

Waiting for eVolo - 2023 Skyscraper Competition

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The exponential increase of inhabitants, pollution, economic division, unplanned urban sprawl and other factors are leading towards a vertical development of the cities. Such phenomenon is appearing globally, creating new vertical entities with an impact in the urban context, the public realm and society.

The workshop aims to investigate the relationship between space and the collective in the creation of a dynamic and adaptive vertical community. It seeks a response to the exploration and adaptation of new habitats and territories based on a dynamic equilibrium between man and nature. The workshop is organized in the frame of the international competition launched by “eVolo” magazine, which since 2006 invites international architects, engineers and designers to propose innovative creations that embrace the latest technological applications and promote cultural values that can influence the future design of cities. The participants are encouraged to propose vertical buildings in any context of the world, by taking into consideration technological advances, finding new sustainable means for the urban environment, proposing methods to solve economic and cultural issues, and new strategies for the management of natural sources. The workshop was organized in six groups of five persons and the best proposal will be a participant in the “eVolo” competition.

Objectives of the workshop

In the last two years, the incidence of AI in architecture has seen the rising of significant debates regarding the implemen-

tation of these tools in professional and academic processes. On the one hand, stable diffusion models, neural networks, and intelligent algorithms have defined a new way of ‘designing’ architecture only through the use of words to be transferred into images; while, on the other hand, have opened an untouched field of investigation dealing with creativity, ideas, and as well touching some delicate points such as the authoriality in the field of AI-based design.

Quoting Ludwig Wittgenstein: ‘the limits of my language are the limits of my world, and words seem to be today even more important than before in the emerging context of natural language text-to-image applications driven by artificial intelligence algorithms. With these premises, besides the design of a proposal for the eVolo competition, the subtle objective of the workshop was to expose 5th-year students of an Integrated Master in Architecture and Urban Design to the new challenges linked to the use of AI in architectural design.

The use of the Midjourney AI (version 3.0) platform was, for the pedagogy team as well, a method of inquiry on how such potentialities could be expressed and catalyzed in proper design projects rather than just on a bi-dimensional screen of an already precompiled platform. Exposing the students to learning how to use diffusion models and how to strategize methods to convert the resulting images into 3D models, was the trigger to involving them in a deeper understanding of how to formulate a theory around their designs.

The concept is based on the very transformative years that influenced the way we live today. Having to experience it all together surely impacted how we see our "home" and the upgrades we want to do in our everyday environment. Therefore it is important to notice the patterns that re-shaped the world.

THE INTERCONNECTION BETWEEN NATURE - HUMAN - MACHINE

NATURE - At this point it is no idea to look into the source of the very beginning of everything. The normal standards that it is his own good to care for the green to there can be like his more appreciation for their "Mother".

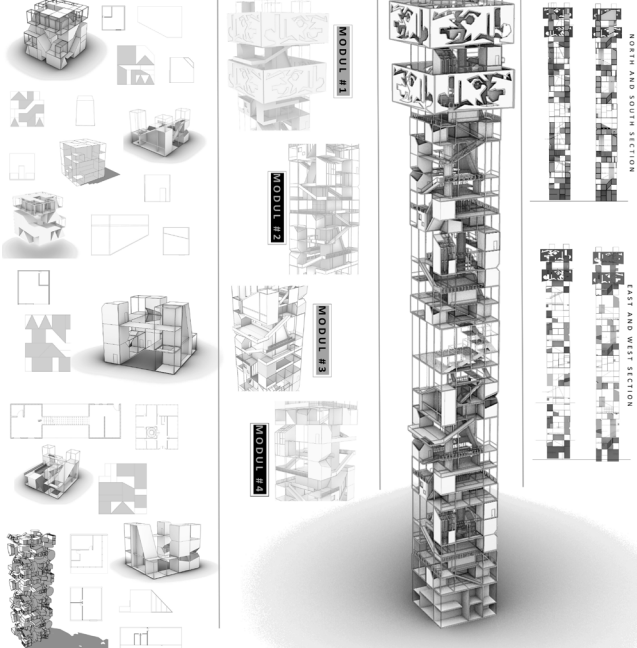
HUMAN - A big challenge is to be away of a here's loved (or) hated. A bigger one is to be present and to play faithful to one's self... These years challenged the perception of the connections with outside and within.

MACHINE - Closing away the outside, the inside became the world. Being mindful enough to create a "new" reality so that one can feel that the "old" one can be willed from the mind.

THE MODULE THAT FITS TO THE NEW REALITY



THE MODULES



Workshop outcomes

RYU CORE

OSAKA, JAPAN YEAR 2222

In a post-apocalyptic future setting of Osaka due to a nuclear war, people have managed to find ways to adapt and protect themselves against the new abnormal environment. Now the city and buildings are being changed in order to survive the radioactivity, tsunamis and earthquakes.

CRISES



FINDING SHELTER IN HISTORY/MYTHOLOGY

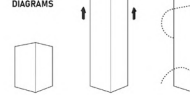
Ryujiin, the mythical dragon

The Japanese dragon, also called Ryū (龍) or Tatsū (虯), is a snake-like creature covered with scales and without wings, contrary to the Western dragon. As a symbol of strength and power, the dragon is highly respected and honored in Japanese society.

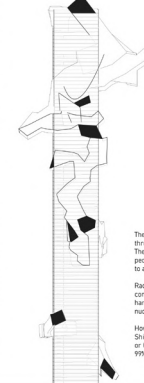
Ryujiin is a sign of good fortune, happiness, wealth, success and symbolizes wisdom, perseverance and immortality. The characteristics of this mythical creature are taken and transformed into tools of protection for the post war setting.



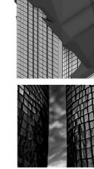
CONCEPT DIAGRAMS



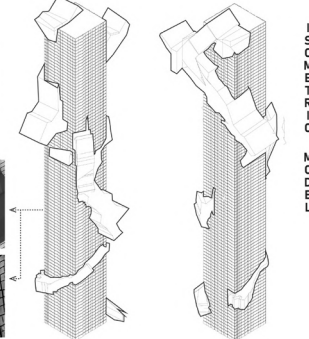
SECTION CUT OF THE SKYSCRAPER



THE FACADE



ISOMETRIC MODEL



The building second skin resembles a reptilian leathery itself throughout the facade, as a layer of protection from the risk of disasters. The "reptilian" (dragon like creature), acts as a safe structure to shelter people in times of danger; while at night the material glows & gleams as to alarm general dangers.

Radiation shielding construction materials are made from solid lead or contain a layer of laminated lead sheathing to stop the penetration of harmful radiation. We provide shielded building materials for medical, nuclear, and other industries requiring radiation shielding.

How thick must lead be to block radiation?
Shielding is mainly achieved by wearing protective lead aprons 0.25 or 0.5 mm thickness, which have been cited to attenuate over 90% and 99% of the radiation dose, respectively.

Workshop outcomes



Workshop outcomes



Workshop outcomes

Methodology

The students were divided into groups of three to four people, in which each of the groups chose the main theme to develop the main concepts of the project. The students listed several global problems with a focus on the relationship of humans to the environment and bringing into play the possible future crisis of this relation. Each of the groups considered different themes, which resulted in unique approaches for the final project. The first concepts were generated by the use of artificial intelligence, respectively through the platform of “Midjourney”, to obtain possible scenarios for the final proposal. Consequently, the students obtain several feedback to develop the final layout of the building represented in architectural drawings and renders, which would answer a specific crisis.

Conclusions

As was seen during the workshop’s phase, enabling vast amounts of data processing and offers great simulation possibilities for the students to display many design alternatives comprehensive and progressive way. Midjourney AI was not intended as a complete alternative to the ‘traditional’ design process but as a way through which the class could develop unexplored lateral thinking enzymes to enrich their final design proposal.

All the different groups engaged, and implemented in Midjourney a series of keywords that could be intended as strong points for their future design solution. All the images generated were then re-traced into traditional modelling software and enriched with the technical drawings. Due to the short span of the workshop – 5 days -, the overall process still needs to be a test and more critical outcomes need to be produced through a longer use of the above-mentioned tool in the design process. Nevertheless, the experience was an interesting test to trigger and promote the use of the latest tools in architectural classes and courses.

Valerio Perna is an architect and PhD in "Architecture -Theory and Design" at the Unievrsvity "La Sapienza" in Rome. Currently he is a Lecturer at POLIS University in the Architecture Department. He is also the coordinator of Innovation Factory (IF) and the head of the Research Department.

