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FROM WEAK FORM TOWARDS SUSTAINABILITY
Bachelor Degree

Arxhenda Lipovica

September 2019
Pristina



Private Provider of Higher Education
UBT COLLEGE

Architecture Program

Thesis Project
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Arxhenda Lipovica

FROM WEAK FORM TOWARD SUSTAINABILITY

Subject: **HYBRIDIA**

Philosophy: **HEDONISTIC SUSTAINABILITY**

Theme: **MODULARITY**

Site: **PRISTINA, “MUHAXHIRËT NEIGHBOURHOOD”**

Supervisor:
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This research is submitted in partial fulfilment of the requirements for the
award of Bachelor Degree

Abstract

When talking about new architectural preferences, there is one key term to take into consideration: sustainable building. Understanding the dire conditions, the earth is facing, architects worldwide are focusing on applying new technologies to reach sustainability. Considering that Kosovo is taking the steps to international recognition, contemporary architecture will be an integral part of it.

Even though, in Kosovo, countless buildings continue to appear without worrying about consequences. It is the place where everyone is an "Architect" as they continue to overbuild day by day stereotypes of buildings without a standard of living, by measuring the value of the architecture with quantity rather than quality. The perpetuation of such a phenomenon continues to have an impact on the inhabitants' lives, meanwhile, the quality of life continues to decrease as the number of buildings grows. Considering this, the aim of this research is to reach a qualitative architectural design, which meets the needs of society.

The methodology of this research uses a particular form of data gathering to reach the aim of the study. The study goes into three steps to reach the design; Problem overview, design problem, and design critic point. These three phases explain the data as well as the design process to the final product. Moreover, the researcher uses a circular approach to get a better reflection in two points of view. Firstly, using the quantity approach, it will get a wider viewpoint of society thoughts. After, by using qualitative approach the focus will take place in the site where the design will evolve. To analyze these data this research will use the comparative form. This application will compare the gained data and try to obtain the best results.

Analysis of the responses shows that the quality of life isn't at the right level. And this phenomenon may continue if there won't be any drastic change. The main cases that reviewers were concern about were the density of large buildings, their quality, the absence of social areas and so on.

The findings of this research show that new buildings in Kosovo have poor condition and residents living in these buildings by their responses show disappointment. Moreover, people hesitate to trust the development of new buildings and do not want to collaborate anymore. Considering their responses and requests collected by residents in “Muhaxhirët” neighborhood, the proposed design tries to meet their needs without degrading the environment.

Dedication

*To my family,
Especially grandmother,
Thanks for your great support and continuous care!*

Acknowledgment

Studying Architecture at College for Business and Technology has been an art of grace whose joyous culmination attribute to many people who have helped me during this process.

With my greatest gratitude, I would like to take the opportunity to thank my supervisor Professor Banush Shyqeriu for his kind patience, while I struggled with certain aspects of this research and his firm guidance that was essential to my successful completion of it. His passion is contagious, and his commitment to the education of each of his students is exemplary. It's an honor that he has been my mentor through this journey and improved my work every step of the way.

I'm extremely thankful to other faculty members of the Department of Architecture, especially to Professor Lulzim Beqiri, for the encouragement, discussions and help received from time to time.

I also wish to thank UBT (University for Business and Technology) staff who helped and shared with me their professional acquaintances and achievements guiding me on a path that leads to success.

This research would have been impossible without the support of my friends and colleagues, whom I thank for putting up with my idiosyncrasies and for providing such a rich source of conversation, education, and entertainment.

Nobody has been more important to me in the pursuance of this research than the members of my family. I'm grateful to my parents, whose love and guidance are with me in whatever I pursue. They are the ultimate role models.

So many others have contributed to making my dreams come true I take this opportunity to express my sincere thanks to all of them.

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Glossary of Terms

Quality – Entomologically the word quality derives from Middle English (in the senses ‘character, disposition’ and ‘particular property or feature’): from Old French qualite, from Latin qualitas (translating Greek ποιότης), from qualis ‘of what kind, of such a kind’.

1. The standard of something as measured against other things of a similar kind; the degree of excellence of something.

"an improvement in product quality"

2. a distinctive attribute or characteristic possessed by someone or something.

"he shows strong leadership qualities"

Sustainable - Sustain– Entomologically the word Sustain derives from Middle English: from Old French soustenir, from Latin sustinere, from sub- ‘from below’ + tenere ‘hold’

1. Able to be maintained at a certain rate or level.

2. Able to be upheld or defended.

"sustainable definitions of good educational practice"

Approach – Entomologically the word approach derives from Middle English: from Old French aprochier, aprocher, from ecclesiastical Latin appropriare ‘draw near’, from ad- ‘to’ + propius (comparative of prope ‘near’).

1. A way of dealing with something.

"we need a whole new approach to the job"

Society – Entomologically derives from mid-16th century (in the sense ‘companionship, friendly association with others’): from French société, from Latin societas, from socius ‘companion’.

1. The aggregate of people living together in a more or less ordered community.

"drugs, crime, and other dangers to society"

Contemporary - Entomologically derives from mid-17th century: from medieval Latin *contemporarius*, from *con-* ‘together with’ + *tempus*, *tempor-* ‘time’ (on the pattern of Latin *contemporaneus* and late Latin *contemporalis*).

1. Living or occurring at the same time.

"the event was recorded by a contemporary historian"

2. A person or thing living or existing at the same time as another.

"he was a contemporary of Darwin"

Hybrid - Entomologically derives from early 17th century (as a noun): from Latin *hybrida* ‘offspring of a tame sow and wild boar, child of a freeman and slave, etc.’.

1. The offspring of two plants or animals of different species or varieties, such as a mule (a hybrid of a donkey and a horse).

"a **hybrid of** wheat and rye"

2. A thing made by combining two different elements; a mixture.

"the final text is a **hybrid of** the stage play and the film"

Segregation –

1. The action or state of setting someone or something apart from other people or things or being set apart.

"the segregation of pupils with learning difficulties"

Rationalization –

1. The action of attempting to explain or justify behavior or an attitude with logical reasons, even if these are not appropriate.

"most people are prone to self-deceptive rationalization"

Place - Entomologically derives from Middle English: from Old French, from an alteration of Latin *platea* ‘open space’, from Greek *plateia* (*hodos*) ‘broad (way)’.

1. A particular position or point in space.

"the monastery was a peaceful place"

Aesthetic - Entomologically derives from late 18th century (in the sense ‘relating to perception by the senses’): from Greek aisthētikos, from aisthēta ‘perceptible things’, from aisthesthai ‘perceive’. The sense ‘concerned with beauty’ was coined in German in the mid-18th century and adopted into English in the early 19th century, but its use was controversial until much later in the century.

1. Concerned with beauty or the appreciation of beauty.

"the pictures give great aesthetic pleasure"

Design - Entomologically derives from late Middle English (as a verb in the sense ‘to designate’): from Latin designare ‘to designate’, reinforced by French désigner. The noun is via French from Italian.

1. A plan or drawing produced to show the look and function or workings of a building, garment, or other object before it is built or made.

"he has just unveiled his design for the new museum"

Space - Entomologically derives from Middle English: shortening of Old French espace, from Latin spatium. Current verb senses date from the late 17th century.

1. A continuous area or expanse which is free, available, or unoccupied.

"a table took up much of the space"

2. The dimensions of height, depth, and width within which all things exist and move.

"the work gives the sense of a journey in space and time"

Value - Entomologically derives from Middle English: from Old French, feminine past participle of valoir ‘be worth’, from Latin valere.

1. The regard that something is held to deserve; the importance, worth, or usefulness of something.

"your support is of great value"

Configuration - Entomologically derives from mid-16th century (denoting the relative position of celestial objects): from late Latin configuratio(n-), from Latin configurare ‘shape after a pattern’.

1. An arrangement of elements in a particular form, figure, or combination.

"the broad configuration of the economy remains capitalist"

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1.0 Introduction

1.1 Research Background

Since the war in Kosovo with Serbia in the late 1990s, different forms of construction and destruction have been formative and transformative of Pristina, and this history is part of what goes into the post-conflict city of today. It is not merely about linear historical time, but the temporal scale of experiences, memories, and the rhythms of everyday life as they take place. The largely uncontrolled building boom has expanded the city into the surrounding, previously agricultural land, as well as densifying and transforming central parts of the city. The style of buildings in the wake of this intense development is characterized by a seemingly random and informal jumble of styles, which is recognizably global in its scope.

After the conflict Kosovo there was hope for better living, as Frank D'Hondt says; "After the fall of the socialist regime and the forced ending of the armed conflict of 1998-1999, there was hope that Kosovo could be rebuilt and redevelop in a different way, with more respect for its rich natural and cultural heritage, using the New Charter of Athens as strategic guideline." (The Transitional City: Post-Conflict Kosovo and the New Charter of Athens, 1978-2013) But political events changed the point of view and now to save what is left, it is crucial not only to consider to get a better architectural quality but to search for more sustainable approaches.

1.1.1 The Need and Justification of the Study

The absence of research in this category illustrates the need for the academic study of architectural quality in Kosovo. The lack of understanding of the situation in which this Country is could bring much more chaos. Hence, this study attempts to reach a balance between the needs of society, quality, sustainability, and affordance.

1.2 Research Aim and Objectives

Aim:

The aim of this research is to reach a qualitative architectural design, which meets the needs of society by applying sustainable approaches.

Research Objectives:

- To evaluate the quality of new buildings in Kosovo.
- To estimate if the quality of building affects socially.
- To assess if Kosovo is ready for contemporary architecture.
- To make an architectural proposal where the quality and sustainability are in consideration.

1.3 Structure of Thesis

Based on the British Standard Institute guideline for the order of contents, this thesis contains seven main chapters besides the introduction chapter. Figure 1 Illustrates the flow of the content. Chapter 2 contains the literature review of contemporary architecture. The literature review is mainly based on books, academic journals, articles. The methodology of data collection and data analysis methods is provided in Chapter 3. In Chapter 4 is presented analyzed data that are collected by online forms and interviews. This chapter also includes Case Study that will be used in the final design. Chapter 5 contains the design process, including site analysis, concept and design evolution. Meanwhile, Chapter 6 gathers whole information, analysis and design evolution and reveals the very final design. Chapter 7 then concludes the thesis by answering the research questions and checks if all the objectives are achieved.

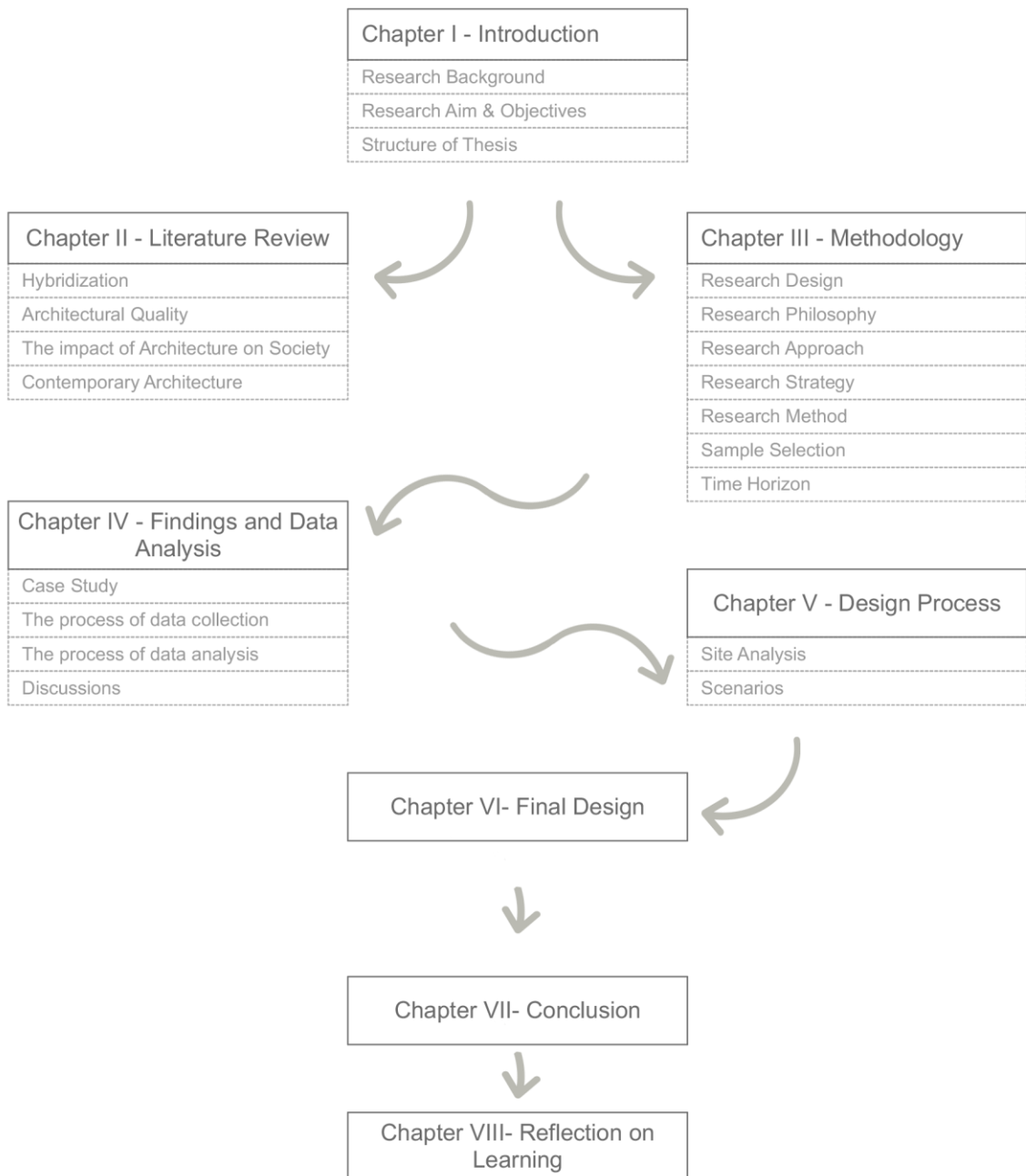


Figure 1 Outline of Thesis Chapters

2.0 Literature Review

“Literature reviews and annotated bibliographies are the stepping-stones toward framing concise research questions.” (Wang, 2013)

This chapter reviews the theories and articles relevant to the research topic that is mainly about the values of new buildings in Kosovo and the application of contemporary architecture concerning their impact on society. Considering the large area that this topic covers, to simplify the order of the literature review section, the author structured a bubble diagram, shown in Figure 2.

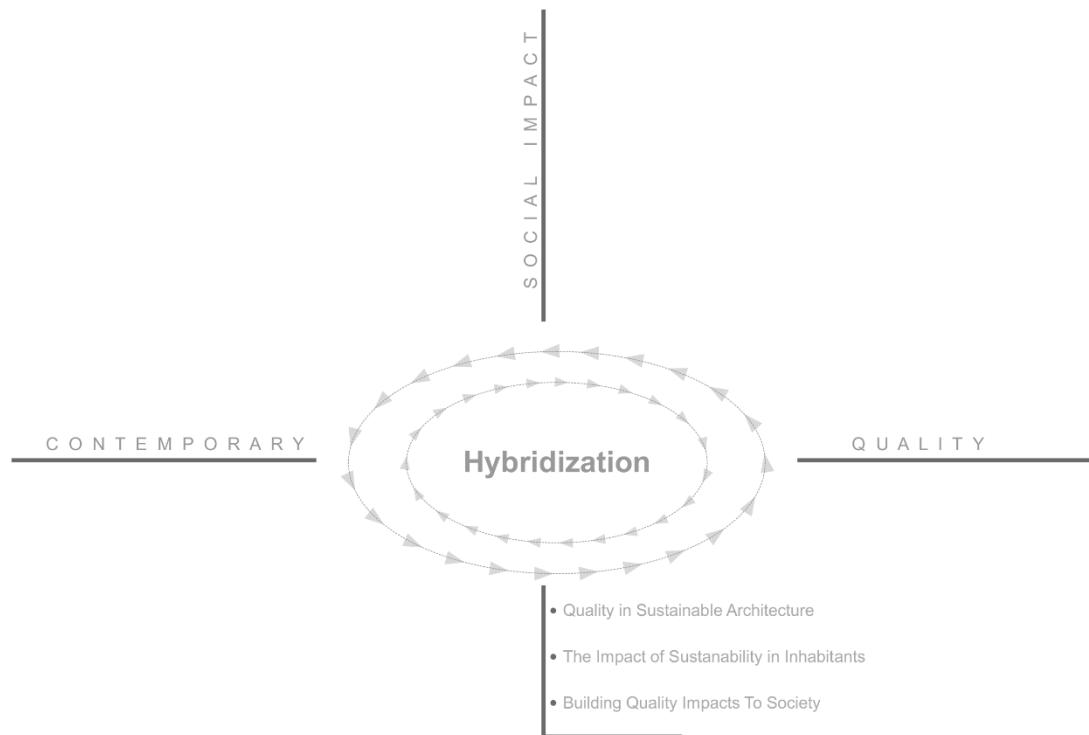


Figure 2 Literature Review Topics

According to the diagram, the literature review covers three main topics; The quality of Architecture, The impact of building on society and Application of contemporary architecture in Kosovo. The diagram divides into other sections that support these topics Figure 3. Following this structure, the author will cover concisely the area of topics that will provide the very final architectural design.

