

Title: Towards Equity in Architecture: Designing

Inclusive Spaces for Diverse Abilities

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Towards Equity in Architecture: Designing Inclusive Spaces for Diverse Abilities

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“Every actual body has a limited set of traits, habits, movements, affects, etc. But every actual body also has a virtual dimension: a vast reservoir of potential traits, connections, affects, movements, etc.” (Deleuze & Guattari, 1983)

This paper draws insights from the students' findings of the 3rd year of Architecture, in the framework of the course “Inclusive Design”. This course's objective was to investigate how space is experienced from different users' perspectives, contributing to a better understanding of the symbiotic relationship between space and user, and enabling the students to create more inclusive environments that complement to the diverse needs and aspirations of individuals or communities. The main task was to recognize certain physical or psychological conditions' spatial requirements and translate them into future architectural ideas for POLIS University facilities.

Simplification of Human Diversity

From antiquity, the human body was considered the main reference for generating architecture, primarily not from the perceptual aspect of the architectural experience, but by considering the human body as a metaphor, as a mediator of the microcosm and macrocosm, since human proportions were seen as the perfect system created by God. Such an approach is visible in Greek temples, where male and female body figures were the genesis for creating architectural or structural elements. The

search for the “ideal” body as a modulor continued throughout history, corresponding with various considerations attuned to the mentality of the society of the time.

The pursuit for the “able-body” culminated with the creation of the Vitruvius modulor, based upon “truths and emotions of a superior mathematical order” (Boys, 2017), and characterized by “a statically balanced symmetrical figure with well-defined limbs and muscles”, according to Lefebvre's terms (Lefebvre, 1992). While the search for perfectionism culminated in the early 20th century, with the invention of aerobic and gym appliances and machines, which suggested a different way of seeing the relationship between the body and objects. “Avant-garde is intoxicated by the machine aesthetic... But the machine aesthetic is not everything... Their intense intellectualism wants to suppress everything marvelous in life... Their desire for rigid precision makes them neglect the beauty of all these forms... Their architecture is without soul.” (Weisman, 1994) Such relation implied the shaping of the human body from objects and technology, to obtain the “ideal body” model, a mentality reflected also in architecture since both are systems that are focused on body-centric design. While the machine transforms the body, at the same time space or furniture evolving from a single-body model, does not fit the other body's proportions but on the contrary, attempts to shape it.

Using a single standardized figure with precise dimensions and

proportions, as a reference for creating spaces and furniture, resulted in a strict readjustment of the bodies towards objects presented in space, without taking into consideration the vast proportional typologies or capabilities of body movements in the range of users. The modulor of Le Corbusier, although it was a significant contribution to architecture, has its limitations, which dealt with taking as a main reference for architectural and furniture design the body of a French man of a 1.75m height with an active range of motion (limb flexibility). Such an approach excluded the consideration of the multiple typologies of bodies, such as the female gender, other age ranges, cultural ethnic differences, or even other limited motoric conditions. The fixed dimensions of the “Modulor” promote a top-down approach to design with a set of rigid proportions, risking to prioritize aesthetics over user comfort and becoming normative for all the architectural elements and furniture, in contrast to Universal Design principles, that aim to create environments for as many users as possible. However, the modernist approach evolved with a set of normative to be applied in architectural projects, making the “disabled” a passive user in spaces and facilities. But how much of a society fits the standards of a “perfect” body?

Understanding Diverse Abilities

To understand the role of a “disabled” person in architecture, it is necessary to tackle the position of him/her about societal attitudes. The meaning of term “disability” has its roots in the Latin language, and specifically “dis” means apart, while “habilis” means “ability” or “to be able”. Starting from the terminology that has been carried out from the beginning of mankind till nowadays, reflects a distancing of society to this category, an exclusion. The course of “Inclusive Design” aimed to reconsider the everyday use of such terminology and replace it with the term “diverse abilities” due to the vast potential they

provide concerning experience in architecture, as the first step to an inclusive approach towards social structures. From the architect’s perspective, primarily it was necessary to understand the specific possibilities of these “bodies” provided in architectural terms, representing different viewpoints of perceiving the physical environment, but also confronting their position in societal structures throughout history.