Urban Regeneration Strategies. The Tirana Case Study

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Workshop introduction, objectives and intentions

The first signs of historical settlements in Tirana date back to the year 1614. These settlements and their road system belong to the old Ottoman city structure. Nowadays this historic north-east area of Tirana consists of a conglomeration of buildings that date back to different historical periods. Recently, a good part of these dwellings are informal ones, which damage the morphology of the area.

Tirana has gone through different regulatory plans starting from 1921 up to today. The influence of Italian architects and urban planners is undoubtedly obvious within the urban tissue of the city.

The rapid demographic growth after years of dictatorship increased extraordinarily the monotonous band of the periphery. This made the city triple the number of residents to the suburbs, leaving immobile the only center of the city designed by Florestano Di Fausto 80 years ago. Agricultural lands or free territories around the city were replaced with buildings that were unplanned by a regulatory plan and in most cases illegal or without architectural projects. "Tirana suffers today an extreme difference in the urban, economic and social level, between the center and the periphery."

The workshop aims to introduce students to aspects of new models of urban renewal within a Southern European and Balkan context of historic and architectural character.

The workshop was structured in three main parts:

- The history and planning that shaped Tirana's urban tis-

sue (how are the past and the history incorporated into the modern city)

- The high structures and the organization of the public space in dialogue with the city's historical places
- The urban regeneration policies and strategies that combine both public space and high structures.

Student's work and workshop goals

Students were asked to analyze, interpret, record, maps creation, plans, 3d drawings, collages, or other materials of their preference. Presentation of an action plan of intervention, urban activation, heritage incorporation, and quality of life parameters was one of the main goals of the workshop.

Activation and upgrading the concept of the specific area through mental maps was necessary. Students were free to imagine and propose their ideas according to the overall understanding of the city's character. SoPHIA methodology for approaching the historical environment was one of the tools used during the workshop.

Students were asked to observe, record, and analyze the character of the city center composed of fragments of heritage both monumental, as well as anonymous, and vernacular architectural structures, and other urban details that have been identified, as well as contemporary structures, including new construction in the form of buildings, public spaces, gathering areas, rest areas, parks, etc.

Students were asked to comprehend the planning of the city

around its main axes, squares, and green spaces, as well as the chosen site of interest, and the interpretation of local and global characteristics.

The workshop went through different site analyzes involving different urban tissues, in order to enhance the sustainability of the historical sites of the city of Tirana. Finding the right keywords which involve the problematics of the area through mental maps was some of the main objectives. The identification of the area of analysis and its immediate surroundings, provided a series of appropriate uses (mental map – comprehension scenarios) towards the area’s regeneration, facilitating public use and integrating it into the urban tissue.

The formation of design principles enables us to address each of the above-proposed design scenarios. Interpretation by each team was showcased by providing an iconographic and/or sketchy way through a “section” of the town of their choice that expresses better the coexistence, merging, conflating, and still active opposition and contestation from the global to the local plan, including the community.

The workshop goal was also to critically assess what was observed as the past & present activation strategy including heritage incorporation and to evaluate and upgrade the quality of life parameters.

Therefore, the workshop was shaped around the notion of proposing an activation plan and upgrading different concepts for a specific area near the historical center of Tirana.

The collective analysis of the greater area and each specific element analyzed by each student collected a composed body of knowledge both personal and subjective as well as collective and objective, which faded into the final report.

Finally, the workshop elaborated a new methodology for approaching the historic environment, called SoPHIA, which has specific thematic categories. The students funded interest to incorporate the methodology within their proposals.



Figure 1. The students on site visit in Tirana

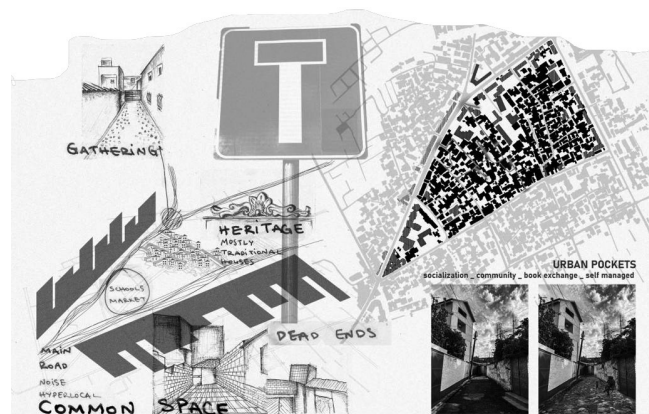


Figure 2-3. On top the work of L. Duka, M. Hazizolli, M. Kuqari, K. Ymeri, N.Nikolopoulos. Below the work of E. Oikonomou, K. Miraku, L. Muslika, M. Gjoni, M. Ziu, N. Babe.

Dimitra Nikolaou is a Professor at the National Technical University of Athens (NTUA) and a specialist in urban regeneration and historical heritage.

Framing Architecture

OLSON LAMAJ

POLIS University

VJOLA ZIU

POLIS University

Architectural photography is the photography of buildings and residential buildings. Architectural photographers are usually skilled in the use of specialized photographic techniques and equipments.

This workshop offered an exploration of the development of architectural photography and some of its key themes. Architectural photography is a seemingly simple genre, but in reality, it presents challenges for the photographer both from a technical and compositional point of view.

The topic of architectural photography was addressed both from a historical and critical point of view as well as from a technical point of view. In a word, this was an introductory but in-depth course that offered all the basic notions of architectural photography, notions which were developed in the classroom in a very specific and articulated way, juxtaposed with all those technical and expressive knowledge and photographic language that every architectural photographer must master in order to start creating satisfying and visually exciting images.

Framing Architecture workshop equips students with the necessary skills to accurately create professional photographs of tall buildings in the city.

Starting with analog techniques, students were shown how to best use the digital medium to achieve the structuring of an architectural photographic project for magazine or publicity use.

To begin with, together with the students, we chose some towers in Tirana that fit the main theme of Tirana Architecture Week, which was: "Going high! The Pros- & Cons- of City

Verticalization". The selected towers were: Hotel Plaza, Air Albania Stadium, Forever Green Tower, Blloku Golden Cube, Credins Bank Tower, and Toptani Center.

The students were given 2 days to photograph using the techniques they learned in class the day before. After this process, the next step was to deal with the editing and post-production of the images photographed with the respective cameras. For photo editing, students were free to manipulate the image through Adobe programs such as Photoshop or Lightroom in order to play with contrasts, light, and colors to create a photo as realistic as possible.

At the end of the process, the students were asked to print 4-6 of the best photos selected together with the curators on photographic paper and stick them on top of a forex or a foam. In this way, the photographs could be exhibited in the lobby of the University, next to the MAD Gallery in a mini Expo.

Olson Lamaj, is a multimedia artist from Albania. He graduated as a painter from the Academy of Fine Arts in Florence, and received his M.A degree in artistic photography from the Academy of Fine Arts Brera in Milan. From 2020, he is part of Polis University where he teaches Museography and Exhibition for the departament of Art and Design.



Workshop Outcomes

Theory of Architecture for Towers

ALESSANDRA COMO

University of Salerno

LUISA SMERAGLIUOLO PERROTTA

University of Salerno

SIMONA TALENTI

University of Salerno

ANNARITA TEODOSIO

University of Salerno

MARSELA PLYKU DEMAJ

POLIS University

The concept

The workshop consisted in a critical and visual laboratory to interpret skyscrapers through specific historical, architectural and spatial paradigms. The skyscraper was explored through a critical analysis of relevant texts and design examples which had a great impact on its spread as an architectural type. Particularly significant Italian case-studies from the Second Post-War period – such as the Velasca and Pirelli towers in Milan – were analyzed to explain skyscrapers as a phenomenon which characterized the vertical growth of cities and parts of them. The study highlighted the main features of the high-rise and the intrinsic connections between its elements and parts; attention was also paid on the relationships that the tall building established with the city and the urban landscape. The focus was therefore on the impact that skyscrapers have had on the transformation of cities and the understanding of their role in the contemporary city. The historical and visual exploration was followed by the critical reading of selected excerpts from relevant texts from the history and theory of architecture. The final result was a visual and narrative investigation on the Skyscraper through texts and diagrams. The main objectives of this laboratory were:

- To explore the complexity of the skyscraper as architectural and urban phenomenon in the modern and con-

temporary city;