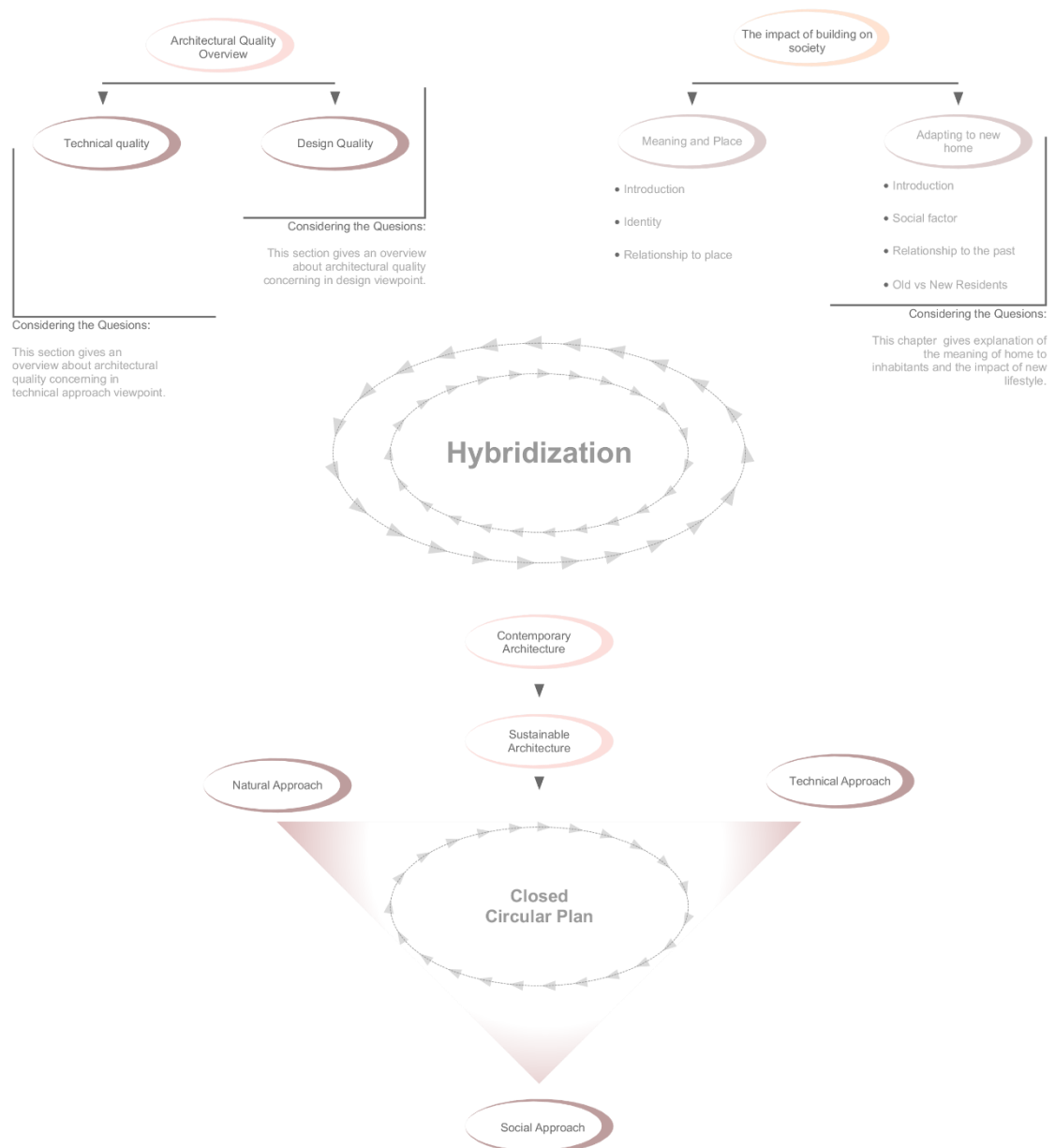


Figure 3 Literature Review Sub - Topics

2.1 Hybridization

In present cities, escalating land values and the growing pressure on developers to optimize the utilization of built areas are changing the way architects engage with designs in urban environments. Architectural ideas are now more likely to be driven by variety, density, and intensity of uses to revitalize urban centers. Some of the forms and ideas put forward by the Modern Movement failed to deal with urban engagement by imposing segregation and rationalization of architecture. This engagement resulted in the alleged death of cities towards the end of the 20th century. The idea of hybridization has been blamed for the decline of Modernism and has been held responsible for some of its extremes.

Hybridization is a relatively new concept recognized by science between the 18th and 19th-century defined by Alan Bullock and Stephen Trombley as “a thing of mixed character or composed of different elements.” (Alan Bullock & Stephen Trombley, 1999) Being the result of collisions between similar and/or dissimilar elements, regardless of its field of study, hybridization aims the creation of a new kind.

Humans are now evolving in a disrupted environment which appears to stand the weight of previous design mishaps. In this sense, hybridization can be seen to represent a viable tendency concerning urban and architectural studies.

2.2 Architectural Quality

Quality in architecture is an open concept built on knowledge. To understand the architectural quality means that one should recognize, explain, and account for illustrative examples. Knowledge about quality rises with education, professional practice, and research. New standards of quality arise continuously in architecture and urban design. Changes create the need for developing, reinterpreting, and specifying the contents of the quality theory. There is no final definition of what identifies good solutions for design problems in architecture and urban design. The concept becomes meaningful through constant discussion. Communication is crucial for architectural quality to continue to be a knowledge-based key concept for the profession.

Architectural quality is a concept that promotes debate. There are basic discrepancies in the different views of quality. The concept is controversial, and disagreement is a driving force. The breadth of the linguistic usage reflects the different approaches toward what quality is, how quality work should be carried out, and how quality aims should be expressed in architectural design. At the bottom of the disagreement lies the desire to steer the agenda in order to get interpretation status, status in society, and assignments. Architects maintain that they are best qualified to judge architectural quality thanks to their education and professional experience. Since there is no single way to solve conceptual differences, the debate can continue forever.

Architectural quality is a combination of elements that form a whole. This is fundamental for the evaluation of projects, especially in the early stages. Professionals indicate architecture quality as a holistic idea: A composite entity of aesthetic dimensions and technical aspects along with requirements for the economy, environmental friendliness, and social conditions.

2.3 The Impact of Architecture on Society

The connection between architecture and society is evident. It is something that we have to keep in mind whenever we want to design something. Architectural designs, are affected by the ideas, values, beliefs, activities, relationships, and forms of the society that they sustain. But, *“However pervasive of everyday experience, the relation between space and social life is certainly very poorly understood.”* The lack of this understanding *“... is the chief obstacle to better design.”* (Bill Hillier & Julienne Hanson)

“Buildings play a fundamental role in organizing certain kinds of social relations...they are not just objects, but transformations of space through objects.” (Bill Hillier & Julienne Hanson) These transformations have a crucial impact in society, as Donald Schmitt, in his speech held in TED Talks states *“We know that the dimensions of space, the scale of ceilings... we can measure that the quantity, characteristics and the configuration of space has a positive impact on our creative thought process, on our understanding, on our ability to learn...”* He strongly believes that architecture can have a profound and positive impact on both the environment and the interactions and rituals of everyday life. (The Impact of Architecture, 2015)

The lack of relation of space and society is a phenomenon that always had a drastic impact on our lives, without recognizing it. The roots of the absence of this relation appear in the fundamental way of the conceptualization of the problem. Which in turn, has its roots in the ways which social theorists have conceptualized society. The problem is the relation between a material realm of physical space, without social content in itself, and an abstract realm of social relations and institutions, without a spatial dimension. *“The problem definition has the effect of de-socializing space and de-spatializing society.”* (Bill Hillier & Julienne Hanson)

As Russell points out, *“...relations, especially spatial relations, are very puzzling entities. They seem to exist ‘objectively’, in the sense that ‘Edinburgh is to the north of London’, but we cannot point directly to the relation in the way that we can to other entities which seem to ‘really exist’. We must accept...”* Russell argues, *“...that the*

relation, like the terms it relates, is not dependent on thought, but belongs to the independent world which thought apprehends, but does not create. We must then accept...” he continues, “...that a relation ‘is neither in space nor in time, neither material nor mental, yet it is something.” (Hiller, 1996)

The cause of the problem is mainly related to the difficulty of talking about spatial configurations in architecture. Bill Hillier in the book ‘Space is the Machine’, explains the non-discursivity of configuration as he states; “*Configuration seems to be what the human mind is good at intuitively, but bad at analytically... We easily recognize configuration without conscious thought, and just as easily use configurations in everyday life without thinking of them, but we do not know what it is. We recognize and we are not conscious of what it is we use and how we use it...*” (Hiller, 1996)

In his book ‘Space is the Machine’ the author explains elaboration of form and space into configuration, and it is “...the key to the argument about the nature of buildings, and also to how architecture arises from building.” As he illustrates a diagram, shown in Figure 4. (Hiller, 1996)

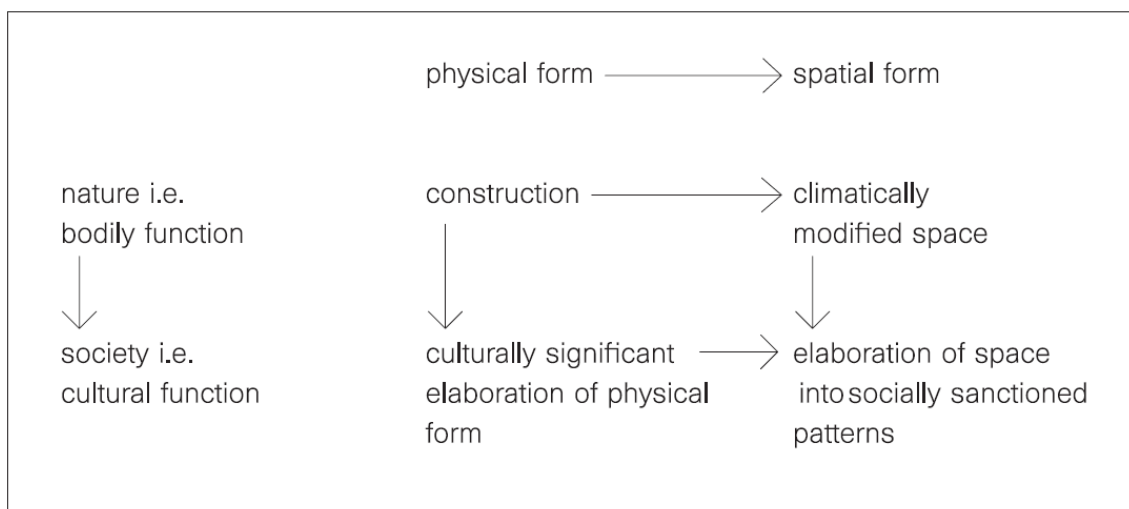


Figure 4 Space is the Machine (Hillier, 1996)

The essence of the diagram is that a building even at the most basic level embodies two dualities, one between physical form and spatial form and the other between bodily function and socio-cultural function. The link between the two is that the socio-cultural

function arises from the ways in which forms and spaces are elaborated into patterns, or into configurations.

In addition to functioning as a bodily protection, buildings operate socially in two ways: They constitute the social organization of everyday life as the spatial configurations of space in which we live and move, and represent social organization as physical configurations of forms and elements that we see. (Hiller, 1996)

2.3.1 Relation to the place

Urban life is not only about housing in terms of building and creating a family and public area. The city is also about meaning-making through memories of places, local names, and different kinds of work and joy and similarly works for those who move and live there. Relations of age and gender and ethnicity play a prominent role in creating public spaces.

According to M. Carmen Hidalgo and Bernardo Hernandez 's study about the definition of place attachment, a generally accepted definition of place attachment is an affective connection or link between people and specific places. (Journal of Environmental Psychology, 2001) For Shumaker and Taylor, it is a positive affective relationship or association between individuals and their residential environment. (1983)

The concept of place attachment is most commonly used in urban neighborhood design as a strategy to revitalize abandoned neighborhoods. Some of the strategies are successful such as Bronx neighborhoods revitalization and Mill Creek Neighborhoods revitalization. Both place identity and attachment refer to people 's relationships to places. Although it is still uncertain how these two notions are related to each other, there is a consensus that there is a complex and rich relationship between these two. Maria Lewicka stated in *Place Attachment, Place Identity, and Place Memory: Restoring the Forgotten City Past* (2008), that sometimes the two notions are interchangeable. Sometimes place attachment is subsumed under the concept of place identity, sometimes place attachment is considered to proceed development of place identity which means it takes more than attachment to incorporate the place as part of one 's life. Lewicka proposed that to restore the forgotten past is a way to strengthen both attachment and identity. Based on Lewicka' assumption place identity and place attachment can reinforce each other, and improving place identity should be one way to increase place attachment.

2.3 Contemporary Architecture

“A great epoch has begun. There exists a new spirit. There exists a mass of work conceived in the new spirit; it is to be met with particularly in industrial production. [...] Our epoch is determining, day by day, its own style.” (Corbusier, 1976)

A remarkable shift in architecture emerged in the second half of the twentieth century, modern architecture spread around the world, in various interpretations, and with its wake, a wave of movements developed generating a new notion named; Contemporary Architecture.

The extraordinary expansion started to appear when the modernist consensus of the immediate postwar period began to fray in the late 1950s and early 1960s. Modern architecture faced multiple critiques which led to new experiments, providing a variety of architectural works, designed to meet the needs of emerging societies, sometimes resorting to a hybrid architectural language that integrated international modernism with regional or national patterns. (Elie G. Haddad and David Rifkind, 2014)

The term Contemporary Architecture appeared with the rejection of ‘Modern Architecture’. Van Eyck recommended that architects should follow examples of artists and scientists as Picasso, Mondrian, Joyce, Le Corbusier, Schoenberg, Bergson, and Einstein, whose work he described not as modern, but ‘Contemporary’. He believed that *“...when architects again discovered the world anew, they would discover a ‘New Architecture’- real contemporary architecture...”* (Elie G. Haddad and David Rifkind, 2014)

Architects responded to the challenges of this era by engaging different architectural paradigms, some of which were improvements of previous traditions including a rehabilitated modernism, while others came out as syntheses of opposite tendencies.

Movements that had an impact on architecture development include;

Postmodernism, High-Tech, Neo-Functionalism, Deconstructivism, Green Architecture and Sustainability.

2.3.1 Sustainable Architecture

“Sustainable and eco-friendly architecture is one of the main aims that humans for creating a better life have made as to the ultimate model for all their activities. For this reason, moving towards a greener architecture is well-thought-out the main goal of the present architecture of our time.” (M. Mohammadjavad, 2014)

For a long time, humans have been forced to find ways to adapt to natural conditions. By the time, the attempt of creating safe conditions caused a large impact on the environment. In the book *Understanding Sustainable Architecture*, the author indicates the differences in good architecture through time. He points out that back in time good architecture was considered when it would adequately protect the inhabitants from the climate. As for now, he brings out the environment like the “one” that needs protection, and that the concept of good architecture is the buildings that will adequately protect the environment.

“In many ways, the built environment, the very means by which we attempt to create secure conditions, is itself seen as becoming a source of danger and threat.”

(Terry Williamson, Antony Radford & Helen Bennetts, 2003)

Concerning environmental degradation, many architectural designs aim in achieving sustainability by following the principles of sustainable architecture.

The environment in a human’s life is essential, but the impact that humanity is creating in it is causing an imbalance in nature. Activities such as agriculture, mining, forestry, and urbanization have drastically disordered the natural cycle. Humanity since its existence has used the resources nature offers, first by only covering the needs and then for luxury. As Mahatma Gandhi said; *“Earth has enough to satisfy every man’s need, but not every man’s greed.”* and if the land devastation continues there won’t be enough sources to live and only *“When we see land as the community to which we belong, we may begin to use it with love and respect.”* (Leopold, 1949)

The most significant step made towards sustainability was in 1973 when governments were bound to solve the problem of the oil crisis by reducing dependency on imported fuel. As the crisis showed up again governments were clear that reduction of dependency on oil is not the main imperative to green design and the environmental degradation was leaving signs worldwide. Considering this issue, The Earth Summit held in June 1992 in Rio de Janeiro, Brazil, was a defining event in the sustainable development movement. For the first time, it brought together many developed and developing nations to solve difficult issues related to the environment and development. (Terry Williamson, Antony Radford & Helen Bennetts, 2003)

The World Commission on Environmental and Development report Our Common Future known as Brundtland Report provided an early authoritative definition of what constitutes sustainable development. Thus, according to the Brundtland Report:

“Humanity has the ability to make development sustainable, to ensure that it meets the needs of the present without compromising the ability of the future generations to meet their own needs... Sustainable development is not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the directions of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs.” (WCED, 1990)

Considering Architectural movements to sustainability, Frank Lloyd Wright was one of the first architects to give ideas towards sustainability, organic architecture. With the house named “Waterfalling House,” he demonstrates how a building can be an integral part of nature without destroying it. As he mentions;

“No house should ever be on a hill or on anything. It should be on the hill. Belonging to it. Hill and house should live together each the happier for the other.” Frank Ll. Wright

The bioclimatic architecture was also dominated by ideas of Le Corbusier on sun shading, Meyer on the biological model, Aalto on health and so on. Buildings of those architects showed a tendency of rationalism and functionalism while being fascinated by the beauty of nature. The following paradigms through the years tend to reach the so-called “zero energy buildings”.

According to (Attia) the development of sustainable architecture is a result of the symbiosis of ecologists and architects. It began with these two professional groups suggesting a change in the function of the building. The idea was to transform the linear approach to a closed circulation plan, Figure 5. Hence, from an ecological point of view, the design of the building function has become a model. The architectural design seeks for the limitation of the environmental impact, with the objectives of achieving energy efficiency, positive impacts on health, comfort and an improved liveability for inhabitants.



Figure 5 Closed Circulation Plan (<https://twosidesna.org/US/paper-and-the-circular-economy/>)

In the book *Sustainable Design*, Jana Revedin shows up the problems that society is facing and how Sustainable Architecture is crucial to reach a better life quality. She sends us back to our roots as craftsmen, how the traditional techniques for utilizing were used back then, including the energy of the sun and wind, the warming and cooling potential of geothermal energy, gravity, water power, and the energy of light. Jana Revedin suggests the use of these resources once again by applying innovative approaches to fit local conditions. Therefore, in the book *A green Vitruvius*, the author states the need for defining environmental issues to develop a good architecture; “*No building designed at this time which ignores environmental issues can be said to be good architecture.*”, by pointing out five issues which need to be considered to reach sustainable architecture;

- Energy consumption
- Material Use
- Water Use
- Waste Management and
- Noise Control

(Vivienne Brophy and J. Owen Lewis)

Considering these issues, in the following sections the author uses three approaches to cover sustainable design literature review; The Natural Approach, The Social Approach, and The Technical Approach.

I. The Natural Approach

“A building should be in harmony with its natural environment - a building that in its proportions materials and design, belongs to its site.” Frank Lloyd Wright

When talking about the integration of building with nature, it is unlikely to not mention the idealist of organic architecture, Frank Lloyd Wright. Organic architecture refers to the idea that buildings should serve to honor and enhance the natural beauty surrounding them. Development and application of new technologies, materials, methodologies in architecture reached a new viewpoint, by focusing on ecosystem integrity, by carrying capacity and reaching biodiversity. The innovative systems used recently do perfectly fit the environment, developing the sustainable design.

