cannot afford to live in the towns and villages in which they were born, “Airstavros” claims, “they [...] resent the tourism and expensive restaurants that have replaced shops and cafes” (Lopez Diaz, 2017).

Moreover, besides the effect these have on rents in the area, residents resent home-sharing platforms, such as Airbnb, “[...] because of noise, but more often because of total collapse of community you get when people come and go weekly” (opinion expressed by “waaliki” commenting on Hunt, 2007).

Increasing popularity of cruise ships and day-trips by coaches leading to higher concentration of tourists

A relatively new phenomenon, the popularity of cruise ships is growing year by year. As many as 3.6 million cruise passengers visited Spanish port-cities in the first half of 2017, a figure that is twice as high as a decade ago (Tadeo and Penty, 2017). Readers commenting on the newspaper articles analyzed for this research mentioned that cruise ships could unload as many as 5000 visitors (“Frenchview” in Hunt, 2017) and very popular historical cities, such as Venice, could receive as many as eight cruise ships in one day (“Anne Baillie” in Groundwater, 2017). Even second-tier tourist cities, such as Cadiz (Spain) could be “flooded” with as many as 17,000 cruise passengers in one day (“Professor Parkin” in Hunt, 2017). In small towns, such as Dubrovnik, the impact of these masses of visitors is even greater (“Georgette Wheeler” in Anonymous, 2017b). And the numbers are predicted to go up in the coming years (Tadeo and Penty, 2017) creating resentment among residents (Peter, 2017).

Although these visitors usually behave well (“Frenchview” and “Professor Parkin” in Hunt, 2017), they are detested by the locals because they “[...] have pre-paid their meals and crowd the towns with masses of people in shorts, funny hats and selfie sticks with cameras attached who just walk around and buy nothing” (“Frenchview” in Hunt, 2017). Moreover, “these multiple groups of 50+ people often have head phones and are listening to their guide and don’t care who they run over or push into walls in their determination to keep their guide in sight” (“Georgette Wheeler” in Anonymous, 2017b). The general conclusion is that these visitors do not benefit local economies, yet, simply by their sheer numbers could bring a city “to a halt” (“Anne Baillie” in Groundwater, 2017) and the

recommendation is that city governments take responsibility, limit the number of ships allowed per day and charge per visitor ("Anne Baillie" in Groundwater, 2017) and that cruise ship organizers "encourage people to travel more responsibly and with consideration to the locals" ("Georgette Wheeler" in Anonymous, 2017b).

Overall impact on residents

Many residents in European cities and towns are complaining that the recent increase in the number of tourists is making their lives intolerable (Anonymous, 2017a). For this reason, many residents would like to see a stop to their places being promoted as a destination for tourists. "Ivan Tiger" explains that his city does not need more tourists because space and resources are limited:

"Sorry, but London's economy does seem to promote unnecessary tourism to the fatal outcome of residents – e.g. all these Central London blockages every weekend – which means locals cannot get taxis, buses, roadways thru to hospitals, work, any social activities, childcare/elderly lunch clubs and most tubes are still not accessible to disabled, so we're all trapped in our homes from Fridays to Mondays." (Hunt, 2017)

The same idea is echoed by another reader ("Doctor Strabismus") who calls for solutions to limit the number of visitors "within bounds of sanity" while recognizing that "everyone has an equal right to travel and love places like Florence" (Hunt, 2017).

What most residents complain about is not overcrowding but a complete transformation of their place from a residential neighborhood into a tourist-oriented area with no regard for the residents. "Kate King" commenting on the article by Hunt (2017) summarized this situation very clearly:

"[...] The point is that the whole place becomes taken over, not only with coaches, tour buses and thousands of extra people per day. The shops become gift shops and every recreational space becomes a melee. It isn't that locals don't appreciate the tourist yen or dollar. It's that they don't want their environment to become nothing but that. Locals need real shops, would prefer to eat out in places that aren't dominated by loud tourist groups with phones on sticks and don't want all their pedestrian precincts filled with mobile stalls selling spinners and wooden roses – or whatever the equivalent in their town ..." (Hunt, 2017).

The result is that cities invaded by tourists become uninhabitable by year-round residents who are forced to move out and abandon their places of residence to tourists (Anonymous, 2017b). For example, "Ferdy Lijftogt" laments: "I used to live in Amsterdam and while I still like visiting the city, I wouldn't want to live there anymore because of the tourists. Especially the British stag parties who think that the city is a sort of adult Disneyland and roam the streets looking for drugs, drinks and prostitutes." (Coldwell, 2017)

Three conclusions can be drawn from the quote above:

1. Many tourists fail to notice that their playground is also a residential neighborhood in which locals try to go on with their lives. In some of Barcelona's central neighborhoods banners were hung from balconies to remind tourists of this fact but these had a very limited effect ("necronancy" – an ex-resident – in Colau, 2014).
2. It is not only the overcrowding that bothers residents but also the behavior of tourists, who, unlike tourists in the past, are not as much interested in a cultural experience as they are in getting drunk and doing things that would never dare to do in their hometown. Or, according to "Jonellsworth", perhaps they would: "Part of the problem these days is that many 'tourists' are not 'touring' at all or seeking any form of cultural experience or knowledge gains whatsoever. They are simply boorish, binge-drinking louts who behave pretty much the same way when they are at home" (Coldwell, 2017).
3. Most residents want their neighborhoods (and their city/town) to remain "residential". However, with each new tourist moving in and each resident moving out there is a possibility that their neighborhoods/cities would turn into a theme park. As a reader, known by the handle "Mad Maki", in a response to another reader who accused residents of xenophobia, puts it:
"It's not about appreciating diversity, it's about turning historical cities into theme parks for tourists who walk around like sheep, not caring where they are, their only purpose being to take a selfie at the world-known sights (sic!) and buy some 'Made in China' typical souvenir (in a place where a 'real' shop used to be). [...] The architecture and cultural attractions of a city are important, but without the people who live there, their bars, restaurants and shops it's something more like Disneyland." (Coldwell, 2017)

Of course residents understand the benefits of tourism and are willing to make some compromises. However, they do not want to live in a "fantasy" place. Moreover, as was also evidenced in previous studies (see, for example, Egresi, 2016c) most locals do not benefit from tourism – tourism brings indeed a lot of money but "this doesn't filter down to ordinary working people" ("Bee Locks" in Hunt, 2017) – they only share the costs as "ordinary people get priced out of living in the city where they work" (ibidem). Even some residents who make a living from tourism feel overwhelmed by the onslaught of tourists during the summer season making everyone's life so much more difficult and declare that they would happily agree with any restrictions and regulations to limit the number of tourists ("el Brujo" in Coldwell, 2017).

Also, while most of the complaints seem to come from larger and more populated places (cities), it is possible that the effects of tourist overcrowding are felt worst in smaller and/or less densely populated places, such as Iceland, a country in which the number of tourists skyrocketed after the 2008 financial crisis. This is how “Kriabird” describes the impact of tourism on residents in this country:

“Iceland’s been hit very hard with this. We have more tourists visit each year than we have people living here. Our already poor road system is crumbling, idiots keep chasing horses with drones for ‘dramatic effect’, and far too many people are ignoring warnings at the ice floes, cliffs or dangerous beaches and getting into trouble and putting the (volunteer!) search and rescue teams in danger. ... [Tourism is] a huge part of our economy but the attitude of a lot of tourists is infuriating, and the negative effects the sheer numbers is having on locals is getting absurd.” (Coldwell, 2017)

What can be done to ensure peaceful co-habitation of residents, tourists and visitors?

In the previous section we have concluded that a series of factors related to tourism development challenge the co-habitation of residents, tourists and visitors in many European cities. The question is what can be done to solve this problem.

One reader (“Bucket”) suggests banning “Airbnb style lets” unless the owner lives in the house, banning cruise ships from docking in busy destinations and limiting the access of tourist buses to city centers (Hunt, 2017). Limiting the number of tourists is not a new idea. In the past, a number of studies have argued for demarketing as a means to reduce overcrowding and to encourage/discourage certain tourist types (Beeton and Benfield, 2002; Carlsen and Ali-Knight, 2004; Clements, 1989). Demarketing, a term coined by Phillip Kotler (Kotler and Levy, 1971), is defined as “that aspect of marketing that deals with discouraging customers in general or a certain class of customers in particular on either a temporary or permanent basis” (p. 75).

Current urban policy and planning is outdated as it cannot cope with negative impacts of tourism development and there is an urgent need for a new community based planning strategy that is able to ensure neighborhood livability and co-habitation between residents and tourists (Nofre et al., 2017). Therefore, it is stringent that we find solutions that could both protect and preserve residential neighborhoods and satisfy the needs of the tourists (Lambea Lop, 2017).

Some readers (“serpyuk”; “Hendouwenti”) also pointed out that most of the problems discussed here are not the fault of tourists but rather the fault of central and local governments that failed to plan for and regulate the increased tourism activities and are unable to control corruption and illegal activities (Coldwell, 2017; Lopez Diaz, 2017). Their conclusion was that the number of tourists should not be limited. This opinion is also shared by some decision-makers at both global and national levels. For example, while recognizing that the rise in anti-tourist sentiments is “a very serious situation that needs to be addressed in a serious way”, Taleb Rifai, the secretary general of the United Nations’ World Tourism Organization (UNWTO), has argued that the solution to this problem is not the limitation of tourism but rather the design and implementation of strategies for managing crowds in destinations, such as extending the area visitation beyond the famous landmarks and tourist objectives, diversifying tourist activities, reducing seasonality and addressing the needs of the local residents (Coldwell, 2017). Although we agree that we should not blame the tourists for the situation, we believe that the number of tourists must be capped. Of course, tourist apartment owners and hotel owners will not be happy with this decision but we need to control tourism development “otherwise we’d end up having a city with just tourist apartments and deserted neighborhoods” (Roca 2017; quoting Agusti Colom, chief of tourism for the Barcelona municipal government). The ever increasing number of tourists in Barcelona could be interpreted as a sign of success but these numbers cannot go up indefinitely or else “Barcelona could die of success” (ibidem). The present mayor of Barcelona, Ada Colau, has already taken the decision to freeze the total number of tourist accommodation units (tourist apartments included) at 158,384 and to gradually redistribute these units away from the city center (Roca, 2017). Similarly, Venice is considering a ban on new tourist accommodations in the city center (Coldwell, 2017). One reader (“Helen Wheels”) reports that similar concerns exist also in Amsterdam where the city council tried (albeit unsuccessfully) to limit the number of centrally located accommodation units advertised by Airbnb (Hunt, 2007).

Next, these cities should clamp down on illegal tourist apartments and tax more those that are legal. Since the existence and rapid expansion of tourist apartments shared on Internet platforms such as Airbnb emerged (in this study and many others) as one of main factors responsible for the frictions between residents and tourists, Lambea Lop (2017) suggests suspending the permits for tourist apartments and designing new regulations and special urban planning rules for these short-term rentals.

There is already a strategy to do exactly this in Barcelona. Airbnb was fined last year €600,000 for continuing to

advertise unlicensed short-rental apartments on their website (Sansom, 2017). However, as already mentioned, in many cities, the majority of these tourist apartments function illegally anyways. Moreover, visitor accommodations listed on home-sharing platforms are difficult to regulate because in big, attractive cities there are so many of them that it is very difficult to monitor them and they often avoid detection until neighbors complain (Gurran and Phibbs, 2017). Furthermore, besides Airbnb, which, admittedly, is the most popular, there is a long list of websites allowing home owners to advertise their residential properties which could make the task of detecting (and, perhaps, closing) illegal short-term rentals next to impossible (Gottlieb, 2013).

Barcelona also intends to impose higher property taxes on legal tourist apartments (Roca, 2017; Sansom, 2017). It is a well-known fact that the owners of most apartments on Airbnb listings do not pay any taxes (Guttentag, 2015). Hence they could keep their prices lower than hotels and still be highly profitable. When they are properly taxed, it is reckoned that some of these rental units may become less competitive and may have to close business. Many problems arise from the absence of landlords from the premises to manage the property and tourists like a traditional tourist accommodation provider (Jordan and Moore, 2018); hence Barcelona city council also intends to ban illegal subletting (Sansom, 2017).

Another necessary step is limiting the number of cruise ships (we do not think that they should be completely banned). As we have seen in this paper, cruise ships disembark thousands of tourists who crowd the area without actually bringing many economic benefits to the community. Venice already imposed a limit on the number of cruise ships allowed to dock in its port (Lyman, 2017) and similar measures are being considered in Dubrovnik (Coldwell, 2017). Meanwhile, the city of Barcelona, which receives about 750 cruise ships a year carrying at least 11 million visitors, is planning a new tax to be levied on each visitor staying less than 12 hours (Anonymous, 2017b). Not only cruise ship passengers will be affected by this tax but also groups of visitors arriving by bus. For example, each bus which parks at the foot of Montjuic Hill will be charged a fee of 34 euro (Roca, 2017).

Eliminating crowding of public spaces should be a primary concern of city governments. Already, Rome is considering limiting the number of visitors to certain areas of the city center such as the Trevi fountain (Anonymous, 2017b) and, in Barcelona, large tour groups are forbidden to enter La Boqueria, the city's famous food market in order not to clog its alleyways (Lyman, 2017). At the same time, in Venice, the mayor's office is contemplating the introduction of "people counters" at popular tourist sites to monitor crowding (Coldwell, 2017). Some city officials have even proposed to allow access to some of these sites, such as St. Mark's Square, only with tickets (Anonymous, 2017b). Authorities in Barcelona have also restricted the use of segways and electric bikes which are dangerous in areas with large crowds (Roca, 2017).

Central and local governments should also implement stricter measures against tourists and visitors with anti-social behavior. In Dubrovnik, cameras were installed to monitor the number and behavior of tourists in the old town while on the Croatian island of Hvar the mayor is determined to crack down on the anti-social behavior of drunken tourists by fining them (Coldwell, 2017). In fact, the residents of the island made it clear that "This new generation that's coming in, who come to rollick, who come to drink cheap alcohol, we don't want this type of clientele". (Senka Halebic, spokeswoman for one of the most popular beach clubs; in Lyman, 2017). In Rome, it is also not permitted drinking or eating in the streets and at tourist attractions or bathing in the public fountains. Measures against anti-social behavior were also taken in Milan to protect residential neighborhoods (Coldwell, 2017).

In order to decongest the city centers of tourists and visitors, one reader ("Neur Geeza") suggests visitors shift their attention to "the 2nd, 3rd, and even 4th cities of a country/region", a strategy that would also help visitors "to have a more authentic experience" (Hunt, 2017). Others have made the case that, in order to ease overcrowding, tourists should be redistributed from the city center to other neighborhoods (Roca, 2017). Copenhagen has already started an aggressive tourist redistribution strategy from the city center to the more peripheral neighborhoods (Goodwin, 2017). While we agree with the strategy to shift the attention of tourists away from the crowded tourist cities, we do not think that spreading the tourists across residential neighborhoods would be beneficial. We agree with "Uriruri84" who lamented: "We have accepted that we've lost the center of the city, but now tourism invades many other zones" (Colau, 2014). Indeed, in our opinion, the centers of the cities and some neighborhoods close to it are already lost. There is not much the residents can do to reclaim them. What the governments should do now is contain the damage and not spread it to other neighborhoods.

Finally, the findings of this study confirm the conclusions drawn by previous studies that tourism growth and development should be regulated because, in the absence of proper planning, mass urban tourism will evolve in a haphazard way leading to numerous socio-economic and environmental problems (see also Egresi, 2016b). We, therefore, agree with Ada Colau, the current mayor of Barcelona, that tourism needs to be controlled in order to remain beneficial, otherwise "it's paradoxical, but uncontrolled mass tourism ends up destroying the very things that made a city attractive to visitors in the first place: the unique atmosphere of the local culture" (Colau, 2014).

Conclusion

In this paper we analyzed the recent anti-tourist movements in several European destinations while trying to understand the reasons behind residents' anger. Through critically examining a number of newspaper publications presenting the events and the comments readers posted to those articles, we found that many locals find the increasing number of tourists visiting their places of residence objectionable on the grounds that the overcrowding caused by tourists has made their lives a lot more difficult.

Similar to other studies, we found that some European cities and mass tourism destinations, where tourists and locals battle for the use of shared spaces, are already stretched to breaking point (Sanchez-Galiano et al., 2017) causing resentment among residents (Dirksmeier and Helbrecht, 2015). As found also by other studies (Gutierrez et al., 2017), one reason for residents' discontent is the swift rise in rents fueled (at least in part) by the success of home-sharing platforms, such as Airbnb. This has had the greatest negative impact in cities like Barcelona where two-thirds of the population lives in apartments organized in condominiums (Lambea Lop, 2017). Moreover, private parties in tourist apartments fueled by cheap alcohol consumption create excessive noise (Nofre et al., 2017) which is another source of dispute with local residents as it challenges community livability (Colomb and Novy, 2017). These factors coupled with increased cost of living have led to "collective displacement" of residents from the central neighborhoods (Cocola Gant, 2016).

The results of our study present many similarities to findings of other (previous) studies. However, our study is novel in that our research methodology was different. This proves that qualitative content analysis of newspaper articles and of readers' comments to investigate co-habitation problems in urban contexts could lead to meaningful results.

The main limitation of our findings results exactly from the method we used as public opinions derived from comments of readers on newspaper articles cannot be taken as representative for the entire population (Henrich and Holmes, 2013). However, given the high number of comments some of the articles we analyzed received, we could safely assume that they represent the opinion of a large segment of the population.

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[TOU/04]



The “Islands” of Oporto

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abstract

This paper provides a critical vision about the social, artistic and ethical limits of architectural tourism-oriented refurbishment. To address these issues it will focus on recent examples of architectural projects that have transformed industrial slum houses into tourist accommodation facilities. Porto, Portugal's second largest city, has seen an exponential growth in tourism in recent years, from barely a million in 2004 up to more than 7,5 million tourists in 2017. This exponential growth has radically changed the city's social, economic and physical landscape, creating a great number of frictions yet unsolved. Debates about the limits and impacts of the “touristification” of places have exploded. Among the most polemical are the transformation into guest-houses or hostels of the so-called “Islands”(ilhas). The “Islands” are a unique typology of housing that emerged in the late XIX century and consists of a wall façade to the main street and an interior private street with rows of houses on each side.

The rise of modern architecture as well as the later socialist revolution of 1974, put the spotlight on the “Islands”. During this time, architects in Porto developed a great number studies about these houses, developing schemes that improved living conditions while maintaining its inherent qualities of community and neighborhood. Nowadays these socially stigmatized houses became the picturesque accommodation for tourists. The small scale of rooms and its traditional-house aura turned the “Islands” into the perfect profit model of tourist housing. But these changes come at the cost of relocating most of its original inhabitants outside the city or to leave some of them as almost decorative figures.

In western literary tradition the Island is a space of experiment, where dream and reality are confronted to produce both images of perfection or chaos. In Porto, the “Island” is real.

keywords Tourism, Architecture, Slums, Architecture

“Siza Vieira returns to heart of Porto” (Branco, 2017) the headline reads. On July 2017, in a TV show dedicated to branding, the architect Nuno Grande announced the acquisition of Monte da Lapa “Islands” and explained the refurbishment project for these old industrial slums in the center of Porto. Grande's arguments revolved around the fact that this was an attempt to develop a successful co-habitation between city-users (tourists) and city-tenants(local inhabitants). The new Monte da Lapa would in his words would“(…)substitute the traditional tourism logic(…)for an intervention that kept inhabitants in the heart of Porto, in the industrial labour housing units, and make them blend with city visitors.” (Branco, 2017) To legitimize this real estate operation, avoiding claims of aestheticization of poverty or gentrification, Grande chose the renowned portuguese Pritzker-Prize winner Siza Vieira to design it.

Although the scale of the project is relatively small, its impact, either positive or negative, can be tremendous. The escalation of tourism in last decade (from barely one million to almost seven million tourists a year) as put brought as many benefits as it created tensions. Tourism has gone from residual to almost the city's most important industry. Tourism created a boom in the housing market, dragging a lot of locals out of the city. The city's urban reforms were, with very few exceptions, done to functionalize and intensify the tourism. In last couple of years many voices said the city had itself been turned into a brand.

This commodification of the city by tourism raises great ethical problems that inevitably have an architectural reflection. Having this into consideration, the transformation of the so-called “Islands” into tourism projects just makes these questions all the more prominent. As I will later show, the “Islands” were always a kind of political

battlefields within the city as well as labs for innovative architectural experiments. The evolution of the attitude towards them is the reflection of the evolution of the mind frame of society itself. "Islands" came a long way from its somewhat secretive construction in XVIII and XIX century, to the attempt of its substitution by suburban housing blocks of early and mid XX century, to their reconnection with the city after 1974's revolution, to the attempt of eradication and substitution by gentrified real estate developments in the 80's and 90's, to (finally) its conservation and re-adaptation as touristic attractions.

The participation of Siza Vieira in Monte da Lapa project only adds complexity to the whole thing, as Siza cemented his name as international renowned architect with his interventions in "Islands" during post revolution period. In both Bairro da Bouça (concluded only in 2005) and S.Vitor (never finished) projects, Siza very masterfully articulates the original "island" vernacular typology with central Europe social housing references of 1920's. Besides this very articulated design exercise, Siza was also able to create a truly social experiment where poor local inhabitants were in direct connection with architects and the housing projects they would inhabit. More than 50 years passed, these operations in post-revolutionary Portugal of the mid 1970's are still a unique example of an extraordinary other way to do and to commission architect. An example of how poor neighborhoods can be re-connected and opened up to the rest of the city without destroying its unique character or autonomy. In the present day, the co-habitation problem of the 1970's has not disappeared but only taken another shape. The co-habitation between tourists and locals is perhaps the biggest challenge the city faces today. How to accommodate the big masses of tourists without expelling locals into the periphery? How to keep the city attractive and functional for tourism without turning it theme park resort? How to maintain the "soul" and character of the local population without exploiting poverty? How to renovate the city, without radically changing it or on the other hand keeping it static open air museum for the tourist gaze? How can architecture play a fundamental roll in the harmonization of urban tourism and urban living?

ISLANDS, FROM BOOK PAGES TO THE STREETS

Islands have always occupied a very special place in the collective imagination. In western literature, Islands have always been represented as an exceptional geography that symbolizes and potentiates difference offering itself as perfect scenario both for perfect utopias and nightmarish distopias. "Islands, therefore, are places that can be paradoxically both safe havens and sites of great upheaval." (Stephanos, 2008, pag 7) In the western literature tradition "time and again we find the island represented as the locus of a transformation, a translation" (Stephanos, 2008, pag 7) this can be seen from Homero's "Odyssey" to Thomas Moore's "Utopia", from Jonathan Swift's "Gulliver's Travels" to Daniel Defoe's "Robinson Crusoe", from William Golding's "Lord of the Flies" to Aldous Huxley's "Island". This is also true in the Portuguese literary tradition as we can attest in Camões's "Lusíadas" or in Saramago's "The stone raft". In all these books, the insular topography "(...)explores and creates bridges between the real and the imaginary" (Stephanos, 2008, pag 8).

In Porto the architectural typology of the "Island" also reflects a kind of alternative to the norm, as it "(...)can be understood as an element of 'otherness". The Island simultaneously represents the city and the other side of the city" (Seixas, 1996, pag 8)

As Seixas very plainly explains "(...)the construction of the island as a ritual that reproduces the city itself, turning the small bourgeois constructor into the status of big capitalist to the eyes of society." (Seixas, 1996, pag 10) "The islands would therefore be a topological expression of a struggle between the panoptical and microscopic reproduction of the city - as wished by the bourgeois- and a more egalitarian alternative - a product of the more or less conscious wish of right to the city by the workers."(Seixas, 1996, pag9) The two variations, Island with a bourgeois house and isolated Island, would respectively be the representation of the bourgeois city and the projection of a possible labour city. Thus the construction of the islands mimics the "(...)social differentiation between center and periphery." (Seixas, 1996, Pag 9) "In the context of the industrial city and therefore it can be said that 'To construct an 'Island' is to construct a city.'"(Seixas, 1996, pag 10)

CITY WITHIN THE CITY

"Etimologically it's probable that its origins come from the insulae of Imperial Rome, housing units that accommodated the lower classes and that could reach 6 floors, only inverting the vertical for an horizontal logic"(Pinto, 2015,pag 24) The famous book "Descrição Topographica e Histórico da Cidade do Porto" of 1789' already identified houses with 15 different families and that by its extension were called "Islands". Big growth in second half of the XVIII century created rectangular, narrow and extremely long lots of terrain that would latter shape the 'islands'. The spread of this type of construction was fast and by 1830 there were already 200 hundred islands and at its peak, in 1930, there were more than 13000, with a fifth of Porto's population living in them. The inhabitants were mostly poor migrants from the rural country newly adapted to the city life that caused a certain

"ruralization of the urban space". "The island formed a common identity, a space of resistance and socialization of the poor(...)"(Pinto, 2015, pag 21) | As Gaspar Martins Pereira points "The island worked as kind parallel universe, a social and cultural micro-cosmos". This was due to complete lack of knowledge that wealthier classes had of these "Islands". These were secluded and secretive spaces that were in the very heart of the city but at the same time hidden from it, using similar urban codes (street, the row of houses etc...) but completely detached from the rest of the urban structure. In present day Porto there are still over 700 of these "islands" with half of its houses now vacant.

The islands consisted of rows of houses, generally with one and maximum of two floors high, constructed in Porto's generally extremely deep backyard leftovers of the bourgeois houses. As marked by Jorge Ricardo Pinto "In many cases, the connection between these rows of houses and public space was done either by a door in the wall facing the street or a sort of tunnel under the street façade of a two floor house, occasionally inhabited by the landowner.

The solution is ingenious has much as it is speculative. The typology adapts itself perfectly to the city's morphology as it uses almost totality of the vacant lot. As Virgilio Pereira describes the houses were very small (4m wide) with only one door and one window facing the "semi-private street" and "(...)its dimensions rarely exceed the 16 square meters by unit." (FERNANDES, 2004: pag 29) The morphological characteristics of the city's lots, narrow (more or less 5,5m) and extremely long, fomented the island solution very much inspired by the back-to-back houses in industrial England cities like Leeds or Liverpool (Seixas, 1996, pag 9)

As a Pereira points out "Porto grew inside itself" (Pinto, 2015, pag 22). This process "centrifuging of the poor" in the XIX century was facilitated by the fact that at the time the Town Council's only design preoccupation was the street façade, having no legal instruments or will to regulate the inside of city quarters, promoting intensely speculative design solutions as were the "Islands". These were very lucrative real estate operations, for each house contained no more that very small partitions (a living room, a kitchen and one room; sometimes a small upper room above the kitchen) and materials were cheap and no ventilation, sewer infrastructures, electricity or running water or demanded. As for the bathrooms, when existing, were communal and placed in top end of the street row. Rents were low but as some islands contained each almost twenty individual houses the real estate promoter would very rapidly get his money back.

The first big concentration of islands were located in new urbanizations of the beginning of the XIX century, cheaper areas in times of the cholera epidemic, French invasions, hunger and civil war. In the first decade of the XX century the construction of Islands was made illegal. Hygiene and disease control policies saw the first construction of new housing quarters to substitute them. The process was accelerated in the 50's and 60's with advent of modernist planning ideas and subsequent construction of big housing blocks in the suburbs. The scale of the operation was enormous, fast and painful removing as much as a fifth of the urban population being removed to the periphery and the demolition of many islands.

As José Antonio Bandeirinha points out, in the end of the 60's and beginning of the 70's mark a crisis moment in European architecture. One year before the Portuguese Revolution of 1974, Manfredo Tafuri denounces all consummated utopias, from the illuminist era to the contemporary world, as coincidental in falling prey to the imperatives of either the "bourgeois art" or logic of the market. All in all, Tafuri explained in detail the labyrinth in which the architecture of its time was trapped. An ideological dead-end. As a result, design was at that time abandoned and considered an instrument of oppression. Architecture as a practice, done for the people and to the people was considered impossible. This would radically change with advent of the 25th of April Revolution of 1974 in Portugal.

The country, burning with political fervor after the longest dictatorship in Western Europe, started taking definitive measures to face a situation of unescapable seriousness, the housing crisis. "The lack of housing was now in the figures of 600000 and rising."(Bandeirinha, 2016, pag 143)

To face this situation the provisional government created the SAAL program. This was a decentralized organism, controlled by the state but in a direct connection with the locals, in an effort to respond to the housing crisis without committing the same mistakes of the previous decades (real estate speculation, gentrification etc) in both Portugal and in other parts of Europe. "In the post-revolutionary Portugal there were finally the conditions architects had been looking for working with and for the people." (Bandeirinha, 2016, pag 143) With real estate

1 / "It is in this context, a demographic growth along with the city's inadequacy when faced with an exceptional housing demand, that will have a multiplying effect in the growth of the "islands", a housing typology that pre-dates the industrialization but that will nevertheless be potentiated by the latter." (Pinto, 2015, pag. 19)

promotion industry stopped, it was up to inhabitants in connection with the technicians in direct connection with the government to identify the problems and needs and then come up with plan for its resolution. The end result was though very diverse and uneven due to "(...)the social and political pressures(...)"(Bandeirinha, 2016, pag 144) but proved, even if briefly, that the city could be renovated by architecture and by the construction of social housing in a purely political way. City and city dwellers regained the city from the hands of bureaucracy, technology and the market.

The results in Porto, in particular, far surpassed the results in other parts of the country. The city's architecture school had in the SAAL process its true rebirth. Architectural theory was thus saved by architectural practice. In its most successful operations in Porto, the pressing problem of the "islands" was resolved in an extremely modern way, taking into account the city's history and morphology and connecting it to history's most advanced social housing experiments (the working quarters of Holland, the german Siedlungen or the avant-garde experiments of Taut, May or Oud).

A striking case of this was Siza Vieira's project for the "island" of São Victor. In this project "(...)the interior of the bourgeois city, marginalized until that point, is given an urban role(...)"(Bandeirinha, 2016, pag 146). The city's hierarchical system is analyzed and turned inside out. Lefebvre's "right to the city" is gained in the architecture and the design field, the same that created its inequalities in the first place. The city proved to be able to be a place for the co-habitation of poor and wealthy.

TOURISM AND THE ISLANDS: from segregation to exploitation

The Monte da Lapa project is the latest chapter of this long history of "islands" bringing them back to the center of the city's architectural and urban debate. Although details are scarce and a thorough evaluation of the project will only possible years after its construction, it is nevertheless possible and important to analyze it on the basis of its discourse and the inherent contradictions.

In an interview the architect, Nuno Grande, states that his intention is to develop a new business model that would combine social housing and tourism facilities; consisting of a small hostel, Erasmus student apartments, tourist apartments and social housing. Grande says he wishes to capture and maintain the genius loci, the authenticity and the memory of the place while simultaneously introducing modernity, cosmopolitanism and inter-classism to it via tourism. Locals would retain their houses, with no increase in rents, with the benefit of seeing them remodeled and enlarged; tourists, on the other hand, would enjoy a unique and truly local experience; and the city would benefit socially and economically from having more and more diverse people living in it. In his own words, the process could be described as a gentle and thoughtful gentrification that would reconcile city-tenants and city users.