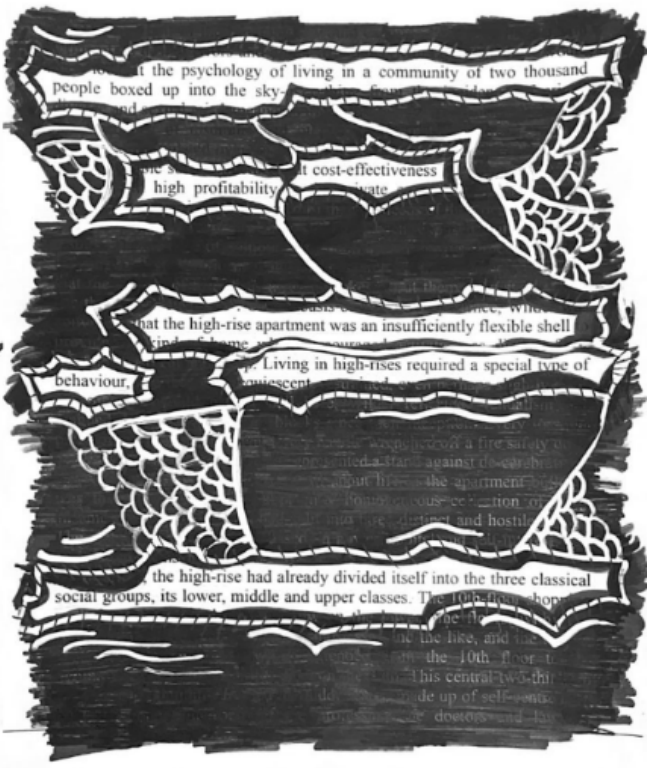
- To develop visual tools to analyze and explain the main characteristics of the skyscraper from a typological point of view;
- To experience a comparative reading of texts and images/drawings in order to create a bridge between history, theory and design;
- To explore comparison as a method to analyze the experience of the space in the city.

The process

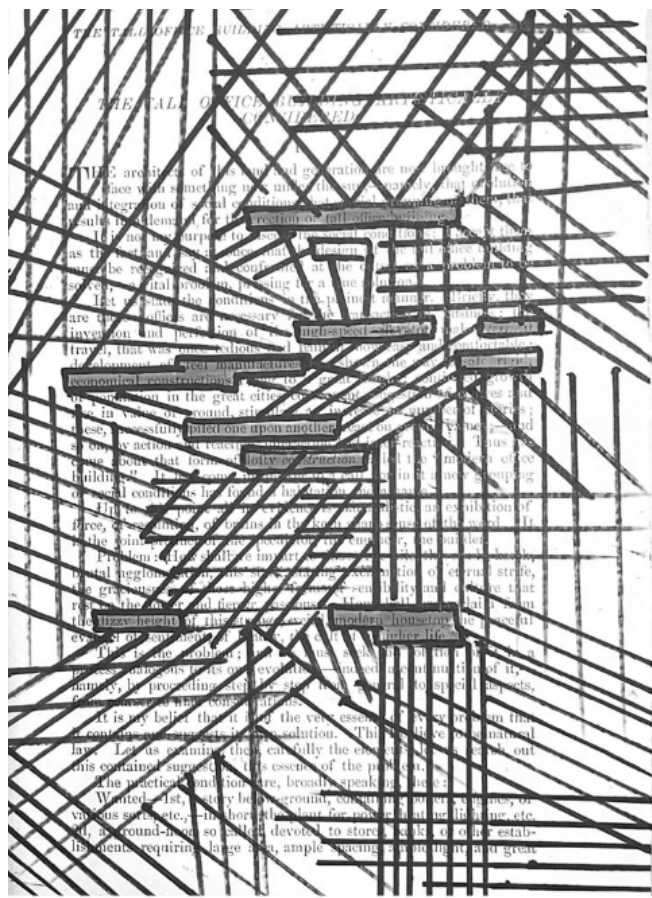
The workshop was organized as a process of sequential steps over 5 days with brief lectures and seminar sessions. Students were required to follow the progressive work of the workshop through three different tasks methodologically separated and with different related assignments. The outputs were sketches, studies of extracts from books; interpretative diagrams, and collages.

The Tasks were sequential and connected at the same time because of the content and the output. Each task lasted about one / two days.

The first task - “Skyscraper History and Observation”: the Skyscraper through some Italian case studies - dealt with analyzing texts and images of the skyscraper topic through Italian case studies. It was an exploration of critical texts and



Works from Dea Hushi



Works from Dhimitra Dodi

projects about Italian 50'-60' skyscrapers. The students carried out the task divided into 8 groups. Each group studied a specific case study using provided historical research, visual materials from archives and from books and historic journals.

The case studies were the Italian project: *Centrosvizzero* (1949-52) designed by Armin Meili and Giovanni Romano; *Torre al Parco* (1953-56) by Vico Magistretti; *Velasca Tower* (1955-57) by BBPR; *Pirelli Tower* (1956-58) by Giò Ponti and Pier Luigi Nervi; *Grattacielo INA* (1953-58) by Piero Bottoni; *Torre Galfa* (1956-59) by Melchiorre Bega; *Torre Breda* (1954-56) by Luigi Mattioni; and *Torre Turati* (1963-68) by Giovanni Muzio, Lorenzo Muzio, Bosisio Pietro Giulio. The studies underlined historical issues and descriptive information, regarding designers, timeline, localization, construction materials, number of floors, and so on for each case study as well as the main information on the building, such as dimensions, proportions, structures, etc..

The second task - "Skyscraper Reading": some readings from selected texts and feedback from the students - was a critical reading of selected texts about the genesis and meaning of the tall building (Fig.1). The selected readings were texts particularly meaningful for the skyscraper topic, within different realms. The texts were from different historical periods and were different in typologies such as novels, critical texts, and papers. Within the selected texts there were the L.H. Sullivan article "The tall building artistically considered" (1896); the book "Delirious New York" by Rem Koolhaas (1978); the book "La poesia del grattacielo/The poetry of the skyscraper" by G.M. Titone (1998), the J.G. Ballard's novel "High-Rise" (1975) and the book "Green Obsession, Trees Towards Cities, Humans Towards Forests" by Stefano Boeri Architetti (2022). Task 2 was a collective reading experience. Each member of the group read a different text in order to have an overall reading at the end of the task. The students were asked to select parts of the texts and to identify the main issues by graphic and creative elaborations on the texts such as highlighting, deleting, underlining as in the works of the Italian artist Emilio Isgrò.

The third task - "Skyscraper Design Exploration" - was a skyscraper comparative design exploration. Through the use of diagrams and collages, students were required to explore selected spatial topics in different skyscrapers using case studies of their choice. The topics were defined in order to have all the groups working on different aspects. The topics were divided into Building Topics such as module repetition/variety; single/mixed use; plans/sections; solids/voids; and into Buildings and City Topics such as above ground/underground; visual fields; paths: from the city/within the building/towards the city; building/urban landscape and territory. All the explorations, from the different groups with different topics, became a common and broad analysis on the spatial potentiality of the skyscraper's design.

Students were asked to discuss and present their work at the end of each TASK with a final discussion. This was a useful way to test their interest and understanding of the process during the five days. In this way the students were involved into the work and they understood the sequence of steps as a method of analysis. Students demonstrated their understand-

ing of the Skyscraper spatial conditions and its related arguments through the development of graphic materials. At the end of the week, students gained an integrated view of the topic of the Skyscraper through various issues from the history, theory, and design points of view. In the final discussion, the interest in the Italian cases of the 1950s was evident. They are all located in Milan. Today, studying these old examples placed in the city that is considered a reference for the international architectural debate, was quite special for the students. Starting from these emblematic cases-studies of the first architectural exploration of tall buildings in Italy, the student's attention shifted from the skyscraper as an image and icon of the city to the skyscraper as the space of the city.

In the final step the comparative analysis explored the topic of the skyscraper in its spatial solutions transversally through time and space and through specific characteristics. From this point of view, the main interest of the workshop was the collective response to the topic. Each group with its work represented a piece of common research that found its value in the exchange, underlining the nature of the workshop as a collective exploration.