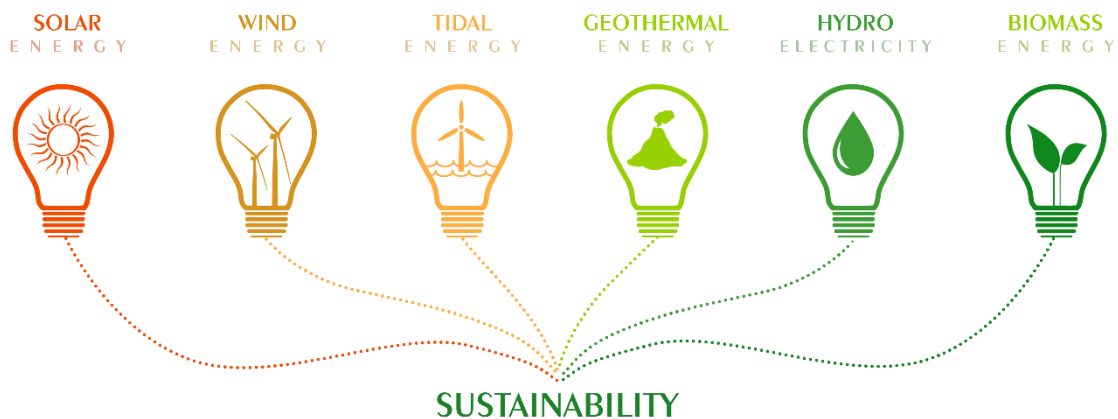


Figure 6 Sustainability approaches

• **Pre- Fab Architecture**

“The serial state of spirit has to be created.

The serial house manufacturing state of spirit.

The serial house inhabitation state of spirit.

The serial house conception state of spirit.” Le Corbusier

Considering environmental and social impacts, prefabrication has emerged as an alternative construction method and an example of resilient design. Prefabrication stands for the practice of manufacturing the components of a structure in a factory and transporting complete or semi-complete assemblies in situ (on site). It is widely known for using construction techniques that minimize construction time and project costs. In particular, prefabrication offers various benefits that play a crucial role in sustainability. These benefits include waste reduction, recycling construction waste, improving site safety, enhancing quality under factory production, leading to environmental protection, process standardization, and shorten lead time.

Regarding the history of Prefabrication, Barry Bergdoll, a curator of the Museum of Modern Art 2008 “Home Delivery,” differentiates prefab from prefabricated architecture. He states that prefab is a “*long economic history of the building industry that can be traced back to antiquity*” including the applied techniques to build ancient temples and timber structures, Figure 7. Differently, the history of prefabricated architecture is “*a core theme of modernist architectural discourse and experiment, born from the union of architecture and industry.*” (Smith)

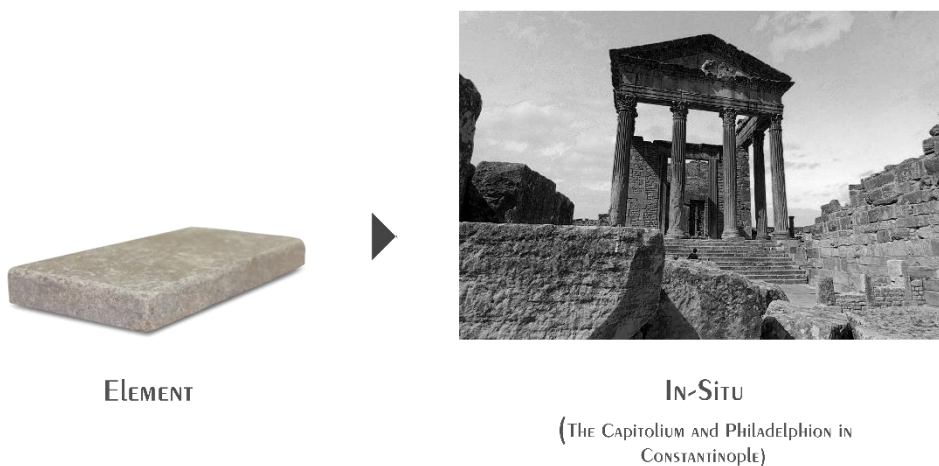


Figure 7 Element - In-Situ

However, tracking back in time, we can encounter prefabrication even at the nomadic period. Nomadic architecture moved about for various reasons in the past, as; Locating migrant food sources, adapting to changing climatic conditions, trading goods, finding communal protection, and searching for the unknown. With these features, nomads created a flexible and durable shelter. These shelters include the American Indian Tipi, the Mongolian yurt, the Bedouin made of goat-hair "black tent," and the Basque shepherd tent. These shelters and tents were constructions showing the potential of mobile architecture. (Shyqeriu, 2017) Figure 8.



Mongolian yurt

The Mongolian yurts are conveniently compact for transport on camels yet provide secure shelter and display traditional values. The nomads recamp two to four times a year, so the efficient use of the steppe region resources is a necessity.

Figure 8 Prefab in the Scope of New Structuralism Novel Tectonics (Shyqeriu, 2017)

Meanwhile, as Berry Bergdoll classified the history of prefab architecture as one “*born from the union of architecture and industry.*” It encounters in the years after World War I when prefabrication became a viable alternative for reconstruction of cities with a relatively small workforce available. After World War II, Japan and Europe used manufactured housing to fill the massive rebuilding needs. Many early and late modernists including Le Corbusier, Gropius, Mies van der Rohe, and Wright were interested in the advancement of modern architecture and prefabrication. (Smith)

The most influential architect for modernism in the twentieth century, Le Corbusier came up with the idea of “Machinist Movement” that stood up for improvement in technical solutions that would stand many decades after. His statement “a house is a machine for living” was to be taken literally, because, for Le Corbusier, it was either “architecture or revolution”. As part of his effort to create a machine for living, Le Corbusier designed and built a prototype called the Citrohan House. Which linked with five points of architecture including Dom-ino. (Smith) Figure 9.

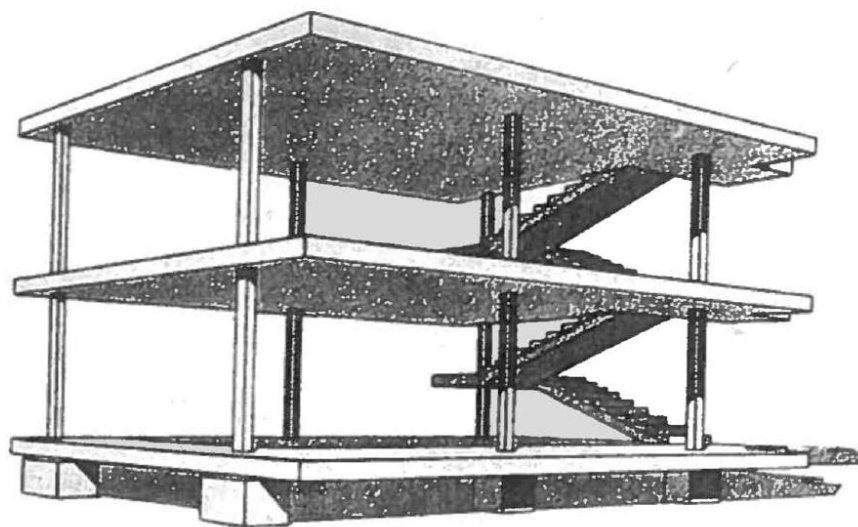


Figure 9 Domino House (Le Corbusier, 1914)

Dom-ino was a reinforced concrete framework connected with stairs, and six columns based on prefabricated foot. The frame allowed openings to occur were needed for view and light. In this case, the application of prefabricated components like doors and windows appeared. “*Although none of Le Corbusier’s buildings were built using prefabricated methods, his ideas about using the manufacturing industry were widely*

known by architects of the era. Le Corbusier saw beauty in the standardization of everyday objects. He viewed the purist object, as his architecture manifest, as the embodiment of utility and refinement. These ideals have provided much of the basis for contemporary low-cost, mass housing experiments in prefab architecture.” (Smith)

After the turn of the century, there was a sudden influx of interest in the prefabrication industry. (Bell, 2009) Countless contemporary architects attempted to re-evaluate prefabrication housing as a potential way to sustainable living. Several other architects, tested prefabrications as a solution to an overwhelming number of home buyers, emphasizing on providing solutions for high population density countries – through prefabricated systems, Figure 10.

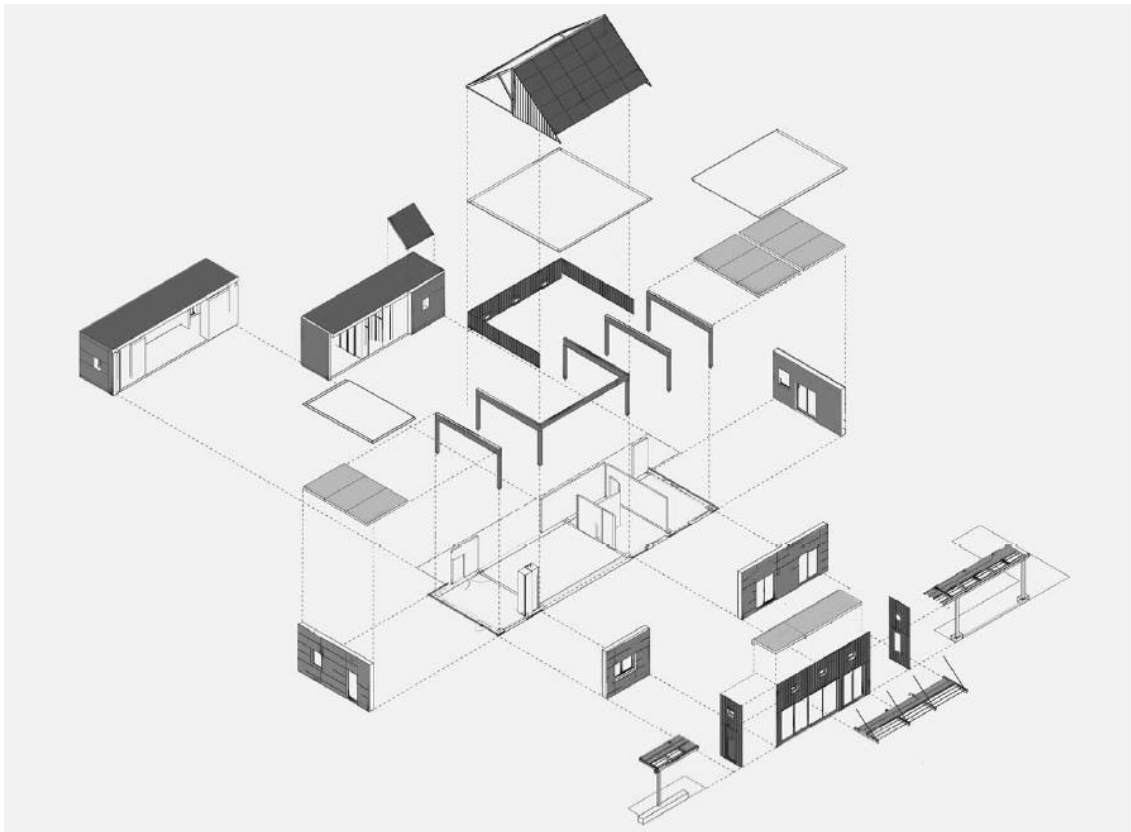


Figure 10 Prefabricated Systems (Smith)

Prefabrication in architecture plays an important role in sustainability, in his book “Prefab Architecture” Ryan E. Smith explains; “...by controlling the means and methods by which buildings are produced through prefab, architects, and construction professionals are able to ensure more sustainable materials and practices for

construction as well as have a greater opportunity to predict future energy performance...the capacity of prefab to deliver buildings that respond to time, change, and reuse/recycle may be its greatest benefit toward total lifecycle sustainability in the future...” (Smith)

However, the level of the impact regarding prefabrication in sustainability is a result of the degree of prefabrication. In the book “Prefab Architecture”, the author illustrated Figure 11 four basic levels of prefabrication for buildings including materials, components, panels, and modules. (Smith)

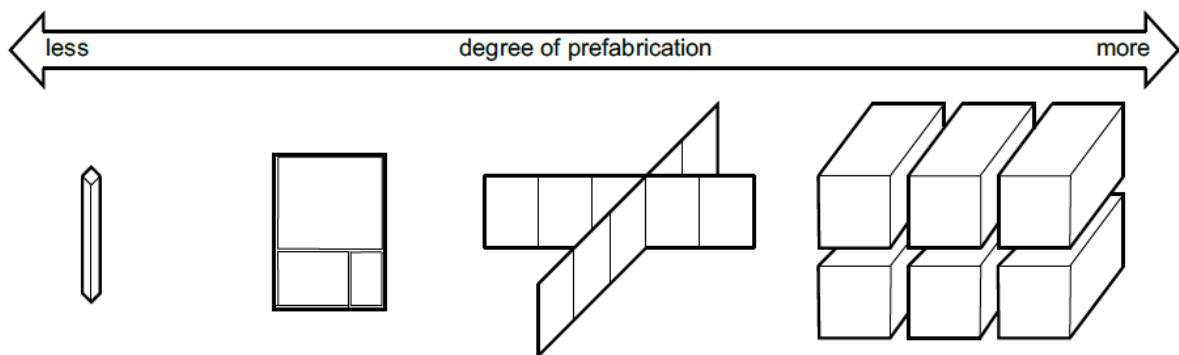


Figure 11 Degree of prefabrication (Smith)

- **Modular Architecture**

Modular is a growing industry making larger dents each year into the building market. Considering time, quality, cost and many other benefits that prefabrication offers, the modular approach is the one that tends to be more finished than other methods of prefabrication. “...In the spectrum of the degree to which prefabrication is finished, modular is the greatest, offering the possibility of constituting upward of 95 percent complete before setting of the structure site...” (Smith) Meaning that the application of modular architecture takes less time to build, and also offers a higher quality of living.

The prefabricated modular architecture is mainly related to dimensional and structural networks. The structure is realized through construction meanwhile tectonics give the visual expression. The structure represents a stable assembly of structural elements designed and constructed to function as a whole to support and transmit loads securely to the ground without overloading the structural elements. (Shyqeriu, 2017) Based on

the excerpt “Prefab in the scope of New Structuralism and Novel Tectonics” the author points out four fundamental aspects that structure should fulfill: Strength, stiffness, stability, and synergy.

Further, the author explains the meaning of construction “...as the way the materials are sorted, gathered and united in an ensemble...”. Whereas, the tectonic term refers to the art and science of construction, shaping, decorating and displaying the structure through the construction. (Shyqeriu, 2017)

Concerning the prefabricated system structure, it divides into four types;

- Structures with light - skeleton frames
- Structures with panels
- Modular structures and
- Combined Structures Figure 12 (Shyqeriu, 2017)

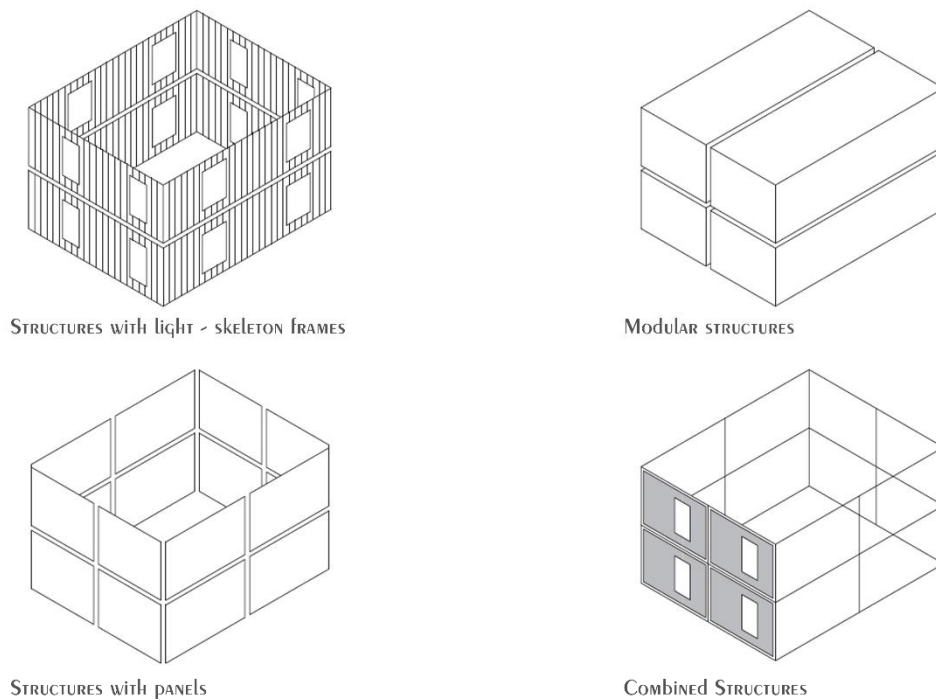


Figure 12 Combined Structures (Shyqeriu, 2017)

The benefits of prefabrication don't just cover the project duration. Since prefabricated construction occurs in a controlled manufacturing environment and develops specified standards, the components of the structure are built to a uniform quality. In- situ structures are dependent upon varying skill levels and the schedules of independent contractors. These all contribute to the craftsmanship and overall quality of the structure. With prefabrication, each component is built by an experienced crew in a weather-resistant factory, with multiple quality checks throughout the entire process.