The project seems to represent the architectural crystallization of the fusion between apparently contradictory political urban perspectives. Capitalism would turn conscious while socialism would turn profitable in a sort of new urban "third way" utopia. Tourism would be thus used as a tool to reconcile class struggle utopianism with the realism of the market economy. The Monte da Lapa project tries "to assemble a set of signifiers as a way to fundament an intervention that in itself as little to do with the origins of those same references."(Coutinho, 2017) "The end of history" and the consequential triumph of liberal capitalism, as proclaimed by Fukuyama, is thus achieved by an endless cycle of repetition and appropriation of past history "(...) first as tragedy, second as farce", as Marx famously put it.

In Monte da Lapa we can see how SAAL's original socialist rethoric and intentions are updated to fit a neoliberal logic. Inviting an icon of SAAL, like Siza, to design it, maintaining the 1970's design logic although radically altering its goals and processes only lends verisimilitude to this reenactment of history. In this new version, speculative real estate capital works with and for the people while the original role of the state disappears. The class struggle dynamics that made the original SAAL and its islands interventions so rich are now permanently frozen in time for the tourist fruition. The social concerns revealed are central to the success this self-assumed gentrification project because they are mainly aesthetic. As Sarah Kendzior's states, in "The peril of hipster economics", "(...)the gentrifiers focus on aesthetics and not people. Because for them people are aesthetic." (Kendzior, 2014)

Nuno Grande rethoric about the all-around social benefits of urban tourism mimic those used by the local power to justify the imbalances provoked by the city's touristic boom of the last decade. "(...)journalist Adam Hudson notes that "gentrification is trickle-down economics applied to urban development(...)" (Kendzior, 2014) and it seems that this logic as slowly became unanimous substituting urban planning in the city of Porto. Contrary to Grande's idea, tourism has not helped fixed people in the city center but as instead derived the big majority into periphery. The gigantic economic revenues of the millions tourists every year have only contributed to a more

unequal city. The boom in hotels and AIRBNB's meant the accentuation of the "donut effect", with more and more people having to move further away from the city due to the soaring house market prices. The dream of a more cosmopolitan and diverse city as given place to an increasingly harder to disguise theme-park city. Monte da Lapa as well as other similar mercantile urban acupuncture operations are thought in a minimal quarter logic and not inserted in a general and broader urban plan. This permits only a narrow and often aestheticized vision of both people and architecture. The island of Monte da Lapa is just an example of conserving the material by flattening its history, invalidating a richer and more complex readings. It is no coincidence that the Monte da Lapa project, with an architect as its real estate promoter and a Pritzker-prize winner as its designer, is publically presented, not in a architecture conference or magazine, but in a TV show dedicated to branding. Just like brands, architecture has now become, intangible and hollow, ready to accommodate simultaneously every contradictory meaning one projected by the public. A phenomenon that transcends largely architecture in itself and can now be seen engulfing entire cities.

As Lefebvre wrote "(...) a city, historically constructed is no longer lived or understood. It just a mere object of cultural consumption for tourists, for an aestheticism hungry for spectacle and the picturesque. Even for those who seek to understand it affectionately, it is gone."(Coutinho, 2017)

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[TOU/05]



SE(CON)D (C)H(A)NCE

Hydraulic arrangement and reconversion of Conca basin: an opportunity of development for the inland of Romagna

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abstract

Coastal areas are dynamic environments, whose balance depends on the interaction between natural and human factors. Sometimes this balance is compromised and this is what happens to Conca River basin, located in the South of Riviera Romagnola, a stretch of the North-East Italian coast. This study starts from a multi-level analysis that consider the complex range of environmental issues currently afflicting this territory. It aims to perform the hydraulic arrangement from the reservoir to the whole river and it suggests its functional reconversion, which offers great potential from both a naturalistic and a strategic point of view.

The reservoir was built in the early 1970s, in order to provide the water supply to the Rimini's south coast municipalities and at the same time to allow the aquifer recharge, consequently to its exploitation because of the peak summer demand. Indeed, since the 1950s, Riviera Romagnola became one of the most important destination for Italian and European tourists and the whole territory began to suffer the water shortages. Due to the creation of the reservoir only 3 kilometers away from the coast, this system caused a set of hydraulic and environmental problems, that nowadays make it difficult for the reservoir to be a real water supply source. In fact, even if the role of tourism has been important for the economic and social development of Riviera Romagnola, actually it claims a consistent providing of infrastructures, that currently are strong elements of weakness in terms of vulnerability and resilience. The reconversion of the surface of the reservoir become an important occasion to start an environmental regeneration and at the same time a catalyst for the enhancement of the landscape system and the touristic supply diversification, by embracing sportive and ricreative activities and promoting the reconnection between the coast and the inland of Romagna.

keywords Reservoir, Romagna, Water supply, Tourism, Infrastructure

Introduction

At the end of the nineteenth century the Emilia-Romagna coast consisted of a strip of low and sandy shoreline, about 100 km long and wide in some parts over 100 m, edged by dunes and interrupted only by the mouths of rivers and canals. The population centers were few and sparsely populated.

One hundred years later, the framework was radically changed, in fact during the twentieth century the coastal system had undergone profound modifications, especially for the development of tourism and urban expansion, leading to the disappearance of most of the original landscape-environmental features.

In fact, at the end of the '70s a large part of the coastal territory had become a single linear city, consisting of seaside tourist facilities and urban settlements. While from one side the tourist boom was an important driver for economic and social progress on the Adriatic coast, on the other side it caused a series of problems of a strategic and environmental nature. In fact, the administrations at that time had to respond to the growing demand for water, especially in the summer. It was no longer sustainable to draw large amounts of water from aquifers, so two infrastructures were constructed for the superficial capture of water: the Conca Dam¹, the object of this research, and the Ridracoli Dam².

The Conca Dam a few years after its construction was already subject to a series of problems. Only thanks to the construction of the Ridracoli Dam it was possible to limit the withdrawal of groundwater, thus hindering the phenomenon of subsidence, which in those years had reached very high peaks.

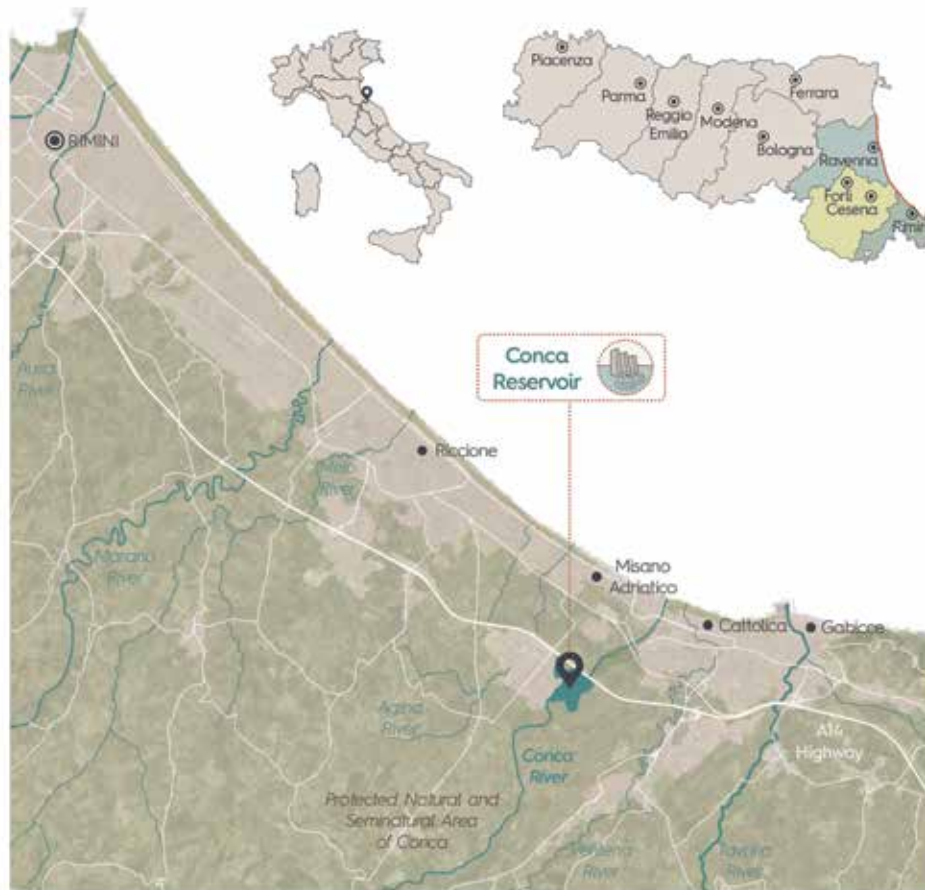


Fig.1: Localization of the Conca Reservoir

1. The loss of adaptability and resilience of the coast

The subsidence was not the only problem that needed an answer, in fact the changes that occurred over time generated a series of critical issues in Romagna, which still afflict this territory. Some striking examples are the reduction of the river sediment transfer to the sea, the infiltration of seawater in the aquifer and the coastal erosion. In an attempt to solve the problem of coastal erosion, during the period 1950-80 hard defence works were carried out along a stretch of almost 54 km of coastline, but, given their strong landscape-environmental impact, in recent years the defense strategy has opted for the less invasive practice of nourishment. These interventions, however, didn't solve the problem from the root and this is precisely the focal point of this research.

In recent decades, the coast has gradually lost its characteristics of dynamism and resilience but there are strategies to hinder this trend.

2. Conca Reservoir as a residual of the 'tourist boom'

The Conca Reservoir was built in 1972 in the terminal stretch of the river basin, with the aim of integrating, during the summer, the water supply sources of the coastal municipalities. However, its construction in a flat area just 3 km away from the coast has immediately caused a series of environmental problems, first of all the silting process of the reservoir. In fact the presence upstream of the reservoir of five weirs³ causes the slowing of the water current, so the material carried by the river settles in the reservoir, rather than naturally reaching the sea. All this implies the need to constantly operate expensive dredging, in an attempt to guarantee the useful capacity of the water resource, and at the same time also expensive nourishment at the mouth, to hinder its tendency to retreat.

The Conca Dam today has substantially lost the function that had motivated its realization, in fact the water supply function of the Romagna is guaranteed for 50% from the Ridracoli Dam and, for the remaining part, from the other innumerable sources located in the territory of the three Provinces.

The question may arise spontaneously: why not eliminate the reservoir and restore the original balance of the river? It might seem like the obvious choice, but after a careful analysis of the naturalistic and strategic potentialities that characterize this infrastructure, it is clear that the Conca Reservoir needs a strategy aimed rather at re-establishing a dynamic and resilient behavior for itself and for the coastal system⁴.



Fig.2: The Conca Reservoir at the current state

Objective

While the construction of the Conca Dam has changed the geomorphological characteristics of the river and has altered the balance of the coastal system, at the same time it has enriched the ecological value of the valley. In fact, the reservoir has a great importance for the territorial ecosystem and since 2011 it has been under the protection of the management 'Natural and Seminal Protected Landscape of the Conca River', in accordance with the guidelines of 'Natura 2000 ecological network'. These institutions promote the preservation of biodiversity and the sustainable connection between the cities of the coast and the relative inland, encouraging cultural, educational, sporting and leisure activities.

1 / The Conca Dam and its reservoir are located in the South of Riviera Romagnola, in the Province of Rimini.

2 / This is an artificial lake built on the Bidente River, in the territory of the Province of Forlì-Cesena. It has a water capacity of 33 million m³, compared to just 0.44 million of the Conca basin.

3 / The weirs were built in the '80s to restore the balance of the river, depleted of inert material due to riverbed excavations during the construction boom.

4 / The main inspiration became from the project of TLS Landscape Architecture, winner of the competition 'Lion Mountain Park' (Suzhou, China) in 2016. Project link: http://tlslandarch.com/portfolio_page/lion-mountain-park/

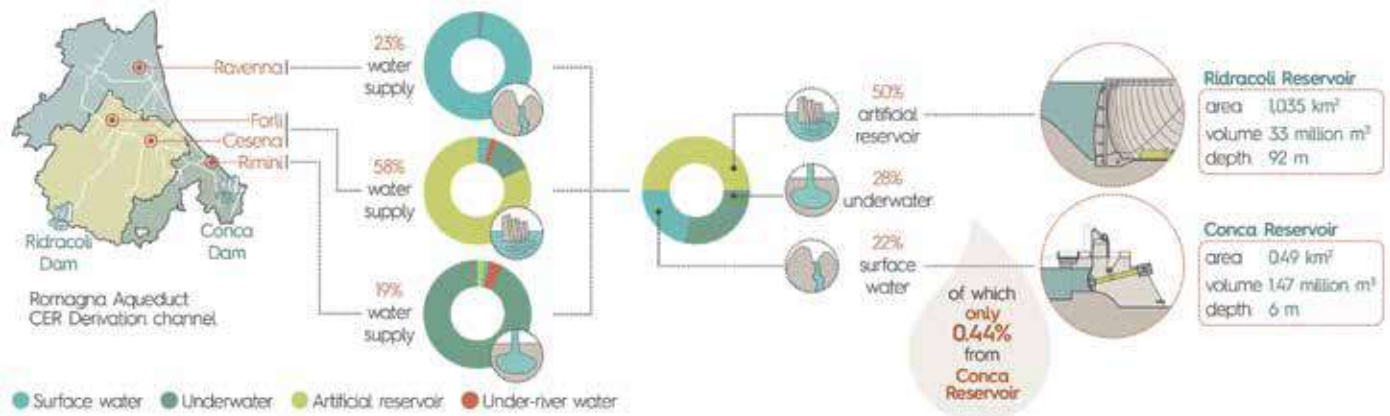


Fig.3: Water sources of the three provinces of Romagna

With the awareness of the importance that the Conca River has for the inhabitants of its shores, the project aims to encourage it as a place of social identification, through the promotion of paths that recover and enhance its environmental characteristics, in close relationship with the cities of the coast and pursuing the principle of sustainability in planning and design choices.

Starting from these aspects, the project aims to integrate two important objectives: the management of the hydrogeological risk of the entire river and the elaboration of a strategy of requalification and functional reconversion of the surface of the reservoir, oriented to its environmental compensation and to a sustainable tourism and recreational activation.

In fact, the territorial area of Conca Reservoir is one of the best opportunities for the development of the inland of Romagna and the presence of a rather extensive wet surface is a great opportunity to settle water sports activities. Indeed, among all human activities, sport has one of the most significant correlations with the natural environment. Among the objectives of the project there is also rehabilitation and enhancement of the cycle pathways on the riverfront, which are today fragmented, through the preparation of equipped rest stops and the preparation of educational and information signage and public lighting systems.

The places of naturalistic interest along the river would be put into a system, reconnecting the routes that from the mouth allow the ascent to the hinterland and at the same time the connection with the green system, parks and urban centers. Among the polarities of naturalistic interest, there is also the ornithological Observatory on the left bank of the reservoir which, besides constituting an important scientific resource in the faunistic field, also assumes a certain importance for the promotion of the area.

Methodology

In order to undertake a reconversion and redevelopment strategy of the Conca Reservoir, we initially carried out an in-depth and multi-sector analysis of the characteristics and criticalities of the entire river, with a view to not intervening on the single problem but with the goal of adopting a strategy capable of long-term benefits. In fact it is only through a synergistic involvement between the various specialized skills that it is possible to guarantee a more aware management of the territorial resources.

Thus, thanks to the collaboration between Sealine⁵ and the Department of Hydraulic Engineering of the University of Ferrara, it was possible to find and systematize a series of information, data and previous studies⁶, in order to understand the dynamics that have affected the Conca Reservoir over time.

In light of a rather clear general framework, we have pursued the restoration of an environmental balance by identifying three specific actions, one for each of the three river stretches: the removal of the weirs along the river to reactivate the solid transport, the realization of a by-pass channel inside the reservoir to allow the solid material to overcome the dam and the reconstruction of the dunes for the retention of the material that would thus reach the sea. Then we evaluated how to intervene through a series of scenarios, estimating case by case the strengths and weaknesses and systematizing all the needs, starting from a macro vision and reaching a micro definition.

1. The removal of the weirs

In the period 1950-60, the Conca River was subject to indiscriminate excavations in the riverbed, with the consequence of the impoverishment of the layer of alluvial material of which the riverbed was formed, triggering serious channeling phenomena. To solve this problem, starting from the 80s, five weirs were built upstream of the reservoir, for a stretch of 2.8 km. Although the removal of the weirs allowed the reconfiguration of the

riverbed and the decrease of the silting process of the reservoir, at the same time, having reduced the overall solid transport, it caused serious consequences on the river mouth.

For almost twenty years the river has reached once again a balance profile and for this reason the usefulness of the weirs is now outdated. These artifacts, moreover, constitute real barriers for the circulation of fish populations along the river. Considering that the hydraulic risk is limited, the project proposes the progressive removal of these five weirs⁷. This would allow an increase in the slope of the river and the reactivation of the solid transport in the perspective of the natural nourishment of the river mouth, as well as a greater permeability of the river environment for the species.

2. The realization of an internal by-pass channel

The presence of the dam and of the artificial reservoir is the cause of a strong imbalance for the coastal system. The original project involved the construction of a by-pass channel off the riverbed, but since it was never built, there was a lack of solid contribution to the mouth. Because of the low slope of the bottom of the reservoir the material settles inside it, aggravating coastal erosion. This situation implies the necessity of periodically sediments dredging, which now have a consolidated thickness of about 1.4 meters⁸. Now high costs of these frequent dredging operations make the maintenance of the reservoir as a water reservoir very impractical⁹.

Therefore the project proposal involves a careful dredging of the entire surface of the reservoir and the appropriate reshaping of its bottom. In a second step, an internal by-pass channel is provided to ensure the solid material is released during the opening of the dam. The dredged sediments would be reused to build the by-pass banks and to model the surrounding green area¹⁰. The effectiveness of the by-pass would be limited to the opening period of the dam (October-May) while in the remaining period the function of the water reservoir would be preserved.

3. The reconstruction of the dunes system

The Misano Adriatico beach¹¹ requires high management costs because it is subject to heavy erosion and the contribution of the Conca River, given the current situation, is generally irrelevant for the purpose of the natural nourishment of the beach. Currently the Authorities aim to contrast the construction of new rigid defense works and artificial reefs, since these solve the problem of erosion in a given stretch but often accentuate it in adjacent stretches. Provided that periodic beach nourishment operations are considered indispensable, given the severity of coastal erosion, we propose to reconstruct the dunes at the river mouth area. The consolidation of the dunes would be favored by the arrival of the sand, made possible thanks to the actions planned upstream.

4. The evaluation of intervention scenarios

The Conca Reservoir is subject to a periodic alternation between presence and absence of water, in fact between April and September the accumulation takes place but, after the summer season, the dam is opened and the reservoir is completely emptied. For many animal species this is a source of strong imbalance, therefore one of the primary objectives of the project was to provide systems that can guarantee the presence of water throughout the year.

Starting from these assumptions we have examined different scenarios of intervention: some limit scenarios - specifically those of maintaining the current situation, the restoration of the original river bed and the restoration of the appearance of the reservoir as at the time of its realization - and other scenarios. The latter had in common the idea of dividing the surface of the reservoir into several tanks, through the construction of some internal banks.

After a careful evaluation of each scenario, from the point of view of the tourist-recreational potentials and that of the long-term hydraulic-environmental benefits, it was decided to divide the basin into three main areas, one for

5 / Research Center of the Department of Architecture of the University of Ferrara.

6 / In particular, the studies on the solid transport regime of the river, the history of interventions on the reservoir starting from its construction, some advanced intervention proposals in the past, etc.

7 / With the exception of the weir located immediately upstream of the reservoir, for reasons that will be illustrated in the following paragraphs.

8 / In the most critical points sediments can even reach 5 meters thick.

9 / In addition, the contribution of Conca Dam on the overall water balance of the Romagna water supply is only 0.44%.

10 / The project proposes the construction of hills, to enclose and collect the lake environment, through the use of the dredged material, which is free of pollutants and therefore suitable for re-use.

11 / It is the beach at the mouth of the River Conca, characterized in summer by a strong tourist presence.

the water supply, the other two designed to maintain a constant water level. This would ensure a suitable habitat for the preservation of the species and would also guarantee the possibility of practicing water sports, with the benefit of encouraging tourism throughout the year.

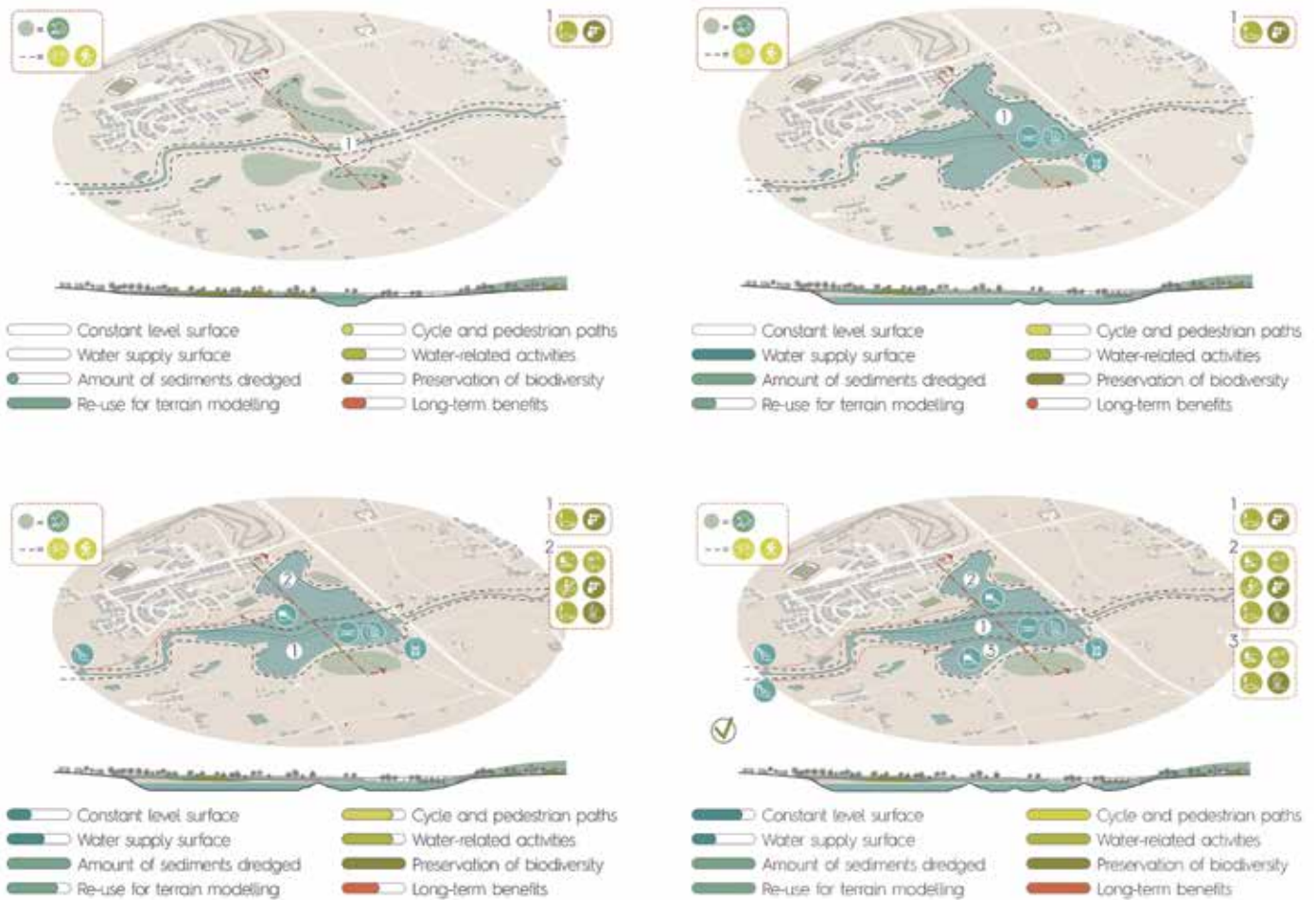


Fig.4: Different scenarios of intervention

Furthermore, it is important to underline that since 2003, the Wellness Valley Foundation¹² promotes the enhancement of local characteristics and organizes several events related to sport and health, with a view to improving the quality of life of people. The Conca Reservoir redevelopment project could be rightly included in this program, setting itself as an important opportunity for sporting and eco-sustainable territorial re-activation. This would be possible thanks to its proximity to the main seaside tourist destinations of Romagna and also due to the presence of other tourist centers of supra-local interest, such as the Misano Circuit, the Riviera Golf Resort and the Riviera Horses Resort.

Results

1. The project proposal

Having emerged the need to achieve a sub-reservoir of constant conservation of water, we decided to tripart the surface of the reservoir, through the establishment of two main banks, which would determine a central floodable area¹³ and two adjacent areas with a water level constant. The project also foresees that the areas at constant water level are further subdivided, through minor banks, in different areas, each of them with a specific function. The presence of all these embankments inside the reservoir would allow the realization on its surface of a network of cycle-pedestrian routes¹⁴, able to increase the enjoyment of the area and to favor the dialogue between the two shores.

Overall, as can be seen from the Masterplan, the North area would be divided into four tanks: two dedicated to phytodepuration, one to sport fishing and another to rowing and bathing. The South area instead would have a pool dedicated to surfing, one dedicated to the cable park and one to practice climbing on the water, as well as a further phytodepuration tank. A pump track for mountain bikes would also be built near the southern bank of the reservoir.

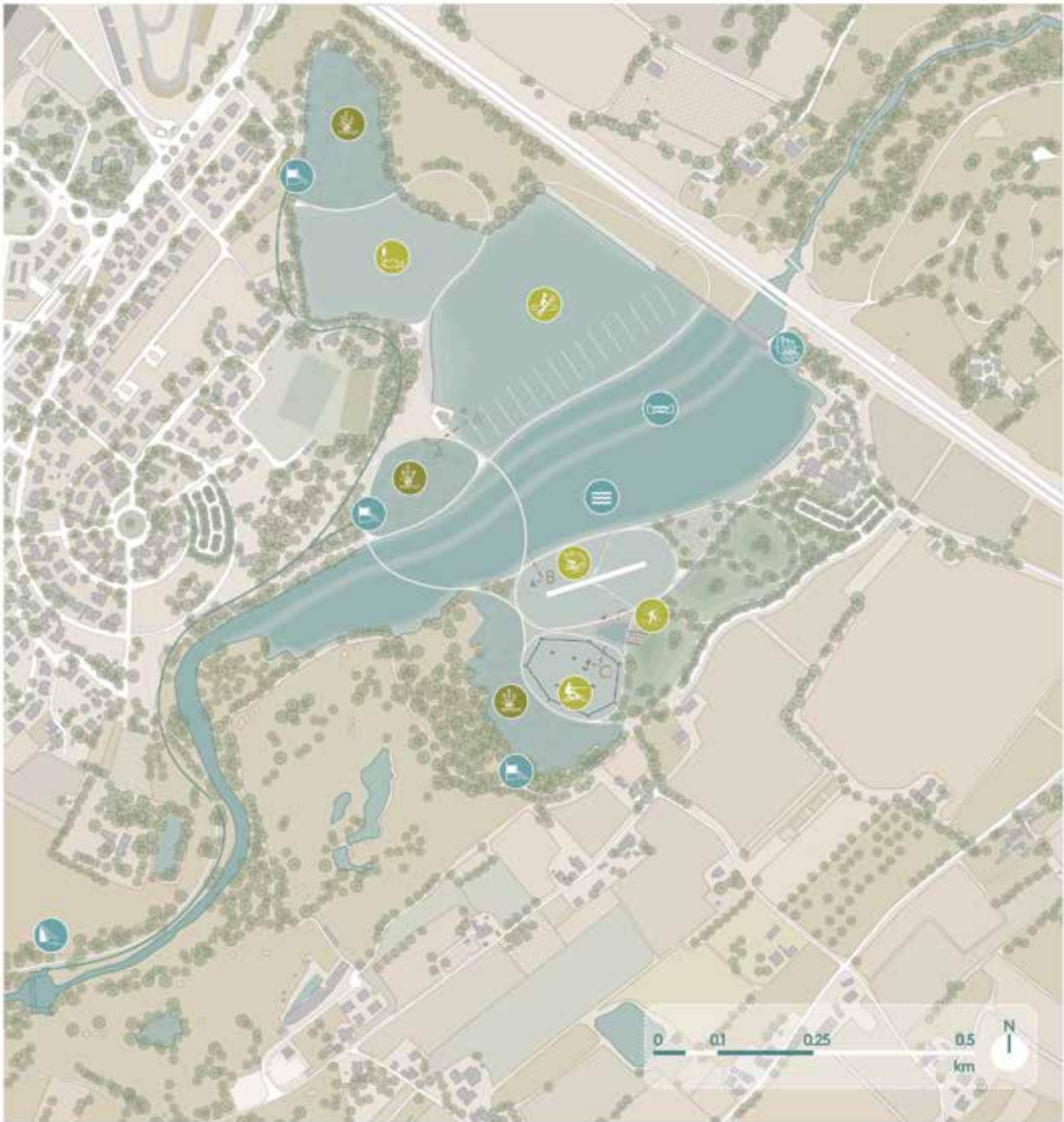


Fig.5: Masterplan

12 / It is a consortium of local companies linked to the tourism sector, a well-established brand on the national and international scene.

13 / This floodable area would be directly connected to the use of the dam and provided with an internal by-pass to ensure the solid contribution to the sea.

14 / As for the accessibility to the area, we have provided two parking areas, one near the technical buildings of the dam, the other near the residential buildings in the north of the reservoir.

The presence of these competitive and amateur sports activities has an important role for the relaunch of outdoor and environmentally sustainable tourism in the entire territory of Romagna. In fact, it is an activity able to attract many sports enthusiasts and to propose events of a certain importance, giving visibility to these territories and supporting their strategic-environmental regeneration policies.

2. The hydraulic system design

The effective functioning of the internal tank system would be ensured by a strategy that would reuse the weir located upstream of the reservoir¹⁵.

In fact, this weir would be implemented through the construction of two intake structures, one for each bank of the river, which would allow the derivation of the waters and their conduction within the relative phytodepuration tanks¹⁶, through two by-pass channels¹⁷. These pools would improve the quality of the water coming from the river and, moreover, their limited depth would guarantee the preservation of suitable habitats for the species¹⁸. Once made suitable for bathing, the waters would be conducted within the relative pools for practicing water sports.

3. The environmental benefits of a conscious management of the Conca river

Thanks to all the photogrammetric surveys¹⁹ and to the data provided by the dam manager, we have estimated the current sedimentary balance and compared it with what we would expect after the actual implementation of the proposed interventions. Following the elimination of the weirs, solid transport would be reactivated and, thanks to the realization of the by-pass channel inside the reservoir²⁰, this would be able to overflow the dam, with an increase in the contribution to the sea of the 160 % (resulting from a current 8% to 95%). Moreover, thanks to this design strategy it would be possible to expand the tourist offer but at the same time also to guarantee the function of water supply, at least for agricultural uses. These are very important data, which highlight the benefits that could result from a more conscious management of this infrastructure.

Conclusion

In years characterized by ever more evident climate changes on a global scale and by frequent hydrogeological disruptions, the management of the water resource implies the need to pay attention to the protection of the territory and the environment. It is essential to link the policy of water availability to the maintenance of suitable environmental conditions in the areas where water resources are located, especially when, as in this case, surface water is exploited.