From the ancient civilizations people with disabilities were seen as a sign of divine displeasure, and as a result, most of them were abandoned or despised. This approach continued even in the medieval period, where the Christian Church played an important role in the societal attitude or mentality towards these individuals, promoting a sort of charity towards them, which as an approach excluded them more from the rest of the society by reinforcing inferiority and hierarchy to both receiver and giver, “perpetuating a system of dependence and pity, rather than genuinely empowering individuals” (Nietzsche, 2006). During the Renaissance, nevertheless the advancement in medicine and recognition of human conditions, these individuals were hidden away from the public eye or institutionalized to be cured. As a result, the “disabled” was distinguished and isolated from the rest of society.

An interesting example of this exclusion was “Narrenturm” which refers to the “Fool’s Tower”, a building in Vienna functioning as a psychiatric institution, built-in 1784. Such a building applies the “panopticon” effect of Foucault, representing a circular tower with individual cells arranged around a central courtyard. The use of this building was to provide an environment dedicated to the mentally ill, however, applying to the layout of the panopticon model not only provides seclusion but a psychologically damaging environment, an environment of anxiety and fear of being observed. The significance of architecture to a person, especially to an individual that has specific abilities, directly shapes the state of sanity, self-sufficiency, and

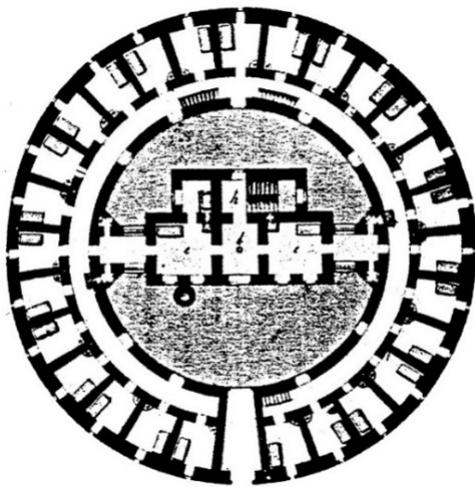


Figure 1. “Narrenturm”, Vienna; Source: <https://gedenkstaettesteinhof.at/>



quality of life, indicating their level of physical and psychological freedom.

Institutionalization of individuals with specific needs started with the intention of inclusiveness, but the terms inclusion and exclusion are inseparable from each other, whereas the intention of providing care for a group of individuals leads to seclusion, as a result creating enclaves within the society, even if the aim of the action itself is to provide social cohesion. Modern society has a greater capacity for inclusion, but also risk disintegration varying from how the system of integration or rejection of a specific group is built.

A prime example of this discussion is the case of West Memorial Village, Lancashire in England. The village was founded in 1919 and designed by Thomas Mawson, emerging at a time when architecture and planning were a field of experiments due to post-war effects in the urban and rural contexts, to which these effects were also present in the population, where a considerable number of World War I veterans had some kind of physical impairment. The village aimed to provide an efficient environment for these individuals and grouping them all together by creating a community. It featured a mix of residential, commercial, and industrial buildings to integrate the veterans by promoting productivity and independence. The composition of the plan followed the model of the Garden City concept, offering gardens and open spaces to balance the practical needs with the aesthetics of the environment. However, this model faced several criticisms, especially from the Conference on the Aftercare of Disabled Men of 1918, which was considered a

model of “segregation of the disabled”. First of all, Mawson designed several designs detailed that considered the physical conditions of the veterans, which most of them were not implemented due to the financial strains, as a result, most of the cottages were built in two-storey structures and presented an obstacle to anyone with movement difficulties. Secondly, even if the concept of the village was to create a collective experience of disability, created a secluded community distanced from the rest of the society. Furthermore, considering that its genesis as a monumental village with spaces associated with sculptures that represented figures of physical impairments, reinforced the community’s identification as different from the “normalized” group, painfully reminding them of their condition in contrast to the “able” bodies.

However, this case represents a first attempt to include the needs of other than “normalized” human conditions, “the rise of a new conceptual architecture that offered a new epistemology of the body, a new ontology, notably of patienthood.” (Stefanos Geroulanos & Todd Meyers, 2018). It wasn’t until the mid-20th century that due to the growth of several physical disability emergence from the wars, raised consciousness in the social model towards disability, considering such conditions as not only medical but also social, leading to the emergence of activism towards this topic, to turn down barriers and attitudes for the “disabled”, later on, to be translated in legislations and Rights, starting with the crucial step of the Rehabilitation Act of 1973.