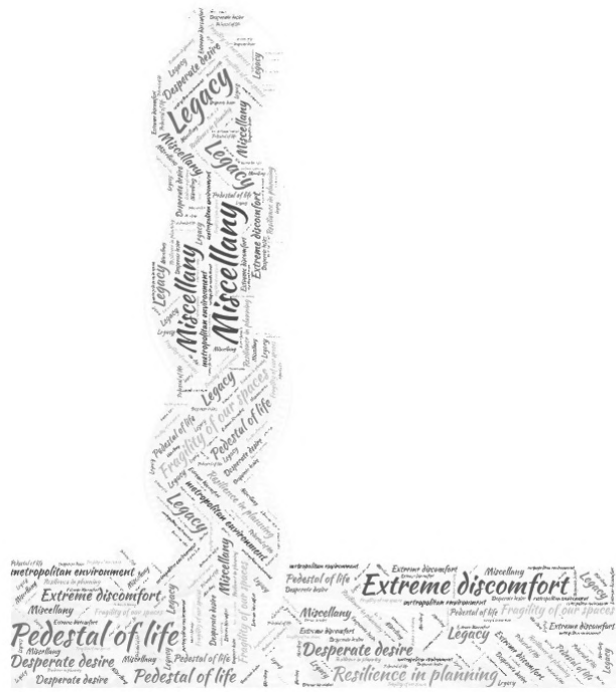
Skyscrapers through history, theory and design

The analysis of the case studies allowed the students to trace the peculiarities of the Italian transposition of this typically American architectural type. In Italy after World War II, tall buildings represented an important opportunity for experimentation and renewal for architects and engineers who produced very interesting and varied solutions. The historical analysis and the critical reading of the selected projects allowed the students to identify and highlight, also through drawings, the specificities of the selected cases and the different approaches that concern structural aspects, compositional logic, but also the relationship with the urban context and tradition.

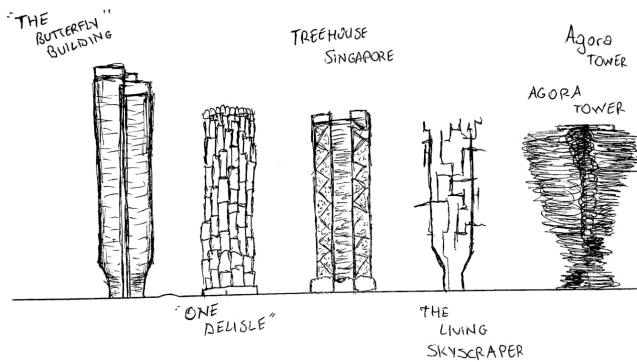
The reading was an intermediate task between two analyses and it created a room of words and ideas in order to go beyond technical issues and deal with the topic from a theoretical point of view. Critical texts underlined the importance of the literature on the skyscraper and opened to the architectural investigation upon the impact of the skyscrapers' type spreading. Some of the considerations are still valid today and linked to the contemporary debate, as in the case of the extract on the Vertical Forest by Studio Boeri Architetti's book.

The reading responds to a cultural engagement – appropriate and useful especially for teaching explorations – which aims at making the critical narrative again at the center of the architectural analysis. At the same time, the reading highlights the interest in the narrative dimension within the architecture realm.

The final step – the exploration of design projects through the comparison tool – showed the experience of skyscrapers in the space of the city. This was developed through selected spatial topics and using synthetic drawings such as sketches and diagrams.



Student's work.



1:10000

Student's work.

Simona Talenti, architect and Ph.D., is an Associate Professor of Architectural History at the Department of Civil Engineering, University of Salerno (Italy). Her current research work concerns modern and contemporary architectural history, especially the origin and development of skyscrapers in Italy as well as company towns and their renewals.

Emergency Architecture in Resilient Times

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MICHELE DI MARCO

World Health Organization

ANNA SILENZI

World Health Organization

Introduction

The increasing transformation of society brings new paradigms both on a global and local level. During the last pandemic, the World Health Organization (WHO) created a network called *Techne* of professionals in order to give an emergent and efficient response to health facilities as a priority.

Architects for the first time achieved a new role in the first line of the pandemic war. The regeneration of existing buildings into Covid19 treatment centers or the construction of new ones was the priority of the architects. The normalization of the pandemic brings out the results but also new questions and paradigms of WHO's network achievements. Despite the pandemics, there are 'new' fields to work on as an emergency: wars. How resilient buildings should be in times of natural and man-made disasters, to give a better response than the one until now? How can institutions in collaboration with WHO contribute with research and workshops, involving students, in order to maximize the efficiency of emergency response?

On 15 May 2022 POLIS University and *Techne* / World Health Organization, stipulate a contract of collaboration that involves the university in the *Techne* network, among other institutions around the world. The aim of the collaboration is to involve Universities in contributions of services and support of WHO in emergency needs. From 26th September 2022 to the 7th October 2022 POLIS University, as part of the Tirana Architecture Weeks (TAW), organized a workshop as the first concretization of the collaboration, held by the Arch. Franklind

Jesku (Lecturer at POLIS University) and Michele Di Marco with Anna Silenzi (part of *Techne*).

Workshop objectives

The purpose of this Workshop is to produce a training kit containing the set up of treatment centers for infection diseases like Ebola, Cholera and SARI (Sever Acute Respiratory Infections), by using 3D printing machines and laser cutting machines. The methodology will focus on understanding the power of digital printing in order to create modular components that will be used in missions by the World Health Organization to explain to nonprofessionals how a recovery treatment center should be organized in case of pandemics/epidemics. The result will underline the importance of the role of the architects to involve technology including non professionals for help in case of emergencies. Theoretically, we will understand how to redefine the hospital or treatment center of the future, according to the World Health Organization guidelines and standards, but also how a set up layout of a treatment center works.

Workshop outcomes

Upon successful completion of this workshop, the participants:

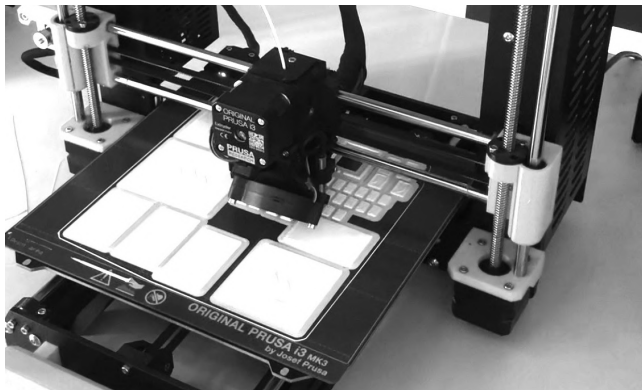
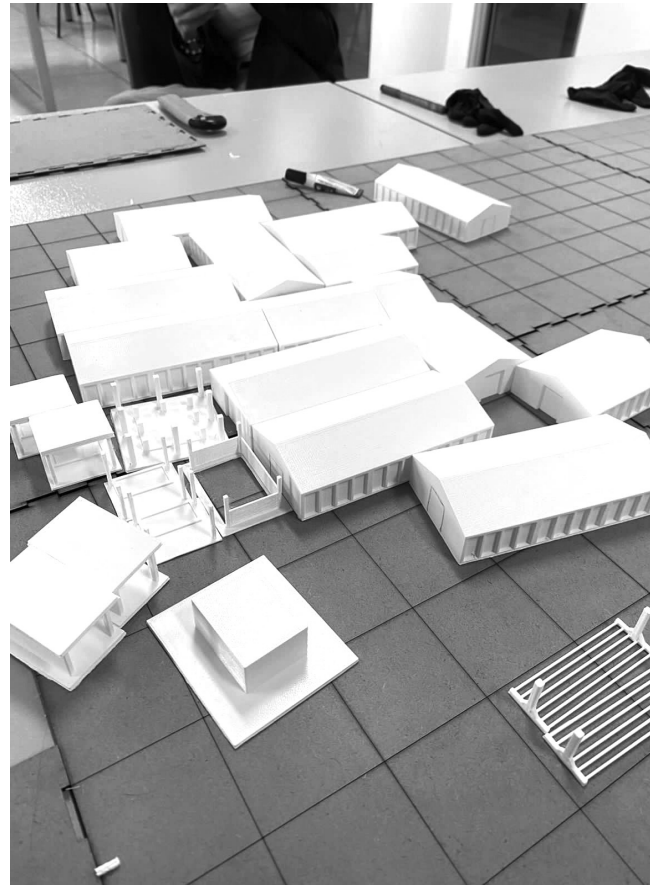
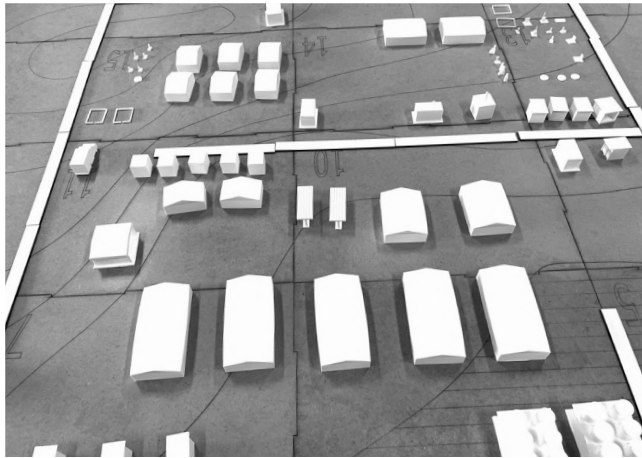
- Have exercised critical thinking about the creation and implementation, or setup, of a recovery and treatment center in case of Cholera, Ebola, and SARI.
- Created modules of tents or other components of a treatment camp and printed them digitally.