In this sense, the re-functionalization project of Conca Reservoir is an important opportunity to reverse the tendency to let the contingencies take the upper hand over questions of interest to the community, such as the preservation of the values of the landscape. This strategy could create a valuable opportunity to promote a sustainable tourism model, and it would also show that the achievement of a compromise between the need for environmental compensation and the pursuit of sectoral interests is possible.

Acknowledgements

We would like to express our sincere thanks to all the professors who have guided, advised and motivated us in this long and difficult but satisfying thesis experience. We would like to thank arch. Luca Emanuelli and arch. Gianni Lobosco, our supervisors, for giving us their precious time, for their valuable advice, constancy and dedication. We would like to thank our co-supervisors, Massimo Tondello, for teaching us to apply our ideas by embracing the engineering technique, and Leonardo Schippa, for the willingness, competence and passion with which he has transmitted his knowledge about our theme of thesis.

15 / *The only weir that, for this reason, we decided not to eliminate.*

16 / *In these phytodepuration tanks, the typical plant species of the wetlands are expected to be rooted to a growing substrate and floating on the water.*

17 / *The one in the North would be a shallow channel, while the one in the South would be underground, due to the presence in this area of the Riviera Golf Resort.*

18 / *In the section near the Autostrada Adriatica, we have set up a barrier made of native tree species. In fact, on one hand the presence of this road artery has the merit of giving visibility to the intervention on the area but at the same time is a potential source of noise, especially for the ornithic fauna.*

19 / *All photogrammetric surveys carried out on the reservoir starting from its construction up to the last available survey, done in 2012.*

20 / *As considered in the engineering study 'Studio per il ripristino del trasporto solido a valle dello sbarramento del Conca - Regione Emilia Romagna - S.P.D.S. di Rimini' (Prof. Eng. A. Lamberti, Prof. Eng. L. Schippa)*



Fig.6: View of Conca Reservoir which flows into the Adriatic sea

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[TOU/06]



Sustainable Tourism In Southern Italy: Integrated Strategies For Rural Areas

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abstract

Regarding tourism as a rapidly evolving phenomenon, we must consider the whole complexity that characterizes this industry. Several aspects have to be taken into account: in addition to social, cultural and economic factors, we should reflect on the environmental dimension, which nowadays represents the most complicated and potentially damageable factor. This sector involves many activities that require strong coordination, various operators, and above all the exploitation of local resources that mostly can not be reproduced. In order to defend territories from irreparable damages, these actions must be regulated and overseen by authorities.

During the last few years, tourist flows, which are influenced by users' age, interests, income and spare time, have changed to meet the latest people's needs. Currently tourists travel more frequently in order to flee from everyday duties and responsibilities, so they choose nearer and cheaper destinations for short trips. People want to avoid crowded zones, therefore diverting tourist flows towards the countryside and small villages, with great potential but so far almost unknown, can be a good opportunity for their economic development.

Focusing on Italy, where tourism is a pillar of national economy, it is mainly chosen for culture, food and wine by now. The important event of the election of Matera as European Capital of Culture 2019, represents a significant challenge for the surrounding territories, which are weak, vulnerable, and therefore not ready to accommodate many people yet. The article, after a design experimentation in this area, proposes integrated strategies, which bring together economic, cultural, ecological, energetic and architectural aspects, in order to tackle the increase of mass tourism. The main goals are to promote, enhance and protect these fragile areas, to guarantee their integrity for the future, through a project able to meet the new needs.

keywords Sustainability, Mass Tourism, Countryside, Safeguard, Development

Tourism trends over the years: opportunities and threats.

During the last few years tourist flows, which are influenced by users' age, interests, income and spare time, have changed to meet the latest people's needs. Currently tourists travel more frequently in order to flee from everyday duties and responsibilities, so they choose nearer and cheaper destinations for short trips. People want to avoid crowded zones, therefore diverting tourist flows towards the countryside and small villages, with great potential but so far almost unknown, can be a good opportunity for their economic development. After several analysis and studies regarding this phenomenon, the following contribute illustrates the results of a design experimentation in Southern Italy, carried out within the 2nd level Master's Degree in "Valorisation and management of minor historical centres. EnvironmentCultureTerritory: integrated actions", at the Sapienza University of Rome.

1. Introduction

Over recent years an important economic crisis has put a strain on the industrialized countries and, as a consequence, on the developing ones, though indirectly. In this situation, characterised by uncertainty and a constant feeling of insecurity, only the tourism sector continues to increase significantly: people keep on travelling for leisure, passion, work, and many other reasons, depending on a radical change in needs, tastes, interests, and above all in the mentality of each one of us. Nowadays people have deep need to travel more frequently than a while back; currently tourist is not only who moves from their residence in order to have a relaxing holiday away from the stressful city life, but also who moves for business issues, conferences, study, health, religion,

sport. Unfortunately if on one hand the increase of the tourist flows improves regional and national economy, on the other hand it would have also unintended and undesirable consequences on the territory: pros and cons must be taken into account overall if it is hoped to avoid irreparable damages on the places mostly affected by tourism phenomenon. To sum up, even if tourism is a huge source of income and it encourages a responsible and careful attitude towards the environment, it could become a concerning global threat if it is managed without a multidisciplinary approach that pay special attention to preventive measures of environmental protection.

2. Mass Tourism: origins and development

Until the second post-World War period, in Western society tourism was purely a privilege of wealthy people from upper and middle classes. Since the '60s it began to have the connotation of a real cultural phenomenon, affordable almost for all those who were interested in. This change was affected by several factors; the most noteworthy was the important economic growth of those years, which led to a significant increase in personal income and in the economic well-being of families. It was not less important also the spread of the use of private vehicles, chosen mainly to deal with short distances, and above all the ever-increasing availability of public transport (trains and planes) at more affordable prices. It inevitably led to an increase in travel demand towards more distant destinations, which had been considered almost out of reach until then.

It was crucial a change in the mental attitude too, regarding the definition of "free time": it was no longer seen as empty time to devote to taking care of family and house, but rather it became time available to carry out recreational, cultural, and relaxing activities, and of course useful time to take care of yourself. This remarkable and rapidly changing need of population was the engine for the development of a new way of thinking, more inclined to travel and consumption. At the same time people began to no longer choose according to their personal tastes, but rather they followed standardized paths that included same places, activities, and period for everyone: the so-called Mass Tourism started to grow due to the work of tour operators who acquired an increasingly important role. They proposed for the first time all-inclusive services at competitive prices, which met perfectly the new needs of a collective tourism, affected by the passing fad and the continuous research of social relationships, inclusion and approval.

Undoubtedly, this phenomenon has been useful since it led to a decisive economic growth and job creation in tourism sector, and it was widely recognized that the new strategy was taking to substantial profit too. So several wealthy entrepreneurs started to invest their money in developing areas that were still unknown, but with great potential to become popular. The problem was that this way of managing the phenomenon soon brought to a number of countless negative effects. Tourism was still seen as an escape from the city and the frenzy of everyday life, and the landscape was only a backdrop, without having too much weight in the travellers' choices and therefore in tour operators' proposals (Viganò, 2017). The respect for the environment certainly was not at the first place when people chose their holiday destination, as well as the well-being of local citizens was not taken into account. But there is no doubt that a place crowded by millions of people, who begin to use its natural resources and to interfere with the local culture, can only be irreparably damaged in its balance, hardly achieved over the decades.

3. New trends in tourism sector: the importance of the environment

The way of thinking and doing described before and focused on the standardisation of tourist services, has affected Western societies for a couple of decades; soon it became inadequate and improper to meet the renovated needs of travellers, more careful and demanding than before. They no longer required a trip with the only purpose of getting away from their place of residence to have some recreational and relaxing moments, rather they were looking for more precise and targeted activities, that involved culture, food, sports, physical and mental health. Consumers were tired of mass product, they were looking for something different, unique, which could be customised in accordance with their tastes and feelings.

Like earlier, again that requirements change went hand-in-hand with a much more fundamental change in the collective mentality. In the '80s in fact, through the activities of WWF and Legambiente, people had made aware of the importance of the territory in all its complexity, and every actions started to be attentive to all risks that they could provoke, thereby establishing a new relationship between humankind and environment. In this way a new tourism form, more responsible, was born, which did not take into account only attractive and popular destinations, but rather placed the attention on naturalistic environments, local traditions, human relationships, handling particularly with the protection of the territory and the fight against environmental damages.

The Mexican architect Hector Ceballos-Lascurain in 1983 used for the first time the term "Eco-tourism"¹ to define that new trend, in order to promote a respectful behaviour towards the environment and those who live in it. He used the following words: "Eco-tourism is that tourism that involves travelling to relatively undisturbed natural

areas with the specific object of studying, admiring and enjoying the scenery and its wild plants and animals, as well as any existing cultural aspects (both past and present) found in these areas. Eco-tourism implies a scientific, aesthetic or philosophical approach, although the 'eco-tourist' is not required to be a professional scientist, artist or philosopher. The main point is that the person who practices eco-tourism has the opportunity of immersing himself in nature in a way that most people cannot enjoy in their routine, urban existences. This person will eventually acquire an awareness and knowledge of the natural environment, together with its cultural aspects, that will convert him into somebody keenly involved in conservation issues.¹²

On this basis, new ways of managing the tourism sector have been developed, and over the years they have been modified and adapted up to the present day, which is mainly characterized by the enormous importance given to environmental sustainability and safeguard, according to local traditions and availability of resources. The journey thus becomes a small choice of life, a truly unique experience, opened to the infinite richness of cultures, tastes and stories of the world, according with the opinion of Giovanni Viganò, Professor at Bocconi University in Milan.

4. How tourism affects human behaviour

There are very strong evidences that show how tourism can improve an area due to its ability to influence people's behaviour, speaking indifferently about "host" rather than "hosted". According to the prevailing tourist demand, local and national administrations propose every day several strategies, that increase tourist services both in urban and rural areas. Nowadays the main aims are to avoid the abandonment of small villages, revalue the local crafts, enhance local agriculture with the promotion of local organic products, protect naturalistic areas and archaeological sites. It is possible to obtain that thanks to a new concept of multi-dimensional sustainable tourism³, that gives the right importance to the limits of the environment, the social organization, and the cultural diversity in a society (Novo, 2006). In fact, for a better management of the tourist resorts, the key factor consist in the identification and analysis of the impact produced by global changes on climate, local culture, and behaviour, so as to be able to predict how the factors that influence tourism sector interact between them.

But putting into practice this thought would require new kind of relation between tour operators, host communities, tourists themselves, and the resources that could be exploited. This new heterogeneous and complicated broad set of connections makes up and characterizes tourism phenomenon itself, involving many different territorial and economic aspects. In this sense the educational and cultural aspect is very important: doing tourism means living new experiences, made of meetings, people, places, different ways of thinking, that for sure implies an increase in the personal culture of those who actually travel and those who welcome. At the same time it also allows the development of the social aspects, which means the change of the collective mentality, more open to innovation and acceptance of the different, seen as resources able to stimulate growth and not as a threat for their traditions and territory. However, if these aspects need a more thorough analysis, regarding the economic one it is easier to understand its impact on society because the results of the increase of cash flows, the development of the infrastructure and the growth of tourist accommodation and commercial activities, are undeniable. It is clear that this development involves a transformation of the area itself, sometimes even radical, and therefore must be kept under control. The environmental aspect tackles the problem of excessive urban growth, land consumption, water pollution, and resources exploitation, aiming to the valorisation and preservation of the environment, through the prevention of catastrophic consequences.

Starting from these assumptions, there is no doubt that sustainable tourism is essential to preserve the environment, biodiversity and culture of the wonderful places on our planet. Currently people are very aware of how the beauty of many places depends on the habitat that characterizes them, the local cultures and the balance created over the centuries. The holidays no longer involve a sort of mass consumerism, but rather an investment for themselves and for the inhabitants of the visited places: an opportunity to learn and grow together. The sustainable tourist adopts a behaviour that completely respects the place where they go on holiday, the nature, the environment, and the local populations. Otherwise, the latter are ready to meet the needs of tourists in an ethically and environmentally sustainable manner, fully heeding their own resources.

1 / According to the TIES's definition, Eco-tourism refers to a "responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education" - The International Ecotourism Society TIES, 2015.

2 / Hector Ceballos-Lascurain revised this preliminary definition in 1993 to: "Eco-tourism is environmentally responsible travel and visitation to relatively undisturbed natural areas, in order to enjoy, study and appreciate nature (and any accompanying cultural features - both past and present), that promotes conservation, has low negative visitor impact, and provides for beneficially active socio-economic involvement of local populations". This definition was officially adopted by The World Conservation Union in 1996.

3 / According to the UNWTO's definition, Sustainable Tourism can be defined as: "Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities" - World Tourism Organisation UNWTO, 2005.

Design experimentation in Southern Italy: goals, methodology and development of the research

Focusing on Italy, where tourism is a pillar of national economy, it is mainly chosen for culture, food and wine by now. The important event of the election of Matera as European Capital of Culture 2019, represents a significant challenge for the surrounding territories, which are weak, vulnerable, and therefore not ready to accommodate many people yet. The design experimentation hinges on the difficulty of combining that fragility with the high number of people expected for the event. The main objectives concern the introduction of new hospitality by the reuse of existing built heritage, and the proposal of new kinds of tourist itineraries, that pay special attention at the valorisation and safeguard of the territory. It is possible to achieve these goals through interventions able to spread and develop a form of sustainable tourism, which make users more aware of their impact on the environment.

1. Italian tourism trends and the choice of Basilicata

In Italy tourism sector has an extremely important role and it represents a pillar of national economy. According to a report made by the Bank of Italy and Eurostat, in 2016 the revenue from foreign travellers was about EUR 36.4 million, and Italy is the third European country with more overnight stays. While from the report made by Unicredit in collaboration with Italian Touring Club for 2017, it emerges that the Country has consolidated its position as the fifth world tourist destination with 50.7 million international arrivals. Below it is proposed a brief overview of the most relevant and lucrative tourism forms offered by Italy.

On foreign market, the main resource is its cultural heritage, made up of countless cities classified as historical-artistic and internationally recognized. Art heritage cities are constantly overcrowded, but nowadays the concept of cultural tourism⁴ includes many other aspects: today the "cultural tourist" is who wants to combine the need of relax and entertainment with the opportunity to know and discover the cultural aspects linked to the folklore of the visited places. So the attention has shifted to the small villages scattered in the Italian countryside, in which the authenticity of places and people is still preserved. Complementary to that, there is today a tourism steadily increasing linked to food and wine, which mainly focuses on slow food, organic products, sustainable agriculture, and which is accompanied by the development of a new social and economic trend: the agricultural tourism, a particular form of vacation consisting in staying at farms that provide hospitality and catering services. At national level, however, not less relevant are the seaside tourism and the more recently developed hiking and trekking tourism, both linked to the need of relax and escape from the bustle of city life, which are very successful thanks to the particular conformation of the land and the bioclimatic characteristics of Italy.

These obviously are not the only forms of tourism that Italy offers, many other forms are constantly evolving every day; but the common trend towards journeys that offer a complete immersion in intact and authentic environments characterized by slowness, has put under the spotlight territories so far never considered, almost forgotten. This is the case of Basilicata, which with 58% of agricultural areas and 35% of wooded areas is one of the most naturalistic region in Italy. Territory fragile and unknown, over the years the region has seen moving tourist flows - mostly domestic - towards the coasts, the mountainous areas and the city of Matera, that become famous for the "Sassi", historical evidences of prehistoric and peasant culture.

2. The Basilicata region towards the event "Matera 2019"

The election of Matera as European Capital of Culture for the year 2019 has given a lot of visibility to the region, increasing tourist flows of 25% from 2014 - the year of the candidacy to the event - to date, and almost 10% is from the last year. The European Capital of Culture event was founded in 1985 as a tool to bring all the European people closer together, and to regenerate the image of the city of Athens that started to suffer the first effects of the economic crisis. Since then 52 cities have been designated for this event, as Berlin, Paris, Stockholm, Marseilles. Intervention programs aim to highlight local culture and are based on the main goals that the event wants to achieve: valorisation of cultural diversity, improvement in the knowledge of the European territories and their inhabitants, spread of a sense of belonging to a community - the European one. Furthermore, the experience has shown that the event represents a great opportunity to regenerate the cities, enhance the image of the territory, and boost the economy through new businesses, local products and tourism. Matera 2019 represents a challenge for the whole region, which aims to open up to Europe but without forgetting the objective of city's enhancement, with the proposal of a new image for southern Italy through its traditions, local artistic products and initiatives that make visitors feel "temporary citizens" through participation strategies and interactive tours.

The Basilicata region, a destination for niche tourists in search of nature and relax, has never seen such a big number of tourists in the past, so it may not be ready to meet the needs of the great flow expected for this event. A policy of rapid interventions made to cope with mass tourism and the increase in tourist demand would compromise the territory permanently. It is clear that it is necessary to define valorisation strategies that evaluate the impact of tourism on the territory, local population, and its economic and social development, which therefore

aim to protect the place, reactivate the territorial economy, and guarantee the integrity for the future, even after the end of the event.

3. Methodology: research, analysis and proposals

The program of the 2nd level Master's Degree, after a theoretical approach to the case study, established the final elaboration of a territorial project, that was able to cope with the aspects that particularly affected the students. The most important in our case were underlined in the previous paragraphs: social, cultural, environmental, energetic, economic. Moreover, to develop an appropriate proposal in the context described before, it was used a methodological approach divided into three main phases, that are described below.

a) Knowledge of the territory and data collection.

Firstly a big amount of data were collected thanks to several online platforms. Censuses about demography, main economic activities, local associations, tourist flows and current services, existing buildings conditions, climatic and ecological data, were studied. Through this meticulous analysis it was possible to build a preliminary knowledge of the territory. Starting from that, a field research was organized with the collaboration of the local authorities: direct observation and inspections allowed a better understanding of the daily dynamics affecting the area, hard to understand without experiencing them. In this way it was possible to obtain a more detailed knowledge of the territory, useful to identify the specific area in which an intervention was essential.



Figure 1 / Identification of the study area

b) Choice of the area, identification of its strengths and weaknesses, and division into different action levels.

These critical analysis has led the attention on the Bradano river valley (Fig.1), a territory of great naturalistic value between the regions of Puglia and Basilicata, characterized by a hilly landscape, natural reserves, agriculture and small historical centres built on limestone bluffs. In particular, the intervention area includes the six villages belonging to the "GAL Bradanica"⁶, Irsina, Grassano, Grottole, Miglionico, Pomarico, and Montescaglioso, which are characterised by an ancient and very dense urban fabric, with a great architectural value. Since the '60s they have suffered a great depopulation and for this reason their historical centres are widely abandoned. Because of its morphology, the territory presents great distances and long travel times to reach the points of interest and the different villages, which are often not connected by public transport: that causes a very widespread use of private vehicles. Another important aspect is that the regional economy is mainly based on agriculture, whose products are distributed both locally and nationally.

At a later stage, it was necessary to split the whole system that defines the area into its subsystems, three in particular, and to analyse them in detail, starting from their current conditions, strengths and weaknesses.

- Infrastructural System: it is fragile and rundown, and the high level of seismicity and the recurring landslides impede the construction of new roads. Through surveys, measurements, graphs, traffic information, and public transport evaluation, the quality of the regional and local routes and the level of accessibility to the main points of interest were defined (Fig.2). It highlighted a lack in public transport services and several problems on

4 / Today there are several definitions describing cultural tourism. According to the UNWTO's definition, Cultural Tourism comprises "movements of people for essentially cultural motivations such as study tours, performing arts and cultural tours, travel to festivals and other cultural events, visits to sites and monuments, travel to study nature, folklore or art, and pilgrimages." - World Tourism Organization UNWTO, 1985. The first definition of cultural tourism adopted by the World Tourism Organisation (WTO) included "all movements of persons (...) because they satisfy the human need for diversity, tending to raise the cultural level of the individual and giving rise to new knowledge, experience and encounters".

5 / "Gruppo di Azione Locale" - Local Action Group is generally a consortium company made up of public and private institutions in order to promote the local development of a rural area. The GAL elaborate the local action plan (PAL) and manage the financial funds provided by the European Union. The GAL Bradanica is a consortium that includes six villages in the province of Matera, with historical, geographical, cultural and environmental affinities belonging to the Bradanica area of the Basilicata region.

the access roads that makes difficult to reach the different villages or the naturalistic areas. This contributes to isolate these places, diverting tourist flows to more reachable spots.

- Environmental System: it is prevalent for quality and quantity. There are several naturalistic reserves, poorly maintained and so not used. The analysis of technical maps has allowed an accurate study of the current land use, which showed that about 67% of the area is destined to agriculture, one of the main sources of subsistence in the region, and woods and forests cover another large portion (Fig.3).

- Settlement System: it has two different kind of fabric. A dense one constitutes the small aggregates that define the built-up areas; a punctual one represents the rural buildings scattered on the countryside for agricultural use (Fig.4). Through a mapping of these buildings, it was possible to identify those that are still used and those that are abandoned, their current conditions, and their distance from the villages and the naturalistic areas. That study led the selection of the buildings that were suitable for a renovation, in order to make them "active" again.

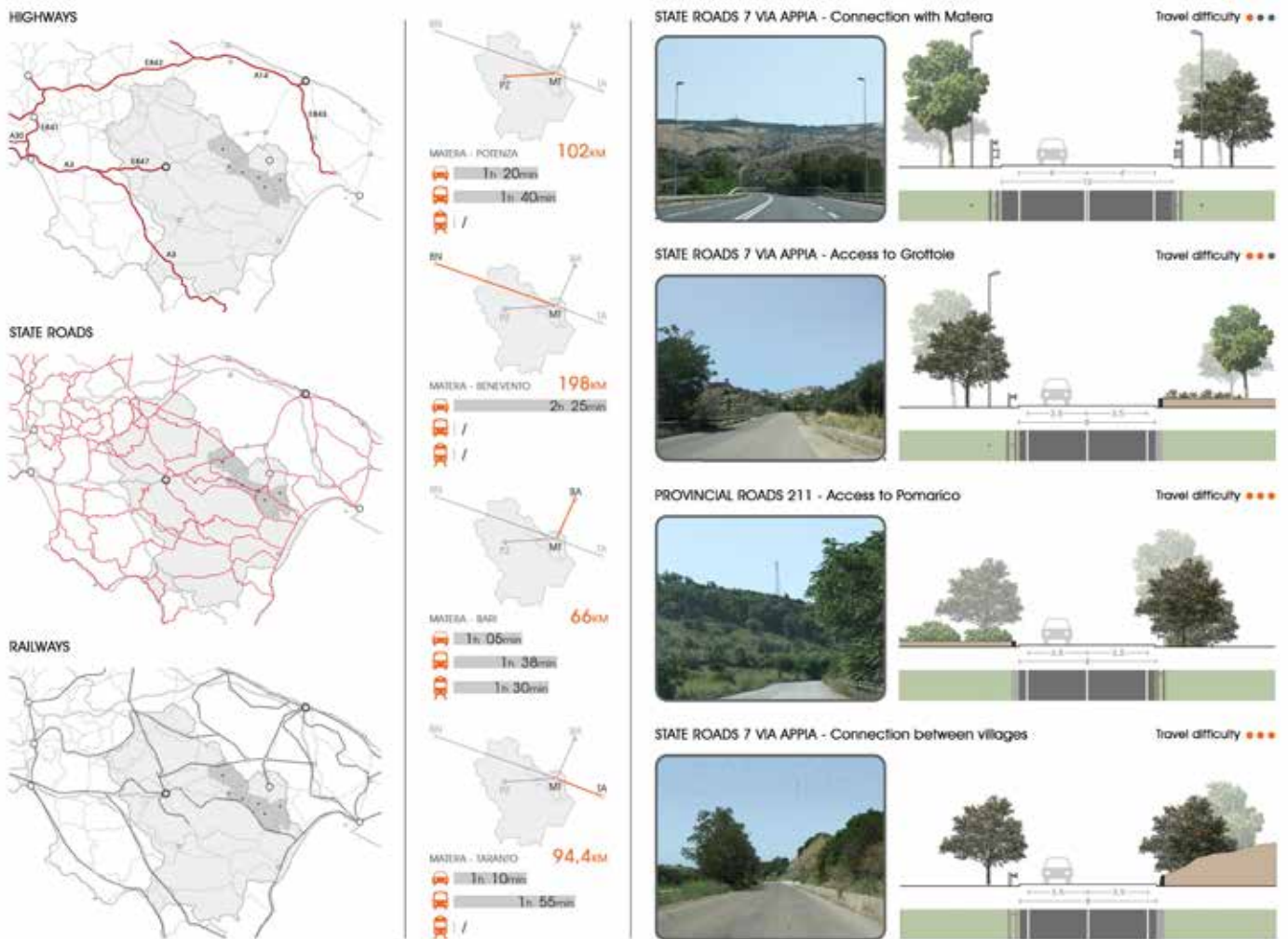


Figure 2 / Definition of the quality of the regional and local routes and the level of accessibility to the main points of interest

c) Identification of intervention strategies: application scenarios.

After all these analysis, the results of the study were summarized in a framework in order to define what kinds of interventions were useful to pursue the goals of bringing tourist flows to the inner territories of the region and define a management model of tourism that aims to improve and expand the tourist offer (Fig.5). The model is based on guidelines that intends to work on three different topics:

- Accessibility and mobility: improve the connections at the territorial level, facilitating the transfer from the main regional railway exchange nodes to the villages;
- Hospitality and business: reuse existing abandoned buildings in order to implement hospitality offer and commercial activities, revitalizing the economy and repopulating the most internal villages;
- Entertainment and relax: create thematic path, events and diversified tourist packages capable to meet the needs of different users, ensuring unique experiences focused on local traditions, history and the beauties that the territory has to offer. This management model, working at different scales, allows the creation of diverse networks that aim at the correct use of the available resources, in order to respond to tourism demand and induce sustainable tourist behaviours that do not compromise the future development of the area.

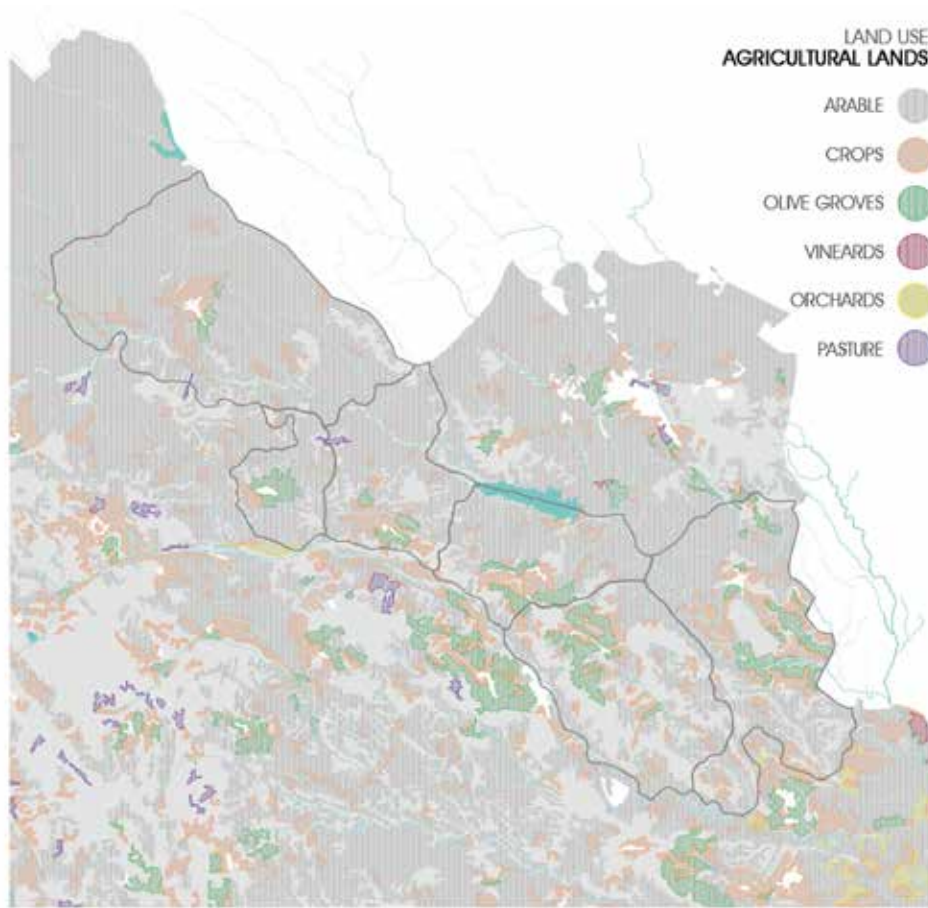


Figure 3 / Environmental analysis map with land use classification

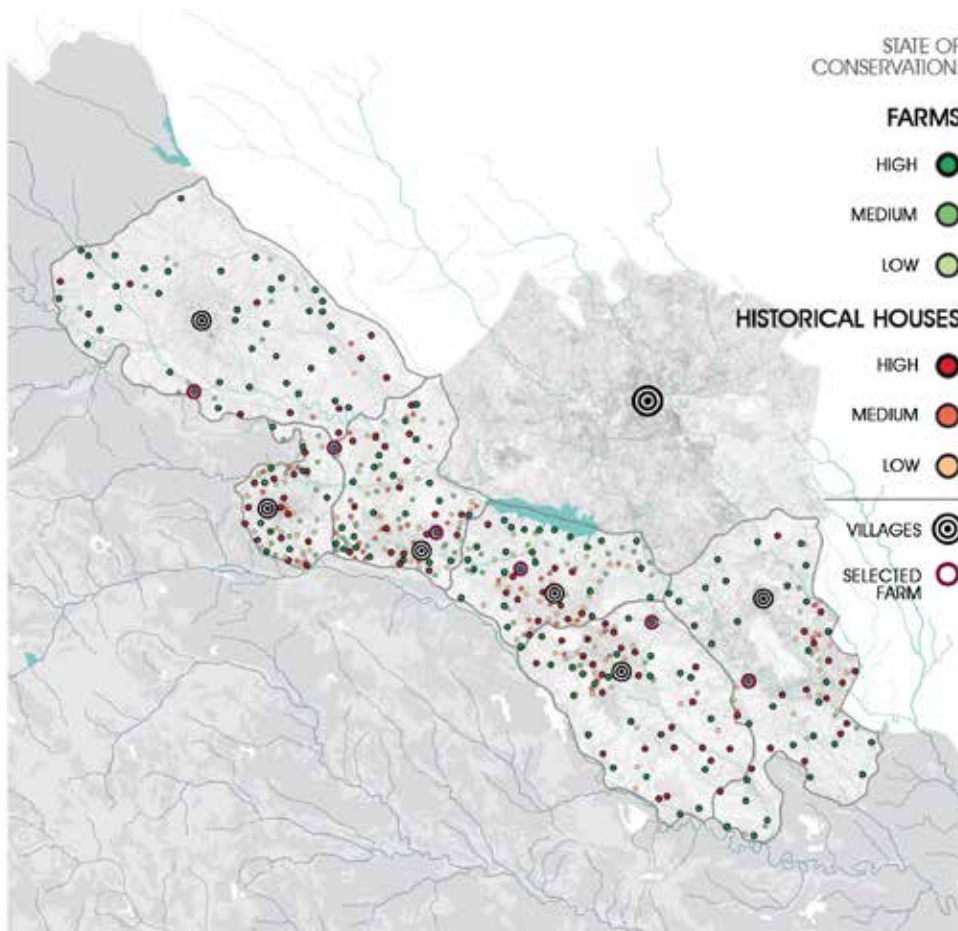


Figure 4 / Map of the settlement system



Figure 5 / Map of strategic interventions

Taking into account the local vocation, the project involves the creation of an “Agri-Food Park” on the administrative boundaries of the six municipalities belonging to the GAL Bradanica, each one characterized by different agricultural products, natural reserves and architectural beauties. Strategies applicable at both regional and local level has been proposed for the design and the management of the entire park by respecting the three previously mentioned topics, with the aim of activate urban, economic and social regeneration processes (Fig.6).