Today our society aims to be an Inclusive Society, but still

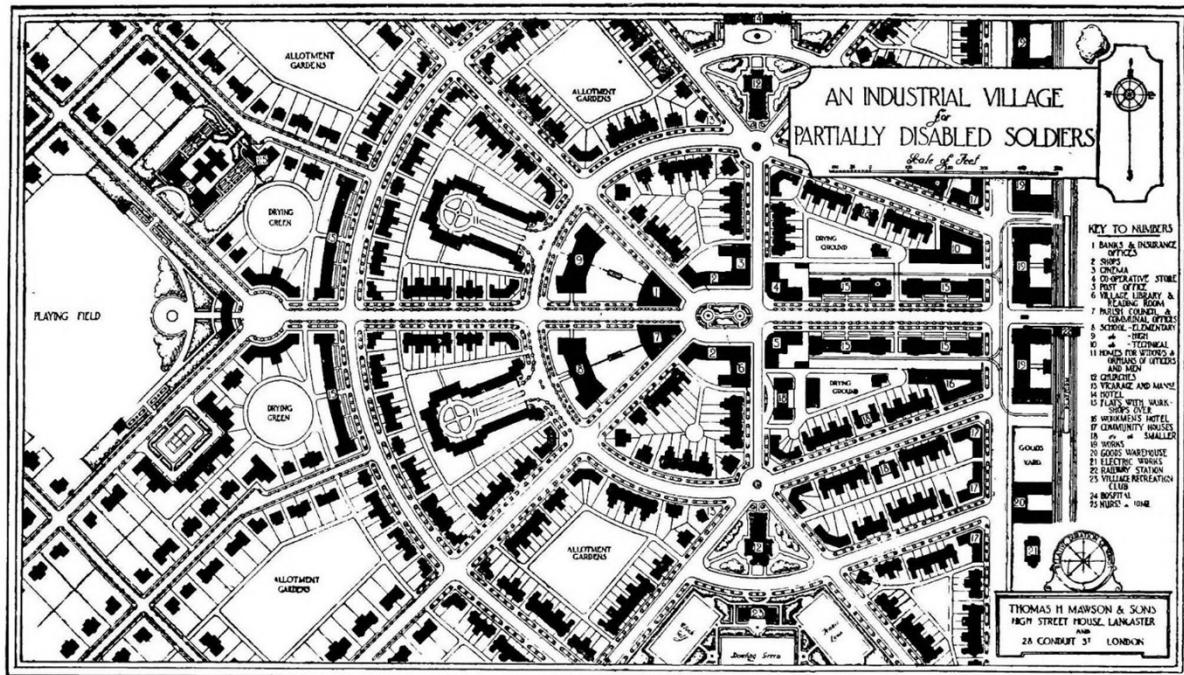


Figure 2. West Memorial Village, Lancashire in England; Source: (Mawson, 1917)

needs to advance and focus more on the discipline of architecture and interior design. According to the World Health Organization, approximately 16% of the world's population experience significant disability, while in Albania, 6,2% of the adult population has a certain type of disability (UNDP, 2015). As a result, the urban structure and buildings must provide the possibility for mobility for all users. This is reflected in design standards that architects need to adhere to, to provide maximum accessibility and independence of using services and spaces. While they are mandatory for public buildings and accommodation structures in Albania, they remain less defined for residential buildings. Furthermore, such standards are seen as obstacles for architects during the design phase, rather than sources of innovation or discussions. Since such architectural elements are static physical models, do not allow the possibility to emerge into a set of creative transformations.

In the Albanian context, a notable oversight exists for both indoor and outdoor environments. According to Albania's law no. 8098 dated 28.03.96, Article 2, emphasizes the imperative of establishing suitable spaces within residences for the blind. Presently, the sole available guideline for architects in Albania is the "Guidance for Architects in Architectural Design for People with Special Needs." When dealing with public buildings, architects are expected to adhere to these design standards tailored to individuals with diverse needs, predominantly on wheelchair users, leaving aside other categories. While suggestions are offered for residential and workspaces, restrooms, and recreational areas, these recommendations focus only on physical challenges, lacking alternatives for sensorial engagement. Even though these solutions are necessary, they fail to encourage meaningful interaction with architectural elements which are viewed as additional elements rather than integral components of the architectural composition.