(Westchester Modular Homes)

• Underground Architecture

Adopting underground space as a living environment nowadays is something beyond providing shelter. It mostly has to do with conserving energy, protecting the value of the history of the area and reducing the impact on the environment. Still, even that its usage started a long time ago, utilization of underground space for the development of underground living environments is a practice that the general public didn't embrace yet. (G., Gonaly, 1983)

The underground architecture can be traced back in ancient eras when humankind used caves as their shelters. Further, Egyptian Civilization used the earth-sheltered system for Temples and Tombs, and later for living, Figure 13. Hatshepsut, Abu Simbel (G., Gonaly, 1983) The thermal benefits of the earth's temperature controlling in a harsh climate, together with the ability to create a shelter with minimum materials, energy and mechanization resulted in the mass construction of these caves to our day. (Modern Earth sheltered constructions: A paradigm of green engineering, 2014)

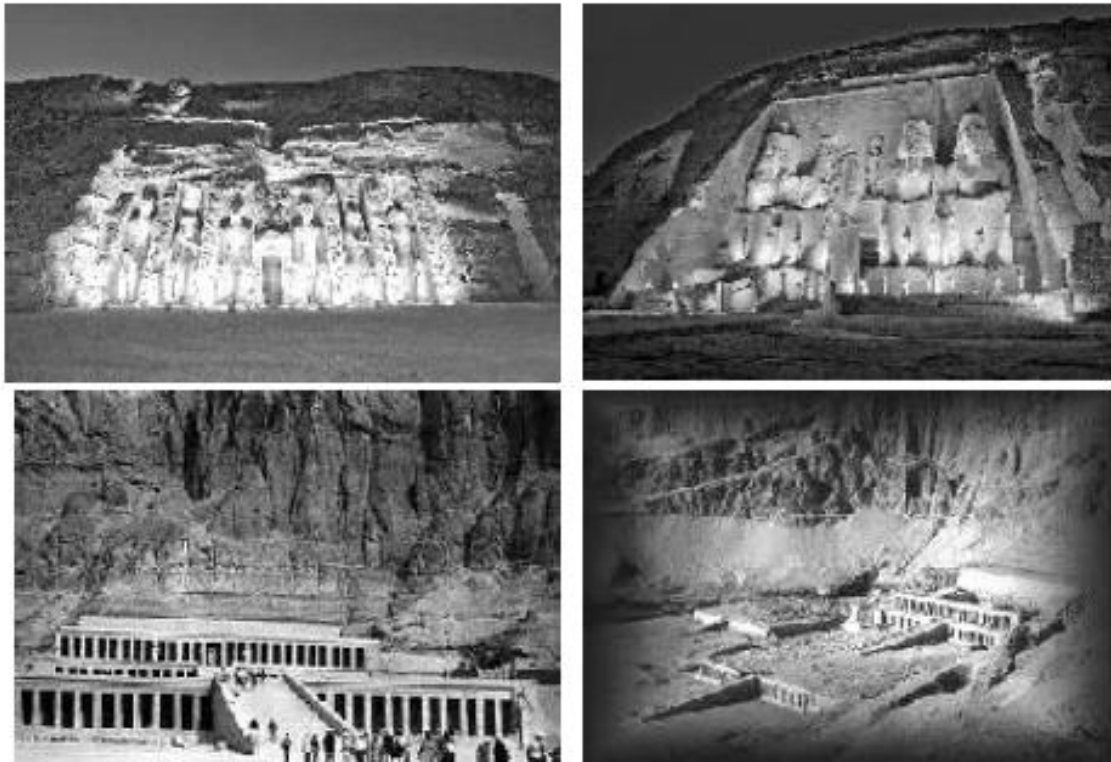


Figure 13 Hatshepsut, Abu Simbel (G., Gonaly,1983)

The most common usage of Earth-Sheltered has been for housing purposes, especially in areas with harsh climates. Earth – Sheltered systems rely on design features rather than implementing systems for heating and cooling and, therefore, make significant contributions to energy and environmental solutions. In the book “Earth Sheltered Housing” the author points out the advantages of Earth Sheltered system Figure 14 as he implies that “... *The home must be durable and must not denude the area of vegetation, cause undue water run-off or destroy excessive amounts of wildlife habitat...*” (Max R.Terman)

1. Soil Cover Advantages

- smaller temperature differential between inside and outside of house
- heat extraction in summer by cooler soil next to house
- thermal lag effect
- thermal mass effects

2. Vegetative Cover Advantages

- shading effects and reduced heat gain during summer
- increased insulation
- cooling by transpiration and evaporation

3. Other Benefits

- better soundproofing
- reduced maintenance costs through energy conservation and structural durability
- fire protection
- protection from storms and earthquakes
- increased security
- environmental conservation through double use of land; more open space; increased water retention and less runoff; better oxygen and carbon dioxide exchange; more space for food production

Figure 14 Earth Sheltered System (Max. R. Terman)

Max R. Terman also illustrated the classification of the earth-sheltered building type Figure 15 Max R. Terman, by implying that “... *the eventual success of earth sheltered home depends on how well the building is integrated with its environment. With careful planning, the natural energy of the site’s microclimate can be used, reducing dependence on fossil fuels. If not, the building will fight the climate and be less efficient...*” (Max R.Terman)

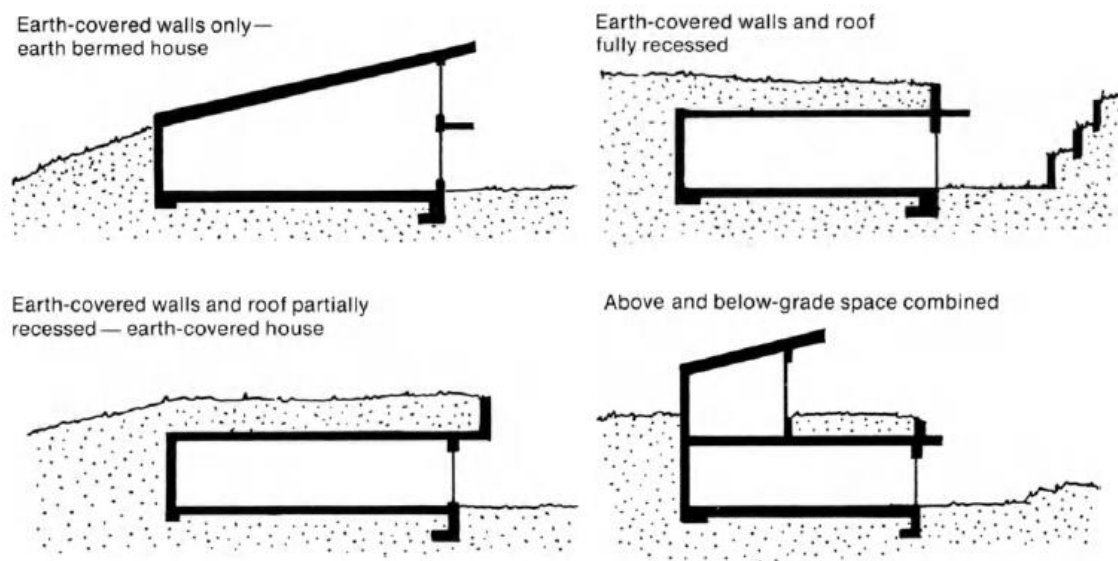


Figure 15 Earth-Sheltered building type (Max R. Terman)

By comparing these approaches, the author discusses some of the pros and cons of the various forms of earth sheltered housing. However, he emphasizes that the typology should suit with the context “...*As conditions vary with climatic regions, the design responses for the temperate regions are the most generalized and applicable. Once these responses are known, each can be evaluated in the context of other design elements (climate, site, and owner preferences), thereby allowing the most adaptive design to evolve...*” (Max R.Terman)

Another important feature associated with earth-sheltered buildings is the amount of earth cover on the roof. As architect Malcolm Wells appropriately stated, “*Putting soil on the house is like pulling a protective blanket over its shoulder.*” The thick the soil is, the better the temperature moderation will be. Of course, the advantages of earth-sheltered buildings depend on other factors as well. The temperature performance of earth shelters varies from the soil type and moisture, latitude and elevation, surface color, the angle of slope, vegetative cover, and general climatic conditions. Obtaining more information about these phenomena, it may be possible to design a building to take full advantage of these natural temperature moderators and eventually even to modify the moderators. Figure 16. Climatic Interactions (Max R.Terman)

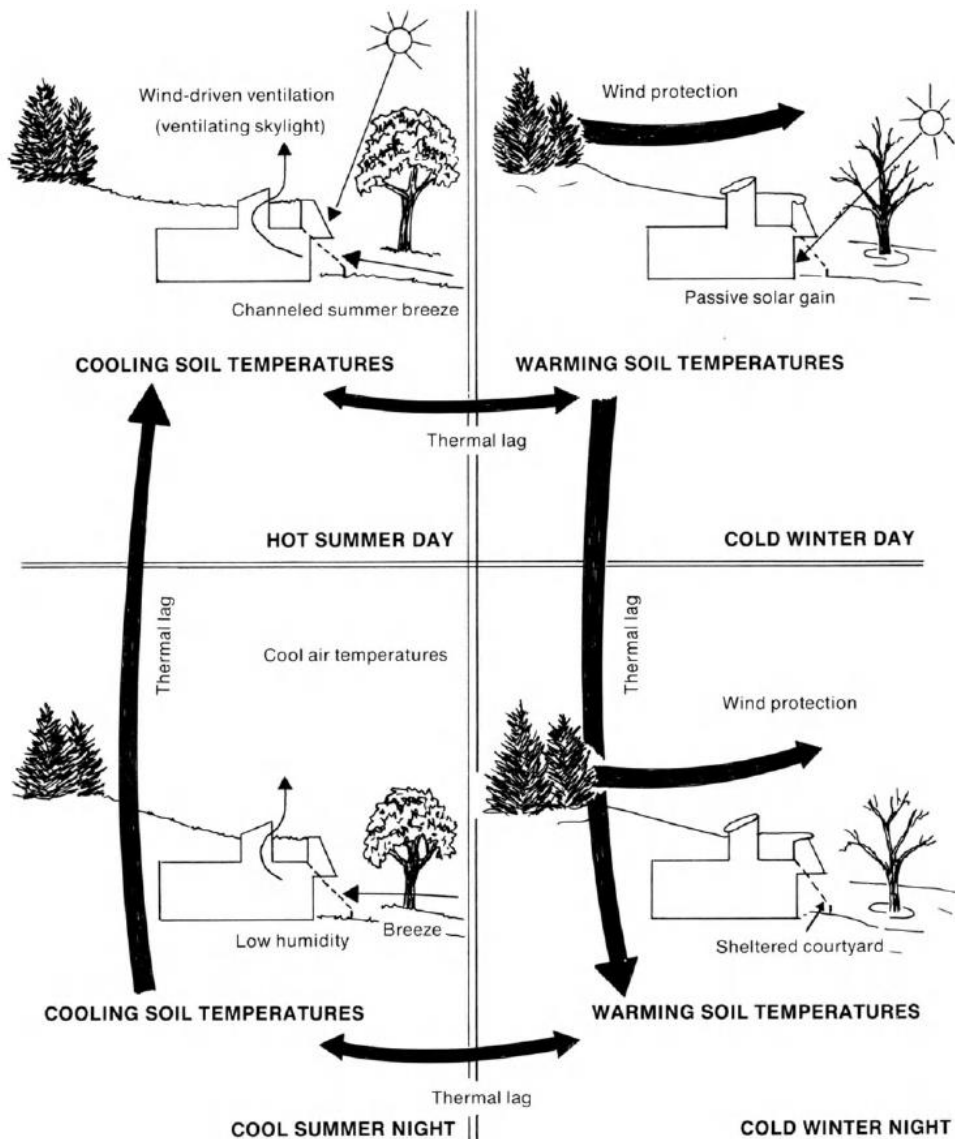


Figure 16 Climatic Interactions (Max R. Terman)

In the research “An Ecological Study on Earth Sheltered Housing in Different Climates”, the author describes the underground structures as the approach that “...has great potentials for improving the urban environment and enhancing human life by providing more greenery spaces, environmentally friendly construction, and decreasing energy consumption...” (Mirrezaei, 2015) relying on this point of view, the epilogue of his book “Ambassadors from Another Time”, Amory Lovins of the Rocky Mountain Research Institute, made an optimistic observation: -, “... if humans are smart, repairing the environment could become of the biggest businesses of the coming century, a huge source of profits, jobs, and general economic well-being. “The potential profit....is limitless”, one Japanese official has said, because the market is all but limitless.” (Amory Lovins)

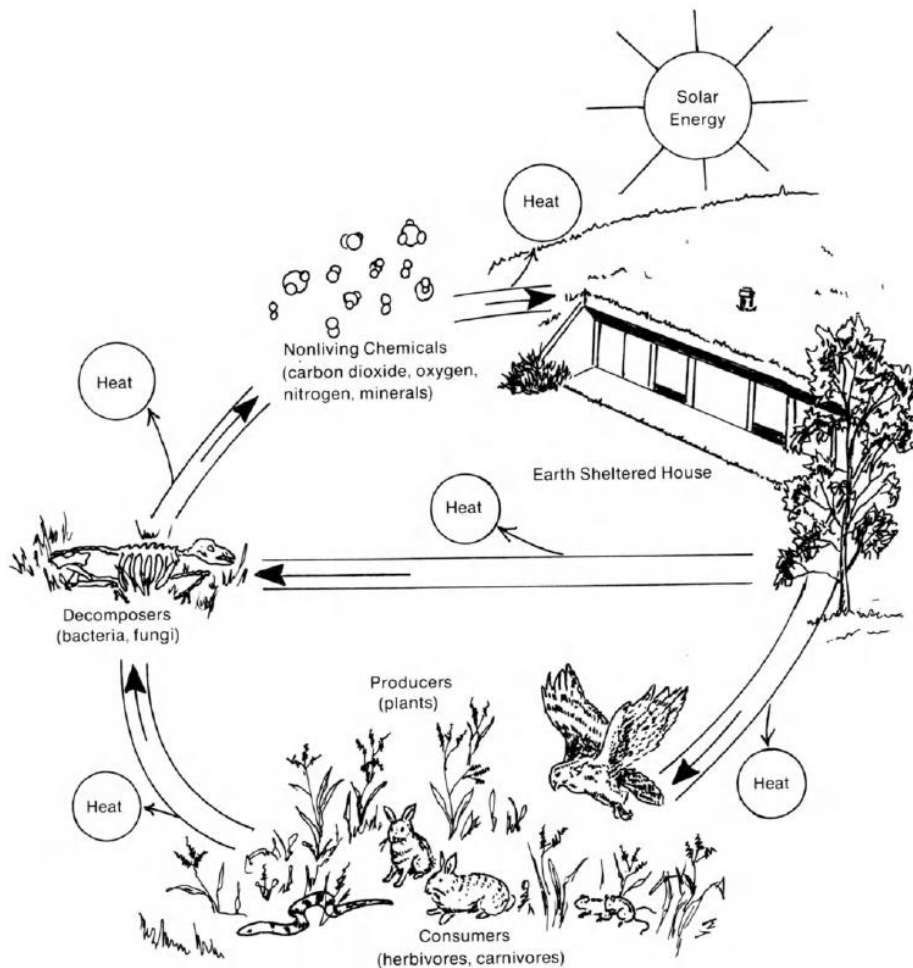


Figure 17 Life Cycle (Mirrezaei, 2015)

II. The Social Approach

One of the Sustainable development pillars is the social approach (social sustainability), it presents *“the widest range of characteristics and most diverse differences, as it sometimes referred to as social development, human well-being, social justice or poverty alleviation.”* (Kates, R. W., Parris, T. M., & Leiserowitz, A. A., 2005) The social sustainability since the awareness and interest on sustainable development appeared, the human aspect is almost always neglected and overlooked, as (Omann, I., & Spangenberg, J., 2006) states; *“although as equally important as economic or environmental sustainability, it still lacks broad recognition.”* However, recently the interest in social sustainability increased with more scientists focusing specifically on social sustainability, discussing definitions, implications, and indicators. As Dempsey concludes *“surprisingly little attention has been given to the definition of social sustainability...”* (Dempsey, 2011) Accordingly, social sustainability has evolved into different approaches that seek the sustainability of societies and of human life.

Referring to Cuthill, social sustainability includes four fundamental components that unite and work harmoniously together. These components connect social sustainability to actual practices and policies. *“The first component is **social capital**, which refers to social networks, norms, trust and civic engagement governing the interactions between people...The second component is **social infrastructure**, which provides an operational perspective...The third component is **social justice and equity**, which offers an ethical imperative to the formulation of policies, strategies and the implementation of initiatives...The last one, **engaged governance** is the fourth component. It provides a methodological foundation for working together for social sustainability in policy-making, planning, and practice...”* (Cuthill, 2010)

The idea to bring these components together led to many strategies and approaches that seek for a better design to fulfill social needs, and one of these strategies is Mixed-Use architecture.

- **Mixed - Use Architecture**

Residential buildings

Since the early ages, when the mankind stepped out of the caves, humans started building “houses” which usually were just temporary shelters as the humans at the time were in constant movement in search for food and were more of hunting nature.

However, with the passing of time humans started settling and began to developing more “continuous shelters”, and then the concept of home or residence was born.

The notion “Residency” derives from the Latin word “Resideo” meaning staying or settling, therefore based on the etymology it doesn’t really specify the nature or the shape of the building or its organization.

This term has been used since the ancient times by leaders such as kings, emperors and other elites signifying the center of their regime or power since they had residencies from where they ruled and practically the whole state system was organized around that “residency”.

Through different periods of time the meaning of “residency” has differed quite a lot almost essentially from ancient large residencies to modest Italian palazzos but always has indicated “a place to stay”.

In modern culture residency also means as the center of the power or an administrative center. Many times, we refer to the name of the residence thinking on the power which is exercised by the person living in it for example “White house”, “the Versailles” or similar.

Healthcare center

Health care in Kosovo is provided by public and private institutes of health care. There are different institutes that offer their services depending on the departments selected to serve on specific diseases and patients. Thus, the main services that each institute has to provide no matter the nature of it are:

- First aid,
- Emergency services,
- Diagnose
- Treatment for minor injuries,
- Blood transplants,
- Health care,
- Treatment on the institute, etc.

The workplace for the health care institutes needs to be equipped for the treatments that are provided by them. For the institute, it is very important that they have open spaces, the right equipment, staff, in order for the doctor to proceed with the diagnose and treatment of the disease successfully. Modern architecture for dwellings that offer health care services requires to consider the employee, patient, and family as the bone of the dwelling considering the sensitive services that are provided there. Health care workplaces instinctively are considered to be as cold and negative places due to their nature of work, so the design is preferred to be warm for the stakeholders. The design needs to work on the employees' favor because usually, they will walk all over the place. Hence, the building is preferred to be as compact as possible for them. The employee's mindset is very important while being in the institute. The patients are also an important piece during the design process since the patients are going to spend time there complaining about something on their body. Creating a place where they will focus on their recuperation and not the building where it is getting the service is the first step to treating the patients. The family of the patients plays the part on making the building work for these kinds of constructions. They are the glue for the employees and the patients to work on a positive perspective and fight the diseases. The comfort of the families during their visit on the health care institutes opens up the opportunity for the staff to work without interruption and focus on the patient and the reason why they are there. The main factors that partake on the design of the health care institute are:

- Fresh air 24/7,
- Room service,
- Insolation,
- Hygiene,
- Green spaces,
- Short halls,
- Easy access on the institute,
- Isolated from the noise, smoke, and unhygienic ambient,
- Separate spaces (public vs private areas), etc.