4. Strategies proposed at both regional and local levels

- Accessibility and mobility. These aspects had been taken on according to two different but interactive levels: territorial level, which takes into account fast transfers across the entire area that help mainly the inhabitants; and local level, which refers to slow transfers, most recommended for tourist experiences. In an attempt to solve the problems related to mobility at the territorial level the project proposes the revitalisation of the two railway stations located on the area. They are redesigned as an exchange hub with reception services, info points, electric shuttles services, rental and recharging points for electric cars, in order to enhance a direct connection between stations, villages and the city of Matera. Car charging stations are also furnished at the main entrances of the villages and the city of Matera. On the other hand, in the Agri-Food Park transfers are facilitated by a network of slow mobility: cycle paths, bridle paths and pedestrian paths draw the territory, and visitors are allowed to reach different interesting spots with the support of maps, information points, and guided tours. These cycle and pedestrian paths extend to historic villages too, and improve the accessibility to the residential areas.

- Hospitality and business. These aspects involve two different situations too: farmhouses spread on the entire territory; and historical buildings situated in the small villages. With the purpose to reactivate the economy and develop the commercial offer, and with the help of regional funds, the project proposes a reuse of old farmhouses as start-ups for new farms. These have to be more attentive to the environment, following ecological recommendations about soil protection and biodiversity safeguard, architectural recommendations through the regeneration of historic buildings using sustainable materials and renewable resources for energy production, economic recommendations about the adoption of the short production and distribution chain with the farm-to-table approach. Referring to the enhancement of the historical centres, in order to avoid the construction of new buildings the project proposed to use the abandoned historical buildings for the inclusion of services and new commercial activities in residential areas, and for introduction of the “diffused hotel” as a new model of hospitality. Dedicated to all tourists who do not like traditional hotels, it is characterized by rooms and small apartments distributed in different buildings in the same village. That type of structure allows contact with people and local habits, promoting a direct experience of knowledge of local landscapes, villages, and traditions. In addition, to make the urban spaces more useful and hospitable, the project focuses also on the regeneration of the squares and external spaces close to the buildings regenerated, through urban furniture, vegetation and fountains that improve the microclimate of open spaces, making it possible to carry out outdoor activities even in the hottest periods.

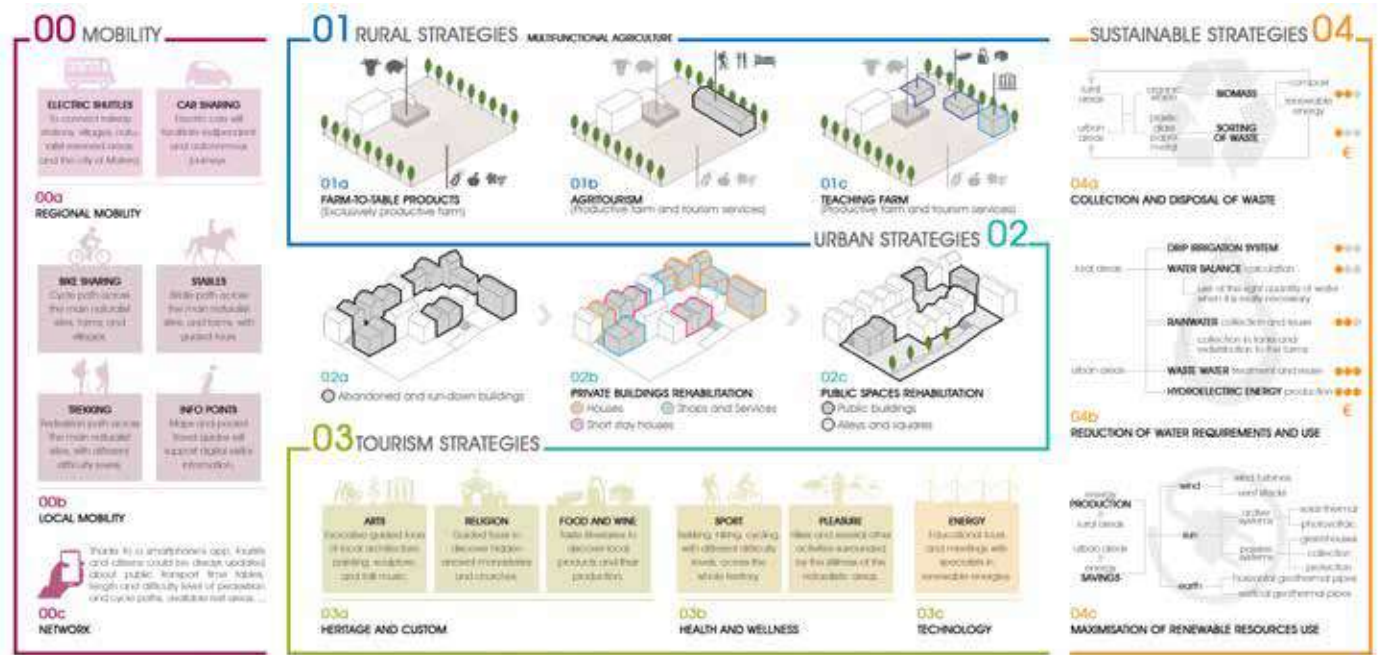


Figure 6 / Conceptual map of the strategies proposed

- Entertainment and relax. In order to diversify and expand the tourist offer, thematic itineraries are proposed according to the possibility that the intervention area offers. There are many interesting resources relating to landscape, architecture, and food-and-wine culture, so that project identifies three different itineraries. The first one is linked to art, architecture and religion, highlighting the architectural beauties present in the historical centres. The second one is linked to wellness and sport, which includes outdoor sports such as trekking, climbing and relaxing activities such as horse riding in natural reserves, wellness and body care itineraries. The third one is linked to the promotion of the territory and its products through the discovery of traditions, local craft and agricultural products, food and wine. It proposes an educational tour through historical farms in the area, in which were included small museum where will be told the story of the peasant civilization and the evolution of agriculture to the present day. A program of itinerant events, hosted by the six villages involved in the project, will improve the knowledge of the territory and will promote the tourist flows towards the inner areas in the evening, thus making the park more alive and active.

5. Conclusions

The delicate process of valorization must start from the identification and codification of the identity and vocation of the territory. In this way an appropriate regeneration and a lasting conservation of the main aspects of the places are guaranteed, ensuring both economic development and environmental sustainability. The complexity of this kind of actions involves the investigation of cultural, environmental, urban, architectural, economic, and social aspects. It is clear that tourism sector involves many activities that require a multidisciplinary and synergic approach among the people involved, a strong coordination between the various operators, and above all the exploitation of local resources that mostly can not be reproduced. In order to defend territories from irreparable damages, these actions must be regulated and overseen by authorities, and it does not depend on the site that has been studied. In fact the design experimentation proposes integrated strategies based on an analysis methodology that can be apply in several other contexts. The development of a complex management model can identify strategies that bring together several aspects, in order to tackle the increase of mass tourism indifferently of where you are. It is hoped that this model will set in motion attitudes and actions that can reactivate the territory, guaranteeing the survival of the system also after the end of the event of Matera 2019. It is important to do not forget the main purposes: to promote, enhance and protect these fragile areas, and guarantee their integrity for the future.

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[TOU/07]



CO Habitation Between Navy And Tourism: The Case Of The Cheradi Island Of Taranto

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abstract

The present case study regards the Cheradi Islands of Taranto, a city in the south of Italy. This small archipelago is composed of two islands, and closes the harbour of the Mar Grande of Taranto. The archipelago has had an exquisite strategic military role in the past, and still belongs to the Italian Navy, which holds a base on the largest of the two islands. The purpose is to demilitarize partially the two islands circumscribing the intervention of the navy inside the largest island. Demilitarization must be progressive and constant, creating a co habitation between the tourists and the Navy. Our project starts from the notion that environmental and cultural heritage is an important element in dealing with the Taranto steel crisis and with its ongoing process of post-industrialization, among the most complex in Europe. Our main strategy was to overcome the spatial isolation in which the small archipelago lives, due to a physical distance that makes it difficult to access and enjoy the islands, both for the local community and for tourists.

Therefore, we aimed to develop a physical link between the islands and Punta Rondinella, a natural projection mainland adjacent the vast industrial areas. Especially Punta Rondinella play an important role in this strategy, since we think about it as a large natural park that acts as a filter between the city and the islands. Today near the coast are being confined the muds from the nearby harbour.

On the largest island, San Pietro, we have thickened the already existing tree vegetation, creating an exploratory path through a thick vegetation almost untouched by man, creating a perimeter cycle path to the island that contains the Military zone inside. Instead on the smaller island, more anthropized throughout history, vegetation is sparser and has served to identify a difference between the spaces of rest (natural ones) and those of work (anthropized).

keywords Navy, Integrated Coastal Planning, Small Archipelagos, Coastal Cultural Heritage, Marine Strategy

Introduction

The supported thesis is that it is possible to activate processes of territorial regeneration and enhancement of small islands and minor archipelagos, which are protagonists in Italy of strong debate since the eighties and that today can be implemented in the broader framework of the European Marine Strategy, triggering actions for a new model of local development of these marine and coastal territories, often abandoned, which is linked to the Blue Growth pillars.

It is necessary for these archipelagos to create opportunities to develop new ecological skills, which have deep relationships, with the forms of expert and innovative knowledge (scientific institutions, research centres, cultural structures, ...), as well as with the forms of traditional common knowledge and rooted in places (seafaring, shipbuilding, fishing, food, religious and civil traditions...). Therefore, enhance the small islands in the form of "Blue Sustainability and Development Labs" with the dual cultural and economic focus.

The Cheradi archipelago, in particular, fights as well as the problems of small islands also those connected to the polluted city of Taranto, to which they belong. This city is facing a steel crisis and an ongoing process of post-industrialization, among the most complex in Europe. So the islands must face several problems such as the abandonment due to the Navy occupation, the growing ignorance about their existence, the pollution of the air and the sea (since they are located in front of the industrial area). Through the pillars of the European Marine Strategy and Blue Growth our intent is to save these islands, returning them to the population and to the tourism.

1. The state of the Cultural Debate and Policies

The Marine Strategy Framework Directive 2008/56/CE (MSFD) on the marine environment strategy, aims to the member states to achieve the Good Environmental Status (GES) by 2020. In the last period, the concept that the marine environment is a precious patrimony has been metabolized, that must be protected, safeguarded and, when possible, restored to aim the maintenance of the biodiversity and to preserve the diversity and vitality of clean, healthy and productive seas and oceans. The parameter of the good environmental status of the waters corresponds to the ability to preserve and conserve marine ecosystems, in order to guarantee the use of marine resources that is maintained at a sustainable level for present and future generations.

Member states are called to cooperate through common and integrated approach and to play out, for every marine region and sub-region, a strategy consisting of a "Preparation Phase" and a "Program of Measures". To allow member states to achieve their goals, the directive has drawn up a list of 11 descriptors, describing marine ecosystem once the good environmental status has been achieved. Looking at the cross-border issue, European Union launched the Adriatic-Ionian European Territorial Cooperation Program 2014/2020 (in short Adrion). Adrion's aim is to act as a driving force of the development politics of the Adriatic and Ionian area, responding to the need to move towards a holistic and integrated approach that overcomes the fragmented and sectorial logics of management and planning. The program involves 4 member states of the UE (Italy, Slovenia, Croatia, Greece) and 4 countries – in pre accession- (Albania, Serbia, Montenegro, Bosnia Herzegovina). Italy participates with 12 regions, including Puglia.

The aim is to promote economic sustainability and social well-being of the Ionian and Adriatic area, through the creation of new job opportunities, improving attractiveness, competitiveness and connectivity of the area and, in the meantime, safeguarding the environment and the balance of maritime and coastal ecosystems.

The most important operational tools are Maritime Spatial Planning (MSP) and Integrated Coastal Zone Management (ICZM). The first one is a practical tool, to create and establish a more rational organization of marine space and of interactions between its uses, in order to balance the development demand with the need to protect marine ecosystems and to achieve social and economic aims through a transparent and planned way. Furthermore, this is a great opportunity to connect marine and maritime world, where the first one embody everything belonging to the sea, whereas the second one concerns the anthropogenic activities connected to the sea.

Integrated Coastal Zone Management is an innovative tool recognized by European environmental legislation, that expresses an action strategy in the context of integrated coastal zone planning and management, useful to prosecute economic, social and environmental sustainability.

Coastal areas, indeed, play an important role both from an environmental and landscape point of view as well as from a strategic one (for trade and transport). However, they present numerous problems such as widespread coastal erosion, habitats' destruction, biodiversity loss, soil and water resources contamination. Yet, anthropic problems such as unemployment and social instability, competition for the use of resources, the destruction of cultural heritage and social disintegration, loss of assets and opportunities for development resulting with consequently lack of possible permanent jobs and phenomena such as marginalization and emigration. All these problems are what Marine Strategy want to extinguish.

2. Small islands and problems connected

All the problems previously mentioned are much more severe on the islands, increased by other huge problems such as mass tourism and seasonal population. So even small islands must now put in field policies and actions for territorial resilience. Small dimensions make it more difficult to solve typical islands' problems like easy and constant connections with the mainland, water supply for civil and agricultural uses, supply of fuels, energy independence (with great use of energy produced from renewable energy resources, such as solar thermal, photovoltaic and wind), waste management (in the asymmetry that quantities have between tourist season and ordinariness), telemedicine to allow health protection for permanent residents. It is necessary to develop small islands as Laboratories for sustainable development and green economy.

3. Italian Small as Laboratories for Green Economy

The attention paid to minor national islands is highlighted through initiatives inherent these territories that configure small islands as open-air laboratories where is possible to experiment, find innovative and economically sustainable solutions, in the context of non-polluting energies and, more in general, of Green Economy. Italy has got hundreds of minor islands, with 36 municipalities and over 200,000 inhabitants that become millions during summer season. Italy, due to its geographical configuration (located in the centre of the Mediterranean with archipelagos and many small islands), possess a truly beautiful natural heritage, and the islands themselves become authentic "environmental sanctuaries", perfect natural laboratories where to experience energy conversion. Indeed, exactly the islands are the most expensive and unsustainable electric systems imaginable. An integrated waste management system aims to enhancing recovery and recycling and to eliminate the environmental impact

of transporting waste to the mainland, thus creating a self-production system for waste produced. It is necessary to develop a project that aims to protect environment and citizens through a vision inspired by a circular process opposed to resources depletion. A community that operates in this sense must also tend to value the cultural heritage linked to its own landscape and historical-monumental heritage. In this way, resources can become the basis for building new, more sustainable and respectful tourism economies. Conceiving an idea of sustainable tourism means reaffirming the value of respecting local cultures, visited places and natural resources. This concept lays the foundation for a real integration among peoples that allows to educate knowledge and mutual respect. This kind of tourist product becomes full of opportunities and allows to structure a positive experience of high quality management. A sustainable and looking forward tourism can make these islands great again and all united in one important myth, the Environment.

Objectives

Considering everything presented until now, the purpose of our study is to enhance these islands and make them freely usable, which means demilitarizing them. However, of course, the Navy will not easily give up its possession on the island. This is why demilitarization must go through cohabitation between the navy and civil tourism. It must be progressive, starting from the smaller island of San Paolo, already unused and abandoned by the Navy, then move on the bigger one of San Pietro, today still partially occupied despite just a couple of soldiers preside it on stable plan. A military enclave could be created on S. Pietro in which enclose, in a first phase, the spaces with limited access for the only Navy, so the tourists can explore freely the whole island, moving also to S. Paolo through the connection between the two islands.

Methodology

The inability of the Navy to provide a thick garrison for the defence of the Island must be the key of the project to demilitarize it. It is clear that they don't have the necessary funds to keep the Islands alive, so during the time they have already abandoned one of them and the second one is on the same road. The city government must exploit this inability to create, at first, an agreement allowing co habitation between the navy and tourists. This co habitation should be different from the one already existing. Nowadays, in fact, the Island of San Paolo is completely inaccessible by the public, and that is a pity considering that it hosts a unique example of an armoured tower (that has only one twin in Italy, the armoured tower of La Spezia), which now falls apart, in shameful state of abandonment, deposit for the Taranto's crime. San Pietro, instead, is already accessible by the civils, but only during the summer season. Tourists are confined to the area of the equipped beach, with no possibility to explore the rest of the island and all the wonders that it contains.

Results¹

The result of our research is a project for the Islands but also for the part of mainland that "confines" with them: Punta Rondinella.

1. Masterplan

The general strategy aims to convert abandoned military islands within a policy of valorisation based on tourism and recreational purposes, juxtaposed to a hypothesis of recycling of the territories involved, through a landscape approach linked to European Marine Strategy, small national islands' debate and local PPTR.

It is necessary to develop a no longer trivial tourism, but a smart one, that make them recover their lost valence. We aimed to connect more the islands to the mainland (through a pedestrian-cycle walkway) to allow a facilitated tourist fruition, giving them back to the city of Taranto, both as natural-cultural heritage and as new possibility. A

1 / Artioli F., (2017) *Le aree militari nelle città italiane: patrimonio pubblico e rendita urbana nell'era dall'austerità e della crisi*. *La Rivista delle Politiche Sociali / Italian Journal of Social Policy*, Ediesse, 2016, *Le città nella crisi*, 1, pp.89 – 113; Gastaldi F. e Baiocco R., 2011, *Aree Militari Dismesse E Rigenerazione Urbana*, «Urbanistica Informazioni, Supplemento bimestrale di Urbanistica: Rivista dell'Istituto nazionale di Urbanistica», n. 239-240, pp. 24-45; Kaika M. e Ruggiero L., 2016, *Land Financialization as a 'lived' Process: The Transformation of Milan's Bicocca by Pirelli*, «European Urban and Regional Studies», vol. 23, n. 1, pp. 3-22; Ponzini D., 2008, *La Valorizzazione Degli Immobili Statali Come Opportunità Di Sviluppo Territoriale*, «Urbanistica», n. 136, p. 87. Ponzini D. e Vani M., 2012, *Immobili militari e trasformazioni urbane*, «Territorio», n. 62, pp. 13-18; Ponzini D. e Vani M., 2014, *Planning for Military Real Estate Conversion: Collaborative Practices and Urban Redevelopment Projects in Two Italian Cities*, «Urban Research & Practice», vol. 7, n. 1, pp. 56- 73; Progetto Epas, 2015, *Strategie e strumenti per la valorizzazione del patrimonio immobiliare pubblico*. Presidenza del Consiglio dei Ministri.

possibility for a new type of sustainable tourism linked not only to the “hit and run” policies, but also to a cultural and research destination, that should become a receptive centre for bio-marine research of the entire Ionic Arch system.

First of all, it is necessary to give Cheradi' s Islands back to the city of Taranto, that nowadays doesn't feel them anymore as a part of its territory and culture. This condition is due to a high difficulty in reaching them due to the constraints imposed by the Navy. In fact, today, only San Pietro's Island is accessible to the public and exclusively during summer season, when the attendance to non-employees is restricted to the beach area.

One of the most important objectives of the project is to create a path that allows you to reach the islands more directly and to sensitize people to the importance of these lost places, but still dense of historical and naturalistic value.

The project presents three main nodes, connected to each other by pedestrian-cycle walkaways, which connect specifically Punta Rondinella (the Mainland part) to the Island of San Pietro, and the latter to the small Island of San Paolo. To strengthen the relationship between the islands and the city, avoiding further isolation of these places (which are now in a marginal condition), the walkaways provide stops where the observation is directed to the most valuable points of Taranto, such as the Old Town, the castle and the waterfront of fascist era. These points of interest, whether they are linked to the leisure or to sport-cultural activities, make these places attractive, creating an offer that is nowadays not very current in the urban area.

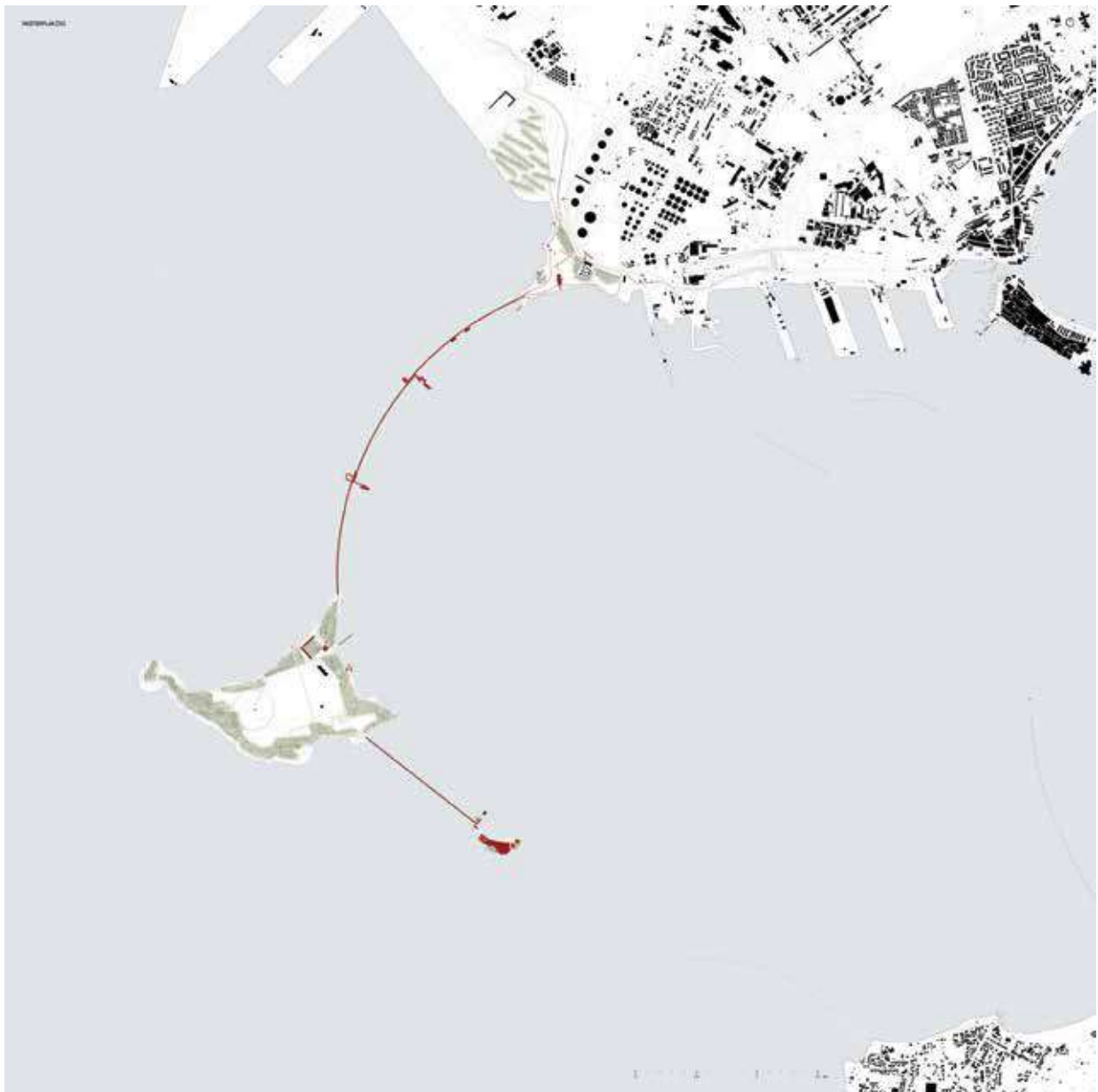


Fig. 1 Masterplan of the Project - Image from Benedetto, A., d'Agostino, G., Gravina, A., Ingrassia, R.C., Montalto, F., Sylos Labini, D. (2017) Valorizzare le piccole isole nel quadro del Blue Growth: Le Isole Cheradi a Taranto e l'Isola di Mamula alle Bocche di Cattaro. Polytechnic of Bari: Degree Thesis of Architecture.

2. Blue Road

The connection between Punta Rondinella and the islands is supported by the presence of a breakwater barrier composed by large, irregular boulders dislocated for about 7 kilometres. The proposal is to create a pedestrian-cycle path that connects the mainland to the Island of San Pietro, through a walkaway partly anchored to the barrier and partly anchored to the backdrop that offers in its path a series of stops both contemplative (consisting in points of observation towards the city of Taranto) but also stops for activities such as bathing and restaurants. The second walkaway, that connects the Island of San Pietro with the one of San Paolo, is far about 1km, and because of its smaller size, presents stop just for observation and rest.



Fig. 2 Project of Blue Road - Image from Benedetto, A., d'Agostino, G., Gravina, A., Ingrassia, R.C., Montalto, F., Sylos Labini, D. (2017) Valorizzare le piccole isole nel quadro del Blue Growth: Le Isole Cheradi a Taranto e l'Isola di Mamula alle Bocche di Cattaro. Polytechnic of Bari: Degree Thesis of Architecture.

3. Punta Rondinella's Park

The first project operation was to create a starting area for the ideal walk towards the islands, identified by Punta Rondinella, where we design a small railway station, that connects this area with the city but also with the rest of the region. Adjacent to the large steel industry area of Taranto, Punta Rondinella is a fundamental design node because of the abandoned military structures and the junction of a breakwater barrier that connects it to the Island of San Pietro. In fact, it has been converted a former disused military hangar into an info point and some former ammunitions deposits into observation points towards the islands. Using embankments and plantings the area has been made eco-sustainable but also shield by the view of the massive industrial polo behind it. Our intent is not only linked to the simple reconversion of the area in a large natural park with the subsequent connection of it to the islands, but also to create a renewed culture linked to the safeguarding of the terrestrial and marine environment through the creation of a cycle path, annexed to a bike sharing service, leading up to the Island of San Paolo and a library (situated in the former hangar) afferent the marine activity and bionomics to support a deeply rooted culture of the place, that has seen Taranto, since ancient time, as one of the most important ports of the Mediterranean.



Fig. 3 Project of Punta Rondinella's Park - Image from Benedetto, A., d'Agostino, G., Gravina, A., Ingrassia, R.C., Montalto, F., Sylos Labini, D. (2017) Valorizzare le piccole isole nel quadro del Blue Growth: Le Isole Cheradi a Taranto e l'Isola di Mamula alle Bocche di Cattaro. Polytechnic of Bari: Degree Thesis of Architecture.

4. San Pietro's Coastal park

The first island we met in this ideal path is the one of San Pietro, today permanently manned by the Navy, which limits its use only in certain times of the year and in precisely circumscribed areas. Our proposal is to improve the receptivity of the place, regularizing the existing pier and partially demilitarizing the island gradually, circumscribing the field of action of the Navy and improving the bathing area, increasing facilities and services related not only to the sea but also to recreational activities such as soccer fields, volleyball and tennis. Since on the island there are some abandoned structures, we decided to create spaces for the overnight stay of the visitors as well as the creation of an area to support the needs of the soldiers who constantly guard the island. At last, indulging the naturalness of the place, we created a perimeter cycle path with respect to the conformation of the island that held in it a pine forest with a strong naturalistic character and that is in agreement with the will of keeping the Island of San Pietro as a strong naturalistic pole (in contrast to the Island of San Paolo, strongly anthropized).



Fig. 4 Project of San Pietro's Coastal Park - Image from Benedetto, A., d'Agostino, G., Gravina, A., Ingrassia, R.C., Montalto, F., Sylos Labini, D. (2017) Valorizzare le piccole isole nel quadro del Blue Growth: Le Isole Cheradi a Taranto e l'Isola di Mamula alle Bocche di Cattaro. Polytechnic of Bari: Degree Thesis of Architecture.

5. San Paolo, the Island of Knowledge

Contrary to the strong naturalness of the places described above, the Island of San Paolo, despite its small size, has always been the most congenial in the military field for the defence of the bay of Taranto. For this reason, on this island we can find a lot of abandoned military structures: a nineteenth-century fort, partly converted into a "museum of itself" and partly into a museum of the sea and marine bionomics linked to the Ionic Arch; moreover, some sheds used in the past as military warehouses become, in our project idea, laboratories for research and nursery purposes linked to marine fauna, as well as management and administrative centre of the whole island. To support these dynamics, slats of services have been created, including a series of activities related to overnight stays for short periods for those staying on the island for laboratory activities.

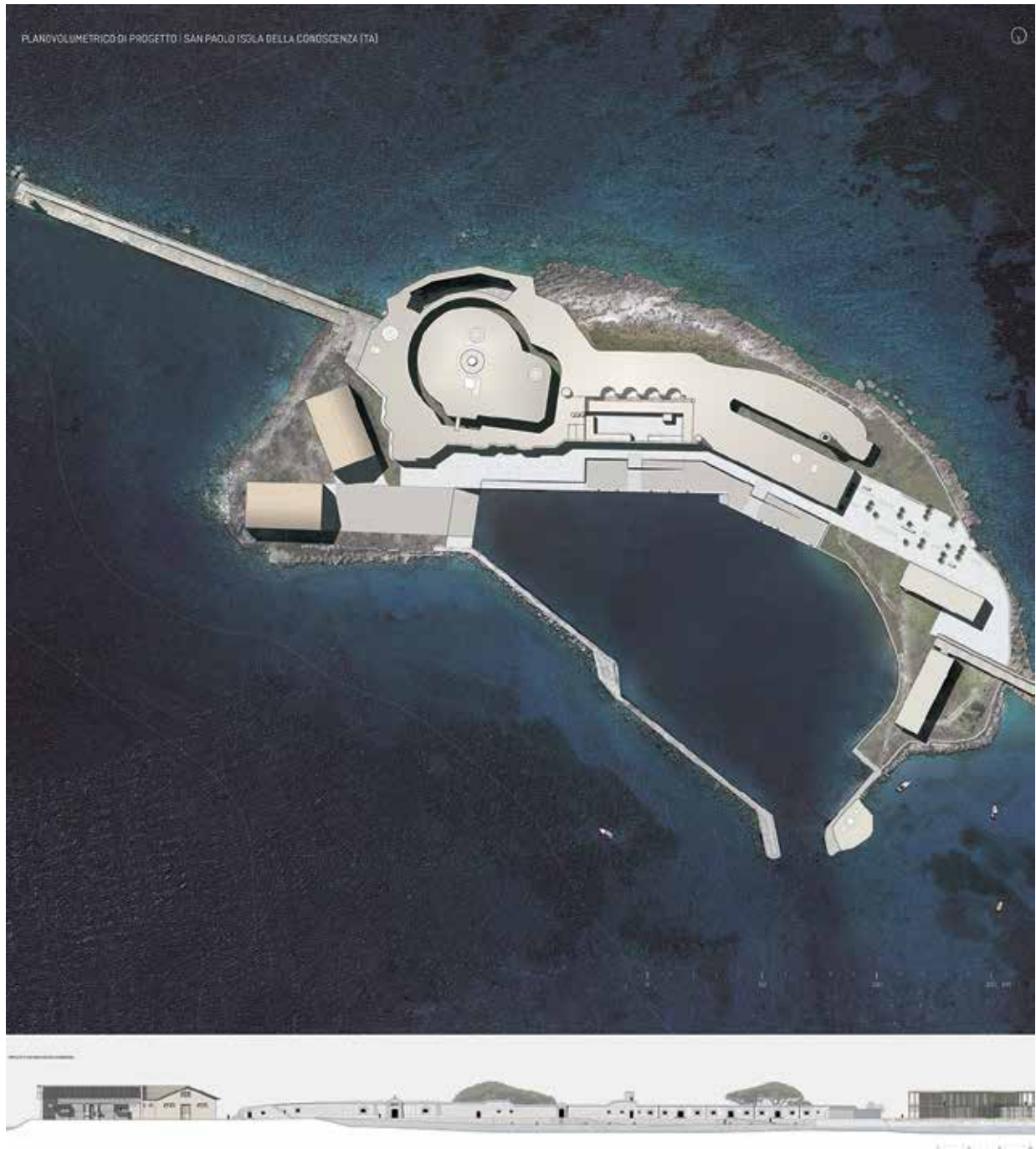


Fig. 5 Project of San Paolo the Island of Knowledge - Image from Benedetto, A., d'Agostino, G., Gravina, A., Ingrassia, R.C., Montalto, F., Sylos Labini, D. (2017) Valorizzare le piccole isole nel quadro del Blue Growth: Le Isole Cheradi a Taranto e l'Isola di Mamula alle Bocche di Cattaro. Polytechnic of Bari: Degree Thesis of Architecture.