The main issue concerning design standards is the misconception about diverse abilities, with the mindset of being considered disabilities, not allowing the reinterpretation of standards in novel generated models of architectural elements and spaces. Such a mindset is closely related to the lack of information about how diverse abilities use and experience space. This mindset has persisted since the era of communism in Albanian society and is reflected also in the residential buildings' layout and its relation to the outdoor environment. It is noticeable that in buildings of this period, there is an absence of elevators, as a result, the presence only of staircases could not allow people with physical difficulties to use outdoor spaces, consequently not having the right to use other services, which enhances the feeling of dependence to other people. Furthermore, lack of consideration is seen in the indoor environment, through the construction of narrow doorways, effectively making the passage of wheelchair users very difficult, or even in the small dimensions of spaces that could not provide eased accessibility

to navigate from one space to another. Certainly, the lack of consideration of the needs of diverse abilities reflects the social perception of this group during the period of communism, which remains an important issue to be discussed even nowadays and to be reconsidered in architectural decision-making. "For an architect, more important than the skill of fantasizing space, is the capacity of envisioning situations of human life." (Pallasmaa, Tullberg, MacKeith, & Wynne-Ellis, 2005) The understanding of different perceptual experiences and comprehension of space requires developing narratives and architectural concepts to be applied in all building typologies. The central aim of the course "Inclusive Design" was to explore a holistic strategy for designing environments that provide comfort and accessibility for individuals of diverse abilities, fostering environments that provide the principles of dignity, justice, and autonomy without boundaries.

Methods and Findings

In the course of "Inclusive Design," it was important for the students to be aware of the diverse conditions present in our society and the numerous typologies of users to be taken into account in every architectural scenario. Integrating unique needs helps the students create a narrative as a powerful tool for generating architectural solutions. The course emphasized the importance of involving as many users as possible by not only meeting the standards but encouraging them to view diverse conditions not as constraints but as opportunities to generate innovative and creative design. Following the principles of Inclusive Design from the starting phase of the project, students are trained to respect all users' needs, ensuring that every person regardless of their physical, psychological, or cognitive abilities can use and navigate space without barriers and most importantly with dignity. Such a way of thinking contributes to the education of a young generation towards a more respectful community. Furthermore, the course aims to educate architecture students about the significant role of the architect in society and the well-being of the users. The primary goal of the course is to emphasize the importance of accessibility in architecture for all users, promoting an inclusive approach, and avoiding exclusion in architectural scenarios. It brings to attention the necessity of research in the discipline of architecture, to gather information about various users' category, using this data as instruments for designing more accessible spaces.

The course was held in one semester and was divided into two main modules. The first module included a set of lectures related to Inclusivity in architecture, Universal Design, and Design for all, which aimed to present to the students the main regulations and standards in public buildings to consider and implement in their future projects. This module featured a series of lectures and case studies focused on "disability" emphasizing the historical background of disabilities and their

position in social context. Such information is necessary for the student to position himself/herself regarding the topic and bring awareness to the great impact the architect has on society and the life of an individual.

The second module consisted of researching two types of “disability”, which aimed to understand the condition, obtain relevant information, and translate it into architectural tools for creating and designing new spaces. This module aimed to inspire the student from a particular human condition to design accessible and unique architectural experiences for all users.

The first step for module one was to develop a simple exercise, to raise awareness about the built environment and its impact on different users. It required creating a schematic representation of the students’ “routine” walk, with a detailed path going from one location to another, and thinking about the obstacle encountered along this route. Later on, students were asked to re-imagine the same route from another user perspective, specifically from the perspective of a person with

specific needs, for instance, a mother with a baby stroller, an elderly person with mobility issues, a wheelchair user, etc. In this phase, the students identified other obstacles found in the physical environment. By comparing the same route from two perspectives, the students recognized how presumed architectural elements can become physical barriers with social and psychological repercussions. A missing ramp may be an obstacle for passing to another side, a wall may divide communities isolating individuals and limiting interactions. This exercise was the first step of emphasizing how thoughtful architectural solutions can provide an accessible and inclusive environment, by placing oneself in another person’s position.