On this thesis, the health care institute goes hand in hand with the requirements of these dwellings. The services that are provided there are going to be:

- First aid,
- Emergency services,
- Diagnose,
- Treatment for minor injuries,
- Blood transplants,
- Health care,
- Treatment on the institute, etc.

Kindergarten

Kindergartens are pre-school institutions for children usually from three to seven years old originating from Germany. Kindergarten in German literally means “children’s garden”, and were first introduced to Bavaria in the XVIII century and were meant for the children of parents whom both worked.

It is estimated that their beginnings are somewhere during the 1779 but it was only until 1840 when Friedrich Frobel coined the newly established institutions name as “Kindergarten”.

In his opinion this name suited the most because he thought that young children should be “nurtured and nourished like plants in a garden”, this could happen by letting them play, dance and have fun while in the mean time they get the very basic steps of their future education.

From Bavaria this type of new pre-school institution quickly spread to Britain, Austro-Hungary and then in the rest of the world.

In modern days Kindergartens fall in categories with age being a basic criterion and are vital to the children as they have their first educational steps in these pre-school institutions.

Also, Kindergartens still service to the main purpose on which they were firstly established, to the children with both parents at work therefore Kindergartens now hold a key role on the first steps of educating the children and taking care of the infants. (Hill, Patty S. , 1920)

Bank

Banks are financial institutions which accept deposits and create credit, they are certified to lend money to individuals and/or institutions.

Modern banks firstly appeared in Europe during the XIV century, however this was only a continuation of the ideas and concepts of the ancient world which were used to deposited and therefore keep safe their money/valuables and for lending money.

In ancient Babylonia there was a system which it could be considered as the “primitive banks” of deposits which were usually used by merchants, a similar concept evolved in Greek and Roman eras.

Modern Banks originate during the Renaissance, where powerful families created the foundations for the modern banking system which is still in use, of course with its own improvements. Modern banks are in the heart of the modern economy, as every business and investment come that from a company, country, group of people or individuals are usually based on the banks.

There are a few types of banks, among which we can mention:

- Commercial banks
- Community banks
- Community development banks
- Land development banks
- Credit unions
- Postal savings bank
- Private banks
- Offshore banks
- Savings bank
- Building societies
- Ethical bank
- Direct bank
- Islamic banks

Urban shopping center as a new urban quarter

Historically shops used to be in the center of the cities and settlements and around them residential buildings were developed thus creating an urban quarter.

With the passing of time the cities have changed and developed and specifically the shopping centers which in the modern times may be found integrated into bigger and more complex shapes known as “shopping centers”.

Shopping centers still usually remain the heart of the modern city although there is a trend to develop them in the sub-urban areas (similar to the American style).

Being the heart of the city center usually gives its character to the surrounding area and heavily affects the development of the whole area.

The designing of the urban shopping centers is usually a long process that takes much time and the matters that affect the designing. Referring “Economic buildings-shopping centers” written by Banush Shyqeriu usually go down to three categories:

- Human and Social
- Designing/planning
- Retail economy

As a conclusion a modern shopping center must be human and stimulate social interaction and gathering, must be designed in a way that attracts people to visit it as more often as possible and of course all this must be for the purpose of boosting the retail economy.

Shopping is considered to have a huge impact on the people behavior therefore the shopping center do affect the social behavior of the community and their identity.

Shopping centers make possible the interaction of the people and by including the amusement category inside the shopping center the designers made possible that people spend a lot more time inside them and have almost every function there.

Shopping centers nowadays are designed to invite people to spend as much time as possible in them therefore serve the ultimate goal of them- the retail economy purpose.

Fitness Center

A fitness club is a place that has included necessary equipment for physical training purposes. Most of the equipment include free weights, dumbbells, benches, exercise machines, cables etc. Modern fitness clubs are believed to originate from Paris where in 1847 an early public gymnasium was started, however fitness clubs as we know them didn't develop until 1947 in Santa Monica, California.

However, the concepts of having a place to exercise is quite old, since ancient times actually when Romans and Greeks had “fitness clubs” which were usually outside in the nature. Health was considered very important therefore these “ancient fitnesses” played a major role in the society. Despite this, we cannot know for sure the origin of the fitness only assume that it derives from somewhere in the ancient time.

Restaurant

Practically, a restaurant is a business which serves to its customers drinks and food in exchange for money. Usually the food is eaten in the restaurant, however it can also be taken to go.

The name restaurant derives from the French word “restaurer” which is translated as “to restore, to revive”, therefore means a place which restores.

This name was defined in 1507 as a “restorative beverage”, hence stores the food or the beverages.

The concept for restaurant has evolved in different periods, as Wyatt Constantine stated:” The restaurant as it is contemporarily understood did not exist until the end of the 18th century. Sitting down in a public restaurant specifically for a meal, with a waiter and a fixed menu is a relatively recent concept in culinary history”. Hence the modern-day restaurant actually is an evolution of the proto-restaurant which firstly was introduced in France.

Restaurants differ greatly from one another both in appearance and offer and usually are categorized by the type of food they offer based on culture (ex. Indian, Chinese, French etc.) or based on the prices (ex. high-priced, mid-ranged etc.).

Also, another way how a restaurant is categorized is based on the type of food they serve such as: vegetarian, seafood, steak etc.

The proprietor of the restaurant is called a restaurateur, which same as the word restaurant derives from French. Meanwhile professional cooks are called chef.

In ancient Greece and Rome there were thermopolia, which practically were small restaurants that served food and beverages to its customers.

A distinctive thing at these types of buildings were the counters of the L shape which were also used to store food and drinks and also served to socialization since in ancient times socialization were quite an important aspect.

In Pompeii have been identified 158 thermopolia with these service counters, usually among the main roads and squares that were frequented by the local population.

In modern times restaurants are very popular with only United States that has about 215,000 full time restaurants with about 298 billion dollars revenue and 250,000 limited time service (fast foods) with about 260 billion dollars revenue.

Green House

A green house or also known as glasshouses are structures comprised of walls and roof with regulated climatic conditions on which plants are grown. They differ in sizes starting from small ones to industrial ones, and they use the sunlight effect based on which the inside is kept warm even in cold external ambient temperatures.

The interior of the glasshouses is controlled usually by a computer which controls the temperature, air humidity, heating, cooling, lighting and other similar characteristics in order to have the optimal conditions for cultivation of a certain specific crop.

The concept of glasshouses existed since roman times, as emperor Tiberius liked to eat cucumbers every day of the year, therefore methods similar to those of glasshouse were used to provide cucumber to the emperor for every day of the year.

The first description of the glasshouses derives from Korea dated 1450s were methods are described to cultivate crops during the winter in controlled areas with artificially heated environment.

This concept evolved in England and Netherlands during the XVII century, in the beginning with many problems during the process, however today Netherlands has

some of the biggest greenhouses, so vast that are able to produce millions of vegetables every year.

The invention of polyethylene was a huge boost for the greenhouses as now they had a new material which were very suitable for this kind of purposes.

Basically, the greenhouse effect can be described as the sun rays pass through the transparent roof, they heat up the air, while the warm air cannot leave due to the closed area.

Ventilation is a key process in greenhouses because is necessary to stabilize and regulate the temperature and air humidity.

Nowadays, the greenhouses are very wide spread and used on different purposes, such as cultivation of the vegetables, flowers and different plants. This way countries like Netherlands have managed to become very successful on agriculture. Netherlands has some of the largest greenhouses in the world, which occupy about 10,526 hectares or 0.25% of the total land area of the country.

III. The Technical Approach

• Water Saving

Water savings plan is a combination of all policies, strategies and activities with a common goal, to protect the freshwater and the hydrosphere itself. This way we could meet the current and future human demand for fresh water.

With the rise of the human population and consumption, the demand for freshwater is significantly higher than before, and the fulfillment of our demands are harder to achieve. Since WWII the human population has doubled itself, this and other factors such as climate change and increasement of household sizes have made the achievement of the water savings strategy even harder, yet vital.

A very important strategy is that we should use no fresh water (such as atmospheric water or similar) for different applications. There are technologies in development that use this type of water for toilet flush, car washing and other similar activities.

However, the main strategies for water conservation include:

- Any beneficial reduction in water loss, use and waste of resources.
- Avoiding any damage to water quality.
- Improving water management practices that reduce the use or enhance the beneficial use of water.

Taking into account all the above-mentioned factors we may conclude that water resources not are only limited but also in danger from pollution and huge demand of humans. A key strategy should be followed in order to ensure that this demand is met now and, in the future, and hydrosphere is preserved for the future generations.

• Natural Ventilation

Natural ventilation is the process of supplying fresh air in interior areas and removing air without using any mechanical system of equipment.

There are two types of natural ventilation that may occur in buildings:

- Wind driven ventilation.
- Buoyancy driven ventilation.

The first one occurs by the different pressures created by wind around the building perimeter or on its perimeter openings while the second one occurs mainly due to the difference in temperature between the interior and exterior. Since during its usages, the building has heat gained by humans (or other living species) and natural processes, the naturally ventilated buildings are often known as "breathing buildings".

Some climate conditions may prove challenging even to the best professionals, however during the design of the natural ventilation there are two things that we must have in mind all the time as the two main problems:

- Cooling
- Humidity

Usually buildings by the ocean side are built facing most of the facade towards ocean in order to have as much natural ventilation as possible coming from the cooling sea breezes. In passive homes, in their upper floors usually we design operable windows or skylights in order to cool the house evenly (considering that the upper stories are usually warmer).

The size, shape and orientation of the openings is crucial in the natural ventilation. Nowadays we have different standards which regulate the requirements for building regulations such as ASHRAE standards which are applied in United States of America. Usually the ventilation performance is measured by measuring the air change per hour.

• **Recycling**

Recycling is practically the process of converting waste materials into new materials. This process is vital to the preserving of the natural resources since recycling is closely related to energy usage, air pollution and water pollution.

Recycling is part of the hierarchy comprised of: “Reduce, Reuse and Recycle”.

Usually the whole recycling process is based on ISO standards such as ISO 15270:2008 for plastic. Often this process is compromised by high expenses since usually it is not a cheap process. This process was known since the ancient times (IV century BC) and scientists have found evidences that during the times when resources were scarce people tend to recycle materials.

During the medieval times there is evidence that bronze was collected and recycled, the same happened with other metals all around Europe as this way they were cheaper.

Many of the railroads were built with purchased scrap metals same as the automobile industry did in XIX century.

During the WWI and WWII, the recycling process became very important for the industry as the war industry required (therefore purchased) most of the metals and they were in great demand so besides the excavation of the metal, recycling of it became very important with a vital role. For a recycling plan to work the continuous and stable supply of recyclable material is vital. Various recycling programs have been created, with one of them being very successful with having to return bottles and recyclables for cash return with a successful ratio of up to 80%.

More and more governments are beginning to follow better recycling policies, usually government strategies are concentrated in four key strategies:

- Minimum recycled content mandates
- Utilization rates
- Procurement policies
- Recycled product labeling

In the main goal of having zero waste in the future, the quality of recycle is essential, this represents the percentage of which the product is made of recyclable materials.

Globally we need more and more resources to keep the industries and our life going the normal path and with the earth's resources being limited and environmental concerns the process of recycling is a key one for our future to have a sustainable and safe future.

• Solar Panels

Solar panels are a technology which absorbs the sunlight and transforms it into energy (electric or thermal).

There are two types of solar panels based on what they transform the sunlight:

- Photovoltaic solar panels
- Solar thermal energy

Photovoltaic solar panels absorb the sunlight and transform it into electric energy which can be used for various purposes. A typical solar panel is made of 6x10 solar cells. They are used for residential and commercial applications. Usually they are in application in agriculture and heating systems.

These solar panels absorb the sunlight (light energy) and then transform it into electricity via the photovoltaic effect. The majority of this kind of solar panels uses silicone crystalline cells and these cells must be protected from mechanical damage and moisture. Alexandre-Edmond Becquerel was first to observe the ability of certain materials to create electricity from sunlight. At the time these solar panels were very inefficient and therefore they weren't used for the purpose of which are used in modern days and were only used to measure the light. Most of the solar photovoltaic solar panels have a guaranteed efficiency of 90% during the first 10 years and 80% during the period of 20 years lifetime. The majority of solar panels are recyclable up to 95% of the materials comprising it. The price of solar panels is continuously dropping with a watt costing about 150\$ in 1970s while in 2010 cost about 0.60% per watt.

Solar thermal energy panels are a form of technology that is used to harness the solar energy and transform it into thermal energy or electricity.

US energy information administration classifies them into three groups:

Low temperature

Medium temperatures

High temperatures

Augustin Mouchot was the first to use solar collector in 1878 in Paris exhibition to convert solar and power an ice cream machine engine.

2.4 The Research Gaps

From the review of literature in the above sections, the following research gaps were identified which will be addressed in this research.

- The lack of information regarding the new building's quality in Kosovo.
- It is quite evident that there is an absence of researches regarding sustainability in Kosovo.

2.5 Research Questions

As a result of the literature review, the following questions were derived and will be addressed in this study.

- What are the values of new buildings in Kosovo and how do they affect to society?
- How does contemporary architecture affect the society of Kosovo?

3.0 Methodology

This chapter describes the broad philosophical underpinning to the chosen research methods to accomplish the research aims and objectives. Wang in the book “Architectural Research Methods” compares the architectural research with other professional fields. He mentions that architectural research covers a wider variety of substantive foci and methodological choices. Architecture research has characteristics of both theoretical research in one hand, and design on the other hand. The structure of this study will follow the diagram presented in Figure 18. It suggests the relative proportion of these two activities on the range of contexts in design and practice. (Wang, 2013) In more details, this chapter outlines the research method, the research approach, the methods of data collection, the selection of the sample, the research process, the type of data analysis, the ethical considerations and the research limitations of the project. Following this strategy, the thesis will provide a practical research structure.

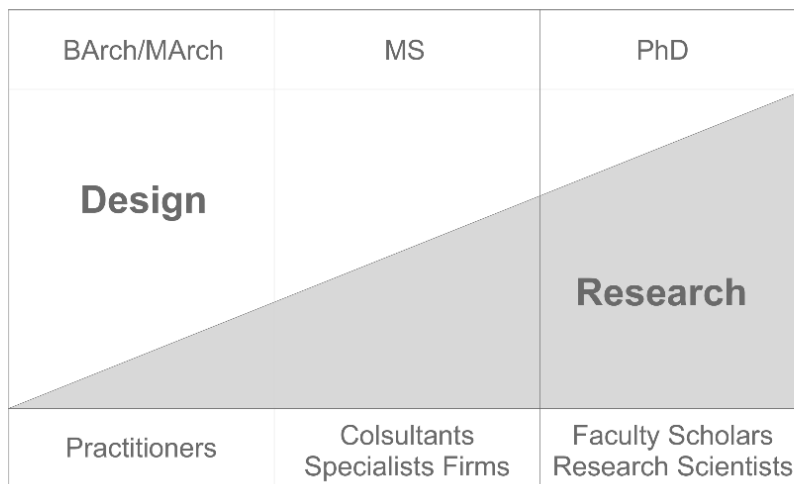


Figure 18 Relative proportion of design and research (Wang, 2013)

3.1 Research Design

The importance of research design derives from its role as a critical connection between the theories and arguments that inform the research and the empirical data collected. (Chova Frankfort- Nochimas, 2008) Likewise, Churchill believes that research design provides direction for collecting and analyzing data in a certain study. (Churchill, 1986) Figure 1 represents a conceptual model for clarifying the relationship between the several research strategies; as such it also serves as the basis for sequencing the thesis structure. The basic diagrammatic form is a cone. The circular plane surface of the cone follows the Saunders et al. research process that represents the onion structure. This surface divides into six layers that contain: philosophies, approaches, strategies, choice, time horizons, techniques, and procedures. At the center of these layers, there is a “core” that represents case studies. Next, the vertical dimension of the cone represents the evaluation of the design. The evaluation process has three phases; Research review (First Circular Plane Surface), Design Problem (Second Circular Plane Surface) and the critic point of design (Third Circular Plane Surface). Going through these phases by using the theory leads to the vertex of the cone which represents the product of design.

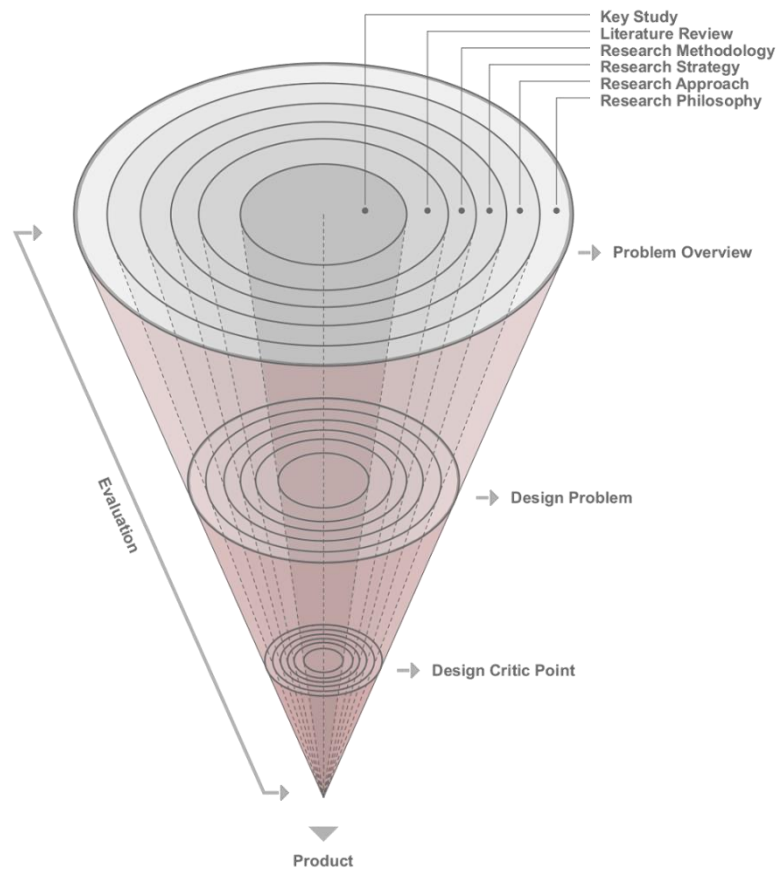


Figure 19 Research Design - Cone

3.1.1 Research Philosophy

The research philosophy is the first layer of the research onion and is the most important. It is a belief about the techniques in which data about a case should be gathered, analyzed and used. (Levin, 1988) The term research philosophy refers to a system of beliefs and assumptions about the development of knowledge. (Saunders, 2009) Meanwhile, according to (Simpson, (2009)) research philosophy refers to the development of knowledge in a particular field. The researcher adopts this layer in a specific study to reflect important assumptions about his/her opinion and views and the manner in which he/she understands the world. The importance of research philosophy has been accepted also by (Crotty, 1998) as he describes the value of assumptions (epistemological, ontological and axiological) that inevitably shape the understanding the research questions, the used methods and how the findings are interpreted.