Conclusions

The co habitation may have several meanings. It is clear that this is a particular case, because who need to co habitat are institutions more than people. There are many places in Italy and, in general, in the World, that still belongs to Military Institutions even if they have lost their defensive reasons.

In our project we have included this theme in a more generic and actual strategy, in fact, the re-appropriation of these Islands aims to give them back to civilians but in doing it we adopted a sustainable thought, based on European politics (Marine Strategy, Blue Growth, Adrion Project) and precepts of Bio Architecture and Landscape Architecture. Around the small islands it began defining sustainable projects, putting in place economic resources and strategies in order to circumscribe existing problems, focusing on the possibility of reversing these fragilities into strengths. It is immediately evident that the predominant aspect of the sustainability of small islands and

archipelagos is made up of a multidisciplinary approach, where designing, supporting and applying must be combined with social, economic and environmental issues. From this picture emerges, however, the need to intervene using bio architecture systems that can define forms and structures that have a lower environmental impact. The development must necessarily be sustainable and it is so when it responds to the rules of "ecology, equity and economy", guided by an ethical principle that transmits to future generations the respectful delivery of all that previous generations have had in delivery.

This approach is fundamental to succeed in convincing the Army to demilitarize unused places making them accessible to the public again. The thought of a greater good can and must shift the idea of personal possession towards an idea of more accessible places and co habitation between Army and civilians, and, in general, between people who can finally enjoy these spaces.

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[TOU/08]



Relation between Architecture and Tourism

Understanding the role of Architecture in Enhancing the Tourism Development

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abstract

Tourism is one of the most rapidly growing sector in the overall economic structure of countries. In our days, each aspect of our identity, of our culture and cities is related to the tourism market. Architectural and heritage rich cities like Rome, Venice, Pisa, Paris etc., have empowered their tourism by promoting their architectural heritage, while other cities have enhanced their cultural assets, creating a "fairytale" as a marketing tool for gaining touristic attention. Higher rate of competitiveness has led countries to fully explore the potential of architecture's value on tourism enhancement, because there is as much architecture in tourism as tourism in architecture. Relying on innovative construction and contemporary architecture is an actual approach used by many municipalities, to create a visual perception and the desired image which contributes to tourism enhancement.

This paper aims to investigate the affinity between architecture and tourism empowering, in order to generate an understanding of the design elements that directly contribute to tourism development. The paper is structured in two parts. The first one investigates the relation architecture as sight and landmark, represented by the impact of contemporary iconic buildings to the overall touristic growth. The methodology used during this part consists on literature review on building design, materials and marketing effects of contemporary architecture on the local economies, based on the application on five case studies. In this part it is argued that the architectural design represents a powerful impact on the image of the city through the use of technology-innovation or cultural-traditional heritage trend.

The second part researches the relation architecture as accommodation, where the design principles seeks to have weaker impact and the quality of spaces prevails. The literature review in this part is supported by a short survey and three case studies of accommodation structures (hotel, resort, and eco-resort).

keywords Contemporary Architecture, Tourism, Innovation, Development, Design Principles

Introduction

Tourism is a key sector of today's world industry. For most countries, it represents one of the main pillars of economic growth. According to TOURISMLink publication of EU, Tourism generates more than 5% of the EU GDP, with about 1.8 million enterprises employing around 5.2 of the total labor force¹. It's complex structure has experienced over the last decades a continuous expansion, enhancing this way it's role in the overall economic direction, by contributing in a better planning and implementing of transport development and construction sector, including accommodation structures, public spaces, urban regeneration and in some cases generating also architecture for tourism purposes.

On the other hand, tourism is considered a social, geographical, environmental and cultural phenomena. It's crucial in this case the social and cultural exchange, which benefits not only the visitors, but also the citizens on the specific place which is the reason many people consider traveling as a way of learning about new cultures and experience different ways of living by connecting with local citizens and their traditions. Tourism booming, which took place worldwide after the 1980's has introduced during these decades, urbanization and density approaches. Referring to the experience of different countries, this process was evolved with great architectural manifestations, creativity and technological usage in construction, powered by the development of the transportation system, which enabled the "mass tourism" regardless distance or economical state.

The Tourism Sector has multiple dimensions which are closely dependent to the cities or the country overall strategy, and implemented in compliance with the space, transport system, cultural assets, historical sites and

tradition. In the past, tourists traveled mainly for leisure, whilst cultural and urban tourism is taking more advantage in the traveling industry.



Figure 1: Tourism Data_Source: UNWTO 2017

Globalization has also “brought the remote, the exotic and the ‘Other’ closer to home, evidenced by the way in which fashion, architecture and other features of our immediate environment increasingly reflect distant places and ages.” (Gale, 2009). In the global context, the “greatest demand is for activities that can be fulfilled in a day trip” [...] (Burtenshaw, D., Bateman, M., Ashworth, G.J., 1991), eased by accessibility of modern transport, has spurred the widespread growth of tourism globally (Honey, 1999). Low fares, efficiency and combination of transport system has contributed in transformation of tourism as an essential component of the globalization process with focus on urban tourism. The concept of (Urry, 1990), “the tourist gaze” emphasizes the dynamics associated with construction of tourist experience, the complexity of the social organization of tourism, and the systematic nature of these processes. The contemporary tourist space is configured by four main groups representing the key elements for tourism blooming. Attractions, Accessibility, Accommodation and Amenities requires a national and local strategy for contributing to the growth of tourism.

Analyzing this scheme, inevitably is concluded that architecture is part of every tourism component with its direct or indirect contribution to this industry. In much the same way, we understand places by the architecture that defines them (Hornstein, 2011).

During this research, the architecture as part of attraction and part of accommodation is going to be the objective of investigation.

Methodology

Aiming to investigate the affinity between architecture and tourism empowering, towards understanding the characteristics that directly contribute to tourism development is considered the approach of paper structuring as follows:

The first part will be focused in the disclosure of architecture as an attraction landmark and a destination itself regarding the tourism sector. In this part, the literature review on the phenomena of iconic architecture, related to the urban context and local economies will be associated also with the evaluation on five case studies of iconic architecture. In this phase it is argued that architecture as sight, represents a powerful source and enchantment in the tourism peculiarity of a country or a city and the architectural design has a major impact on the image of the city.

During the second part, the conjunction of architecture as a service provider with the prime function of accommodator with the tourism industry is brought to focus. In this part, the research is oriented towards the design accompanied by the quality of spaces and services provided. The literature review in this part is supported by a short survey the analysis of three typologies of accommodation structures (hotel, resort, and eco-resort).

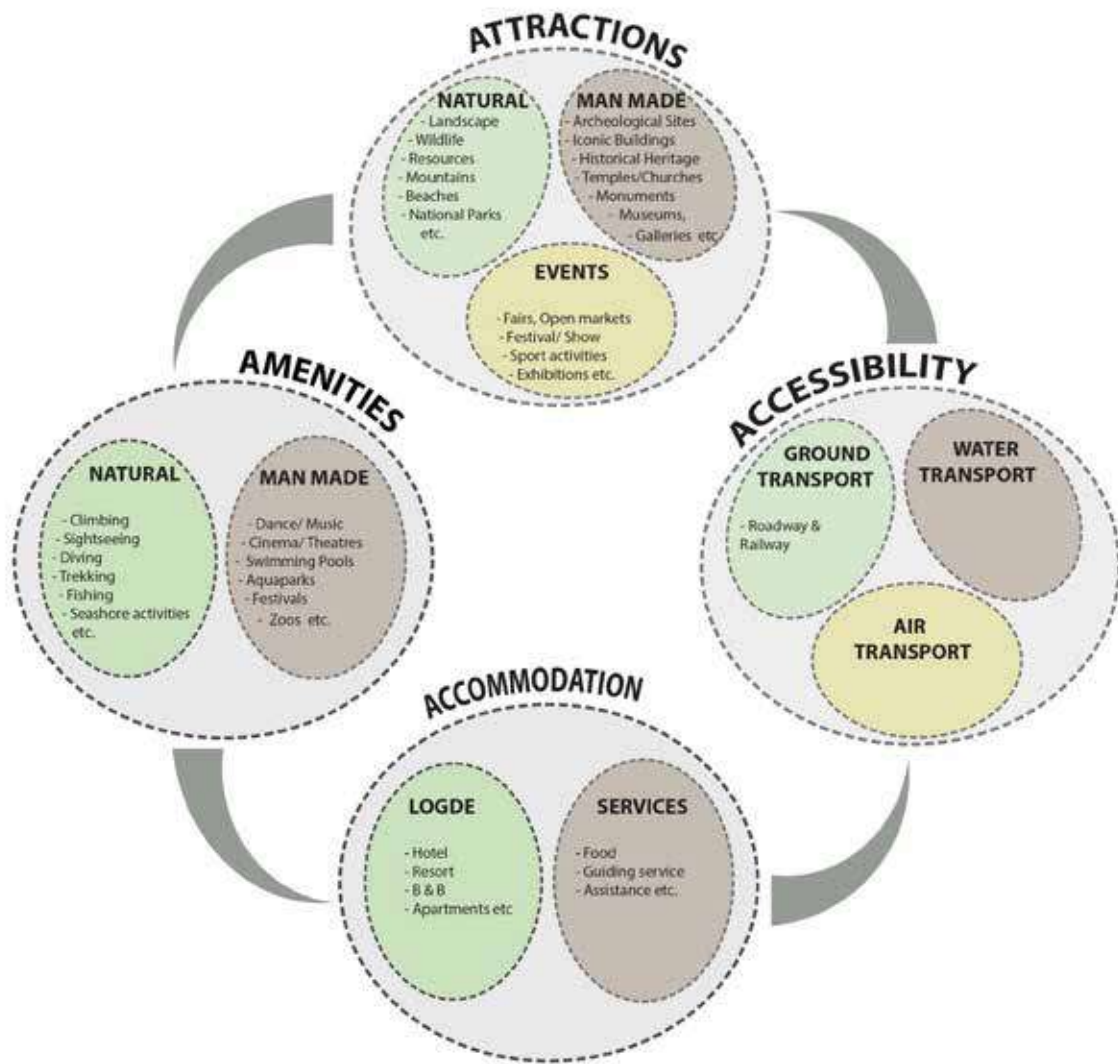


Figure 2: Components of Tourism Sector. Diagram by author

1 / Architecture as Destination

The significance of the built environments to tourism is unquestionable for the contribution it provides to tourism. The physical form, as defined by architecture, aestheticizes spaces with recognizable markers that forge a particular sense of place, 'pulling' visitors to precincts (Edwards, D., Foley, C., Dwyer, L., Schlenker, K. & Hergesell, A. , 2014). In his book, "Architectural Tourism, (Specht, 2014) emphasizes that architecture plays a critical role in almost every area of tourism, providing infrastructure to enable tourists to reach the desired destination and once in place, accommodation to host them, while also offering venues for leisure activities. Thus, by providing space and allowing movement as some of the most basic prerequisites for tourism, it can be argued that tourism is barely conceivable without architecture.

It is quite inevitable to perceive that all forms of architectural disclosure are as ancient as the first traces of the society. This happens because architecture is not just about functionality, but it represents the quality of life and the possibility to offer experiences. It has been suggested by architect and theorist (Rossi, 1982) among others that architecture is simultaneously a site, event and sign. It is both the structure in the traditional sense of the world, as well as the way in which that structure is deployed. In both heritage-based and purposefully developed tourism precincts the main 'pull' factors can be attributed to particular morphological features of a place including its built environment, architecture, urban form, artefact and public spaces. Historical towns have always attracted tourists, both in the past and present. Yet, most contemporary studies of tourism historical towns were written from a modern perspective, with little or no attention paid to the manner in which these towns evolved into tourist-historic cities.

On the other side, contemporary architecture by symbolic and visual design creates an image in the minds of tourists so that these images are then converted to urban brands. Combining symbolic monuments and modern buildings in the world today is a promising development of cities in many municipalities, municipalities and government agencies to freely and without regard to the needs of their local employ all the resources and capital to meet their local needs of foreign tourists in order to cope with the global tourism and earn easy money. (Farshidfar, R., Pourkhiz, I., 2014). Mass tourism has emerged distinguished architourism as a worldwide frequent, phenomenon where internationally renowned architects are longing to design buildings with the aim to attract tourists by creating a local brand. The 1990-2000s are characterized by an exuberance of iconic projects, facilitated by decision-makers and capital flows, which has simultaneously produced starchitecture as a key factor of the global context and international consumers. Tourism pressures localities to re-define and re-package their historical narratives, morality, politics, and traditional lines of socio-cultural difference (MacCannell, 2015). That is the main reason for the creativity in design process to be related to the nation-branding. Besides, many architects are learning how to exploit the iconic building for creative purposes. (Jencks, 2006)

Iconic buildings and designer spaces have received significant scholarly attention over the last 10 years, as the cultural objects of cities par excellence (MacKeith, 2005).

In this session, the method for evaluating the iconic architecture and its impact on the overall tourism development, is through examination of key factors in 5 iconic buildings in different countries; Opera House (Sydney), Bird's Nest Stadium (Beijing), Guggenheim Museum (Bilbao), Jewish Museum (Berlin), MAXXI Museum (Rome). The research was focused on identifying the main structural elements, design, and impact and on revenue and regarding image from the perspective of this manifestations of these architourism.

Sydney Opera House has been the pioneer of iconic buildings of the last century. The architect Utzon, has been inspired by the nautical concept derived from the city itself which was configured with the roof covered from shell shapes, generated by section spheres. Even though the structural issues during the construction phase, the Opera House managed to be open in 1973. The building which can host almost 30.000 events/year (Porter, 2013) has been a symbol and identification mark for Sydney.

The construction of Bird's Nest Stadium in Beijing correspond not only to the economic development of China in general terms, but also with an international event, such as the Olympic Games of 2008. The advanced geometry used by Herzog & De Meuron, is inspired by the Chinese cultural technique "crackle glazed pottery" combined with scholar stones. The building designed by advanced geometry applications and parametric modelling reflects a steel structure with humananistic design by making china "unveil its own architectural wonder, which, like the Eiffel Tower, was a metal mega-project" (Bell, 2018)

Evaluation Characteristics	Opera House	Bird's Nest – National Stadium	Guggenheim Museum	Jewish Museum	MAXXI Museum
- Location	Sydney, Australia	Beijing, China	Bilbao, Spain	Berlin, Germany	Rome, Italy
- Architect	Jrn Utzon	Herzog & de Meuron	Frank O. Gehry	Daniel Libeskind	Zaha Hadid Architects
- Cost	€102 million	€368 million	€211 million		€150 million
- Period of Construction	Feb. 1966 – Oct. 1973 (7 years)	Dec. 2003 – March 2008 (5 years)	Oct. 1993 – Oct. 1997 (4 years)	1989 – 2001 (12 years)	1999 – 2009 (10 years)
- Height/Dimensions/ Surface	Dim. 185m x 120m,	254.600 m ² (Dim. 69.2m,330m,220m)	238000 m ²	15500 m ²	27000 m ²
- Function	Opera Theater	Olympic Stadium	Museum (permanent Exhibitions)	Museum of the Holocaust	National Museum of Contemporary Art (XXI)
- Formal Design - Materials and Technology	Roof from 1million tiles 6225 sq. meter glass	Open Facades but Roof clad with ETFE. Acoustic membrane on the lower surface. Steel structure but humanistic design.	Glass Titanium Milestone	Zig – Zag Promenade. Feelings of absence, emptiness, and invisibility – expressions of disappearance of the Jewish Culture. Materials: The clear plywood, birch and oak. The floor is made of wood.	Two geometric structures representing the fluxes and axes. Linearity is interlaced with window views and openings. Combination of glass (roof), steel (stairs and columns) and concrete (walls).
- Style/Iconic Elements - Exterior - Interior	Expressionist Modernism Nautical Concept – Shell (as section from a sphere) 7 venues – Total Rooms (1000)	Advanced geometry by parametric modelling.	"Random curves on Exterior as light catchers" Atrium in the center of interior – The Flower (shape and organizing function) 11.000 m ² exhibition space.	Using architecture as a means of narrative and emotion providing visitors experience of the Holocaust on both the Jewish culture and the city of Berlin.	2 Primary architectural elements: a) the exposed concrete walls that delimit the exhibition halls and b) the transparent roof that modulates and filters natural light.
- Marketing actions - National /Local Branding Policy	Video marketing, Event promotions, workflow improvements	Pattern inspired by Chinese-style 'crackle glazed pottery' veined with scholar stones - Nation Branding	"A metamorphosis from the museum as repository to a total concept of the museum" (Max Hallein).	Experiencing History Education - Nation Branding	MAXXI Art & MAXXI Architecture Part of the Artistic Pole of Rome (along with the Auditorium "Parco della Musica").
- Impact on tourism Nr. Of Visitors - Impact on economy (Income)	30 events/year audience of 2 million 200.000 guided tours	Over 300 activities/year 30 million visitors Annual income € 25.8 million	More than 20 million/year Revenue: € 650 million Local Jobs: 5000	More than 762,488 visitors (2010) Revenue: € 2.3 million	300.000 visitors (in 2013)

Figure 3 / Case Studies. Diagram by the author

Guggenheim Museum is originated by the request of the local government of Bilbao for achieving a revival of the city, after the achieved agreement with Guggenheim Foundation. Positioned two kilometers around the river of Bilbao. A metamorphosis of the design process but also a metamorphosis of the concept of Museum (Hollein, M.). The success of the Guggenheim Museum in Bilbao in positioning the city with its industrial past and heritage, as a cultural destination on the tourist map, was the result of a sustainable support for the tourist attraction of the historic city of Bilbao. This building not only has managed to create a new image for the city, but also a so-named "Bilbao Effect" which has become a dream for every developers and mayors who could see the economic logic of this sculptural gesture.

Jewish Museum in Berlin, expresses a part of the history by configuration of a zig - zag spatial plan. The aim to experience architecture has always been an objective of local or national policies which is surely achieved by the design which gives feelings of absence, invisibility and penetration through the city. The materials used reinforce the building character.

MAXXI Museum is part of the contemporary artistic pole of Rome. Two geometric structures combined together which creates fluxes towards the linear axes create a special connections with the open area nearby. The new organism includes in its developing the front- side building, by clean and blind surfaces at the side, thus declaring the feasibility and the need of coexistence. The museum is well inserted in the urban block situation, taking from it its guidelines, and opening its cut-end wings as panoramic viewpoints (archdaily.com, 2009)

2 / Architecture as Accommodation

The diversity of attractions, facilities and activities that can a city offer comprise the variety of Urban Tourism. Cities with services and facilities that provide have always embraced people, entering them. City with providing appropriate and favorable services, creates a ground for social, cultural and economic activities for humans. City also with providing services like hospitality and leisure facilities prepares a ground for tourism development and advancement (Timothy, 2005)

Architecture is also a mean of use through accommodation and services. In fact, accommodation facilities are basic elements which are needed in tourism sector to fulfill the traveling purposes. These quality of architecture is successfully used also in the Tourism Development. They facilitate the visitors stay in a destination and constitute a basis for the further development of the destination (Goeldner C. R., Ritchie, J. R. B., 2009). Building up the accommodation capacities is a key process of planning tourism development in destinations.

There are several types of accommodations types: hotel, resort, bed & breakfast, cabin, apartment, bungalows etc. During these phase the characteristics of a hotel, resort and eco-resort are analyzed according through the following criterions: exterior design, interior design, service facilities, spatial orientation and the surrounding environment.

The primary type is the hotel which can be adopted in almost every context and for the major kinds of traveling. They provide the main requests for facility, suitable for a few days traveling. For longer staying, types like resort and eco-resorts which are mostly preferred. Holiday accommodation facilities requirements is one of the main indicators of quality tourism and its service. To emerge a detailed and realistic conclusion about the impact of architecture manifestations in the tourism enhancing, it was considered important to confront information produced by observing different countries approaches to quantitative gathered data. This way, the specific conclusions are more likely to achieve accuracy.

The survey, was created as a compound of questions aiming to understand the perception of tourists regarding architectural configurations and their attitude toward it. The survey, was completed by 168 people, online and as a random selection in two of main roads of Tirana. The target group consisted in the selection of a contingent with the age from 18 years old to 65 years old, which is considered a most likely traveling age. The questionnaire composed with mainly closed questions was introduced to this target group in two weeks' time so that it reaches a substantial quantity of at least 100 surveys. Fortunately, online surveys create to opportunity to reach people easily which allows the research to have a wider perspective and a better accuracy in the gathered information.

So, the individuals who willingly joined the survey has answered separately each of the following questions by rating the architecture elements or touristic aspects according to their priorities:

At first, the participants were asked aimed to evaluate the accommodation structures where they settle. The object in this question was to identify whether the interior and exterior or other characteristics of the hotels are visually perceived or play a significance in the traveler's choices, in order to understand the contribution of the hotel projects in the overall perception of tourism. To be appointed is that two of the three main features of the hotel are interior design and facilities and services which conclude the fact that the choice for the hotel is mainly directed from the leisure facilities and design esthetics. The exterior of the accommodation structure and the history of the hotel seemed to be the least evaluated. This conclusion argues that the exterior of the accommodation structures is not a feature to be experienced, therefore is the least important to the travelers.

Nr	QUESTION 2: How do tourist evaluate hotel characteristics	Ratings (0 - 10)
1	History and tradition of the hotel	5.4
2	Architectural Exterior	6.9
3	The adequate space	7
4	Interior Design	7.3
5	Atmosphere in the hotel	8.2
6	Facilities and Services	8.9

Figure 4: Question Nr. 2_How do tourist evaluate hotel characteristics

In the second question, the participants are asked to choose a mode of accommodation structure. The purpose behind is to identify the importance of the architecture as a guiding factor in this choice. It is not so strange to understand that the hotels and resorts as the main articulated form of architecture display are the highest rated. The tourists tend to absorb and take advantage to the architectural manifestations in accommodation structures by choosing mainly hotels and resorts for spending their vacations.

Nr	QUESTION 3: How does the tourist rate the following touristic emplacements by their preference	Ratings (0 - 10)
1	Cabin, tent	4
2	Hostel	5.33
3	Apartment	5.67
4	Resorts	6.33
5	Hotel	7.78

Figure 5: Question Nr. 4 How much does the tourists prefer to go on vacations in each type of touristic emplacement

Results and conclusion

The purpose during the research, was about better comprehending regarding which element happens the contribution of architecture in the overall tourism development. After the literature review, the case study evaluation and the short survey; The research found it obvious to conclude that architecture is actually the frame or the umbrella that covers the tourism context and evolution. It's presence is irreplaceable to ensure all the facilities, services, infrastructure and also the ambience for developing an attractive model. This usage of architecture can be a growth incentive and the establisher of a tourism strategy itself. It's by making use of the composition, space, structure, functional and aesthetic aspects of architecture where most countries have initiated to establish a specific form of tourism. Architecture, not just creates the facilities but also fulfill requirements by playing a vital role in achieving harmony with nature, residents, history, places and people.

The research oriented the conclusion that architecture as Iconic Building can be reached through two main groups: Technology – innovation or cultural – traditional heritage:

By efficiently using the heritage, it turns into a tourism booster and blossoming the cultural vitality. Architectural heritage provides a very positive enrichment for tourism dynamics and recognition of history and tradition. Architecture has the potential to activate the revival of a city by turning a building or a space into a touristic show. Architectural heritage is certainly a great advantage to use in tourism strategy. It seems that it is a stronger factor than contemporary architecture, so using it integrated with other tourism assets is generally a tourism booster. Contemporary design is preferred almost 20% in interrelation with architectural heritage. "Heritage as a producing machine" (Gravari-Barbas, M., Graburn, M., 2012) is a valuable argument for this direction. Iconic architecture (buildings, landmarks, monuments) are elements of attraction and identification of the city. If managed by cultural, traditional or vernacular elements, they also affirm the identity and cultural vitality of an area and enforce a country's identity.

The "design", "style", or in better cases "Uniqueness of style" factor is fundamental for the impact the touristic sites. The ability of architecture to create landmarks, achieve greatness and produce easily-remembered design is certainly attractive for the visitors.

The Innovative materials, Vernacular elements included, Traditional or inspired by culture and the use of Public space – functions can complement the attractiveness towards a building.

Regarding the use of architecture for accommodation purposes, the requirements and major attractions for the accommodation facilities are related to:

Provision of services since it consists of primer interest during a holiday or a vacation and good use of time is vary valuable. Some of the most fundamental works in psychology confirm that spatial structure and spatial behavior are interdependent (Krolikowski, C. & Brown, G., 2008)

Spatial Orientation is considered a must in the accommodation complex where the ability to be transported easily without losing time is a criterion for the tourists.

Also, in comparison of external design which doesn't seem to have much impact the tourist stay in a facility, interior design is another estimable criterion. The interior side of the design, gives the possibility to create a warm ambience, and the proper required facilities, unless it is related with a certain natural or heritage site, where the exterior takes a greater attention. All the benefits that architecture provides in the growth of tourism has to do with a substratum reading of the countries and translation of these readings to a strategy of tourism development. The challenge in this direction is understanding the potentials and the proper usage of them into tourism. We can surely define that architecture can promote tourism through different factors, by providing the adequate aesthetics, quality of spaces, warm ambiances and the necessary characteristics to enhance tourism growth.

Acknowledgements

This study, has collected data from different tools of research, which also needed the collaboration of the public during the survey phase. Without this contribution the study wouldn't have the adequate accuracy, so it's necessary to express gratitude to all the participants of the questionnaire prepared for this research paper.

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[TOU/09]



AS / IF

a cycladic speculation

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abstract

as: The Cycladic island of Mykonos is one of the epicentres of Greek tourism and a prime example of tourism development in Greece. On the western coast of the island, Ai Yannis, a formerly bucolic landscape displays typical signs of exploitation and environmental degradation. The panorama of Delos -one of the most important mythological, historical and archaeological sites in Greece-, the proximity to the town centre and the sandy beach, were primary reasons for the dramatic yet thoughtless development, transforming, within forty years, an unbuilt area of outstanding natural beauty into an illegal aggregation of irrational private investments.

The abuse of the shore, the environmental degradation, the depreciation of the tourist product evince how four decades of ruthless consumption of the natural environment, conflicting policies and compromises to private interests, transformed the unique coastal landscape into an irrational, out of scale and after all unprofitable investment.

if: The quantified data of the present horizontal development are projected upon a hypothetical scenario of an offshore vertical assembly. Extrapolating occupational patterns, areas, programmes, a speculative stacking method is devised.

The new unconventional tourism and infrastructural typology constitutes an all year round destination in itself, ensuring reduction of the ecological footprint, energy autonomy while preserving and unveiling the landscape with its idealised views.

Project as if is a comment and criticism to an established condition as much as an intentionally provocative speculation. A representation of reality through a vision for the future. An archaeology of the future derived from the fragments of the present in the aura and light of the mythological past.

keywords Tourism Development, Cyclades, Mykonos, Bucolic Landscape, Ecological Footprint

Introduction

Coastal tourism is one of the most prosperous and fastest disseminated phenomena worldwide. The impact of its rapid growth upon the Mediterranean landscape, after the WWII, has been addressed and studied by a great number of scholars. Miles of massive tourism developments have utterly transformed the Mediterranean landscape, especially in the transitional areas between the land and sea. This change is predominantly evident in the former bucolic landscapes that have transformed into coastal resorts.

The broader scope of the research and design project is to challenge the relation between the tourism and natural landscape within a South-East Mediterranean context. Moving far from obsolete dichotomies, the project sets as its primary goal the development of new research and design methodology in order to investigate the established conceptions between the two approaches. Having this problematique as a starting point, this paper will focus on the complex relation between tourism and natural landscape.

Tourism infrastructure is inextricably intertwined with the act of building. Being an architectural praxis it entails the process of designing and erecting a structure. The purpose of this paper is to discuss architecture in reverse. Specifically to investigate the possibility of an architecture that is produced not by addition but by the reverse process. The research project "as if" (fig.1). is a typical example of the above process through subtraction. Project 'as if' is developed as a design research to articulate, test and assess the above process.



Figure 1 / View. Ai Yannis, 2014

Objectives

Our built environment is the product of many forces, as it is aptly described in the competition "Taking Buildings Down", it can dialectically be reduced to the tensions between creation and destruction, addition and subtraction, erection and demolition. Having the above problematique as a starting point, the main objective of this paper is to investigate the potential of architecture to act as an interpretive tool for the erasure of buildings, structures, and infrastructures. Specifically, it aims to explore the possibility of subtraction and the production of voids as a creative act. From Laugier's primitive hut to the contemporary discourses, architecture is constantly portrayed as a process of adding.

The act of adding in architecture has always been connected with adding value. Subtraction, however, can often add value that cannot be quantified, assessed or even envisioned. The act of removal provides a space for critical thought on the economic, political, and social context. Through this approach of "unbuilding" as a culture-shaping force, we will try to investigate the pragmatic and conceptual effects of creation and destruction upon a cultural landscape. (fig.2).

Methodology

The methodology that was employed to examine the above problematique was case-study based. The case study focus is on the coastal development of Ai Yannis in Cycladic island Mykonos. The use of a specific site was deemed crucial for the deeper understanding of the nuances and particularities of the complex topic.