- Create physical modular boxes to put all the printed material ready to be sent to the World Health Organization.
- Selected students will travel to Geneva (WHO Headquarters) to bring the training kit box upon request of Techne.

Workshop organization

The workshop was organized from 26 September to 7 October 2022 at the University of POLIS in Tirana, Albania, as part of the Tirana Architecture Weeks 2022 (Tirana, 26 September – 8 October 2022).

Franklind Jesku is an architect graduated at the University of Studies of Trieste, Italy, and assistant lecturer at POLIS University. He is a Ph.D. candidate with field of research "Architecture of Health". His previous international experience focus on emergency architecture for vulnerable communities around the world.



Process of the printing and assembling the elements at Innovation Factory (IF)



Presentation of the product at the World Health Organization (WHO) Headquarters in Geneva, Switzerland.

Morphological Research on Ways of Verticalization. The Case of Tirana

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GENTI AVDIJA

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Abstract

The workshop's main topic is the densification of urban areas. Specifically, the object of study is Tirana. Since the fall of the Communist Regime in the early 90s, the population of Tirana has been seen constantly growing. The process of growth has been for the most part uncontrolled, resulting in the disgregation of the urban patterns of Tirana. We can distinguish four different stages in the development of the city: the first stage is characterized by the medieval-like development of the historical city; the second stage carries a strong geometrical character given by the planning imprint of the Italian tradition; the third stage develops between the will of a strong planning and the economic difficulties to enforce it of the Communist Regime; the fourth stage is characterized by the uncontrolled and informal development.

In this context starting from the administrative reform of 2015 all Albanian regions and cities have developed instruments of government and development of the territory. The main instruments at a national level are the PPV (General Local Plan) and PDV (Detailed Local Plan). Neither of these instruments is provided a clear way, regarding typological and morphological development. Because of the complicated nature of the development and urban condition of "TIRANA ARCHITECTURE WEEK 2022 GOING HIGH! The Pros- & Cons- of City Verticalization". Through this workshop, we propose a different type of development that starts from various typological and morphological models of urban blocks. Starting from the urban condition of the determined areas we hypothesize different ways of urbanizing at different densities.

Objectives

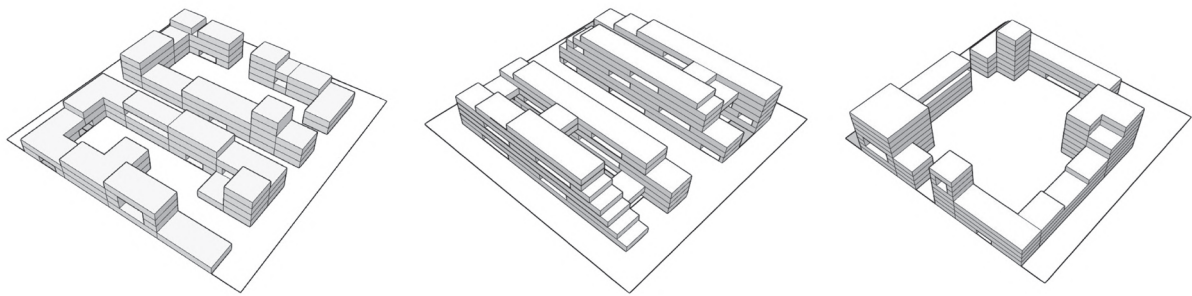
The objectives of the workshop are two-folded. On one side there is the historical and morphological analysis of the determined sites. The goal here is to individuate the strong components that determine the underlying structure of the areas. On the other side, there is the operative part of the workshop which points towards the reinforcements of said structures proposing the densification of the areas based on the virtuous models given.

Methodology

The methodology is empirical and comprises visits on site, and historical and morphological analysis. Through the clashing of the existent condition and development models, we will start a process of experimentation on the urban form and different possible aggregations for the future development of the city.

Conclusions

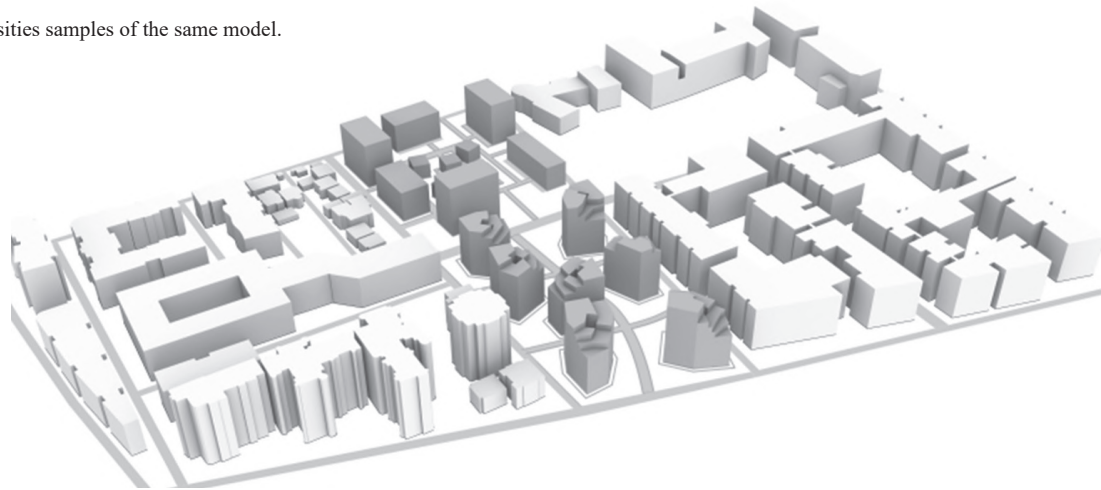
The results of the workshop are undoubtedly interesting. They show how the possibility of starting the urban design from the morphology of the existing and the models can lead to a new perspective which can complement the directions given by the planning instrument in a way such to valorize the quality of the public space in the continuous development of a complicated city such is Tirana.



Site dimensioning and densification models in different FAR.



Different densities samples of the same model.



Dr. Ermal Hoxha studied first at the University of Ferrara (IT), in the Architecture department, and then at the Polis University (AL) in the Architecture and Urban Design department. He is currently a Doctor of Science in Architecture and Urban Planning, graduated from the University of Ferrara and the University of Polis.

Piloting Citizen Science and other RRI Practices in Ecosystem

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POLIS University

IMELDI SOKOLI

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RUDINA TOTO

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RODION GJOKA

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Abstract

This workshop aimed to pilot a citizen science process with students of environmental, planning, and architecture studies, by simulating the 2 roles of the process. Firstly, they acted as citizens involved in citizen science, piloting a process where they produced scientific knowledge through a small mapping exercise. Secondly, the students acted as ‘citizen scientists’, by including the community in participatory processes that aimed at producing scientific knowledge. In this case, the students guided the process following the principles of responsible research.

Ultimately this process guided the students throughout their academic and research path during their studies, and behind. Citizen science, as a process, is promoted as a combination of the main ‘dimensions’ of responsible research and innovation, otherwise known as RRI implemented in the pilot area of Kune Vain Lagoon in Lezha Municipality. The pilot area is part of a wider project research conducted by Co-PLAN in cooperation with the Ministry of Tourism and Environment focused on Ecosystem Service Evaluation aiming to develop a cost-benefit analysis in 5 sectors. The students contributed to two of these sectors which are the mitigation of coastal floods and tourism and recreational services. The workshop had 30 participants and was organized into 3 main parts: the didactic/ eco-design part, the survey and experimental part, and the exploitation-dissemination part.

The didactic/eco-design part

The didactic/eco-design part took place on the first and third

days where the students took all the scientific basis and principles of RRI and understood the Ecosystem Services Evaluation.