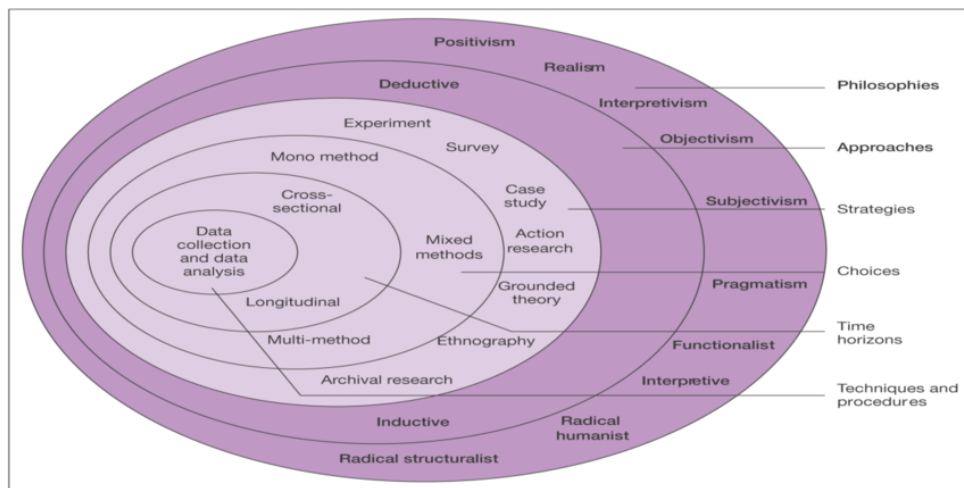


Figure 20 Research Onion (Levin, 1988)

There are various philosophies that explain the research onion. Each view of research philosophy also has different philosophies attached to it. The most significant are Positivism, Interpretivism, and Critical paradigms. However, other researchers such as Tashakkori and Teddlie (2003a; 2003b) propose a fourth that borrows elements from these three and is known as the Pragmatic paradigm. The importance of the paradigm is that it defines a researcher's philosophical orientation and, it has significant implications for every decision made in the research process, including the choice of methodology and methods. A French philosopher, Auguste Comte (1798-1857) was the first to propose the Positivist paradigm. Meanwhile, research methodology explains this paradigm as the scientific method of investigation. Comte (1856) postulated that

experimentation, observation, and reason based on experience ought to be the basis for understanding human behavior, and therefore, the only legitimate means of extending knowledge and human understanding. In its pure form, the scientific method involves a process of experimentation that is used to explore observations and answer questions.

In this process, the researchers analyze the data in terms of the historical, social and cultural context of the story. It allows the researcher to examine the existing discourses and the issue of power. (Foucault, 1982; 1987)

Whereas, in many cases where researchers chose interpretivism, data gathering methods follow a grounded theory approach which generates and explains the theory from real life occurrences. Following this paradigm researcher will be able to interpret the participants' perceptions of their own realities. In this case, an interpretive epistemology would be ideal because it undergirds the fact that meaning or knowledge is not there to be discovered but individually or socially constructed. This paradigm tells us that people make their own reality by the meanings and interpretations they give to their experiences. (Furlong, 2013) Meanwhile, the critical paradigm is suited to studies about social justice and giving voice to the voiceless or those less powerful which lead to social oppression, conflict, and power structures at whatever levels these might occur. Whereas, pragmatic paradigm supports a relational epistemology, a non-singular reality philosophy, a mixed methods methodology, and value-laden axiology.

However, considering that the field of the study requires a combination of methods to reach the desired result, the pragmatic paradigm seems to be the most appropriate method for studying the case.

3.1.2 Research Approach

The research approach is the second layer of Saunders et al.'s research onion. According to Trochim (2006), there are two methods of reasoning, such as; Inductive and deductive. The importance of hypotheses to the study is the main distinctive point between deductive and inductive approaches. Deductive approach tests the validity of assumptions in hand, whereas inductive approach contributes to the development of new theories. (Bryman A. & Bell, 2015) Meanwhile, Creswell and Clark (2007) have also made a separation between these two approaches. They have claimed that deductive researcher works from a theory to hypotheses to data to add to or contradict the theory which is informally called as “top-down” approach, whereas conversely, inductive researcher use the participants’ prospects to build broader themes and generate a theory interconnecting the themes which are informally called “bottom-up” approach. In most cases, researchers use the theory in both, inductive and deductive approaches. If the process of the research is based on theory, but that also generates theory, then it can be described as circular. (Ross, 2010) Figure 21 This study shows a focus on collecting data, but it also generates a theory to achieve the objectives of the research. This indicates that the study is going to follow the circular approach.

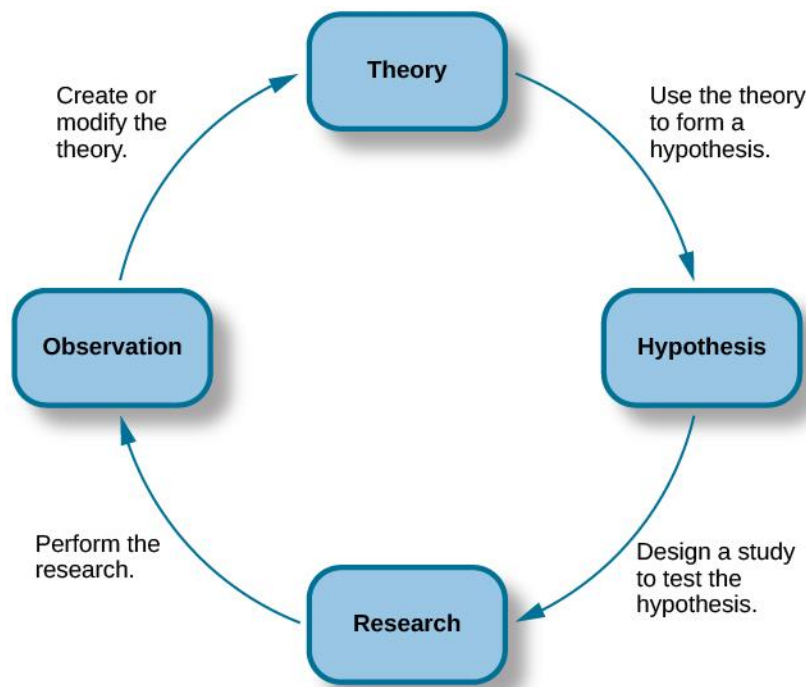


Figure 21 Circular approach (Ross, 2010)

3.1.3 Research Strategy

Within research methodology, research strategy assumes as the “general plan of how the researcher will go about answering the research questions” (Saunders, 2009) According to Saunders, the research strategy involves seven typologies, such as experiments, surveys, case studies, ethnography, grounded theory, action research, and archival research. Based on the research approach (mixed research method /inductive and deductive), the research strategy applied in this study follows the strategy of the case studies. The case study includes empirical research to study the case using multiple sources of data. It is most appropriate to gain a deep insight into the research context. This kind of approach involves varied strategies of data collection, including interview, survey, observation and documentary analysis.

3.1.4 Research Method

A research method refers to how you propose to answer the research questions set and how you will implement the methodology. Based on (Creswell, 2003), the research strategies can be either qualitative, quantitative or a mix of both. The qualitative interview is the most widely used method for gathering data. It provides rich information's but also requires extensive planning concerning the development of the structure, decisions about who to interview and how, whether to conduct individual or group interviews and how to record and analyze them.

In contrast to qualitative research methods, the quantitative method allows access to significantly high numbers of participants. Although the progress of questions may appear easy, to develop a meaningful questionnaire that allows the answering of research questions is difficult. Questionnaires need to appeal to respondents, cannot be too long, too intrusive or too difficult to understand.

This study focuses primarily on a broader view of the needs of residents to avoid the problems that they usually encounter. Meanwhile, the particular focus is the neighborhood where project development will take place. The residents' needs in this neighborhood will be a reflection of design appreciation. Based on this overview, the research method will focus on both, qualitative and quantitative strategies.

3.1.5 Sample Selection

Saunders et al (2009) claimed that it is impossible to collect all the available data due to limitations of time, money and often access. Hence, a small but carefully chosen sample will be used to collect the needs of the inhabitants.

According to Saunders et al (2009), there are several different sampling techniques available, subdivided into two groups: probability sampling and non-probability sampling. Probability sampling uses random sampling techniques to gather data. In other words, the process of gathering data covers a broader range of society, and they have equal probabilities of being chosen. Hence, the non-probability sample is not a result of randomized selection processes. Subjects, in this case, are usually selected depending on their accessibility or by the purposive personal judgment of the researcher. Considering the nature of the study, the structure will follow both techniques of sampling; probability sampling and non-probability sampling. Firstly, the probability sampling will be used to gather an overview of what society of Kosovo thinks about residential buildings. Then to get in touch with the needs of the inhabitants of the area of the study, the researcher uses the non-probability sampling.

3.1.6 Time Horizon

(Saunders, 2009) explain that the time taken to study the phenomena is independent of research methodology you have chosen. There are two options that Saunders mentions; Cross-sectional studies and Longitudinal studies. Cross-Sectional Studies intend to obtain information on variables in different contexts but at the same time. Meanwhile, Longitudinal studies is a study over time, of a particular or group of studies. This research is limited to a specific time frame and hence the cross-sectional time horizon is used.

3.2 Methods for Data Collection

Among the numerous descriptors of data collection techniques, Creswell offers a particularly helpful framework. He identifies four basic types of information: interviews, observations, documents, and audiovisual data. Fig.111 Represents variation and explanation of this structure, which will be the main component of data collection in this study. 3.3 Methods for Data Analysis

Tactics	Interactive	Non-interactive
Interviews & Open-ended response formats	face-to-face or phone in-depth interviews focus groups task-oriented formats, e.g.: mapping exercises multiple sorting task projective surveys (games)	online response to openended questions prompted journaling activity logs photo logs
Observations	participant observation (research role concealed) participant observation (research role known)	nonparticipant observation
Artifacts & Sites	in situ observation & analysis of artifacts/ buildings/urban context/ landscape sites	photos, drawings, or virtual representations of artifacts and sites
Archival Documents		public documents audio visual material artifactual or site documentation personal journals, diaries, letters, sketches

Figure 22 The variety of data sources for qualitative research. Linda Groat & David Wang, Architectural Research Methods (New York, Ny: Wiley & Sons, Inc. 2002): and John W. Creswell, Research Design: Qualitative, Quantitative, and Mixed Methods Approach (Thousand Oaks, CA: SAGE, 2009)

Sometimes during, but mostly after, completion of data collection results need to be analyzed and interpreted to be useful and to provide any research conclusion. There are many ways to analyze and interpret data. Since the aim of this research is to provide an overview of living quality, this study uses a comparative research form.

(Vliegenthart) in his study “Comparative Research Methods” explains the characteristics of comparative research from other kinds of international research. He mentions that comparatists carefully define the boundaries of their cases, by using factors at the macro-societal level as explanatory variables for differences found in lower level communication phenomena embedded within the societies. He also explains that comparative analysis enhances the understanding of one’s own society by placing its familiar structures and routines against those of other systems; Comparison heightens our awareness of other systems, cultures, and patterns of thinking and acting, thereby casting fresh light on our own political communication arrangements and enabling us to contrast them critically with those prevalent in other countries; The comparison allows for the testing of theories across diverse settings and for the evaluating of the scope and significance of certain phenomena, thereby contributing to the development of universally applicable theory;

He explains the comparative communication research as a combination of substance and method, mentioning five practical steps, each connected to a specific research goal. On the most basic level, the comparison includes the description of differences and similarities. Second, contextual descriptions provide the knowledge necessary for understanding functional equivalents. In a third step, which builds on the previous two, classifications and typologies must be set. Classifications seek to reduce the complexity of the world by grouping cases into separate categories with identifiable and shared characteristics. The fourth step is the explanation. Comparative research aims to understand how characteristic factors of the contextual environment shape communication manners differently in different settings. Confirmed hypotheses are extremely valuable, as they offer the possibility for prediction. The ability to make predictions provides a basis for drawing lessons across countries and contributes to finding solutions to problems common in many countries.

4.0 Findings and Data Analysis

4.1 Case Study– Habitat 67



Figure 23 Habitat 67 (Wikipedia)

Habitat 67 is a residential complex designed by the architect Moshe Safdie in the years 1966 to 1967 in the Canadian city of Montreal. The complex, which is located on the St. Lawrence River, consists of 354 stepped cuboids with a total of 158 residential units for up to 700 residents. It was built as part of the 1967 Expo 67 World Expo in Montreal and was a breakpoint for the Expo Express during this period. (Wikipedia, 2019)

Safdie's design for Habitat 67 began as a thesis project for his architecture program at McGill University. It was "highly recognized" at the institution, though Safdie cites its failure to win the Pilkington Prize, an award for the best thesis at Canadian schools of architecture, as early evidence of its controversial nature. After leaving to work with Louis Kahn in Philadelphia, Safdie was approached by Sandy van Ginkel, his former thesis advisor, to develop the master plan for Expo 67, the world's fair that was

set to take place in Montreal during 1967. Safdie decided to propose his thesis as one of the pavilions and began developing his plan. After the plans were approved in Ottawa by Mitchell Sharp, the federal cabinet minister responsible for the exhibition, and Lester B. Pearson, Safdie was given the blessing of the Expo 67 Director of Installations, Edward Churchill, to leave the planning committee in order to work on the building project as an independent architect. Safdie was awarded the project in spite of his relative youth and inexperience, an opportunity he later described as "a fairy tale, an amazing fairy tale." (Wikipedia, 2019)



Figure 24 Habitat Front View (Wikipedia)

The federal government financed the development, but now the tenants own it. They formed a limited partnership that purchased the building from the Canada Mortgage and Housing Corporation in 1985. Safdie still owns a penthouse apartment in the building.



Figure 25 Habitat 67 – Implementation (Wikipedia)

Habitat 67 is located on Avenue Pierre-Dupuy on the Cité du Havre peninsula. During the Expo, 26 apartments were furnished and open for inspection. The rectangular elements made of exposed concrete measure $5 \times 11 \times 3$ meters and each weigh 85 tons. They were prefabricated in a purpose-built factory and brought to the construction site by special transporter. The entire settlement consists of 5,000 tons of steel, 96,000 tons of concrete, built by 900 workers in a year and a half. Originally, Safdie had planned to hang the concrete elements on inverted V-beams. After a revision of the blueprints, the units were stacked with the help of a crane honeycomb on twelve floors stacked. This also ensured that each unit has enough light. Projecting elements were secured by post-tensioned vertical cables. The seemingly random structure represents a deliberate contrast to the historic harbor. (Wikipedia, 2019)

Habitat 67 comprises 354 identical, prefabricated concrete forms arranged in various combinations, reaching up to 12 stories in height. Together these units create 146 residences of varying sizes and configurations, each formed from one to eight linked concrete units. The complex originally contained 158 apartments, but several apartments have since been joined to create larger units, reducing the total number. Each unit is connected to at least one private terrace, which can range from approximately 20 to 90 square meters (225 to 1,000 sq. ft) in size. (Wikipedia, 2019)

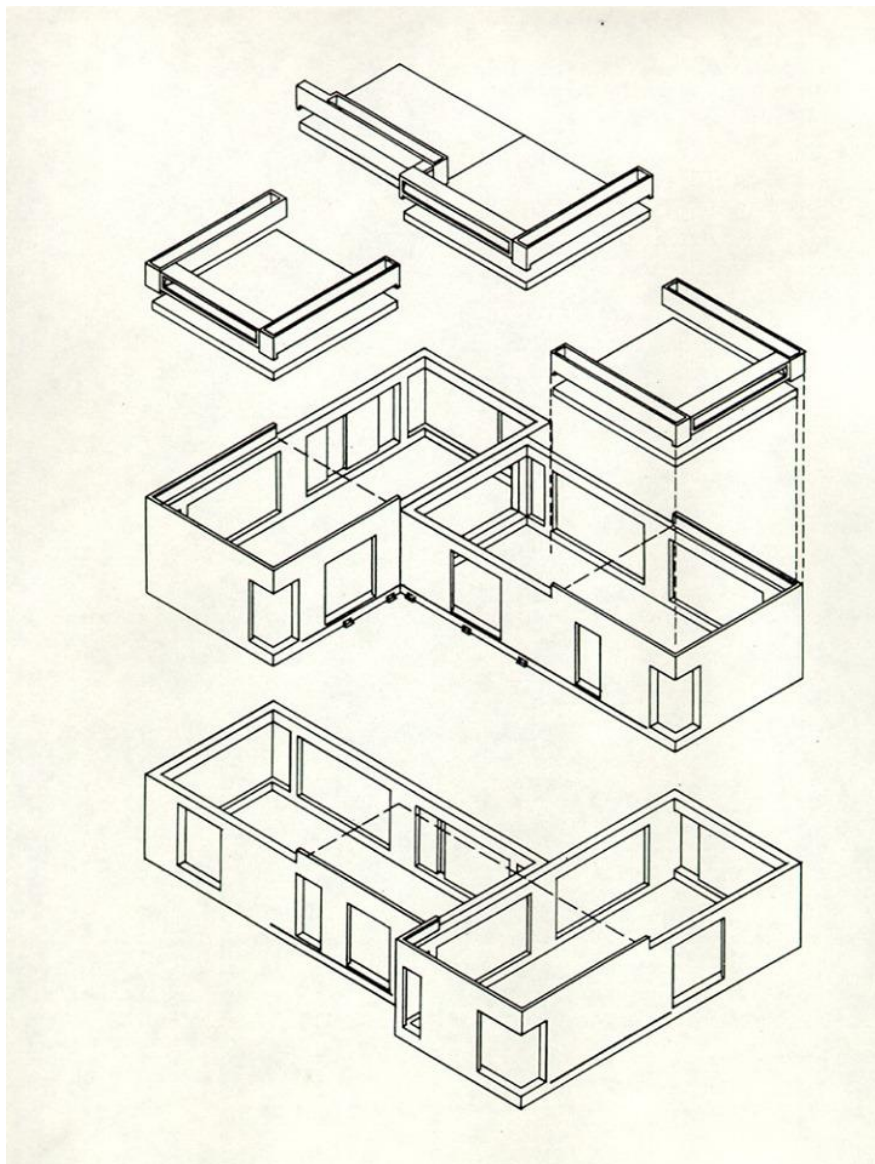


Figure 26 Habitat 67 Module (Wikipedia)