The research is initiated with a presentation of a theoretical framework of similar acts as an attempt to challenge the established conceptions between 'built' and 'unbuilt'. This critique guided the development of project "as if". The site was chosen, as a vehicle to investigate the possibility of architecture to act as a reverse tool for the balance between landscape and architecture, in contested space like Mykonos. Project "as if" is simultaneously a political act, a means of criticism, and a method of speculation. The core objectives of this speculative research in Mykonos are: To comprehend the cultural values of the established balance between tourism, landscape, architecture and to develop a design strategy that could challenge, assess and redefine the above relation.



Figure 2 / 'As if'. model

Results

Project "as if" is a comment and criticism to an established condition as much as an intentionally provocative speculation. A representation of reality through a vision for the future. An archaeology of the future derived from the fragments of the present in the aura and light of the mythological past.

The theoretical concepts that facilitated the theoretical framework of the design approach are:

Subtraction

Subtraction is not a recent concept, but a common practise in real estate, transportation management and city planning. In 1993 architect Dan Hoffman in his project 'Erasing Detroit', was the first who quoted that "unbuilding has surpassed building as the city's major architectural activity" (Hoffman, 2001). Ten years later, we have the exhibition "shrinking cities" that analyses overgrowth cities under urban crisis, including Detroit. According to Keller Easterling, subtraction is not simply the lack of structure but a design tool or a process (Easterling, 2014a). She argues that building subtraction as a heavy industry and a design protocol, is an emergent profitable enterprise, a source of employment and a political instrument of extrastate governance (Easterling, 2014b). It is practically one more interplay of counter balances.

Minor Architecture

Jill Stoner in her book "Toward a Minor Architecture" states that architecture can no longer limit itself to the act of making buildings. Stoner presents to us a radical and optimistic re-visioning of the contemporary built environment and landscape of late capitalism. Stoner provocatively promotes a discourse away from design, through a new perception of architecture based on cultural theory, contemporary fiction, and environmental ethics.

Abstraction

Abstraction in architecture is a very blurred term compared to abstraction in art and literature. In a lecture called "Design Without Qualities: Architecture and the Rise of Abstraction" at the Architectural Association, Pier Vittorio Aureli stated that in a design world increasingly dominated by organic and redundant forms, abstraction is likely to be one of the most unpopular concepts in the field of architectural theory. While it is a mistake to think abstraction opposes the complexities and contradictions of our world, we deny that it is the very outcome of larger historical and cultural forces.

In a design culture focused on the superlative (the tallest, the newest, the priciest), destruction appears as a secondary concern. Henry Lefebvre in "The production of Space" defines two types of abstract space, the political as a product of violence and war and the institutional that is instituted by a state. In attempt to manifest the

different trajectory upon the act of removal-demolition in architecture, the term aphaeresis signifies a particular perspective towards the issue. The act of aphaeresis in architecture, not as a mere theoretical concept, but also as a design tool in architectural practice is examined in relation to the transformation of space in an equal basis as through addition. 'As if' aspires to problematize the complex relation between social, political, cultural and historical context through the development of a design strategy.

As If

as: The Cycladic island of Mykonos is one of the epicentres of Greek tourism and a prime example of tourism development in Greece. On the western coast of the island, Ai Yannis, a formerly bucolic landscape (fig.3) displays typical signs of exploitation and environmental degradation. The panorama of Delos -one of the most important mythological, historical and archaeological sites in Greece-, the proximity to the town centre and the sandy beach, were primary reasons for the dramatic yet thoughtless development, transforming, within forty years, an unbuilt area of outstanding natural beauty¹ into an illegal aggregation of irrational private investments.



Figure 3 (left) / Bucolic landscape. agricultural road, traditional stone walls, 1974
Figure 4 (right) / 'Hotelisation'. 7 categories, 33.500m² coverage, 2.200 beds, Ai Yannis 2014



Figure 5. View. Ai Yannis, 2014

Ai Yannis constitutes today an informal massive hotel accommodation (fig.4) with a total coverage of 33.500m² offering 2.220 beds, twice as many as the legally foreseen for the given areas. The informal accommodation is organised in 113 units of second homes, with an average use of 4 weeks per annum, characterised by the established circumvention of planning provisions and the misinterpreted 'commitment to the strictly mimetic formalisation' of the Cycladic tradition. Furthermore, in 12 ever upgrading 4 and 5 stars hotel complexes and 4 rental villas' compounds, which follow the prevailing trends of Greek tourism offering an array of services, which can be enjoyed during a tourist season of less than five months and with an average occupancy rate of below 70%. The buildings with their extensive cascading outdoor spaces occupy a vast area of a total of 196.000m² and spread through the network of easements everywhere, continuously demanding the extension of the area's inefficient infrastructural network. (fig.5)

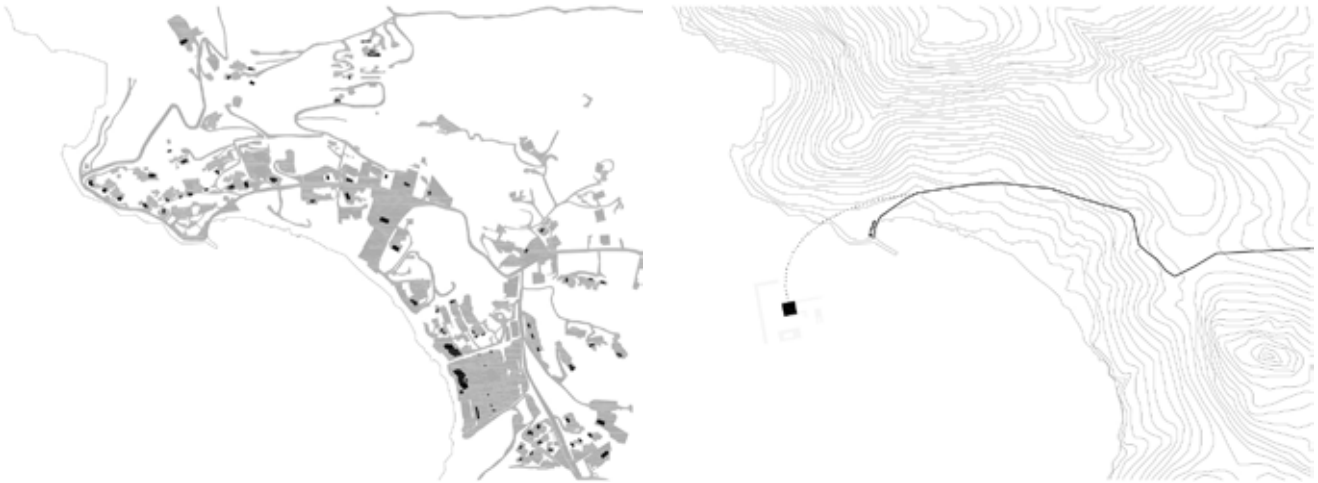


Figure 6 (left) / Hardscapes. 97 private pools, built environment's, easements - coverage 196.610m², 2014

Figure 7 (right) / 'As if'. siteplan

The abuse of the shore, the environmental degradation, the depreciation of the tourist product evince how four decades of ruthless consumption of the natural environment, conflicting policies and compromises to private interests, transformed this landscape into an irrational, out of scale and after all unprofitable investment. (fig.6)

if: The quantified data of this horizontal development is projected upon a hypothetical scenario of an offshore vertical assembly on a footprint of 27x27m and with a total of 84 levels above sea, equaling the total area as currently existing. (fig.7) Extrapolating occupational patterns, areas, programmes, a speculative stacking method is devised. At a ratio of 55% solid - 45% void various external areas are introduced in order to enhance the Mediterranean experience, which determined the scale and scope of the project. (fig.8)



Figure 8 / Porous assembly. 55% solid + 45% void

The new unconventional tourism and infrastructural typology constitutes a destination in itself, all year round and ensures reduction of the ecological footprint, energy autonomy while preserving and unveiling the landscape with its idealised views. (fig.9) An archaeology of the future derived from the fragments of the present in the aura and light of the mythological past.



Figure 9 / 'As if'. render panoramic

Conclusion

The core objectives of this speculative research are: a) to understand the historical/cultural values of the existing notion of the Architectural praxis b) to identify the social forces that shape it c) to investigate the potentials of architecture through apheresis. The project 'as if' is a comment and criticism to an established condition as much as an intentionally provocative speculation. A representation of reality through a vision for the future.

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[TOU/10]



Routes As New Enhancement Strategy Of Landscape Resources

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abstract

The improvement and revitalisation of Cultural Routes, as a new sustainable tourism form, focuses on slow mobility and not on the invasive use of landscape. The main ancient streets' layouts, define a complex infrastructure network between regional and cross-border hubs. In this way landscape and cultural heritage, in addition to the art of walking, are new places' storytelling instruments and meaningful loisir form.

Thanks to material and immaterial marks from the past, the rural and developing areas preserve specific productive traditions and know-how, which can offer new ways to attract tourism. This touristic form allows to enhance socioeconomic values and more sustainable development, connected to the relationship between cultural identity and local economic growth.

Something for us to reflect on, is offered by Routes in the region of Apulia, especially the Via Francigena route that connects the northern part of the so-called Tavoliere with the city of Brindisi through the ancient way of Appia-Traiana. This way goes through rural areas and hinterland towns, running into Christian pilgrimage places.

Becoming conscious of routes network's irregular development and different fame, we would suggest a territorial improvement vision based on specific theoretical and systematic approach.

The strategy's main feature is the ability to join at the same time socioeconomic growth and local identity safeguard thought perceptive and geographic itinerary of land route and coastal route. This last could be organised along sand bars, cliffs and coastal centres in order to join between lighthouses, coastal towers and monuments. However this development plan is congruent with 2 of 5 regional strategic views of the new Piano Peasaggistico della Puglia (PPTR) on Slow mobility infrastructural system and Coastal landscape redevelopment and enhancement, respectively.

keywords Route, Land and Coast, Development, Loisir, Walkscape

Introduction

The ancient roads, today the Routes and Thematic or Cultural to get to the historically important places, they have been crossed for millenniums by pilgrims and wayfarers, merchants and army, holy and brigands. It is the reason why whom enjoying these places today, the effort of the little daily achievement effort and delight have a peculiar fascination of the identity values strongly connected to crossed territories.

From the original shape, the Routes represent homogeneity elements in rural lands of Italy and Europe and they are also able to match areas and socio-economic development levels significantly different among them.

Today the itinerant journey privileges the moving's cultural component, that is added often to pilgrims or transhumances' original components. First of all, it becomes a fruition instrument of "diffused cultural good", made of a landscape that puts in a complex palimpsest the history and nature traces according the eighteenth-century educational model of Grand Tour.

The other two not negligible components are ascribable to contemporary concept of "extended use of territory": the landscape's sensorial reading and excursion activity, that are both strongly linked to the new health and body care need, as those relationship defined by Richard Sennett "flesh and stone" (Sennett, 1994). Indeed, the "new travelers" in the walking action are involved in aesthetic experience of landscape¹, perceived as result and combination of places' identity structuring "iconemi" (Turri, 2008), but especially in physical action.

Objectives

1. European and Italian Historical Routes

The cultural and pilgrimage itineraries along the European continent have been identified and recognised by European Council for their strategic ability to be an instrument of communication a cultural exchange between nations and cultures, increasing the same European identity. Throughout the 1987 official launch of Cultural Routes Program in with the establishment of Route to Santiago, two years before the fall of the Berlin wall, it is clear the importance of cross-cultural dialogue and encounter between the 3 majors Christian peregrinations of medieval period: Santiago of Compostela, Rome and Jerusalem. The "Declaration" approved in the Spanish city on 23 October 1987 was focused on these concepts: "...the human dimension of society, the ideals of freedom and justice, and confidence in progress are the principles which, throughout history, have forged the different cultures that go to make up the specifically European identity." And also "...That route, highly symbolic in the process of European unification, will serve as a reference and example for future projects." (Delegation of EU Council, 1987). In the 2001 thirty-four local authority, located among the Italian path of the Sigerico Itinerary, signed the constitutive act of the well known as the European Association of Vie Francigene. The AEFV, which today sticks over hundred Regions and local territorial authority, gives impulse to the representative of the itinerary valorization project, adding the institutional layers with multilevel integration from local to European including the national one. In view of the Enhancement Agreement signed with the Ministero dei Beni e delle Attività Culturali e del Turismo², the most evident result of promotion and coordination work is the European portal viefrancigene.org.

In Italy, thanks to "Atlante dei Cammini d'Italia" published in 2017, there was developed a holistic vision of roads and paths organised on the ministerial guide lines and rules of Comitato Cammini. It is an inter-ministerial coordination institution made of MiBACT, Regions and independent districts. This roads collections involves over forty Routes that cover the Italian peninsula linking historical, artistic and landscape heritage.

For the first time in 2012, the European Association of Vie Francigene calls to a meeting "Vie Sacre Experience" the partner authority in the artistic city of Lucera, to the south of Rome. In this occasion, the AEFV awards Apulia region and Foggia district for the development of segment towards Monte Sant'Angelo, Bari, Brindisi, Otranto, Leuca, and the Apulia region strategic role in the process of routes fruition improvement (Vie Francigene: <http://www.viefrancigene.org/it/>).

Methodology

1. European and national political actions

Lately, the MiBACT promotes, through ministerial directive of 12 January 2016, action getting value to the Routes, perceived as intermodal infrastructure of historical, religious and naturalistic ways. This strategy brings to a sustainable form of tourism based on slowness and other different carriages allowed by multimodal path. The new aspect of experiential tourism, in line with the 2030 Sustainable Development Goals³, aims at the conscientious use of territory with values and identities rediscovery thorough the tourist's direct engagement. Thanks to the chance of choosing path and carriage among the Routes stop-over, the tourist can develop the uniqueness and subjectivity of touristic experience escaping the latest standardization process of international tourism.

The digital "Atlante dei Cammini d'Italia" puts into effect the project of cultural itineraries improvement. It contains paths and ways according to parameters and guide lines defined by Comitato Cammini. In light of definition included into ministerial directive, the Routes are "the cultural itineraries of European or national importance, accessible by walking or with other form of sustainable mobility. They represent a fruition manner of diffused natural and cultural heritage, as well as the enhancement occasion of natural and cultural attractive and also of involved territories...they are organized on historical, cultural, artistic, religious or social topics".⁴ The Atlante is organized in order to be constantly updating with advisory from Regions and districts, after a close examination by the Comitato Cammini. It must verify the existence of the 11 valuation standards of slow tourism roads and routes, stated below:

- Physical path required to be linear and available to allow slow mobility form of walking, cycling or riding a horse in complete security and guaranteed crossing condition;
- Presence of horizontal and vertical signage for each route stop-over. The signage, also well known as "pilgrim brand", is regularly approved and registered. It must allow to several user typologies to orient them across the itinerary to orient themselves in full security. So it is necessary that the signage could be readable and easy to understand;
- Road to cross in total security through the by-pass able to avoid risky situations such as the road-crossing and any intervention for enhancing the path conditions;

- Paved roads' percentage not higher than 40%, in the perspective of landscape and naturalistic fragility preserving;
- Stops equipped with all services to support the walker, in order to increase the fruition of path according to sustainable tourism's logic;
- Online description of every stop. In this way the traveler can customize his own itinerary choosing stops and changing plan;
- Accommodation and restoration services within 5 km for tourists and cyclists' overnight and comfort, in addition to local handicraft and food and wine traditioned spaces;
- The presence of the route governance, appointed for continuous monitoring of tourism;
- Guaranteeing the route's surveillance and maintenance;
- Route geo-referencing through stop-over mapping;
- Route web site constantly updates, in order to support the travel organisation and to promote the efficient diffusion of itineraries.

During the last years, the networking project "Valore Paese. Cammini e Percorsi" of the Agenzia del Demanio (Agenzia del Demanio: <http://www.agenziademanio.it/opencms/it/progetti/camminipercorsi/>), with the support of the MiBACT and the MIT, has been starting a programme about the concepts of slow travel and territory conscious fruition. The programme establishes the public concession for nine months of public properties located among cycle-pedestrian paths and historical-religious roads. The trustees could redevelop and re-use public buildings as travel services.

In a touristic context of growing competitiveness, the governmental task in materializing process of the Routes project, replies to need of overcoming the local dimension of tourism in favour of a long territorial net. It is set up as the trait d'union between the tangible and intangible marks of shared heritage and the result of cultural exchange between population happened by paths. This aspect is underlined by the UNESCO Commission in the cultural routes definition: "A heritage route is composed of tangible elements of which the cultural significance comes from exchanges and a multi-dimensional dialogue across countries or regions, and that illustrate the interaction of movement, along the route, in space and time" (UNESCO, 1994). In the perspective of cooperation, the European Council, with support of the EU, has established a development strategy aimed providing economic and politic support to national, regional and local initiatives in order to increase intercultural dialogue and promote the knowledge and comprehension of European cultural identity. The programme should be based on the extended synergies net between national, regional and local authorities and the engagement of association and stakeholders for exchanging innovative development strategies.

2. Congruence with the instrument of territorial governance

"Vieni a prendere una boccata d'aria fresca e fai scorta di idee per le tue prossime vacanze in foresta!" this is the slogan published by nature holiday lovers to participate in the recent and most important event on the route in Paris at the Porte de Versailles Salon "Destination nature". On the site of the fair in the section destinations for Italy, the first to appear is Puglia,

"A region suspended between nature, history, tradition, taste and spirituality, to be visited twelve months a year". Since 2016, Puglia has turned a beacon on slow mobility, particular attention on the theme of the route and on the coherence with the tools of territorial governance.

The new Piano Paesaggistico Territoriale Regionale is made up of three components: the Atlante del Patrimonio Ambientale, Paesaggistico e Territoriale, the Regole and Scenario Strategico (SIT Puglia: <http://www.sit.puglia.it/>)

1 / *The European Landscape Convention describes landscape as "... an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors Art. 5 Each Party undertakes: a to recognise landscapes in law as an essential component of people's surroundings, an expression of the diversity of their shared cultural and natural heritage, and a foundation of their identity".*

2 / *The Agreement was signed on 31 May 2014 by Direttore Generale of Biblioteche and Istituti Culturali. The AEVF is committed in intense activity of communication with each one of 140 Italian municipality involved in Sigerico road, although they aren't enrolled in partnership.*

3 / *This Agenda is a plan of action for people, planet and prosperity approved by member of the UN. It also seeks to strengthen universal peace in larger freedom. It contains 17 Sustainable Development Goals SDGs.*

4 / *Directive of Ministro dei Beni e delle Attività Culturali e del Turismo "2016- Anno dei Cammini d'Italia", 12 January 2016, "gli itinerari culturali di particolare rilievo europeo e/o nazionale, percorribili a piedi o con altre forme di mobilità dolce sostenibile, e che rappresentano una modalità di fruizione del patrimonio naturale e culturale diffuso, nonché una occasione di valorizzazione degli attrattori naturali, culturali e dei territori interessati...si organizzano intorno a temi di interesse storico, culturale, artistico, religioso o sociale."*

portal/portale_pianificazione_regionale/Piano %20Paesaggistico%20Territoriale). The last one permits to prefigure the average and long future period of the Apulia's territory. The Scenario Strategico contains a series of images, that represent essential features of the territorial layout previews. This planning instrument doesn't explain the rules, but it is needed as strategic reference for starting processes of public consultation, actions, projects and policies, directed to the territory real implementation. There are also Linee Guida with technical contents for transformation-oriented activities of places that can have impacts on landscape. The innovative aspect of the Scenario Strategico is a collection of the Progetti Sperimentali Strategici di Paesaggio, a series of projects defined in accordance with local administration, ecologist and cultural associations. The Progetti concerns reproduction and improvement of territorial sources and it shows best practises coherent with the landscape plan aims.

The current theme of valuation and reclamation of the Cultural Routes follows all strategic sceneries⁵ for Apulia region, particularly it is evident the relevance to:

- Regional ecological network;
- Infrastructural system for slow mobility;
- Integrated valuation and redevelopment of coastal landscape.

The relevant element for the building of territorial project "Rete Ecologica Regionale" is the priority relation with the context. In this field, there are roads segments among the directions of ecological fragmentation where confirming and reinforcing the available passages, and getting started specific actions of de-fragmentation where are necessary.

Other elements are the multi-purpose fruition lines of ecological net, identified by directions. These important axis allow integration of different ecological realities between regions through multiple contents (symbolic, management, use). In many cases, many parts of the routers "Via Francigena del Sud", "Via Michaelica", "Via Leucadense", "Via Salentina" and "CamminodeiSanniti" correspond the lines of "Progetto Strategico Sistema Infrastrutturale per la mobilità dolce", reason for consistency and protection.

The "Progetto Integrato per la Mobilità Dolce" "...starts from the need for connecting and putting to system the environmental, historical and cultural resourcesthrough redrawing and revaluig a new perceptive geography of Apulia landscape, built on different kind of pleasure"⁶ The general and specific aims are materialized through actions and projects of improvement and every kind of mobility integration. The scenery involves multimodal circuits by connection: cycle-pedestrian, coastal, intermodal and railway hub; that often coincide with the Southern Francigena and the Appia routes.

Instead, the "Progetto territoriale per la Valorizzazione e la Riqualificazione Integrata dei Paesaggi Costieri di Puglia" moves from an effective approach to the problem of the identity features' loss of identity and Apulia's coast reduction. So it shouldbe based on the coastal deep vision, much more large of 300 meters zone sanctioned by Galasso law. In this strategic project there are many actions and strategies about slow mobility that allow to discover road and passages of considerable landscape value.

The three strategic sceneries of Piano Paesaggistico Territoriale Regionale offer the occasion for reflecting about what promotion and evaluation policies have begun in the Regional Routes net, in addition to the Francigena and the Appia Roads.

Results

1. Land and coastal Route: the Apulia territorial project

The organization of new regional Routes represents a landscape/territorial project able to give value and safeguard places, beginning from the knowledge of territory vocation and potentiality. This proposal calls for a unitary approach to heritage by the building of knowledge frame with contextual peculiarity, fragility and criticality. In this way, it might guarantee the crossing of different landscapes in an integrated way and in the local identity respect, as well as the compliance with the Piano Paesaggistico Territoriale Regionale strategic scenerios.

The project suggests a double net of regional itineraries, the land route and the coastal route in complementary relationship with the context and the cultural heritage, following the morphology and singularity of the Apulia landscape. Both the itineraries are pedestrian crossings of the region, from the Tavoliere to Capo of Leuca in the southern part of the Apulia, retracing the historical roads layout and the well-known religious Francigena and Micaelica Routes.

The land itinerary might be structured among the inland territory from the sub-Appennine of Daunia, descending through the Tavoliere up to the roman bridge of Canosa and across the Murgia area arriving to the plain of

Brindisi. In this contexts, the rural vocation is clear thanks to agricultural and bucolic bequest as "tratturi"⁷ and "jazzi"⁸, used for flock migration across the regions.

Instead, the coastal route is based on themethe Adriatic coast. The net hubs could be the most important lighthouses and lanterns for their historical rule in the Mediterrean commercial traffic and their geographical position in cross-border relationship, as the lighthouse of Vieste, Manfredonia, Bari, Torre Canne, Otranto and Santa Maria di Leuca (Carlone G., Martinelli N., 2016-2017).

The common purposes could be:

- Developing a sustainable infrastructural model able to recover and to reconvert the regional identity materials in attractive poles;
- Preserving landscape throughout the slow tourism development and containing degradation in inland areas;
- Engaging population and local actors in order to trigger the enhancement process;
- Increasing places' competitiveness by insertion in a large net ;
- Promoting the heritage through sharing platforms and websites;
- Offering thechoice of the itinerary according to the travelers' necessity thanks to mobile app with geo-referenced map (La Rocca R.A., 2017).

The land and coastal routes project could be like a catalyst of increasing holistic process of cultural and touristic organization in the Apulia region. In the general vision, the touristic dimension has a central rule for the beginning of endogenous and virtuous process,taking advantage from traditional and folklorist component together with the productive know-how in handmade and food fields.

Conclusion

The slow mobility is always more frequently seen as a movement way for improving the territorial, natural, environmental and cultural sources. The concept of slow mobility doesn't refer only to transport way, but it can be understood as a conscious approach to the territory's knowledge of places and historical identity, tracks and landscape. Therefore the realization of slow mobility net may be an opportunity to develop and promote territory, offering sustainable movement mode and fruition into a new cognitive and experiential process. These transport systems are in line with the 17 Goals of Agenda 2030 about contemporary paradigm of sustainable mobility, becoming central in the new Local Agendas.

The Apulia region as European regional context, that has increased processes to develop tourism together with landscape's protection and enhancement, is able to measure with international challenge of the Thematic Routes⁹, discussing about the real gait of the Southern Via Francigena (Conte A.,2008). New Apulia land and coastal routes proposed in preliminary way in this contribution could weave with the Southern Routes a territories' narrative and reading network. According to the Magris (Magris, 2008) and Rumiz's (Rumiz, 2016) attitude in literature field and also the Corboz (Corboz, 1985) and Secchi's (Secchi, 2007) attitude in planning field, the contemporary wayfarer can build his itinerary, choose his congenial pace and organize his route experience on the concept of landscape as palimpsest.

5 / The five territorial projects for regional territory are: "La Rete Ecologica regionale", "Il patto città-campagna", "Il sistema infrastrutturale per la mobilità dolce", "La valorizzazione e la riqualificazione integrata dei paesaggi costieri", I sistemi territoriali per la fruizione dei beni patrimoniali".

6 / The in-text citation is traslated by the author. ".nasce dall'esigenza di connettere e mettere a sistema le risorse paesistico-ambientali e storico-culturali attraverso il ridisegno e la valorizzazione di una nuova "geografia fruitivo percettiva" dei paesaggi pugliesi, strutturata su modalità alternative di godimento." SIT Puglia, Lo scenario strategico-CINQUE PROGETTI TERRITORIALI PER IL PAESAGGIO REGIONALE (PPTR).

7 / The tratturo is a wide grassy path, stony or hard courts, always with natural background, originating from cattle's passage and trampling. The transhumance conducted annually millions of sheep from Abruzzo to Puglia, so the wide grassy paths provided food to livestock during the migration. The tratturi became places of settlement for factories, churches, taverns and urban centres because of the importance of these infrastructures.

8 / The jazzi are special enclosures for cattle built along the tratturi. They were used as the temporary refuge for cattle during the long journey of transhumance.

9 / During the EUSAIR conference "Sustainable tourism connected to the Integrated System of thematic routes in a macroregional framework", they were presented many Thematic Routes already structured as the Vie Francigene, the Olive Tree Routes, the Phoenician's Route, the Religious Routes, Slow Tourism and also best practise experienced by the Apulia region as the South Cultural Routes, Lighthouses Route and the Iter Vitis Route.

Acknowledgments

This paper is the result of authors' common reflection about the Cultural Routes. The authors' contributions are as follows:

- Introduction, prof. arch. Nicola Martinelli
- European and Italian Historical Routes, ing. Nicola La Macchia
- European and national political actions, arch. Letizia Chiapperino
- Congruence with the instrument of territorial governance, ing. Nicola La Macchia
- Land and coastal Route: the Apulia territorial project, arch. Letizia Chiapperino
- Conclusion, prof. arch. Nicola Martinelli

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[TOU/11]



Viajando con el Levante: responsible tourism as a development, protection and enhancement strategy

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abstract

Spain is one of the world's most popular tourist destinations. Lately the country is adopting new sustainable policies to preserve its priceless heritage, using tourism to reinvest in the local economy. Cabo de Gata-Níjar Natural Park shows great potential for developing sustainable tourism thanks to its wild landscape – which comes under about ten different types of protection - and the low density of population and residential complexes.

The research is developed from a multi-level analysis of this coastline to the east of Almeria. The in-depth study highlighted how the lack of a management model and the huge seasonal increase in visitor has serious repercussions on the ecology of the Natural Park and does not allow a complete and conscientious use of the area. Furthermore, it is necessary to encourage ecological tourism or ecotourism, through the promotion and use of the park's protected natural resources and landscapes.

This study aims to guide the coexistence of humans and the natural environment, creating a landscape plan to achieve optimal management, as well as a fruitful relationship between tourism and protected parks. Having analysed the entire coastline, we noticed that each beach presents discrete problems in different combinations. As a result, the strategy is coherent but articulated with variables based on the specific characteristics of every beach. The resulting strategy created two types of intervention on both micro and macro scales. At the micro level we propose to respond to the specific needs of each area through micro-architectures integrated in the natural context, while at a macro level restructuring the network of transport, access and mobility routes. This is a scalable model, not only providing a vision for ecotourism in Cabo de Gata-Níjar but a strategy exportable to other places characterized by necessity for tourism and for protection.

keywords Cabo de Gata-Níjar (Almeria), Coexistence, Coastline, Natural Park, Network

1. Introduction

The traditional tourism found on the Mediterranean coast, the so-called “sun and beach tourism” has experienced a significant increase according to the number of visitors over the last twenty years. “Diversity, complexity and the enormous dynamism of the littoral system in conjunction with the pressure that it receives due to its potential as one of the most appreciated models for leisure, converts the coast to an especially stimulating case study within the search for new manners of renovation of existing tourist infrastructure.” (Goula, Spanou, Perez Rimpler, 2012: 51).

Costal protected areas, in particular, due to their specific nature, can be problematically affected by this type of exploitation when adequate tourist management is lacking. Through careful interventions and an effective management policy, natural spaces can generate wealth starting from its own heritage, which in turn will be protected and valued by reinvesting it and generating a virtuous circle.

This situation is significant in the chosen case study, the Natural Park of Cabo de Gata-Níjar, due to the beaches and the landscapes of the area. As in many other cases, the poor supply of quality tourist facilities, together with the deterioration of the natural environment and the seasonality of visitors are the main problems that must be overcome to achieve sustainable tourism.

2. Objectives & Methodology



Figure 1_Punta de la Vela Blanca

"We are witnessing in recent years the growth of a kind of tourism based on the enjoyment of nature. The protagonists of this tourism are people looking at nature not only for moments of regeneration but also for their own cultural growth. Protected areas can and should not only respond to this type of tourism, but also increase the respect of nature through conservation actions, education, and enjoyment that is compatible with the preservation of their natural heritage. For these reasons, the protected areas should operate to guide and qualify the tourist flows, so that the tourist organization becomes more qualified and typified." (Vallarola, 2013: 9) Spain has come a long way in the last decades on the subject of protection, conservation and enhancement of material cultural heritage. The declarations of UNESCO World Heritage or Oral and Intangible Heritage or the European Cultural Routes of the Council of Europe require greater public awareness in their favour and a growing interest in defending the values that make them exceptional. In turn, this will translate into a greater flow of visitors who follows the principles of sustainable development, produce considerable benefits for the local economy, which can then reinvest in the maintenance of the asset itself. The heritage, for the environmental, cultural, touristic and territorial functions it plays, is beginning to be considered a fundamental resource in the regional development programs and, above all, in the tourism development strategies, essential in Spain, where it generates about 12% of GDP.

Prospective economic studies are proving that natural heritage is not an economic deflector and does not generate significant socio-economic differences between the regions in which it is located and the rest of the country. Moreover, the value of natural heritage far exceeds the expenses it generates: it is estimated that the Network of the Spanish National Parks has a value of 38,000 million euros, while for their conservation only 3.357 million euros would be needed.