On the first day, the students took the lectures for methodologies of citizen science and ecosystem service evaluation, also general information about the Kune Vain Lagoon and an informative session for the following day which corresponded with the site visit. On the third day, the students were presented with the methodological multidisciplinary approaches to foster environmental biodiversity and energy in the case of Lezha region to understand what can be the interventions in a wetland to deal with different problems that the ecosystem has. The second lecture of the third day was preparatory work for the fourth day to learn about the flood typologies in Lezha region and in what way can the students identify the cause of the surface and the frequency of the floods by interviewing the inhabitants.

The experimental component

The experimental component was focused on the second and fourth days on developing the tourism and recreation services by sketching, analyzing the area in the role of the citizens in a citizen science process and developing the participatory map of flooding risk through the citizen science with the citizens consisting of the surface, frequency and cause. The experiment had 4 targeted areas in the site of the lagoon divided by four groups of students and guided by the mentors. The targeted areas were different from day two to day four per each student group.

The exploitation and dissemination component

The exploitation and dissemination component was organized

on the last day in which the students were focused on data processing and working for the final presentation by integrating the theory basis with the practical ones to construct the interventions for preventing and minimizing floods. Each group presented sketches that represent the most iconic parts of the lagoon, the mental map. The participatory floods risk map and the interventions to prevent the area from floods are based on nature-based solutions methodology.

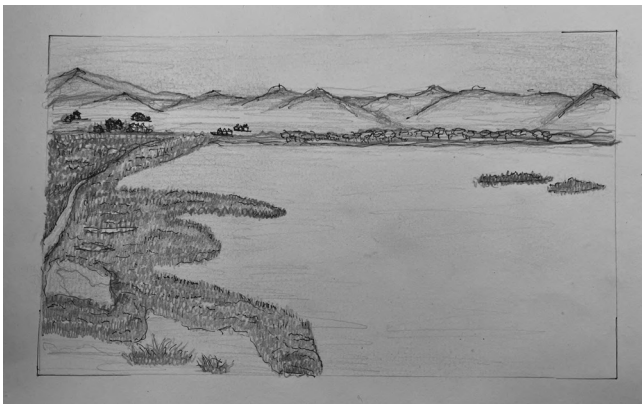
Dr. Kejt Dhrami is a spatial planning and regional development expert at Co-PLAN, and lecturer at Polis University. She completed her doctoral studies in 2020, in the IDAUP (Polis / Ferrara) program.



Students in site visit.



Students working in site visit.



Students' results and works

Archipreneurship: Going High! In-Between Pros and Cons of City Verticalization.

MARKUS NEUBER

ALN Architekturbüro Leinhäupl + Neuber

GJERGJI DUSHNIKU

POLIS University

Abstract

The phenomenon of high-rise buildings is being noticed more and more in Tirana. This is for many reasons. Driven by the high value of the property around the center and their large difference from the suburbs make investors push to maximize profits by utilizing as much as possible the properties around the center. The big difference in the value of the property from the center to the suburbs is due to the lack of public transport and public services in the suburbs. So it seems that everything has to do with living near the center, working as close to the center as possible, and building as close to the center as possible. The local government, from the constant pressure of two possible options, one to invest in modern transport such as the metro by relieving this deadlock or the adaptation of urban legislation for higher construction has chosen the latter as a form of less cost but perhaps short-term.

But what is the role of Architects in this? It should be understood that although Architects in their professional circle are treated as superheroes who can change the fate of a city they are in fact part of a market ecosystem. Of course, they have the potential to improve aspects of it on a micro-scale, and for that, a big fight is needed. Once they understand the needs and speak the language of the stakeholders involved, they are more likely to become more important in this segment and change things for the better.

Architecture and entrepreneurship

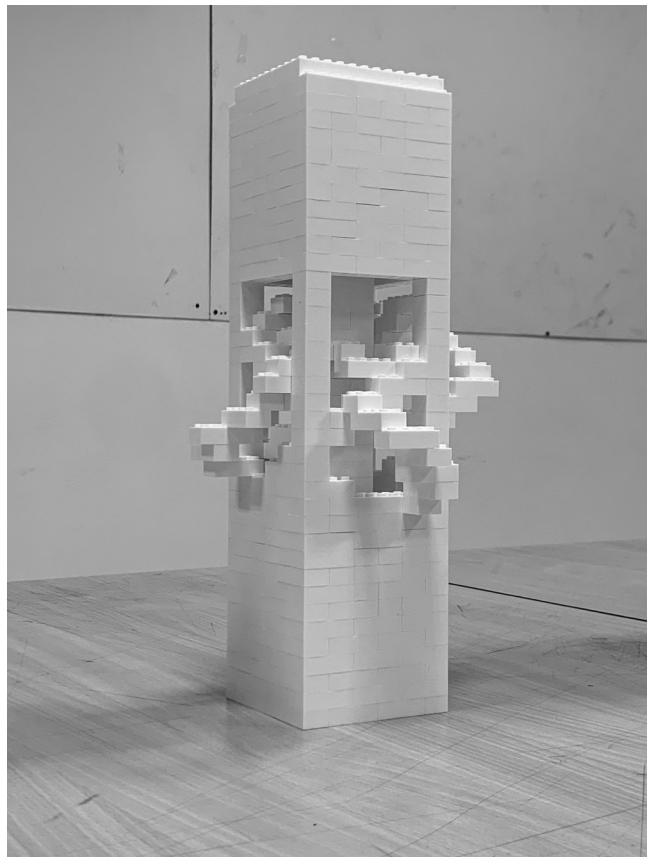
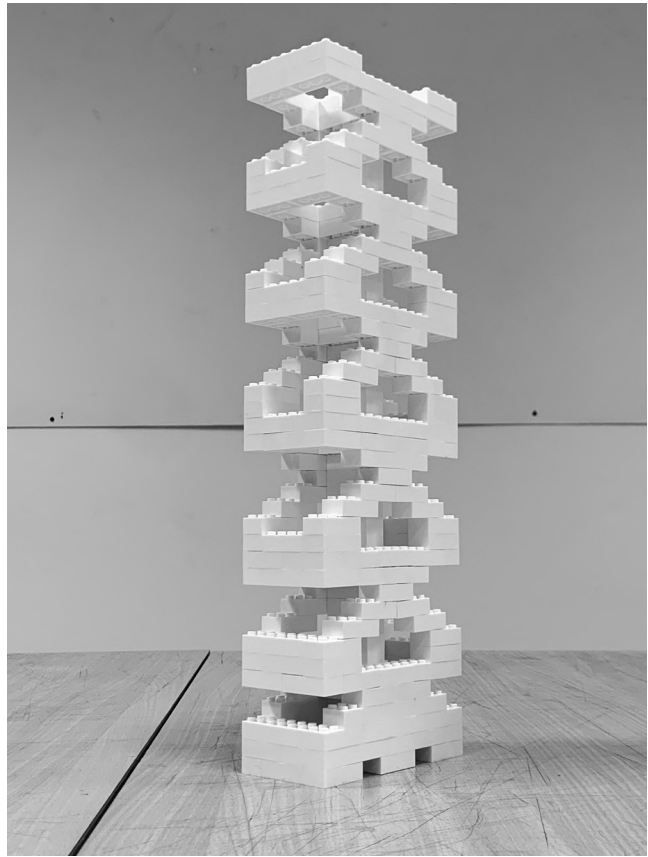
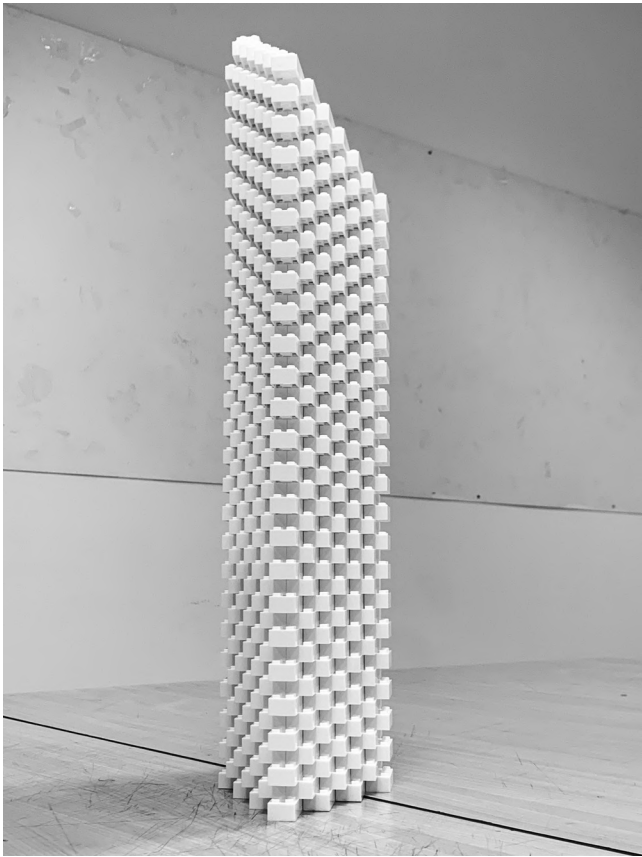
In this workshop, we took the phenomenon for granted and through the lectures, we tried to understand and navigate be

tween architecture and entrepreneurship, the business of architecture, and also the economics of High Rises. Looking at the task from the architect's perspective but also from the developer or city administration. A lecture from Havier Sesna, the director of "TKE elevators", a leader in the elevator field globally, explained the elevators of the future in which the students incorporate those ideas into their project.