The exploration for the students began by being presented with the diverse range of the users’ body types. The presented target groups were a set of conditions that indicated specific perceptual qualities to be used as inspiration for developing architectural instruments, such as physical conditions that included mobility difficulties, sensory limitations, and cognitive

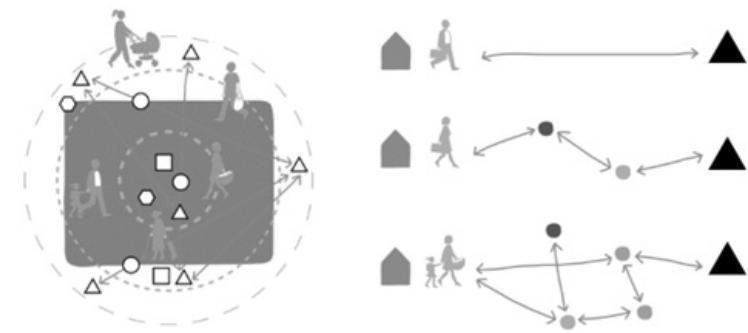


Figure 3. Exercise 1: The schematic “route” compared to different perspectives

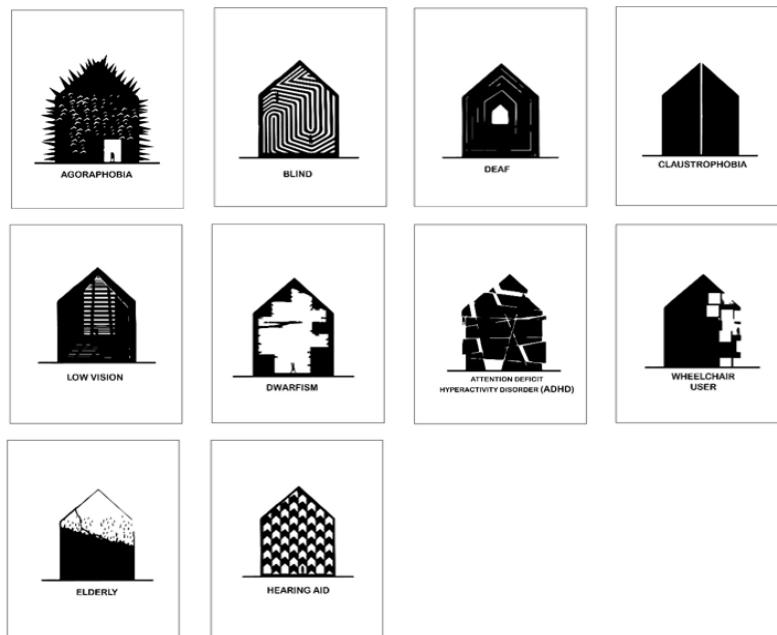


Figure 4. Target Groups for the Course of “Inclusive Design”

limitations. Each of the conditions had a crucial connection with architectural space and the user's interaction with the environment has a direct cause to a sense of belonging and accessibility. The aim of this research was for the student to understand which were the architectural elements that had a direct impact on the condition. The research raised several questions for the student to be familiar with the case study and to, later on, develop the main concept for proposing the second building of the POLIS campus, such as the physical and psychological condition of the user, how they perceive and experience space, which are the obstacles they face when they use the buildings, and which are the main architectural elements related to this condition.

The class was divided into eight groups of five people and was given two complementary conditions, which were of two different target groups. The purpose of this combination was to consider more than one person's perspective. The information obtained for this research led to the creation of the Modulor for each of the conditions. This Modulor provided sensorial information, physical conditions transformed also in dimension, and other additional information that would complete the basic unit to build the concept and from which architectural spaces

would derive. Later on, the students developed research for the conditions of the chosen case studies, to imagine and create a narrative from the target group's perspective and viewpoint, and most importantly, to define the problems these people face while navigating space and translate them to possibilities and solutions in architecture.

The Modulor played a crucial role in shaping the general layout of the plan for each floor and defining the arrangement of the spaces and furniture. It served to specify the dimensions of architectural elements, such as stairs, handrails, openings, relation to natural light, dimensions of the spaces within the structures, and the furniture system. In addition, the unit served to select the appropriate system for the doors and windows, taking into consideration the minimum height of the modulor and providing an accessible system for the target group. Furthermore, materiality specification is derived from the sensorial experience of the user, and attempting to enhance the sensorial interaction, or even using it as a signage system in the outdoor and indoor environment. The shape of the layout was defined by the shape of the walls which provided a better navigation for the user by tackling the physical interaction of the body with architectural elements through the tactile sense.