"The Natural Park of Cabo de Gata-Nijar, is located in the south-eastern part of the Iberian Peninsula, in the Autonomous Community of Andalucía, in the province of Almería. It extends for 37,500 terrestrial hectares and 12,012 marine hectares and is the largest marine park on the European continental coast." (Lopes, Rubio, Fernandez, 2010:19) The identity of this area is based on its semi-arid nature, it is one of the few volcanic parks within Europe, with a steppe climate and landscape.

The park extends west along the coast of the bay of Almería with long sandy beaches flanked by the salt pans, created inside an old Salina, and still today functioning using the traditional technique. Most of the countryside is dominated by the Sierra de Cabo de Gata, which meets the sea with high cliffs and numerous small coves scattered along the east coast of the Park.

This territory, extraordinarily singular in environmental terms, being the most southern desert in Europe, shows also a strong anthropic component, which is evident in many historical sites as the roman saltworks. The consequence of the water deficit and the absence of good territorial infrastructure, especially with regard to the road network, caused a low level of economic development: at the beginning of the twentieth century, it was a huge plantation cultivating wheat and barley, which explains the amount of mills found throughout the park. The area now occupied by the Natural Park was spared from the uncontrolled development of the sixties and seventies, thanks to the isolation and lack of roads, which allowed the conservation of its sub-desert landscape. All these elements made the Park fit into different types of protection, among which we see: IUCN Cat V and Cat VI, Natura 2000 Network, Special Protection Areas for Birds (ZEPA); Sites of Community Interest (SCI); The marine reserve of Cabo de Gata - Nijar; SPAMI; Ramsar Convention; Plan Andalusian de Humedales; UNESCO MAB Program; Geopark.

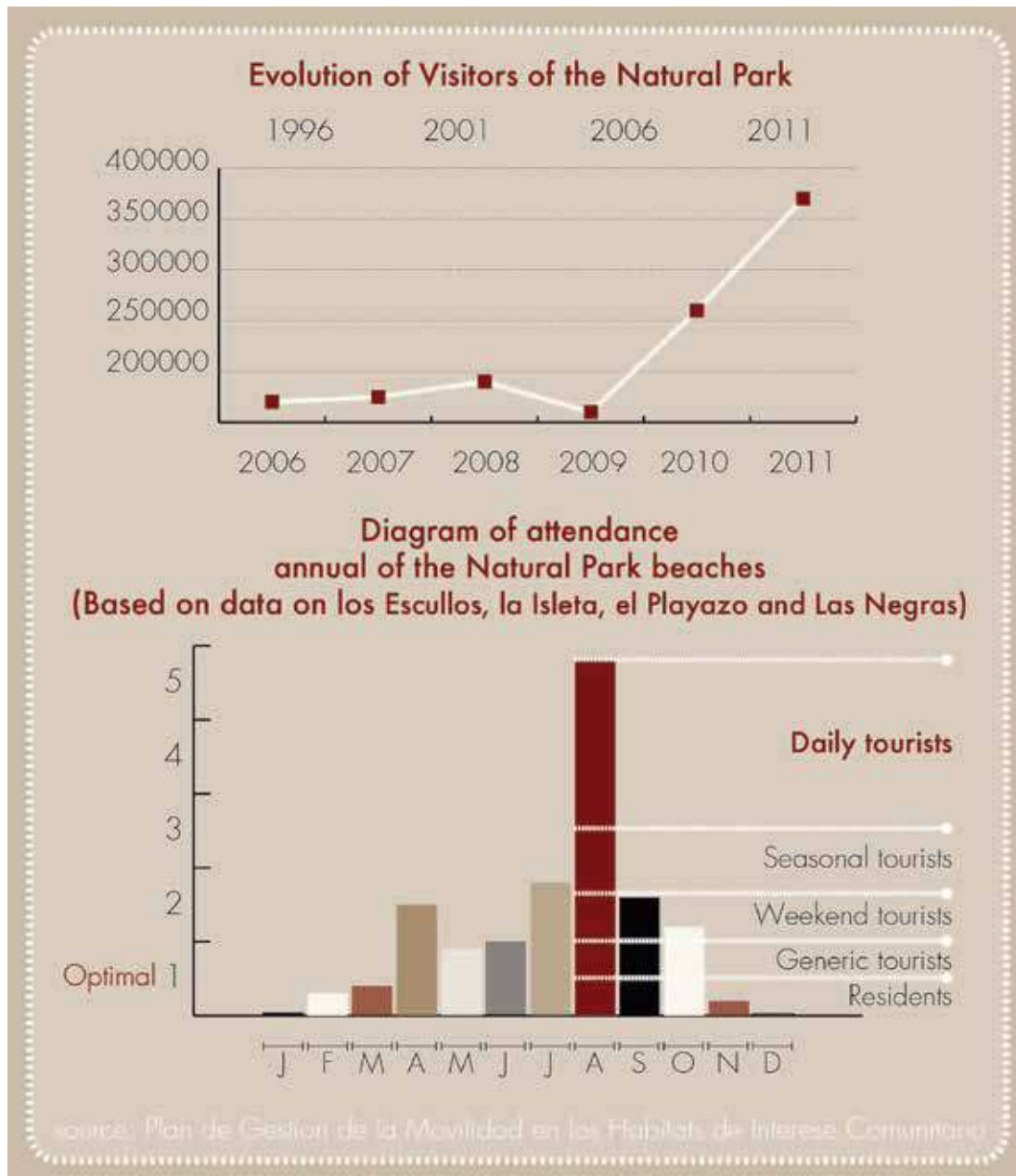


Figure 2_Tourism Data

The study focuses on one of the most pressing problems concerning the Park: the summer influx of tourists. According to the document "Plan de gestión de la movilidad en los hábitats de interés comunitario de los espacios naturales de punta Entinas-Sabinar y Cabo de Gata-Nijar" (Martínez, 2014), the capacity of the plants and infrastructures is designed for a stable population of about 3,500 people, while it is estimated that the Natural Park receives about 875,000 visitors a year. Since the growth of the indigenous population in absolute terms is very low, we can say that all the pressure in the area comes from tourism. We must consider that the development of tourism did not create a well-equipped urban fabric, only San Jose has developed a basic service for leisure time.

The absence of a real public transport system requires the use of a vehicle to be able to reach not only the beaches but also the villages. Almost all of the beaches today can only be reached via dirt paths that can be travelled by car. This means that in the summer, close to the beach, you will find improvised and extremely congested parking places in dirt spaces. "At first sight, the problem of the park seems to be one of mobility, but in reality the mobility crisis is the manifestation of a territorial model incapable of organizing the present flows. In short, it is a mismatch between the values, the uniqueness of the site and the use to which it is subjected. The mobility crisis is the most obvious and surprising aspect, but must be read in the context of the general inadequacy of services in the natural space." (Martínez, 2014:6) Mobility management measures are necessary to overcome this inadequacy, but they will only be effective if they are part of a global strategy for land management, with the ultimate aim of safeguarding the quality of these spaces.

The same document shows a series of concrete problems directly connected with this lack of management. The first step to elaborate a strategy is grouping all these single problems into categories, to ease the formulation of a solution.

1. Summer overcrowding

Referring to the problems found by the Mobility Plan, in this category are included: traffic, soil erosion, emissions of noise, dust and gas, inadequate parking, urban mobility problems, disordered and / or irregular moorings, deterioration of the seabeds with anchors.

The summer months are overloaded by an excessive tourist influx, totally concentrated on the beaches. This leads to an uncontrolled access of vehicles which, not having parking areas, blocks areas normally usable for bathing. They create visual, acoustic and material pollution and give a strong sense of neglect and degradation. Moreover, this huge mass of people that crowds the area, creates discomfort even at the urban level, with the small towns not equipped to accommodate such a large number of people. Problems are also encountered at the level of basic services such as: sewerage, electricity and waste disposal.

2. The abandonment of historical structures

Our personal survey highlighted a massive lack in the care and management of the historical heritage. Most of the historical structures present in the Park are left in a state of total abandonment. Although they are, for the most part, architecturally charismatic and rich in history, they are neither valued nor used. Many buildings are still tourist destinations for their history and their image, for example some cortijos of the interior, were many times used as film sets. But most are now crumbling and unsafe, so visiting inside them is discouraged.

3. Danger of beaches

Some of the beaches of the Park, especially those more exposed to the wind of the Levant, and characterized by the phenomenon of backwash, become, at certain times of year, very dangerous for swimmers, who risk drowning. In urban areas, most of the beaches, are controlled by lifeguards, where special structures have been built. However, on other beaches, where there are no safety measures in place, you can notice frequent drowning during the summer. As in the previous case, this is the result of our personal investigation.

4. Absence of management

Other important negative aspects underlined in the Mobility Plan are: waste disposal, organic containment, vegetation's degradation. The uncontrolled influx of tourists to the beaches, causes not only an accumulation of organic waste, but also use of protected green areas, which are greatly damaged as a result. The camping ban is one of the prohibitions that are affixed to the beaches of the Park because the area does not have basic services like the hygienic ones. The reality is very different: there are numerous examples of infringements of this rule, which lead to a production of organic and inorganic waste.

This kind of analysis needs to be combined with the concept of Carrying Capacity to better understand the real amount of the overflow and to define a concrete sustainable proposal.

The term "Carrying Capacity" does not have a precise definition, rather it is a generic term that covers a range of different concepts. These concepts are related to the idea that systems such as beaches have certain limits or thresholds. The intent is to avoid saturation levels that put natural systems at risk and limit the quality of user enjoyment. The development of various studies of the carrying capacity of tourist areas has confirmed the importance of this concept for understanding the limits of sustainable development. In the case of beaches, their design and management will depend on many factors, but the load capacity is undoubtedly a condition in terms

of use. The analysis of beach load capacity shows that its calculation cannot be simply a division of the sand area available to beach users for a value of tot sqm / person. The effective range of a coastal zone depends on the nature of the area, since coastal environments vary greatly in their ability to absorb anthropic pressure. In the case study, for the type of urban beaches the parameter considered is 10 square meters per person. For non-urban beaches, the parameter considered is 25 square meters per person. This can allow to calculate the parking lots, considering an average of 3.5 people per car and an area for each car of 25 square meters.

4. Results

To get to the final point of problem solving, it was necessary to start with a targeted search on the beaches of the Park. In order to design an effective strategy it is necessary not only to understand the problems damaging a site, but also its peculiar nature and its strengths. So every beach of the Park was studied and classified into 4 categories. The criteria underlying this subdivision are: the type of tourists that frequent and/or manage to reach these beaches; the ecosystem, or the type of soil (sand, rocks, stones...), the depth of the sea floor and the landscape and fauna value; the means that will allow us to reach the beaches in our new global vision of mobility. The subdivision by type that has been made, cannot be representative of all the beaches present, but it was necessary simplify in order to be able to intervene on each with the criteria established for the different types.



Figure 3_Strategy

Thus 4 types are distinguished:

Comfort: All those beaches on the western side of the park, characterized by shallow and sandy seabeds, and beaches that tend to develop on a large stretch but with limited depth. Moreover, this typology is also characterized by the presence, for almost the entire side, of protected green areas that at the moment are not in any way considered by users, who do not respect their naturalistic value at all. A particular feature of these beaches is that they are the closest to the city of Almeria and therefore serve all that basin of users that are on holiday, want to enjoy a quiet day at the beach without the stress of long journeys. For this feature they need to be completely reachable by car during the summer.

Urban: These are the beaches in close contact with urban centres. Usually they are not particularly prized beaches but they are certainly easily accessible for users who go to stay in the structures present in the small

inhabited areas, and that may not always have the time or interest to move to other beaches. Most of them have sandy bottoms, with small rocky stretches. The catchment area is therefore, as already mentioned, that of families or seasonal tourists who stay for quite long periods during the summer holidays. Thanks to their position, they can be reached walking by those staying in the city and by car or bus by tourists who do not stay overnight.

Nature: This type collects all the beaches and bays that are quite difficult to reach. Each of these has some rather specific characteristics, but in general they are areas of strong interest in nature, rich in fauna and marine plants typical of the area. They will therefore be interesting not only for beach tourism, but also for sporting and nature tourism. Users can always be considered: families with children who are well organized in their travels and young people or tourists who are inclined to adventure. These sites tend to be recommended for a catchment area that has the possibility of staying overnight inside the Park, mainly because, as a result of the intervention, they will not be reachable with their own means.

Wild: These beaches shouldn't be affected by interventions, if not for the inclusion of buoy camps in their vicinity. They include all those coastal areas that are noteworthy and are characterized by sea depths of enormous value and, for the most part, rocky. Almost every place can be reached only on foot or by sea, because there are no driveways. Generally, they are located between the cliffs of the Park and enjoy breath-taking views. For this reason, it is necessary to maintain their "wild" character, which is naturally wild, limiting the human intervention to the essentials. They are suitable for a catchment group that appreciates the wild and rugged nature, that is available to travel on foot and does not need services during its stay.



Figure 4_Cala San Pedro

The strategic line that emerges following all these reflections must therefore have the purpose of creating a greater organization, enhancement and ease of visiting the Cabo de Gata-Níjar Natural Park. It can be summarized briefly in four key concepts, which are the design actions deriving from the analysis carried out:

- 1) Propose an integrated transport network
- 2) Develop seasonal revitalization interventions
- 3) Improve the control of the beaches
- 4) Place micro-architectures to solve specific problems

The proposed strategy aims to offer a mobility network that is easy to use and that allows all types of tourists to move comfortably inside the Park. The user can choose the type of transport according to their needs and reach all points of the area without too much difficulty. The new public transport system of the Park is the first and fundamental step to achieve sustainable management of the area. As the Charter for Sustainable Tourism recommends, "Particular attention should be paid to the role and the environmental repercussions of transport in tourism, and to the development of economic instruments designed to reduce the use of non-renewable energy and to encourage recycling and minimization of residues in resorts." (Charter for Sustainable Tourism, 1995)

The first step is to plan a large-scale mobility network, with bus lines connecting the Park to the main cities in the surrounding area, as well as the largest inhabited centres to the area and also facilitating connections between them. The new bus lines need to have a permanent character, as the problem of mobility between the cities of the Park and to the surrounding area is a limitation felt throughout the year, not only by tourists but also by residents. The second part is to organize a shuttle bus system to transport users from inhabited centres to beaches. The insertion of a shuttle bus line means that the road must be closed to private traffic, indeed the vehicular mobility should be extremely limited in the new configuration. All the cities have to remain obviously accessible by car but the same cannot be said for the beaches. Among the few areas where you could still get to the beach by car the most numerous are the Comfort beaches, located in the west, for which it is necessary that the vehicular and pedestrian mobility differs from the rest of the Park.

New car parks must be calculated based on the carrying capacity and the inclusion of new public transport near the inhabited centres, which are currently overcrowded and with considerable mobility problems, and near the few beaches accessible by car. The new widespread network of public transport will also serve for the rebirth of the network of trails that is currently lacking in management, signage and connection with the villages.

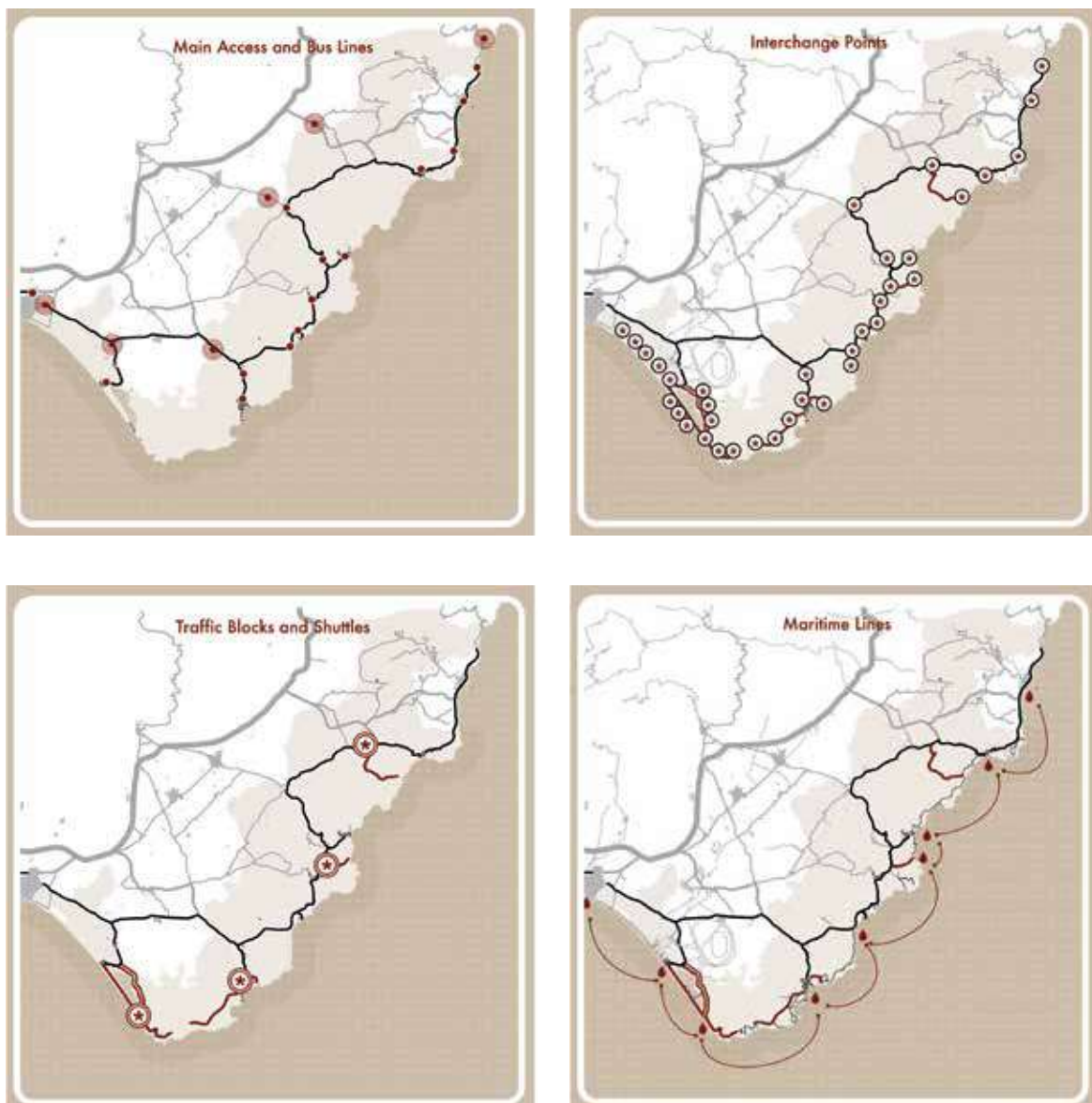


Figure 5_New Proposed Mobility

The last piece is the insertion of places of interchange, devices to integrate private driveway mobility, public transport and bicycles. These needs to be placed in strategic sites linked to the areas of wheel mobility, such as bus stops or car parks, and have to be equipped with waiting areas for shuttles and buses, and an automated site for renting bicycles. In this way the tourist has the possibility to choose the most comfortable means for them, knowing that the interchange points in the rest of the Park will be numerous and only have a short distance between them. The use of bicycles within the Park is currently minimal, but may prove to be one of the best solutions for making longer and/or shorter journeys on low-traffic roads, given the favourable climate for almost the whole year as well as the favourable conformation of some areas, such as the whole west side. Generally, the interchange points are associated with service boxes, self-supporting containers that can be easily moved and positioned where they are needed, and present in the covered parking areas where it is possible to rest and protect oneself from the summer heat. They will provide the basic services for tourists, as they will be equipped with toilets and drinking water dispensers. Along with these new lines of transport, there also need to be a new maritime line, with small boats that will take users from one city to another by sea. To support the new maritime mobility it is necessary to provide new moorings, which can be fixed or floating pontoons and therefore removable when the season is over. It is also necessary to insert buoy fields in areas where the concentration of boats in summer is enough to endanger the survival of *Posidonia Oceanica*'s submarine fields. With the installation of sighting turrets and the introduction of a monitoring team, there are concrete possibilities that the problem of maritime undercurrent can be largely solved. Through studies concerning these dangerous currents, the riskiest beaches for users were identified, highlighting those that urgently need a new monitoring system. Another part concerns the recovery and revitalization of historic buildings and turrets for birdwatching of the salt pans. For most of these, it is necessary to restore function to now uninhabited and forgotten spaces, for other buildings the intervention must start instead from a restoration aimed at a targeted regenerating possibility of function.

The interventions envisaged in the strategy must be thought of as a buffer solution that will solve the mass flow problem in the summer. Some interventions are thought as permanent, while the inclusion of the new public mobility is a seasonal expedient that blocks the flow of private transportation in favour of the shuttles. In winter the shuttles will not be active, and cars will have the possibility to circulate. The bus systems that connect the Park with the surrounding cities and the sea lines, however, remain fixed throughout the year, only less frequently during the winter. Talking about the problem of the deterioration of vegetation, especially in the east area of the Park, we considered that a valid solution could be to channel the users flow in the access to the beaches. Through the creation of raised wood paths you can easily avoid the trampling of green areas with the introduction of a non-invasive element.

Finally, one of the serious shortcomings that have importance on the current management of the Park is information. It would be necessary to create a complete tourist guide of the Park to enhance its naturalistic and historical excellences unknown both to the inhabitants and to the tourists. For this reason an important part of any intervention must concentrate on the promotion and information on the many interesting places to visit. One of the objectives is therefore to propose a unique guide for the visitor who arrives for the first time in the Park. It is important to make visible to the tourist not only the interesting destinations to visit, but also the type of mobility that can be used to move around, offering a rapid interpretation of the transport network.

5. Conclusions

The study developed to solve the problems encountered in the park of Cabo de Gata, turns out to be a strategic plan useful for multiple situations and easily applicable to any case study of the same nature. The main problem of the Park can be summarized as bad management of a natural space of extreme beauty and rarity. Despite this, tourism is currently one of the main sources of income in the area, even if developed in an overly simple way and in contrast with the needs of the Park.

The resulting plan develops on a territorial scale with an integrated mobility system but respond, with targeted interventions, to specific problems, which emerged after careful analysis of the situation and use of the beaches during the summer, the peak period of arrivals in the Park. Moreover, as already mentioned, the results of the study underline the need for a guide to the knowledge and conscious use of the space, that must collect multiple sources in order to create a complete compendium for anyone who wants to engage in knowledge of Cabo de Gata. The goal here is to focus on a more aware tourism, not simply seek the beauty of the beaches. This is configured as an expanding model, not only in the area but also exportable in other similar places characterized by a desire for fruition, but also by a need for protection.

The evolution desired for this study, first, is to apply it to the coastal areas of the Park itself. Then it will continue in the hinterland, enhancing it: a development that will spread, starting from the protected areas, which develops in the interests the neighbouring ones.

Therefore, the reciprocal exchange that takes place between landscape and tourism creates an alchemy of values that can lead to the development of a given region, if well conveyed. The interference of a protected area, in

fact, also reverberates in its surroundings, pushing the redevelopment and increasing the added value. "There is no tourist development without a landscape; it also seems that landscapes, especially those called cultural landscapes, need tourism as an economic activity to be sustained." Goula 2012. Protected areas, places of the landscape par excellence, can't be considered as islands, impervious to everything that surrounds them. It is precisely because of their positive characteristics, they push to improve their surroundings, towards objectives that are common, in a general vision of growth according to the standards respecting the natural environment.

The desirable vision is that we create 'corridors' of positive influence between the various protected places, which are becoming ever wider, connections that are initially weak but constantly expanding. The result of the research, has been divided into strategic points of action that go regularly to solve problems typical of natural areas without a real territorial organization. This allows to think about an expanding influence of this positive model of refunctionalization of protected places to free them from the immobility and isolation that too often characterizes them. The solution is not to incubate and forget the protected areas, but to integrate them, in the most complete preservation, to their context for this to benefit positively.

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[TOU/12]



Memory - Tirana between historicism and avant-gardism

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The motivation for this article is generated from observing a recent tendency in the architectural expression of Tirana to go back to a pseudo-historic language. Regarding this concern, the paper focuses on the following question: will the architecture of Tirana continue to be influenced by the most avant-garde international trends, or will it fall in the black hole of Balkan's local nationalisms? The existence of both trends in Tirana is evident and, not only during the two last decades, but much further back in history. This dialectic between historicism and avant-gardism, a continuous stream in the history of architecture, is true for Albania too. Most importantly, trying to answer the question above is crucial in the framework of projects with an epochal impact on the city; such is the project for the extension of Tirana's North Boulevard. In order to answer the question, first I try to analyze the variety and coexistence of architectonic expressions starting from the beginning of the 1920's to the present days; to some extent, I also explore how this architectonic expression was affected by external and internal influences; and, in particular, how architectonic representation in Tirana was directly related to political and economic powers. Tirana can be characterized as a city not easily shaped through plans: a blurred or fragmented situation created by the continuous interaction between spontaneous developments and planning decisions is typical in Tirana. While the authoritarian power design is unambiguously legible in many parts of the city, or at different scales of the city's hierarchies, traces of recording over from peoples who have invaded the city in different phases of its life are also visible. The same is true at an architectonic scale: Tirana is also characterized by a wide variety of architectonic languages due not only to a conscious design process but also to many "architectures" built without architects. As part of this dynamic context, many people question the future of Tirana. In this respect the project for the extension of the 3 km northern boulevard is the first important test which will show the dominating trends in urban design and architecture in Tirana. Considering the fact that the area impacted by this project covers a fifth of the overall area of the city, we may conclude that this project is the second most important urban intervention in Tirana's history, the first being those undertaken by King Zog in the early '20s with the aim of transforming the city into a European capital.

keywords urban design, city development, memory, Tirana, variety

1. Introduction

Recently the manifestation of "a new" decorating fashion and "historicist" language is becoming evident in Tirana again. This "new trend" is gradually enveloping the facades of many new apartment buildings, hotels, residencies, etc. with plagiarized pieces of history, such as pilasters, capitals, statues, floral motives, etc. The same tendency has also explicitly manifested itself in some other Balkan capitals such as Prishtina and, most obviously, Skopje. At this point some other concerns may be raised: Will Tirana be emancipated enough to push away the nationalistic clouds that nourish precisely the aforementioned kind of backward provincial current in architecture? Will Albanian politicians be smart enough and free from nationalistic complexes not to repeat the same megalomania displayed in project Skopje 2014?

The detailed design of many important projects already in Tirana's waiting list, and most importantly, further developments on the site of the new boulevard, will provide the answers to these questions. But how has this historicist approach survived in the beginning of the new millennium? To explore this question let us take some arguments from the History of Modern Architecture written by Frampton in another context. In the chapter on architecture and the state, ideology and representation, he argues why the historicist approach to building survived in the second half of the 20-th century. Among other things, he says that the modernist tendency to reduce all form to abstraction was unsatisfactory in representing the power and ideology of the state (Frampton, 2007, p.p. 210)¹. Will this – as he calls "iconographic inadequacy" or "the failure of abstract form

1. Frampton K. (2007) – *Modern Architecture, a critical History*, fourth edition, Thames & Hudson world of art

to communicate" with people – present a problem again for the representation of architecture in the present symptomatic nationalistically ill-Balkans? Despite the fact that these concerns were written for another context, they sound quite actual for what is happening in the framework of the nationalist ideologies in the Balkans and the risks Tirana is exposed to.

2. Variety and coexisting of architectonic expressions in Tirana

As mentioned above, there is clear evidence that recently in Tirana a growing number of "architects" have attempted to use a pseudo-historic language (I will try to avoid the phrase historicist style as much as possible). This kind of language is more evident in private initiatives such as hotels, residential buildings etc. but not yet typical in important public buildings, except religious institutions (the Orthodox Church and the project for the New Mosque). The most typical example in Tirana which explicitly illustrated the preference for historicist language was the international competition for the New Mosque. This competition drew entries from some of the most avant-garde contemporary studios. The winning project designed by BIG architects was canceled and considered "non-appropriate" for a traditional mosque in Tirana. Some months later a "typical traditional mosque" was copy-pasted from medieval Istanbul and parachuted on the building site. In many other cases the creation of this false image is forcefully demanded by the clients and is fatefully combined with the poor education and /or pragmatism of architects and politicians.

This kind of historic language, as an imported phenomenon, appeared for the first time in Tirana in the project for the neoclassic ceremonial complex of the Ministry square (1929-1931), during the monarchy period. This tendency was intensified even more during the Second World War, in the construction programs implemented during the Italian Fascist occupation of Albania. The most important public buildings in Tirana belonging to this period, such as "la Casa Del Fascio" (today the University headquarters), the "Dopolavoro complex" (The University of Arts), the Stadium, etc. were designed and built according to the official preference of the Italian fascist architecture, "Stile Littorio". Despite this fact, it is important to mention that, during the same period in Tirana, elements of modern architecture mostly applied to residential typologies, also appeared for the first time. More details about each of them will be presented in the following paragraphs. However, this short period that lasted from the beginning of the '20s till the end of the Second World War could not give Tirana the aspect of a "European historic city". The only history which was intimately embodied in Tirana was that of the "organic town of the origin" and the objects related to it such as the old bazaar, the old mosques, the hamam. etc, that were demolished without any hesitation after the end of the Second World War. During the communist regime, it was a clear strategy to gradually sever ties with everything from the compromised historic past, including the architectonic language. On an urban scale this was reflected in the preference for erasing the old neighborhoods rather than enhancing them, and on an architectonic scale it was reflected in the dry, stripped, impoverished but, at the same time, archaic expression, applied to the main public buildings.

We may conclude that by the end of the Second World War three basic architectonic approaches coexisted in Tirana: first, the historicist neoclassic style manifested as a very late reminiscence of the European Beaux arts tradition; second, the Italian "Stile Littorio" imported from fascist Italy, or as Frampton calls this consciously "modernized" but conservative and stripped historicist style, "The New tradition"², and third, elements of modern architecture which referred to the European Modern Movement mostly imported in Albania from Albanian architects who studied in European countries and also from Italian architects who were using this style in Italy despite Fascism's official preference for the "Stile Littorio". Let us analyze each of them in the Albanian context and how these approaches were affected by the external and internal influences.

1. The neoclassic style in Tirana is mainly represented in the buildings of the ministry square and in many residential villas built in the period that starts from the beginning of the 20's till the end of the Second World War. In order to better understand the architectonic developments in Tirana during that period it is important to see them in the context of the main architecture trends in a wider international context. While the historicist tendency was degrading and dying in other European countries, in a context of cultural, territorial and technical transformations which created the conditions for the emergence of the modern movement or other forms of interpretations of historic language, it survived in the project for the ministry square in Tirana. As Frampton argues in his history of modern architecture, the main line of European Classicism, the Beaux Arts, reached a dead end in the Paris Exhibition of 1900, "the generic style of the establishment, the late 19th century public mode which oscillated constantly between Neo-Gothic and Neo-Baroque ... degenerated into an eclectic elaboration" ... not

2. This term was originally coined after Henry-Russell Hitchcock in 1929; in Frampton K. (2007) - *Modern Architecture, a critical History*, fourth edition, Thames & Hudson world of art

3. Frampton K. (2007) - *Modern Architecture, a critical History*, fourth edition, Thames & Hudson world of art

4. Aliaj, B. Lulo, K. Myftiu, G. (2003) - *Tirana the Challenge of Urban Development*, Cetis, Tirane,

convincing for architectural expression (2007, p.p. 210)³. The first design concept of the main axe of the boulevard was designed by Armando Brasini⁴ in 1925 (Aliaj et al. 2003, p.p. 30, 31). It was a majestic design and redundant with excessive historic language. This kind of "ideal city" rooted in the central axe of the boulevard, next to the spontaneous / organic Tirana, was a typical political diagram where architecture and urban design were exploited by the state so as to demonstrate its power as a newly created nation. As part of the main axe project, the Ministry Square, designed some years later by Florestano De Fausto in the neo-classic style, represented the most imposing complex in Tirana with their decorations and ornaments, decorative cornices, sculptures, and pompous entrances. Despite the fact that this language was outdated in comparison with many other European countries and it was like an alien in the spontaneous, organic and quasi-vernacular Tirana, this architecture fulfilled the political goal and left one of the most important traces in the city. What the establishment of the new Albanian state needed at that time was this: institutions that embodied a "new" typology of architectonic representation and a new image of Albania no longer as a part of the Ottoman Empire but as part of Europe.