We explored how Going high can be more positive for users and the city by analyzing, improving, and modifying the problematic topics, turning them into positive experiences. Our current cities are made up of closed, remote, and introverted architecture just as isolated from urban life and ecological context. The students responded to the task with creativity integrating new ways of vertical communication that can make possible open up these spaces, inserting space pockets capable of promoting social encounters, multiplying circulation, and facilitating the introduction of flora and fauna in a sustainable way.

The final products of the workshop were a model made from white LEGOs and A1 panels.

Markus Neuber is an architect and partner at ALN Architekturbüro Leinhäupl + Neuber based in Germany.



Students' works with LEGO bricks.

Smart Sustainable City Tirana

ARTAN KACANI

POLIS University

ENEIDA MUHAMUCI

POLIS University

ARMELA REKA

POLIS University

Abstract

The workshop is organized by the Polis University Co-PLAN Institute for Habitat Development which hosts the United Nations Economic Commission for Europe (UNECE) Centre of Excellence on Sustainable and Resilient Settlements; the city of Tirana; the UNECE Forests, Land and Housing Division; and in cooperation with UN-Habitat.

The workshop will address two themes: first, challenges of sustainability at the city level; and second, smart sustainable solutions to urban challenges. Under the first theme, the participants will examine the key challenges urban environments face adopting the United Nations Sustainable Development Goals (SDGs). Under the second theme, emerging solutions in place or under development to address such challenges will be presented and discussed.

The workshop will be organized in person with possible online participation. It will include lectures and work in interdisciplinary teams where the students will work together to conceptualize solutions to address a selected challenge.

Objectives

The workshop is aimed to support learning about the key challenges cities face in their efforts to implement global and regional agreements, including the 2030 Agenda for Sustainable Development, the New Urban Agenda, the Paris Agreement on Climate Change, the Geneva UN Charter on Sustainable Housing others; and about cities' actions to address the urban challenges at the local level.

Workshop events

- The workshop started on the 26th of September and finished on Friday for 5 days.
- We can divide the program into 4 core events of the information given and elaborated. Workshop Presentations: Smart sustainable city Tirana. Workshop: Smart sustainable city/ smart solution for a sustainable city.
- Side Event: War in Ukraine and the housing problems and solutions.
- Student's Workshop. Shkoza case study.

Event 1 - Workshop Presentations: Smart sustainable city Tirana

This event session was dedicated to official representatives from Albanian public institutions. The first to present was Mrs Doris Andoni, Director of Housing, Ministry of Finance, Albania and Chair of the UNECE Committee on Housing and Land Management (CHLM) with the title "Urban challenges and solutions". Many challenges were political, like the war in Ukraine and its effect on Western Balkans, or the pandemic situation in the urban areas. In the end, the public officer expressed the need for collaboration with Polis University and Co-Plan Institute for further research and investigations on the territory.

After the presentation from the public officer, Mrs Doris Andoni, a short presentation was followed up by Dr. Kejt Dhrami, from the Co-Plan Institute for Habitat Development, regarding "Challenges and Opportunities of drafting Municipal Social Housing Plans – case of Tirana".

At the end of the session, workshop presentation, Mayors of

Bulqize, Belsh, Berat, Cerrik, Devoll, Elbasan, Fier, Gramsh, Kameez, Kolonje, Korce, Librazhd, Lushnje, Maliq, Mat, Peqin, Pogradec, Roskovec, Sarande, Shkoder, Tirane, Vlore were invited in a discussion. Most of the problems listed by them were connected to the missing capital to invest in social policies.

Event 2 - Workshop: Smart sustainable city/ smart solution for a sustainable city

The workshop's second session was dedicated to the international cases that can open up new solutions for the Albanian housing system. The first to start was Shipra Narang Suri, Chief of, the Urban Practices Branch, Global Solutions Division, UN-Habitat. UN-Habitat activities on smart sustainable cities were presented.

The session continued with Gulnara Roll, Regional Advisor, UNECE Forests, Land and Housing Division, presenting the approach and case studies of UNECE smart sustainable cities profiles.

New international smart sustainable cases were presented by Haris Piplas, Co-Directing Urban Design, Planning and Development, Drees and Sommer, Switzerland, like the EXPO2015 in Milan and the need for Implementation of smart sustainable cities approaches in South-East Europe.

The session continued with Albanian case studies and Polis University experiences. Dr L Lazar Kumaraku, the coordinator at Polis University for the PhD IDAUP program, presented the case of Lezha, and how the region is facing climate change and sea erosion with resilient solutions and actions.

Dr Ledio Allkja, from Co-Plan Institute for Habitat Development, presented adaptive planning tools and Disaster Risk Reduction (DRR) methodologies to prevent negative effects on a regional scale.

Franklind Jesku, from Polis University, and Co-Founder D'ARK Atelier, Tirana, Albania, underlined with a short presentation the importance of design in the common space in the inner city.

Edian Meçe, responsible for the reconstruction at the department of territorial planning for the Municipality of Tirana, Albania, presented the case of "5 Maji" as a good practice to get off the city all those inhabitants that do not have a housing tenure.

Side Event – War in Ukraine and the housing problems and solutions

A third session took place at Polis university on the second day of the workshop, involving students from architecture studies, the planning field, and various international experts. This session, organized in form of a side event, was dedicated to Ukraine and the future need for a rebuilding program. Most of the presentations were of added contribution nature for architecture studies, "what I can do", rather than a first sight of the needs coming from the war and after it.

Students' Workshop

Macro description of the case study

The urban area of Tirana, estimates an urban population of approximately half of the national population, around a million inhabitants. This phenomenon, demographic increase, is reflected as well in the concentration of urban wealth around the city centre. This continuous concentration of inhabitants for more than 30 years in the city centre under a capitalistic regime, has not only changed the nature of the urban wealth but also the spatial distribution of the residential areas. Now shopping malls, museums, and financial districts have taken the place of the residential blocks. More than two hundred villas have been demolished to open space for further densification, and according to the Tirana Municipality, this is only the beginning of what would happen in the next years. For some international architects, such as Stefano Boeri, and Bjarke Ingels, a preferential road has been paved, by the Municipality of Tirana, with the intention to offer speculative projects and renders to add to the vision of the city. Most of these proposals, and projects, are made in open contradiction with the regulatory plan signed in 2017, and its densification criteria. Beyond this contradiction with the regulatory plan, and the development plans, the municipality of Tirana is conducting the administration of architectural proposals without any competition and inclusion of the existing inhabitants. The estranged from the development are the most vulnerable groups, such are inhabitants without proper land tenure, the Roma community, and former workers of the industrial areas that squatted their workplace to live after the collapse of the Communist regime. The confrontation of these two realities, the built environment by the former inhabitants, and the speculative digitalized reality, is being put many times as a wish packet at political stake by the Mayor of Tirana. The digitalized projects are classified as building with high energy efficiency, and good design of the indoor and outdoor spaces and these elements become sustainable and smart characteristics that the Mayor wouldn't forget in any of his appearances on TV. And Indeed, every Christmas, or New Year period, the Municipality delivers new apartments to homeless families. From this perspective, it remains a charitable campaign, aiming to foster political ties, rather than create municipal governance on housing solutions. The political desire to tie interest with primary rights is unconstitutional and should face one day or another the impact of forced eviction and forced deportation at once. Inhabitants are taken by force in the Shkoza neighbourhood to reclaim the ability of the Municipality to deliver primary rights correctly, but what happens next is neither governance nor smart management. The policy of "throwing", and "gettare", the poor into an area is not only against human rights but also according to the principles of so many inhabitants who, forced to live in a suburban apartment, have no chance of economic growth and well-being.