The development was designed to integrate the benefits of suburban homes—namely gardens, fresh air, privacy, and multileveled environments—with the economics and density of a modern urban apartment building. It was believed to illustrate the new lifestyle people would live in increasingly crowded cities around the world. Safdie's goal for the project to be affordable housing largely failed: demand for the building's units has made them more expensive than originally envisioned. In addition, the existing structure was originally meant to only be the first phase of a much larger complex, but the high per-unit cost of approximately C\$140,000 (C\$22,120,000 for all 158) prevented that possibility. (Wikipedia, 2019)

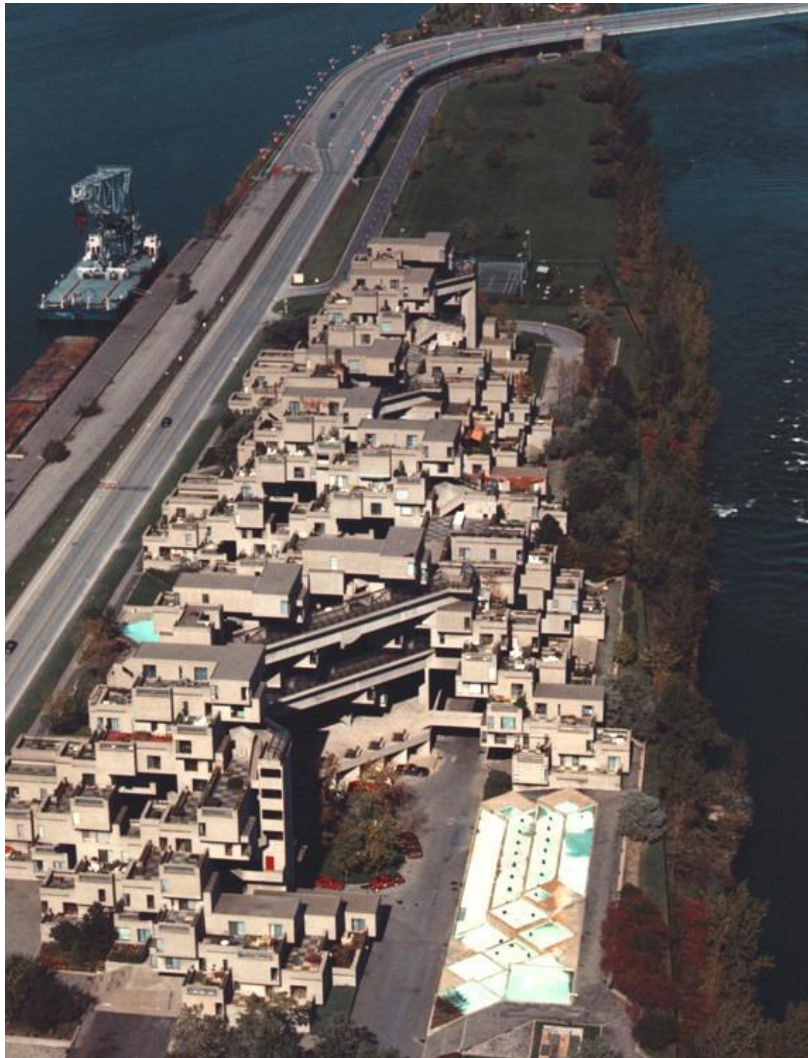


Figure 27 Habitat 67- Top View (Wikipedia)

The theme of Expo 67 was "Man and his World", taken from Antoine de Saint-Exupéry's memoir *Terre des Hommes*. Housing was also one of the main themes of Expo 67. Habitat 67 then became a thematic pavilion visited by thousands of visitors who came from around the world, and during the expo also served as the temporary residence of the many dignitaries visiting Montreal.

In March 2012, Habitat 67 won an online Lego Architecture poll and is a candidate to be added to the list of famous buildings that inspire a special replica Lego set. Lego bricks were actually used in the initial planning for Habitat; according to Safdie's firm, "initial models of the project were built using Lego bricks and subsequent iterations were also built with Lego bricks." (Wikipedia, 2019)

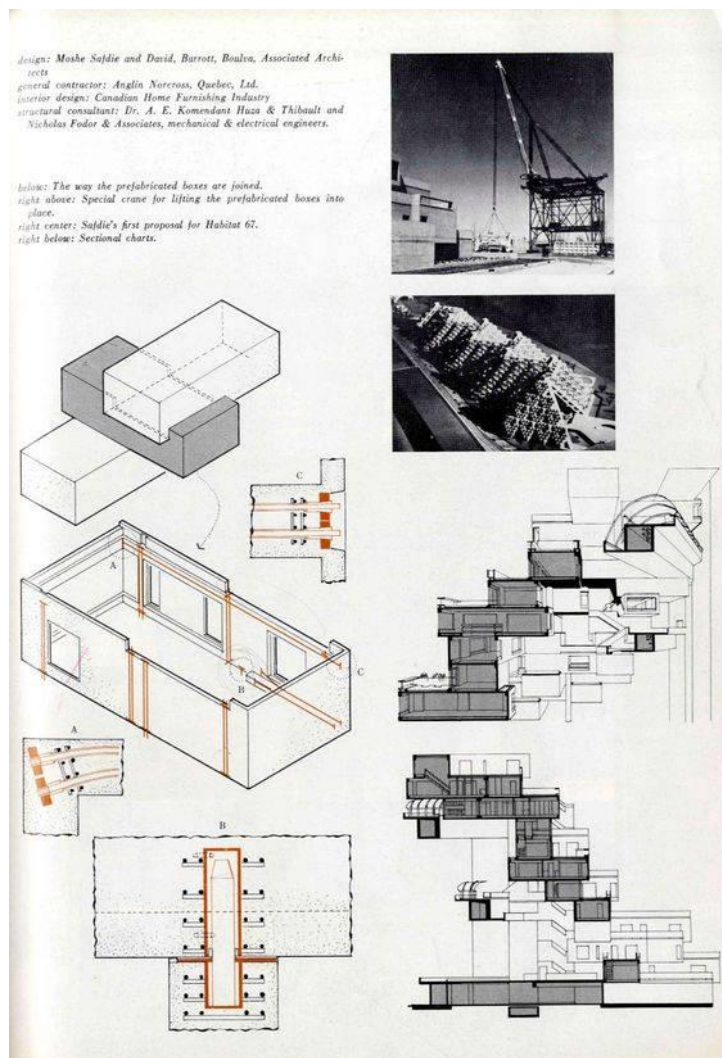


Figure 28 Habitat 67 - Lego Bricks (Wikipedia)

The idea of the settlement was to encourage a modern and cost-effective process through the consistent use of the modular principle. Despite rational series production, the settlement cost the equivalent of about 50 million DM. Since the reactions of the people they wanted to avoid too large a vacancy, given the high construction cost too critical appeared and it reduced the originally planned 1,350 square elements 354. Over time the estate has been modernized and won by especially after initial rejection their location on the river bank is growing in popularity. (Wikipedia, 2019)

Habitat 67 is attributed to the architectural style of brutalism or structuralism and is considered a European imitation of the style of Japanese metabolites.

The complex offers 15 different types of apartments, which consist of one to eight cubes, depending on their size. The living space varies between 54 and 153 square meters, spread over one to four floors. The apartments have between 20 and 90 square meters large terraces. In addition to staircases Habitat 67, has six lift systems. The apartments are heated by central heating and have air conditioning. (Wikipedia, 2019)

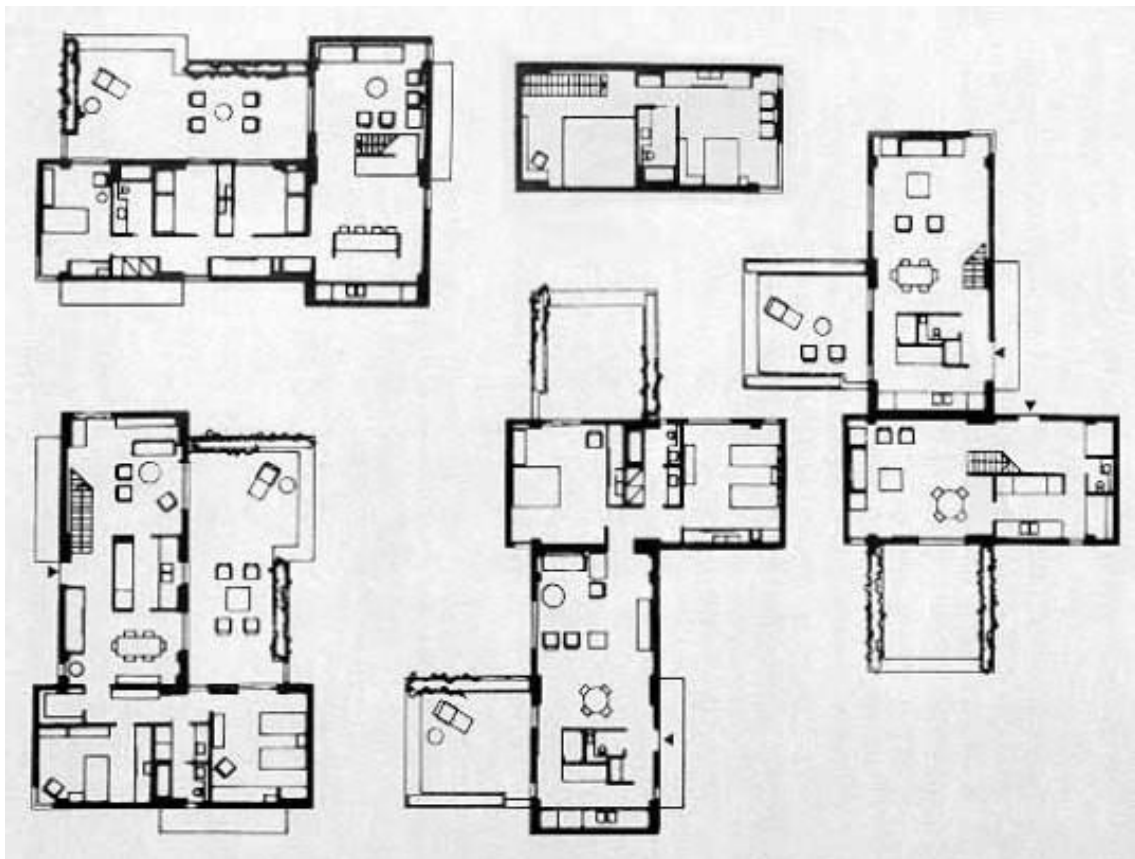


Figure 29 Habitat 67 - Floor Plans (Wikipedia)

As one of the major symbols of Expo 67, which was attended by over 50 million people during the 6 months it was open, Habitat 67 gained worldwide acclaim as a "fantastic experiment" and "architectural wonder". This experiment was and is regarded as both a success and failure—it "redefined urban living" and has since become "a very successful co-op", but at the same time ultimately failed to revolutionize affordable housing or launch a wave of prefabricated, modular development as Safdie had envisioned. Despite its problems, however, Habitat's fame and success "made Safdie's reputation" and helped launch his career; Safdie has now designed over 75 buildings and master plans around the world. (Wikipedia, 2019)

Even now, 50 years after Habitat, much of Safdie's work still holds to the concepts that were so fundamental to its design, especially the themes of reimagining high-density housing and improving social integration through architecture that have become "synonymous" with his work. (Wikipedia, 2019)

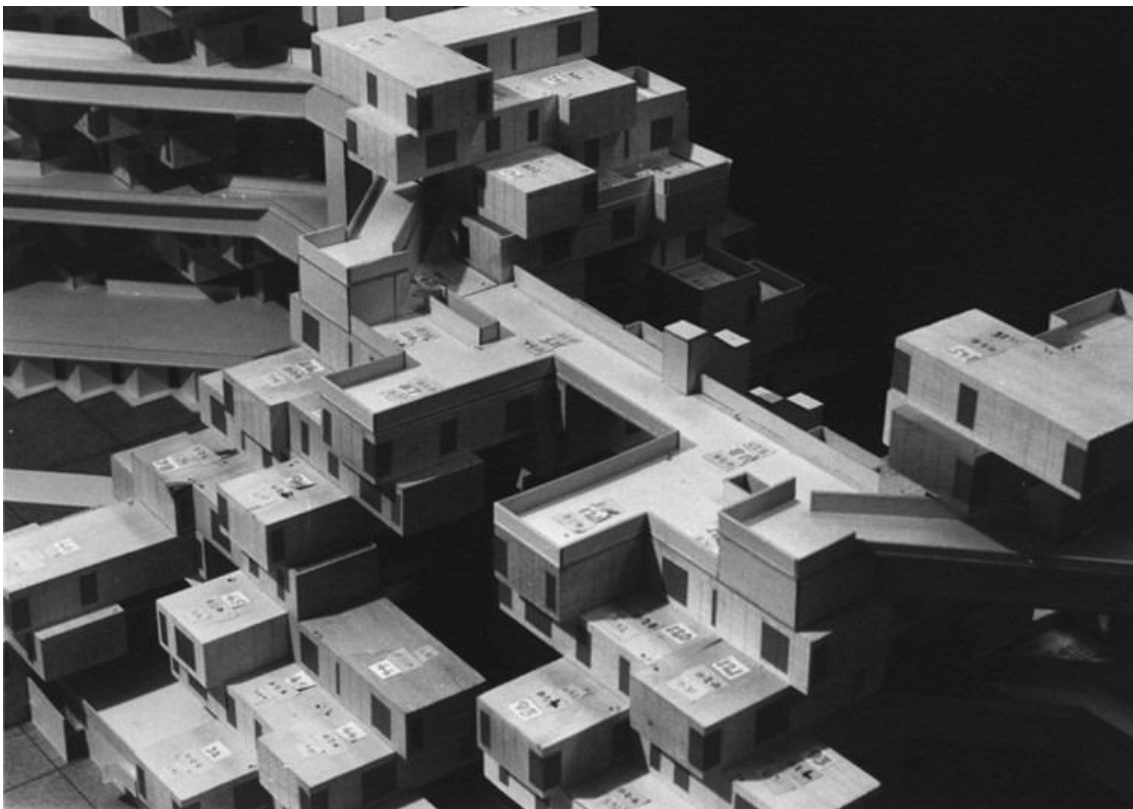


Figure 30 Habitat 67- Physical Model (Wikipedia)

5.0 Design Process

This chapter describes the cerebral process of design, how the design ideas have been implemented. It attempts to give substance to some of the more cerebral and intangible qualities of architectural design through narrative. It can function as a design medium for the service of architecture. By design, the medium is not only meant for platform representation and critique, what we normally consider the function lets us a narrative. But from methodologies and practical experiments that actually generate and develop a design strategy. The strategy of this project will go through seven main phases which lead to the product. Figure 31.

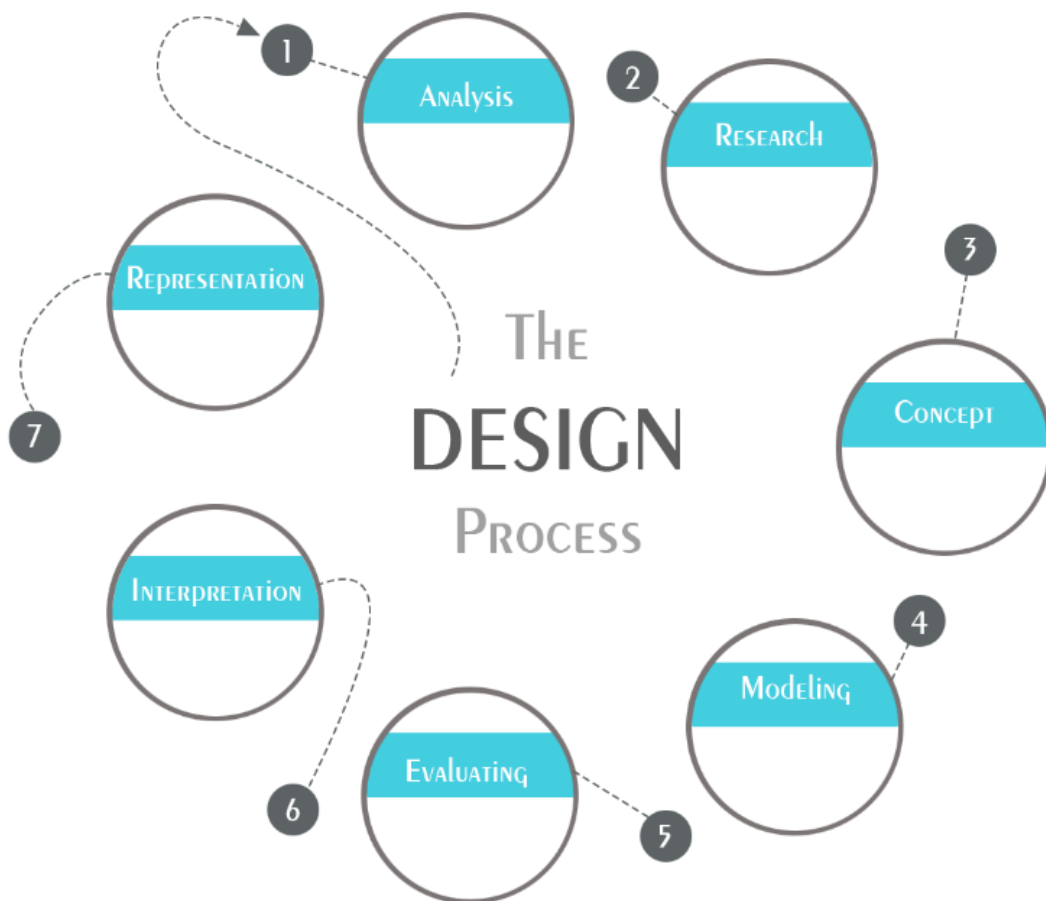


Figure 31 The Design Process

5.1 Site Analysis

This chapter describes the analysis done while visiting, observing and recording the site. Meanwhile, these are used to process the summary, mainly graphical sketches, which set in the relation the relevant environmental information with the morphology of the site in terms of physical, mental and social characteristics.