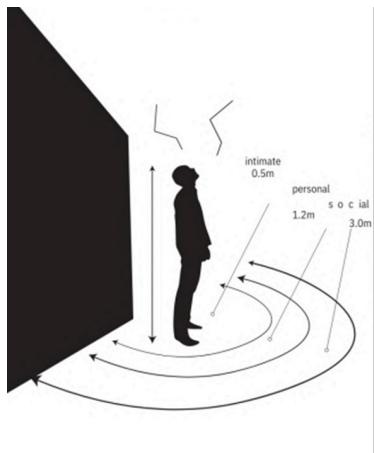


Figure 5. Modulor for Agoraphobia

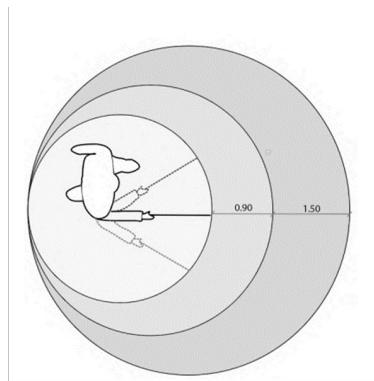


Figure 6. Modulor for Blindness

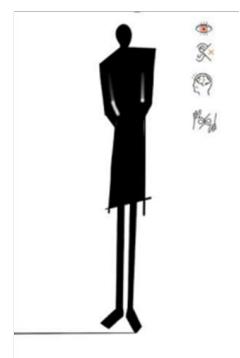


Figure 7. Modulor for Hearing Aid

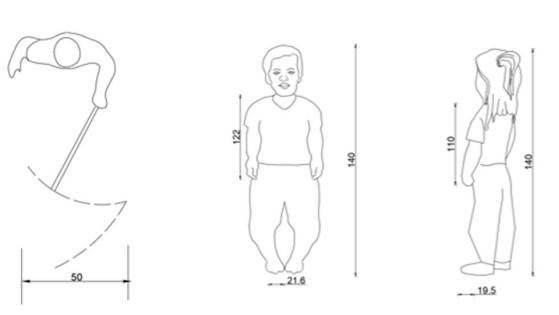


Figure 8. Modulor of Dwarfism

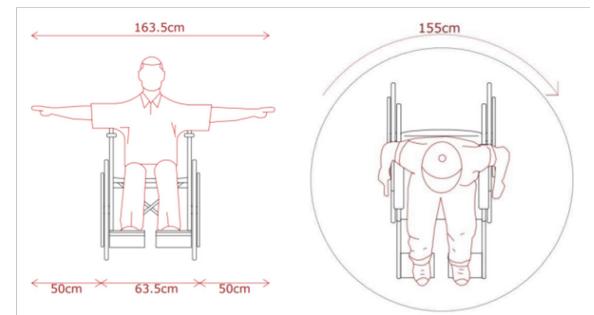


Figure 9. Modulor for Wheelchair User

The following phase involved continuous research about the selected conditions, adopting a multidisciplinary approach, which aimed to equip the students with the skill of interpreting information gathered from medicine, neuroscience, and psychology into architectural language. Such an approach helped them to identify and make detailed analyses of similar case studies in architectures, providing initial insights for building the design concept attuned to the target group's needs. The gathered information was presented in a booklet of architectural obstacles and translation of these obstacles into opportunities, taking into consideration the perceptual experience of the users and their needs for an efficient orientation and navigation in space. The booklet was organized into two main sections: inappropriate and appropriate scenarios. This structure provided a set of tools and guidelines to be applied not only to the final project of this course but even for future considerations in other building designs of any typology.

At the end of the course of “Inclusive Design”, students developed a deep understanding of the principles of inclusive design and their application in practice, which provided the development of a holistic strategy by understanding various users' needs and applying them in architectural solutions to enhance accessibility and sensorial interactions in a building. Prioritizing navigation and orientation in space resulted in creating functional indoor and outdoor environments. Although the students had specific target groups in consideration for their design, the course aimed to gather all the information from each of the case studies and provide a unified booklet with a set of architectural solutions for several target groups of different specifics, as a vocabulary for architects for starting architectural concept. By applying these tools that are attuned to the needs of diverse abilities, consequently are appropriate to all users of a building and to be considered in every future project avoiding exclusion of all kinds. Combining these instruments evolved