Methodology of observation

For a better understanding of the Janus faces of governance in Tirana, we have decided to get into the area of Shkoza, in one

week's workshop with students in the Architectural studies and Planning field. Students were asked to investigate the origins of the neighbourhood, the various social groups added to the area by the municipal policies, such as homeless citizens and Roma families, and the historic inhabitants settled in the area in early 1990 with single-family houses. Land use and social practices have been seen as the primary combination to read the level of sustainability and smart management reclaimed by the municipality of Tirana as a planning tool to deliver primary rights such as adequate housing. Viewing these dynamisms, land use and social practices, as a palimpsest permits us to understand if there has been or not a process of governance or not, and if principles of sustainability and smart management have been applied or not.

“Viewing the city as a process of continuous, but contested, socio-ecological change ...unlocks new arenas for thinking and acting on the city. The tensions, conflicts and forces that flow with this process through the body, the city, the region and the globe show the cracks in the lines, the meshes in the net, the spaces and plateaus of resistance and power”. (Swyngedouw & Kaika, *The Environment of the City ... or the Urbanisation of Nature*, 2002).

Students' Results

According to a sustainability degree, students witnessed a bad environment, high fragmentation of land use and strong diversity in the activities among inhabitants, sometimes conflictual. Some of the problems related to the missing sustainability degree are the design issues and the policy ability of the public authorities to offer possibilities for “a jumping solution” to better housing and working conditions.

From a historical point of view, from the policies that created the Social Housing Residences, the territorial results can be summarised as below:

- There has been in 2007 and till nowadays a process of forced eviction which is occurring systematically by the police of Tirana toward inhabitants. Intimidations and threats are a daily routine for the inhabitants living in single houses, self-build, and those living in squatted industrial areas.
- In 2010 the residential complex, was finished and given to the Municipality of Tirana in management for the social policies of housing.
- Inhabitants expropriated and forcibly evicted from the surrounding area have been moved by force to the new apartments, of the social housing without their desire and in contradiction with principles of adequate housing and cultural adequacy.
- A hate condition in the social layers, has been created in the neighbourhood, between those without a proper housing tenure, and the newcomers in the Social Housing residential complex.
- A third group of inhabitants, from the Roma community, will be added to the ground floor, where economic

and social activities were designed to be given as start-ups to those inhabitants in economic difficulties.

- A further hate layer, to racist forms, has been created between the inhabitants of the Social Housing Residential Complex, and the newcomers, the Roma community, now occupying the ground floor where social and economic activities were supposed to take place (figure 1).
- None of the social groups has enough space to integrate them-self into the broader scale of the city services, and there's no physical space to give solutions to the conflicting situation among inhabitants.
- The Shkoza Neighborhood is becoming a ghetto, where new vulnerabilities are emerging, and no solutions to answer the political use of social policies. Inhabitants are damned to remain forever in the same place.

Artan Kacani (1988) is Lecturer and PhD candidate at POLIS University, dealing with projects and academic research on informal housing in Albania, with a specific focus on policy evaluation, governance and territorial impact. He is the Unit Manager of the OMB/UNECE - Sustainability Research Center.



Fig.1 The ground floor of the Social Housing Complex. Picture by Ermal Hoxha



The Roma Municipal market of used clothes. Picture by Ermal Hoxha



Between the open spaces in the Shkoza neighbourhood. Picture by Ermal Hoxha

IoT User Interface Design and Development Applied to Smart Skyscrapers

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POLIS University

ARJOLA XHELILI

POLIS University

Abstract

The workshop aimed to provide fundamental knowledge to develop user interfaces (i.e.: client apps) for Internet of Things (IoT) systems. The workshop focused on the rapid application development, using the hybrid app approach, of client apps such as Web applications, Progressive Web Applications, and Hybrid Mobile applications (for both iOS and Android platforms) using the Ionic 6 framework. The workshop included a short section about the use of version control software (Git) in a DevOps approach with Continuous Integration and Continuous Delivery. IoT are today quickly spreading and expert UI developers are requested from the market. The acquired knowledge can also be applied to generic mobile or progressive Web app development. In this sense, the workshop can be considered applicable at 360 degrees in a user interface or client app development.

Objectives

The main purpose of this Workshop is to let the students understand and win the challenges caused by a distributed, reactive and concurrent environment and the principles of good UX design and implementation. The acquired competencies are at an industrial-ready level and are applied in a state-of-the-art environment. Acquired knowledge at the end of the workshop was:

- Design a good User eXperience user interface.
- Design and develop mobile or Web apps to be used as client.
- Understand reactive programming using Rx/js.
- Learn the Ionic 6 framework.
- Interact with RESTful services.

- Understand IoT, distributed, concurrent and reactive environments.
- Read and write industry-level UML documentation.
- Implement automated unit testing.
- Use version control software in a CI/CD context.

Methodology

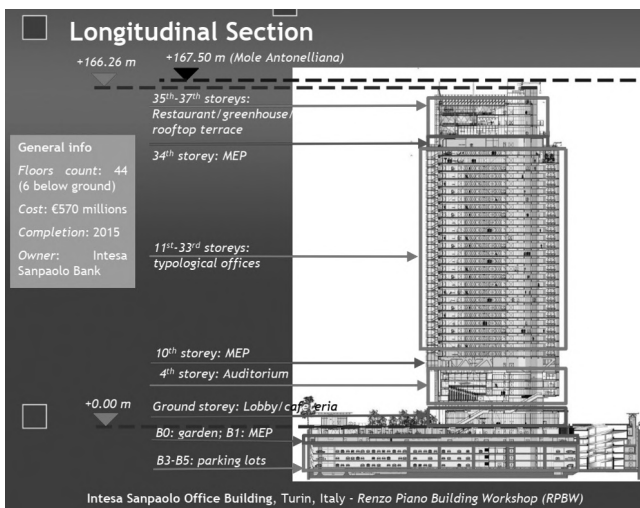
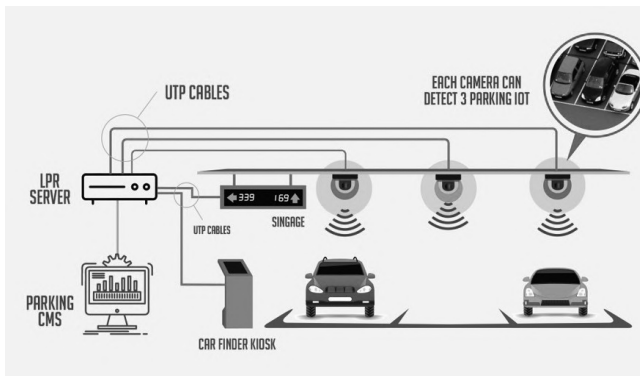
The workshop has been performed through five lessons with both lecturer and assistant present in the classroom (no online teaching) and increasing difficulty level homework, with in-class correction. The lectures have combined the theoretical framework with the practical assignments described below. Assignments also included personal research from each student with the literature or similar case studies. During the workshop hours, presentations have been organized, as well as discussions of ideas related to the progress of the tasks, and presentations related to the experiences of each group. The lecturer has provided some slides to introduce the workshop topics but most of the teaching has been provided by accessing official Web sites of the taught technologies. The application to a skyscraper case has been conducted presenting to students a real existing skyscraper structure (Intesa San Paolo Bank skyscraper in Turin, Italy) and providing them with a list of use cases to be implemented. Students worked as singles to implement these exercises. A minimum level of detail has been requested but students were free to further develop their homework. The minimum requested level of the assignment was to design a user interface using pencil & paper but further development was requested to completely implement the client-side components.

Firs homework was quite simple and was about User eXperience design. The second assignment was about a simple implementation of a client. The third assignment was a more complex client and the fourth was the use case implementation (UX/UI only).

Solutions provided by students have been commented on with the other students, evidencing what could be improved but, mainly, highlighting the good aspects of their work.

Results

Most of the students attending the workshop demonstrated an improvement in designing and developing a UX/UI using Ionic 6 / Angular technologies. Many of them also developed good designs of UX / UI for the selected use case using CASE tools chosen by themselves. Most of them didn't know both Angular and Ionic 6 at the beginning of the workshop but they, in the end, developed good and finely working UI prototypes.



Theoretical approach to the workshop.

MSc Luca Lezzerini, Ph.D.c. in architecture and urban planning and lecturer at Polis, specialized in computer science, organisational engineering, and smart cities, with over 36 years of experience as senior consultant for industry, defense and public administration.