A similar language extended to the architecture of the urban villas for the bourgeoisie of this time and to some other public buildings appearing along the new opened or stretched avenues such as Rruga Nana Mbretreshë (Rruga e Durrësit), Mussolini Boulevard (Rruga e Kavajës), Zogu i Parë Boulevard, etc. A similar architecture appeared also in other Albanian Balkan cities such as Shkodra, Vlora, Manastir, Prizren, Kostur, etc. (Bushati, 2012, p.p. 8). According to Bushati (2012), there is a wide range of stylistic variety in the architectonic expression of these villas, starting from traditional ones built without architects (master builders) and the ones built with architects which are characterized by neoclassical, or eclectic style, and finally a more rationalist one similar to what was built in Europe (Bushati⁵ p.p. 9). The owners of these villas were politicians, intellectuals, government clerks, traders and very well-known families in Tirana. So, owning a villa immersed in the garden was an indicator of social status in the Tirana of the 20's and '40s.

The architectural lexicon of these villas is quite rich. It includes capitals and pilasters; decoration represented by a complex geometry which originates from very different sources and makes difficult their precise architectonic classification (often the decorum is totally unrelated to the structure); window cornice embellished with stylized geometric or floral motives inspired from nature; balusters with different shapes which enrich the staircases, balconies and terraces with their alternated rhythms; decorated colonnades or pilasters normally at the entrance of the villas with classical orders or their composites that vary from neo-doric, neo-ionic, etc.; decorated fences and balconies which vary from the traditional ones to neoclassic, art nouveau, art deco, and modern art. The same can be said for the decoration of the floor and the roofs in the interior of the villas (Bushati, 2012, p.p. 13, 20-21).

From the urban point of view, if we refer to Rossi's statement⁶ that the house represents the manifestation of a culture (Rossi, 1984, p.p.77-82), it is clear that the urban villas built during this period created a new culture in Tirana aside the organic / spontaneous one. If we explore this new housing system within the larger urban system of that time we can notice that there is a binary relationship between the typology of the urban villas and the urban morphology: in some cases they were adapted in the existing organic structure and in other cases the new parts of the city are the direct result of the aggregation of this new typology. Not only could they follow the historic traces mediating between two different typological and spatial conceptions, but they also demonstrated founding properties. In the later periods of Tirana's development, especially during the communist regime, we do not see any sort of attempt to set the problem of housing within the larger urban system, or to explore the binary relationship between the housing typology and urban morphology. Contrarily, the housing system detached from the historic traces of the districts was consciously used to create the disjunction from the past.

2. The Italian "Stile Littorio" in Tirana is represented in the main public buildings, such as the National Bank, Hotel Dajti, "La casa del Fascio", the "dopolavoro complex" etc., which were designed and built during the Italian Fascist Occupation of Albania. To have more complete view of the emergence of such a style and the manifestation of a wide range of varieties within it, it is first worth seeing the larger international context and, more specifically, the Italian one. As mentioned in the previous paragraphs, despite the degradation of the historicist style based on the Beaux-arts tradition, a specific line of thought oriented towards the historicist approach survived in Europe. As Frampton argues (2007), this conservative trend that persisted with tradition but had a new face was emerging as the ruling taste in the '30s wherever the power wished to represent itself in a progressive light. The re-emergence of this historicist language, coined as the New Tradition, reappeared in many different contexts and developed to represent the official architectures of power not only in totalitarian countries such as the Third Reich, Germany (1929-1941), Fascist Italy (1922 -1942), colonial India, New Delhi (1912-1931), Soviet Union (1931-1938), but also in countries such as USA, France etc. gradually distinguishing itself from the neoclassicism of the beaux-arts. In Europe the New Tradition consciously broke with the public style of the Neo-Baroque to return in spirit, form, solemnity and clarity to that of ancient Rome. Typical examples are the Stuttgart's Railway Station, designed by Paul Bonatz built in 1913-27, and Edwin Lutyens's New Delhi commissioned in 1912 but realized in 1931. It is worth

5. Bushati, V. (2012) *Vilat e Tiranës – gjysma e parë e shekullit XX*, POLIS_Press, Tiranë

6. Rossi, A. (1984) *The Architecture of the City*. The MIT Press Cambridge, Massachusetts and London, England

remembering here that the New Tradition was developed in parallel with the modern movement but was isolated and far away from the progressive aspirations of this Movement (Frampton, 2007, p.p. 211, 218, 210-222).

The architecture of this period in Albania, specifically in Tirana, was strongly influenced by the Italian current of the New Tradition "Stile Littorio". Despite the preference that Mussolini Regime showed for this official style, typical, according to some scholars, of the Italy of this period is the existence of a variety of ways in which the Italian architects confronted the ideological issue (Doordan. Denis P, 1983, p.p. 121)⁷. It is important to understand the Italian architecture of that period from this point of view as well because it directly reflects on Albania. Two clear and very different fractions coexisted in Italy: one linked with the historic tradition and the spirit of ancient Rome represented by architects such as Marcello Piacentini, Armando Brasini, and the alternative represented by the Italian Movement of Rationalist Architects (MIAR) related to the European Modern Movement and CIAM represented by architects such as Adalberto Libera, Giuseppe Terragni, etc. As Zevi⁸ argues, there is an attempt of progressive architects in the Italy of that time to integrate political and architectural ideologies (Zevi, Storia dell'Architettura Moderna, in Doordan. Denis P. p.p. 121). In fact, many architects of that period were assuming that modernism in the arts and fascism in politics were supposed to be related to aspects of the modernization of Italian culture (Doordan. Denis P, 1983, p.p. 128). Both fractions were equally committed to the reinterpretation of the classical tradition but in very different ways. This duality representing modernity and tradition that was embodied in the Italian architecture of this period was expressed in Albania too. The main public buildings built in Tirana during the Italian occupation, as part of the "oltre mare project" were designed according to the official "Stile Littorio". This architecture was conservative compared to the avant-garde modern architecture of the same period in Italy. The "oltre mare" project was part of the Fascist colonial project in which, in addition to Albania, other Italian colonies in North Africa were also included.

The most typical expression of the New Tradition in Tirana is the new complex in the southern part of the city which included "La casa del Fascio" in the center, the "dopo lavoro complex", the stadium, the gym, etc. Here we can clearly see the typical program for these kind of complexes and also the main elements typical for the lexicon of the "Stile Littorio," such as the stripped and simplified classicism, lithic solidity, the marble and travertine covering, the repetition of simple elements, the use of "basso-relievo", the decoration of the square with statues, etc. The original design included the proposal for a number of statues which could never be completed, in order to emphasize the main axes in the buildings surrounding the quadratic square. From the urban point of view this complex also embodies the same official principles of the Fascist Architecture in Italy; on a different scale we can assume that the foundation of this new complex outside the existing city was the parallel of EUR in Rome. It was a utopia and monumentality separated from the social reality of Tirana. While the public buildings were designed according to the official style, a more rationalist approach was especially expressed in some urban villas built during the same period; a typical example is villa Nepravishta, etc.

The architecture and the urban traces left in Tirana during this period played an important role in the consolidation of a new urban structure and shape of the city (more details about this in the next paragraphs, the 1942 plan). This new architecture created a new urban scale for Tirana as a capital city, and most importantly brought a new typology of the public space. These buildings still play a very important role in the city structure, and are successfully adapted to new functions and further social and physical transformations of the city.

3. In Albania the first elements of modern architecture appeared in the period between the two World Wars. The most important Albanian modern architects who worked during this period were Qemal Butka, Anton Lufi, Skeneder Kristo Luarasi, Gjovalin Kroqi, Kristo Sotir, etc. As Luarasi⁹ argues (2013, p.p. 175) modern architecture in Albania is represented in the built and non-built projects of the Albanian architects who worked in the period between the 20's and 30's. This period also coincides with the emergence, development, and consolidation of modern architecture in Europe. He also argues that the Albanian modern architecture of this period is related to the European modern architecture not only in terms of formal and syntactic features but also in the social and political aspects. The main characteristic of modern architecture (including the Albanian one) is the avant-garde value in all aspects of the architectonic design: conceptualization of form and space, the relationship between internal and external space, the minimalist and pure design. The architecture of this period demonstrates a variety of styles and conceptualizations as well as the hybridization with the local and regional typologies. These topics need further research in order to be supported by specific examples that are focused in the Albanian context.

The urban villa was the typology in which this architecture was most present. Most of them were located in the southern part of Tirana, on both sides of the new boulevard stretching from Elbasani Road to Sami Frasheri

7. Doordan, Denis, P. (1983), *The political Content in Italian Architecture during the Fascist Era*, *Art Journal* (p.p. 121-131), summer 1983

8. Zevi, B. (1950), *Storia dell'Architettura Moderna*, 5th edition 1975, Turin, in Doordan, Denis, P. (1983), *The political Content in Italian Architecture during the Fascist Era*, *Art Journal* (p.p. 121-131), summer 1983

9. Luarasi, S. (2013) *Duke empatizuar Sizifin – Drejt reklamimit dhe rehabilitimit të arkitektures modern shqiptare, nje moment nga vepra arkitektonike e Skender Kristo Luarasis*, *Forum A+P 13*, POLIS_Pres

Road. Some exemplars can still be seen in the former "blloku area", Jul Varoboba street, Asim Zeneli Street, Papa Gjon Pali II street, etc. Typical in this area are some villas designed by Skender K. Luarasi, including his house, known as the Luarasi villa, etc. and Simonidhi's villa. The investors of these villas represented a specific social stratum of Tirana: the middle / small "bourgeoisie". Most of them were educated abroad and prone to want to change the feudal and oriental image of the country. Their will towards progress, reinforced by the European orientation of the abovementioned Albanian architects working during this period, triggered the avant-garde trend that we find in the architecture of that period. In the course of 15-20 years Tirana was transformed because of this progressive move. Since the early '30s several urban villas and/or other objects were designed and built under the influence of such a trend and in contrast to the "historic" conservative tendencies represented in the monumental neoclassical or in the eclectic style mentioned in the previous paragraphs. However, in many cases architectural expression was subject to the individual tastes and the background of their owners. Often, the architecture of this period successfully hybridized the abstract and poetic aspects of the local Albanian architecture such as the use of roofs and roof eaves, the use of stone, the modern treatment of balconies and terraces, etc. (Luarasi¹⁰ 2013, p.p. 176). The modern character of some urban villas is also expressed in the fact that many of them put more value on the purity of the materials rather than on the decorations. That is why we see the beauty of the marble, the use of massive wood, or squared stones, bricks, and terracotta, etc. without any make-up or stylization. (Bushati, 2012, p.p. 21)

Albanian modern architecture is related to the European modern architecture as a result of a group of Albanian architects who studied in Europe and worked in Albania and also because of the influence of the Italian rationalist architecture during the Italian occupation. Unfortunately, the exemplars of this architecture nowadays are a species in extinction. They are not considered as protected heritage. A lot of these urban villas have already been demolished under the pressure of urbanization and redevelopment of real estate, or have already lost their identity because of incompetent interventions. What was avant-garde at the time in which they were built in many cases has been erased by ridiculous decorations¹¹. Their new face represents the falsity, fast enrichment and the need, on the part of their new owners, for a "new" identity and social status.

4. After the Second World War. This was a period of self-isolation. Albania gradually separated from the rest of the world and from the international discourse in all fields, including architecture. Architecture and urbanism became ideological instruments in demonstrating the state's power and in the support of the "revolution" and transformations in the country. They were part of a social experiment used to influence the creation of a new physical and social reality. The construction activity in general and, architecture and urbanism in particular, were considered important components of "social progress" and the "construction of socialism" in Albania. After 1978, when Albania broke with China, the country had become totally self isolated, but before that some strong influences from the Eastern bloc countries are visible in the country's architecture and urbanism. Some are the reasons of such an influence: firstly, the intensive exchanges and relationships that continued up to '60 with the Soviet Union (SU) and up to '64 with the rest of the communist bloc; secondly, the considerable number of students who graduated in the SU and in the rest of the block (Bulgaria, Romania, Czechoslovakia, Poland, DDR, etc.). After that Albania had its own contingent of architects and engineers educated with a "new ideology" but in the former Eastern Bloc countries; and thirdly, the assistance given during the same period to Albania by architects and urban planners from these countries. Along with Albanian architects and engineers, they designed and assisted in important projects of this period such as the Palace of Culture in Tirana, the Park in the periphery of Tirana, some residential blocs, etc.

Despite the isolation that followed in the next period, in terms of architecture and urban development Albania followed the same track as the Eastern Bloc, but badly equipped with a very poor local economy, poor technological and theoretical know-how, and most importantly, with a high degree of limitations derived from ideological interpretations. This is also reflected in many models copied from the Eastern bloc countries and adapted to the Albanian reality. However, the "spirit" of the proletarian culture that flourished in the SU during this phase is what most influenced Albania not only when both countries were closely connected, but also after the relationships were broken. The inertia of people educated there, as well as the nostalgia of love with the SU was stronger than anyone could imagine. Let us see first how this official language originally emerged in the SU. As Frampton¹² argues, the emergence of a new language in the SU was due to the challenge made by VOPRA (group of Young Proletarian Architects) against the constructivist intellectuals pretending that only the proletariat could create a proletarian culture; in addition, it was due to the pre-war academics who remained unsympathetic to constructivism; and most importantly to the Party itself that sensed that people were incapable of responding to the abstract aesthetic of modern architecture. The monumental Socio-Realist line was officially adopted by the

10. Luarasi, S. (2013) *Duke empatizuar Sizifin – Drejt reklamimit dhe rehabilitimit te arkitektures modern shqiptare, nje moment nga vepra arkitektonike e Skender Kristo Luarasit*, Forum A+P 13, POLIS_Pres

11. Bushati, V. (2012), *Vilat e Tiranës – gjysma e parë e shekullit XX*, POLIS_Press, Tiranë

Central Committee of the Party in 1932. In the apologia for Social Realism written by Anatole Lunacharsky, he insisted that Hellenic culture, a “cradle of civilization and art,” could still serve as a model for architecture in the SU (Frampton, 2007, p.p. 214). However, as Charley (1996) argues, this was supposed to be the “critical assimilation of previous architectural heritage¹³”. This was not to be achieved through any kind of “bourgeois eclecticism” but by the “profound assimilation of the workings of the previous architectural compositional methods and principles for the expression of the new socialist content¹⁴”. This is what Charley (1996, p.p. 27) extracts from the editorial columns of the *Arkhitektura CCCR* in July 1933, about the party pronouncements on what was believed to be the new tasks of Soviet realism as they were meant to apply to architecture. This “critical assimilation of previous architectural heritage” was supposed to be achieved through “historical research” because this would create the “clarity of meaning” easy to read for the “mass perception”. As he argues, this was an old-fashioned argument for populism, the antithesis of progressive historical transformation. In fact, what happened was a fallacy of critical assimilation of heritage because it was not driven by a rational concept of history. What we see is a mechanical penetration of classical principles (Charley, 1996, p.p. 27).

Different from the SU, where there is a visible penetration of classical principles that attributed to architecture an aspect between the neo-classical and highly eclectic, idiosyncratic and a mixture of historical symbols and meanings from the orthodox church to classical antiquity (Jonathan, 1996, p.p. 29)¹⁵, in Albania this flavor of neoclassicism never pervaded architecture during the communist regime in such a way. This (lack of neoclassic flavor) was also a result of the absence of pre-war academicians with a beaux-arts background. However, the same neoclassic “flavor” is visible in buildings designed by Russian architects or under the influence of such a style, such as the Kinostudio building, The Palace of Culture, Shallvare and Agimi housing blocs, etc. A central theoretical concept that Albania copied from the soviet project was what Charley¹⁶ (1996) described in the case of the SU as the search for an ideal unity of form and content that was celebrated in the synthesis of “national form” and “socialist content” (Charley, 1996, p.p. 28). This union was exactly what Albanian architecture was pretending to achieve too. Despite this fact it was a very superficial and vague understanding of these theoretical notions. In practice these imprecise concepts were translated into archaic symbols plagiarized from the Albanian folk and historic culture, often also mixed with the revolutionary symbols. In the total lack of understanding of the original theoretical concept, in many cases, the use of these superficial symbols was the only criteria to classify if the architecture was following the party line. As a result, in many cases, we see socio-proletarian symbols (the star, pickaxe, shovel, rifle, wheat ears, hammer and sickle), quite often as part of the work of artists engraved in basso-relievo, or the use of traditional materials (such as stone) quite artificially used in facades. In general we can say that there is no real fusion and intimate relationship between the elements that create the lexicon of architectonic language and the building itself which adds a sense of archaic sterility to these architectures.

An issue to be discussed within the framework of this period is the huge difference and contrast in architectonic treatment based on typological discrimination and the category of the city. Despite the claims for an equal society, there are huge differences in the way in which different typologies and categories in architecture have been treated from center to periphery, from city to city, etc. From this point of view, first, we can distinguish the a/stylistic 4-5 stories standardized low-cost residential blocs, supposed to support the “new” collective life and be the incubators for a new model. With few exceptions, they were very poor freestanding apartment blocks detached from any historic traces. The only exception, were some blocks in the central areas built according to special design (the apartment bloc behind the National Bank, or behind the National Museum, Barrikadat towers, etc). In addition, we can distinguish the standardized public buildings such as schools, kinder-gardens, commercial services, cultural centers, etc. Also in this case there are huge differences from the center to periphery, from Tirana to other smaller centers. In most of the cases, it is difficult to speak about architectonic expression because the pragmatic approach and the fulfillment of the functional program requirements were considered most important; and lastly, special or unique buildings, such as government buildings, museums, hotels, train stations, etc. These buildings are some of the most distinguished architectures of this period, such as the Museum of the dictator (the “pyramid”), the Central Comity of the Communist Party, Hotel Tirana, the National Museum, the National Gallery

12. Frampton K. (2007) – *Modern Architecture, a critical History*, fourth edition, Thames & Hudson world of art

13. *Arkhitektura CCCR* (July 1933), p.1; in Charley, Jonathan. (1996) *The dialectic of the built environment: The making of an imperial city*, *The Journal of Architecture*, 1: 1, 19-37

14. *Arkhitektura CCCR* (July 1933), p.2; in Charley, Jonathan. (1996) *The dialectic of the built environment: The making of an imperial city*, *The Journal of Architecture*, 1: 1, 19-37

15. Charley, Jonathan. (1996) *The dialectic of the built environment: The making of an imperial city*, *The Journal of Architecture*, 1: 1, 19-37

16. Charley, Jonathan. (1996) *The dialectic of the built environment: The making of an imperial city*, *The Journal of Architecture*, 1: 1, 19-37

of Arts, etc. These cases demonstrate the maximum effort to reach the best architectural expression within the official line of this time. There are some common characteristics of these buildings; they are massive in scale and often organized around a central axis in a symmetric layout (typical is the pyramid, the national museum, etc.); they stay on pedestals and can only be approached through a series of triumphal stairways; in many cases they are adorned with stylized folkloric or revolutionary motifs, which even in these cases have mostly been plagiarized, without being assimilated as part of the architectural expression. This treatment attributes to these structures quite an archaic character and also reinforces the iconic aspects of this architecture.

From 1944 to 1991, under the centralized economy, significant changes happened in the city structure. Regulatory urban plans based on zoning as the main regulation criteria, were the main instruments for large scale urban transformations. This instrument was used as an "ideological instrument" to link the territorial development policy with the ideological objectives generated at the national scale. The city was considered almost a mechanic collection the pieces of which could be removed according to the needs for space and services. Tirana was becoming an "excellent" example of a city designed by demolition, where the alienated space of oppression was gradually becoming dominant. All this was done in the name of social progress which in reality conditioned not only architecture and territory but the entire social life. Despite all these efforts, at the beginning of the '90s, with the collapse of the regime, it became clear that the dream projected towards a city and a society where there were no rich and poor, gradually was shrunken and reflected in the desolation of the poor housing blocs where everybody was poor. The dream ultimately came to an end. In Albania, like in all totalitarian regimes, architecture and urbanism, more than ever, allied with the power.

3. Languages along the main axes of the Boulevard

The ceremonial axe or the main boulevard where the new city and the new architecture started almost one century ago is the most representative space in Tirana. The discussions about its further development are the focus of the current debates. With this concern in mind, it is worth analyzing the urban structure and meaning of the most representative space in Tirana in order to understand its future generative capacity in terms of architecture and city scale. Tirana started the tradition of opening and stretching of the new avenues quite late in comparison with other capitals in the region. At the beginning of the last century Tirana was a small organic town / village, until it was declared the capital of Albania in 1920. The first attempts to move from spontaneous to organized urban planning were initiated under the monarchy period: the opening of several main avenues such as Rruga e Durrësit, Rruga e Kavajës; Zogu i Parë Boulevard, are some of them. Without any doubt, the most significant project was the ceremonial complex of the government buildings and the central axe of the boulevard first designed by Armando Brasini¹⁷ as part of the King Zog's projects for Tirana. The boulevard was included in the first regulatory plan (formulated by G. Bossio and F. Poggi in 1942), as the symmetric axe and the central element of Tirana.

This axial scheme can be analyzed in relation to the topography, and in relation to the political power, as a structure representing a political diagram. In terms of the first element, topography, the boulevard alignment is fixed by the specific location: parallel to the direction of the Dajti Mountains, almost in the north-south direction (slightly inclined to the west) gradually descending through sequential river necklaces (Lana, Tirana, Terkuza river, etc.); The chosen location and the direction of the boulevard was a perfect interpretation of Tirana's valley topographic features; not only because it became the generator axe for the future development of the city, but also because of the reinforcement effects on the identity and orientation of the entire city. Related to the axe as a Governmental linear system or as a political diagram, as Kostov argues in the book *City Shaping*¹⁸ (2003, p.p. 174), it (the boulevard) celebrates monocentric domination. Axial alignment is commonly used in association with an overall urban diagram that upholds its premises and highlights its effects. Kostov uses the scheme of New Delhi designed by the British E Lutyens, commissioned in 1912 but built during the '20s, to illustrate this scheme (2003 p.p. 176-178). He describes some details that may be worth using for analyzing that part of Tirana which was designed and built during the same period under King Zog's project. Among other things, he argues about an elaborate hierarchic spatial structure based on occupational rank and socio-economic status, such as: the hierarchical housing that fanned out from the axes along avenues; the rank was precisely indicated by the altitude and size of the compound and its proximity to the government palace, the size of the dwelling, the width of the road, the name of the road, the number and index of the house type. In a similar way, this is also true for that part of Tirana that was built as a political power diagram. If we refer to the first design options, the King's palace was in the dominant hill at the south end of the axe (later substituted with "la casa del Fascio") and the land along the axe was distributed to the higher rank clerks. As we mentioned in the previous paragraphs this area became the ground for the modern expression in architecture. The area still is perceived as one of the most "privileged" areas in Tirana and the land prices are the highest in the city. It is important to extend this analysis

17. Aliaj, B. Lulo, K. Myftiu, G. (2003) - *Tirana the Challenge of Urban Development*, Cetis, Tirane, 2003, p.p. 31

18. Kostof, S. (2003) *The City Shaped - Urban Patterns and Meanings through History*. Fourth printing, Bulfinch Press AOL Time Warner Book Group, Boston, New York, London

to the catalytic role this axe played in the future development of the city. After the boulevard was included in the 1942 plan as the main centrality of the city, later developments reconfirmed the importance of such a decision. There are several reasons why this boulevard was so successful and went far beyond merely being a ceremonial or a political diagram: firstly, this axe reconciled the initial organic city with the founded city ("Tirana e re"). In this respect it represented the "meeting place" between the spontaneous city and the designed one, between the everyday city and the ideal one. Because of this, aside from the organic pattern, a consciously designed one, substantially different from the previous one, was laying down in a very natural way. Secondly, it was the visualization at the city scale of two important geographic features: the Tirana valley gradually distending towards the sea, and the mountain range in its background. This way, the boulevard was mediating a dialog between the geographic scale and the human scale. Finally, at the end of this period two different Tirana/ s with legible architectonic and urban features were created: one rooted in the organic radials and the other one rooted in the re-foundation axis of the boulevard. It is no accident that during the communist regime, along the same axe, the communist government imposed their own hierarchic structure. The headquarters of the Communist Party was built during this axe in a neoclassic style, following the Russian line of socio realism in architecture as described in the previous paragraphs. Ironically, under an ideology that was propagating the idea for an egalitarian society the most important people of the state hierarchy / nomenclature were living in the same area and the same villas designated for the bourgeois of the previous monarchic structure. This area was even closed during this period and was symbolically called "the bloc(k)". There are no substantial interventions during this period along the axe except in the main square ("Skanderbeg square") that totally changed its aspect, increasingly becoming bigger. I have discussed these interventions and the related erasing operations in other issues of Forum A+P (number 5 and 8). As a conclusion, the development of the axe of the boulevard was stopped at the train station.

During the first decade after the '90s most of the developments along the axe contributed to deform the original concept: typical are the generic / faceless architectures such as the "twin towers" in front of the pyramid, the apartment bloc towers in the same area, Rogner Hotel, etc. etc. In 2004 a new era started: international competitions. The central axe and the "Skanderbeg Square" as well as the buildings proposed along this axe, became the arena of the most important international competitions. After more than five decades a new language appeared in Tirana. An important mental shift was about to happen. The first international competition that was dedicated to the central axe of Tirana was won by the French group "Architecture Studio". Some of the most important proposals of this plan included a new design for the "Skanderbeg Square" and the "Mother Teresa Square"; the pedestrianization of some sectors along the central axes; the creation of "Tirana Central Park", a new train terminal; etc. One of the central ideas of their proposal was to increase the presence and visibility of the central axe. Related to this, the plan proposed one of the most debated themes: a series of towers along the main axe (only two of which are under construction). The design of these towers also went through international competitions which were supposed to bring an avant-garde and extravagant architectonic language along the axe, which would be very different from the neoclassic one. The following years questioned many of this plan's proposals, starting from the idea of pedestrianization; the lack of investments needed to solve the traffic problems at a larger scale (city and metropolitan) and the lack of public parking near the central area made the further implementation of this plan impossible. In a similar way doubts were raised about whether there was a need to build all the towers proposed by the plan, etc.

Only a few years later, another international competition was organized for one of the most important parts already proposed by the previous plan: Tirana's "Skanderbeg Square". Important international studios participated in this competition; among others Daniel Libeskind Architects (New York, USA); MVRDV (Rotterdam, The Netherlands); Architecture Studio (Paris, France); Atena Studio (Rome, Italy), Josep Lluís Mateo – MAP Arquitectos (Barcelona, Spain), etc. The competition was won by the young Belgian studio 51N4E bvba (Brussels, Belgium). The implementation of works on site, started some months after the competition, was suspended for financial and political reasons. What was implemented had nothing to do with any one of the dozens of projects presented for Skanderbeg Square. It showed the failure of politics and administration in guaranteeing the continuity of the important urban projects. Some other important international competitions were organized for the abovementioned towers in the center: the first one was won by the Belgian studio 51N4E (under construction); The second tower was won by the Italian Archea Studio (under construction); Other competitions were organized for the Urban Complex won by Winy Maas of MVRDV Holland (under construction); The New Albanian Parliament won by Wolf Prix of Coop Himmelb(l)au (the project cancelled, the building site changed); The New Mosque won by BIG Architects (the project cancelled, the building site changed); and many other competitions. During the last two years the attention has been mainly focused on the project for the extension of the Northern Tirana Boulevard that is supposed to give a new dimension to the city. The idea to further extend this axe was included in the 1989 plan. According to this plan the axe was considered as a new access from the North, mainly conceived as a shortcut to the international airport. In 2012 this idea reemerged again and became the focus of another international competition. It drew entries from important international studios, among others: KCAP, Holland; Grimshaw Architects, UK; West8, Holland; Cino Zucchi Architetti, Italy; Albert Speer and Partners, Germany; DAR Group, Turkey/UK, etc. The international competition was won by Grimshaw Architects. The project area, impacted by the extension of the 3 km boulevard and the organization of a 7 km river side park, covers a fifth of the overall area of the city. The design of the winning project was based on the analysis of the existing informal urban

settlement and patterns of land ownership. It proposes the creation of sequences of public spaces threaded along the boulevard and urban living rooms which reflect Tirana's Mediterranean outdoor culture.

The avant-garde language would seem an unlikely language for the continuation of a power diagram like the one of Tirana. Despite the prejudice for monumentality, this is one of the reasons that made the government axes of Brasilia iconoclastic as a product of the '60s. The (neoclassic) Mall in Washington DC can be considered another reference for this kind of formal model. However, as you will see in the proposals presented in this A+P issue, the design proposals for the extension of the Tirana Boulevard are far beyond the monumentality of the neoclassic and modernist axes.

4. Conclusive remarks

So far, Tirana has demonstrated one of the best examples of openness to architectonic and urban experiments. The period after 2004, full of new ideas and inspirations relating to the city and its architecture, is a second revival after King Zog's "grand travaux" and "Stile Littorio" operations. Many projects remain from this phase but few concrete actions on the ground. Despite this fact and perhaps most importantly their impact goes beyond being merely competitions: in their totality they represented an important educational process for local architects and planners.

If the opening of the boulevard during the monarchy period generated the "second Tirana" (Tirana e re) made of a different pattern, different urban fabric, and a different architectonic expression, what will be generated by the tides of the Northern Boulevard? Will it play the same catalytic role for the areas under its gravity? How will its architectonic expression be materialized? Will it impose the continuation of the avant-garde language that so many international competitions brought to Tirana, or will it go to backward to the well-known historic or nationalist language? Most importantly, it is vital that Tirana in the future will demonstrate to be a nationalistic complex-free area to be open to architectonic and urban innovations oriented towards the future.

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CIP Katalogimi në botim BK Tiranë

Universiteti "Polis"

[Co]habitation tactics : imagining future spaces in architecture, city and landscape : Tirana architecture week (TAW) : international scientific conference : Tirana, 20th-23th September 2018 : conference proceedings / Universiteti "Polis"; eds. Laura Pedata, Enrico Porfido, Loris Rossi – Tiranë : Polis press, 2018

802 f. : pa il. ; 21 x 29.7 cm.

ISBN 978-9928-4459-6-4

1.Arkitektura moderne 2.Planifikimi i qytetit
3.Konferenca

72 .036 :711.4(4/9) (062)

72 .036(496.534) (062)

72 .036(496.534) (062)

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ISBN 978-9928-4459-6-4