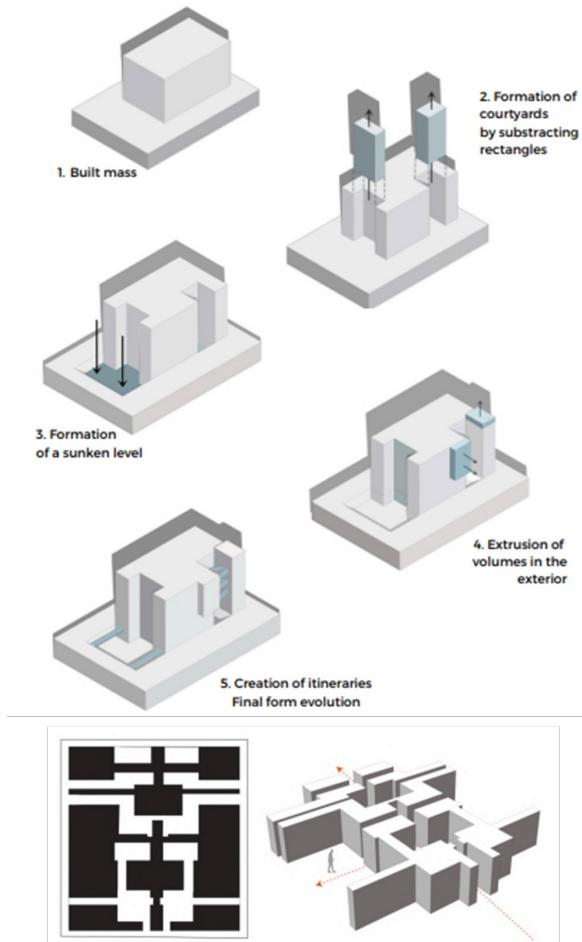


Figure 10. Example of a Booklet generated by students

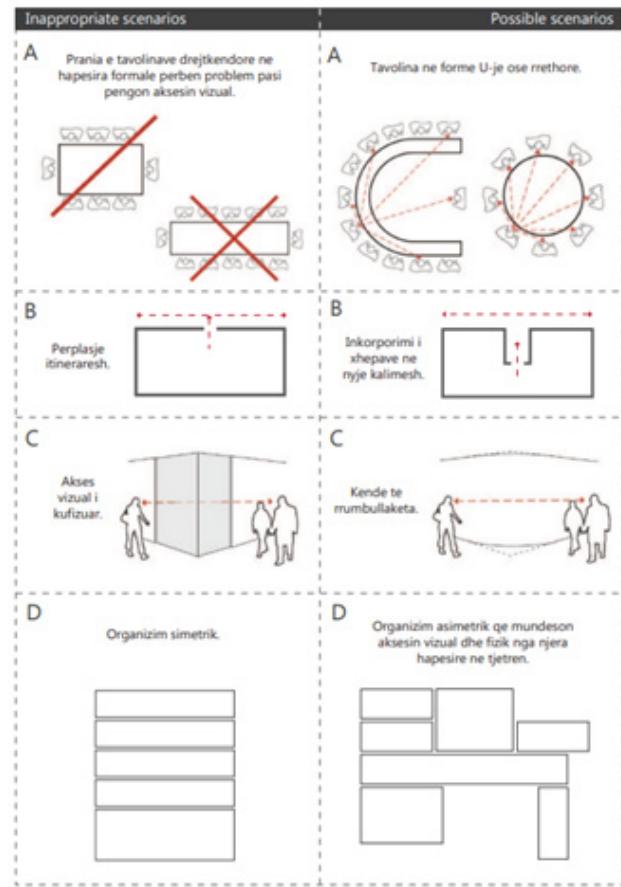


Figure 11. Concept diagrams of the Final Project

into interesting narratives and storytelling enhancing the integration of various users with a strong sense of community.

The most interesting aspect of this course was providing significant insights about the social attitudes our society has towards diverse abilities, which were reflected in the student's interaction from the first day of the course. Several reactions took place, including leaving the class due to anxiety caused by the topics of diverse abilities discussed in class. Such a reaction reflects that still our society tends to hide different models from our sight and as a result avoids at any cost interaction with them or excludes them from design thinking. As we build and shape the world around us, we must consider the needs of all people, including those with diverse abilities. Inclusive design is not just a standard but a commitment to justice, dignity, and respect for all. Considering diverse abilities' needs in our projects, we create more accessible spaces and avoid exclusion, by giving a contribution to a more inclusive society. It is equally important to educate new generations of architects about the importance of considering diverse individuals' typologies regarding their physical, cognitive, or psychological needs. By equipping them with knowledge and empathetic approach for the needs of different users, the architecture of the future goes towards a human-centered approach, proposing environments where each individual regardless of their abilities, feels independent and enveloped by architecture.

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