Site analysis is one of the first stage of the design project, the more information you can get from site analysis the better informed you will be to produce the really great design. According to John Tomey, O'Donnell & Tuomey Architects, the importance of site analysis in the design process is one of the main ingredients when starting any project. Conducting research and developing methods of site analysis led to producing urban studies in this place. Studying both physical and non-physical qualities of the site, place the site within its larger context helped to establish what defines it as a place now and what should define it in the future, in order to bring a positive change.



Figure 32 Location in Global Map

5.1.1 Project Site in Global Map

Kosovo is located in South Eastern Europe, is characterized by the central position in the Balkan Peninsula. Kosovo borders with Montenegro, Serbia, Albania, and Macedonia. Kosovo's surface is 10,907 km² and is populated with about 2.4 million inhabitants. Kosovo, with all its geographic elements, is an individualized and specific space. Through its territory pass important roads, which connect Europe with the Mediterranean Sea coast. Having a significant strategic position in this part of Europe. By population density ranks among the countries the first in Europe with about 220 b / km².



Figure 33 Pristina (Spatial Planning of Kosovo, 2010)

Pristina is the capital and the largest city in Kosovo. Also, it is the central administration of the same Municipality. The surface of the Municipality of Pristina is about 523 km². Extends to the morphological plan of Kosovo map and represents an alluvial plan covered with lakes sediments, and geologically it is a tectonic depression, which is raised during changes in Oligo Miocene. The climate is continental, with cold winters and hot summers. Pristina is also the largest economic, administrative, educational and cultural center in Kosovo. Located near the airport, the railway, and almost all the main

roads that pass from the Municipality of Pristina. (Municipal Development Plan of Pristina, 2012).

The name of the neighborhood is “Muhaxhirët” and is derived from the Arabic word "Muhaxhir" which in Albanian has this meaning, “The one who leaves his place of residence when he is left without a house, by one disaster, or by persecution with force, and seeks for shelter." Muhaxhirët in Pristina fled from their settlements by the harsh prosecution of the Serbian army and settled in Pristina. "Muhaxhirët" neighborhood is located to the east of the center of Pristina and is characterized by housing density of small individual households.

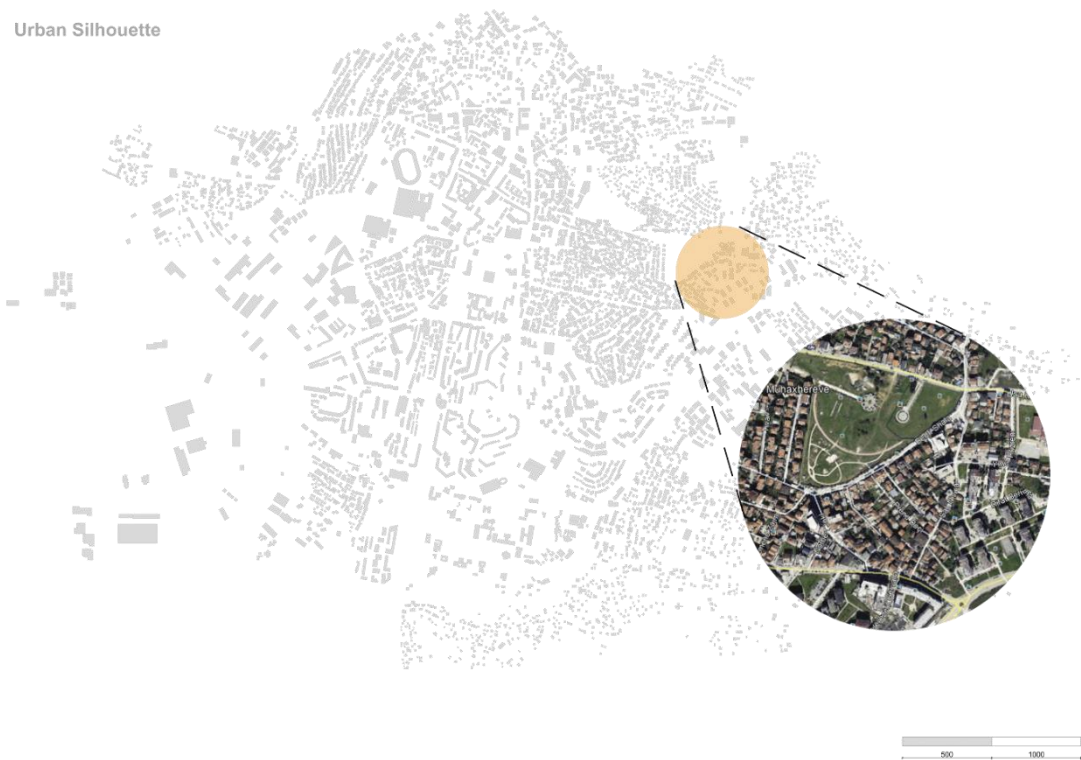


Figure 34 Urban Silhouette

5.1.2 Views

The site is mainly residential and characterized by a density of small houses. The main road "Adrian Krasniqi" connects directly "Muhaxhirët" neighborhood with the center of Pristina. From here, east and south, some roads are separated. Within the neighborhood are some mainly urban centers formed by buildings with two, three or even more stories, which along the main roads (such as Gazmend Zajmi, Isa Kastrati, and Adrian Krasniqi) have some business activities on the ground floor. The neighborhood center forms the Martyrs' Cemetery and the grave of President Ibrahim Rugova, who gives great neighborhood value. Another well-developed residential center is in the eastern part and bordered by "Mat" neighborhood. The buildings in Mat neighborhood are known as white buildings and with their height, they form a unique uninterrupted mountainside face along the streets. Another residential center runs north along the road Isa Kastrati to Velania and is separated from the rest of the neighborhood. (Explanation of the regulatory plan – Muhaxhirët, 2012)



Figure 35 Views (Photos from Site)

5.1.3 Morphology

Based on the regulatory plan, “Muhaxhirèt” lies in two different areas; Western partis categorized as urban mixed zone and the majority of “Muhaxhirèt” are foreseen mainly as Residential Area. It will be developed based on sustainable principles, which means a suitable area for living, healthy, environmentally and economically active and a neighborhood within the city with an existing urban structure.



Figure 36 Urban Morphology

Figure 36 explains the existing silhouette of the neighborhood and the futuristic plan. With the future plan, there is showed how much the buildings will occupy the terrain. The only buildings that will be saved are those with public use, like; Municipalities, Architecture Faculty, Schools, Mosques, etc.

The site has been analyzed further by taking the worst-case scenario, meaning that the buildings could tangent to the construction line of the parcels. As such, if they are raised in ten floors according to the urban regulatory plan, it would give enough space to near blocks to use and design Figure 37.

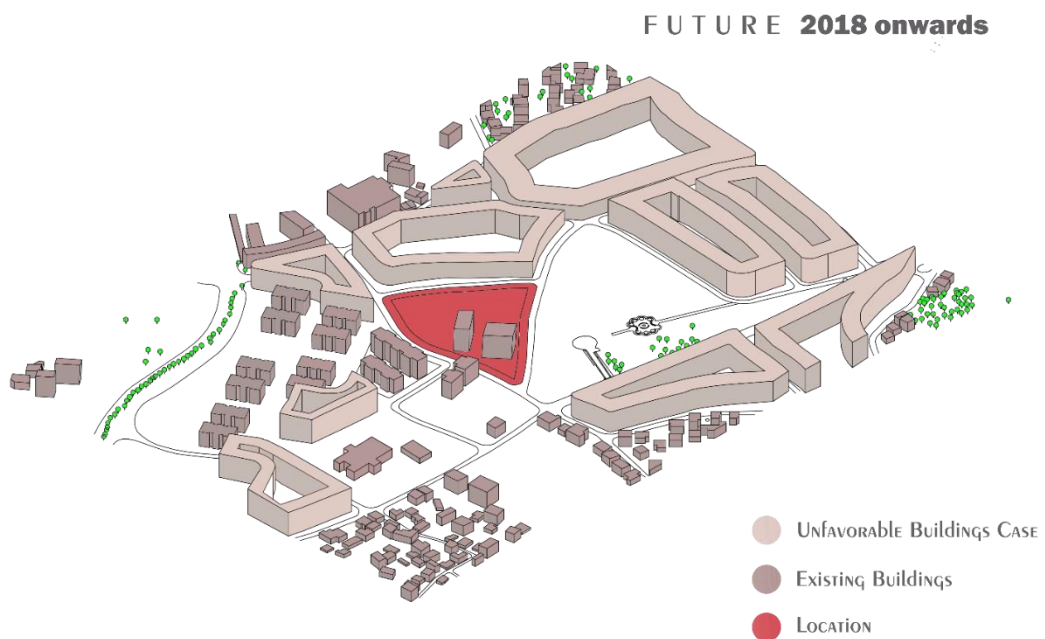


Figure 37 Future worst scenario

5.1.4 Site and Main Places

The neighborhood is located in a very favorable position of the city, as the direct connections with urbanized neighborhoods or its position in relation to the center of the city is a big precedent, giving opportunities for economic development. In **Figure 7** is shown the distance between the location and main places of the city. The distance is calculated by taking an average speed of 1km for 6min for vehicles and pedestrians 500m for 6min.

The air distance between the location and main places shown in Figure 7 are:

- Gërmia Park 5.2km
- Kosovo Museum 3.6km
- City Park 1.5km
- Mother Theresa square 3.5km
- Stadium 5km
- Faculty of Arts 4km
- Library 3km
- Bus Station 7.6km
- Hospital 5km

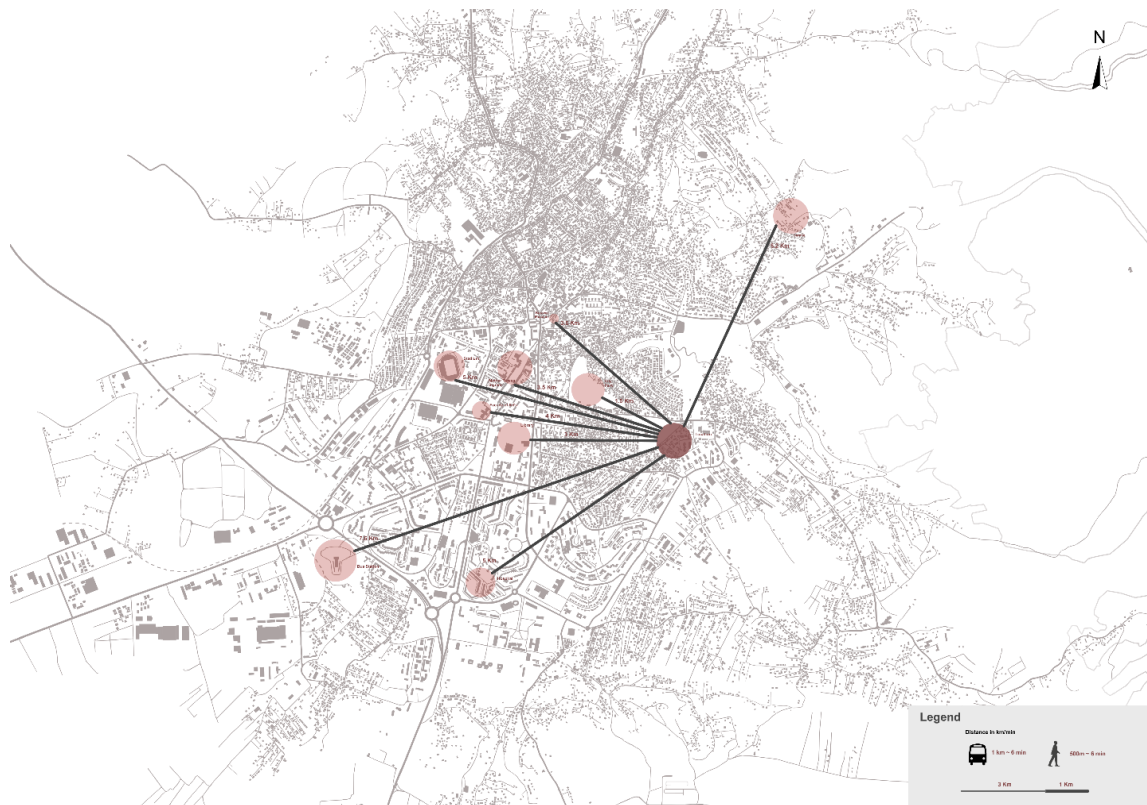


Figure 38 Site and Main Places (Distances)

5.1.5 Transportation

Figure 39 represents Pristina local bus lines, the nearest bus station to the location is line number 9 and is located outside the area (10 min walk to the nearest public transport station), what makes private transportation one of the solutions for residents living in there. According to the urban regulatory plan, the public transport service should be present at a distance of approximately 300m.



Figure 39 Pristina local bus lines

Approaching near the location, we notice three road types; Primary, Secondary and Tertiary roads.

Meanwhile, the location is enclosed on all sides with secondary roads, and this may be an opportunity to use the ground floors for different small businesses. Figure 40

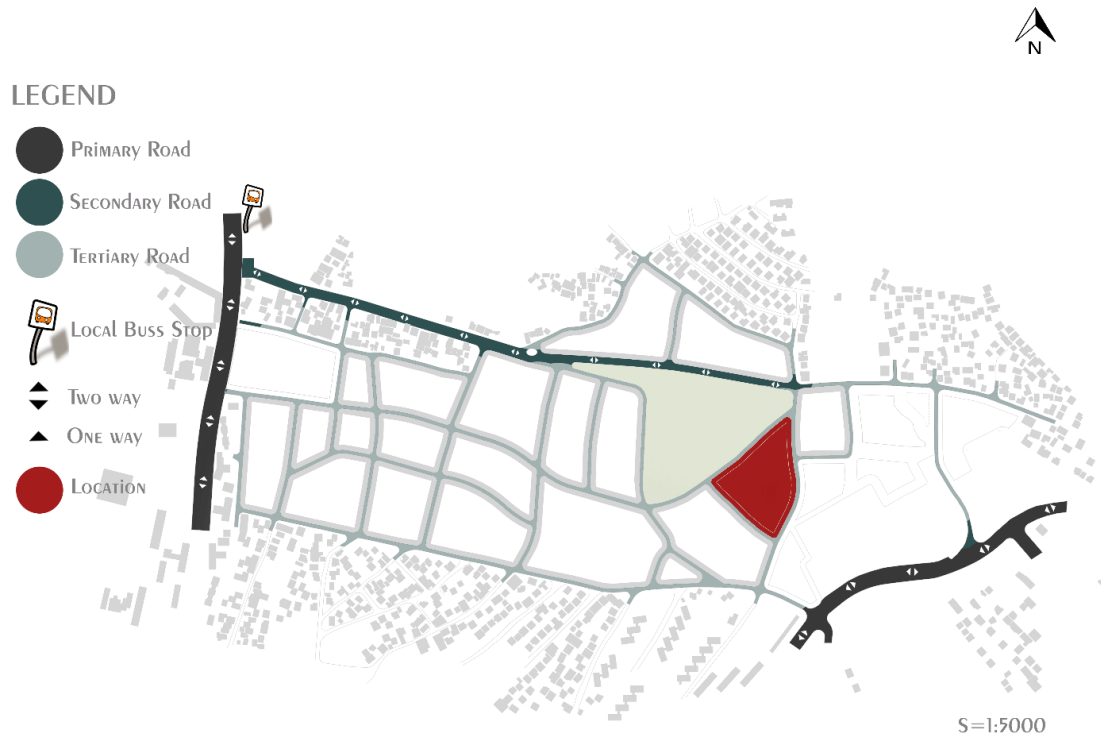


Figure 40 Location in PRRU map

Figure 41 shows the strategy of future roads usage according to the regulatory plan. In order to reach the high capacity on Agim Ramadani Street, speed is limited in 50km/h. Meanwhile to avoid accidents and noise, in the other Streets speed is limited in 30km/h. To improve the conditions, for main streets; Agim Ramadani, Bajram Kelmendi, and Rrustem Statovci, there is defined the minimum cross-section of the road. In order to achieve a hybridization between pedestrians, bicycles, and traffic on local roads the minimum of the cross-section is defined with 5 meters.

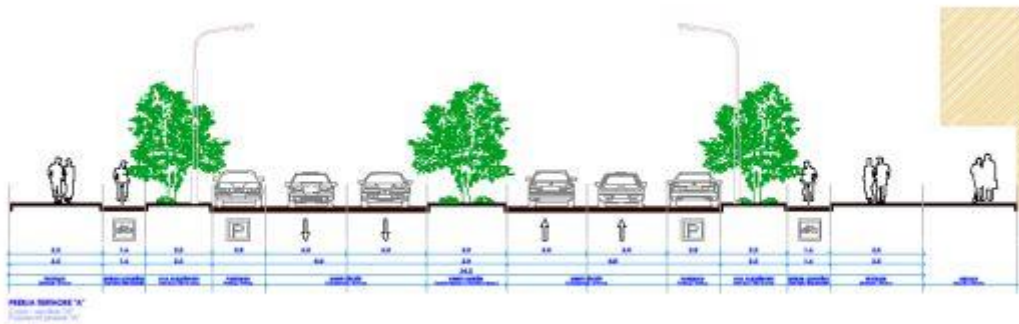


Figure 41 Section of Road

Fig.42 represents three cases of transportation, the first map shows the bicycle path. With the new roads according to the regulatory plan, it is the possibility that every road to be used by bicycles. While vehicles have three types of roads; primary, secondary and tertiary roads.



Figure 42 Transportation

Figure 43 represented below explains the results of site observation done during the day on date 15th of February 2018.

The main focus was to get information when traffic reaches its peak;

- a) In the morning, cars and motorcycles dominate the roads, as people travel to work via Agim Ramadani road. There may be a few cyclists during that time.
- b) Vehicles on the road decrease at mid-day but increase during the late afternoon. Amount of Lorries and bicycles also decrease as the majority of the community goes to nearby places on foot.
- c) At night, the number of cars and motorcycles decrease simultaneously with the number of buses remaining moderate as they travel along Agim Ramadani Road to pick up passengers, Lorries are rare and bicycles are absent at night.

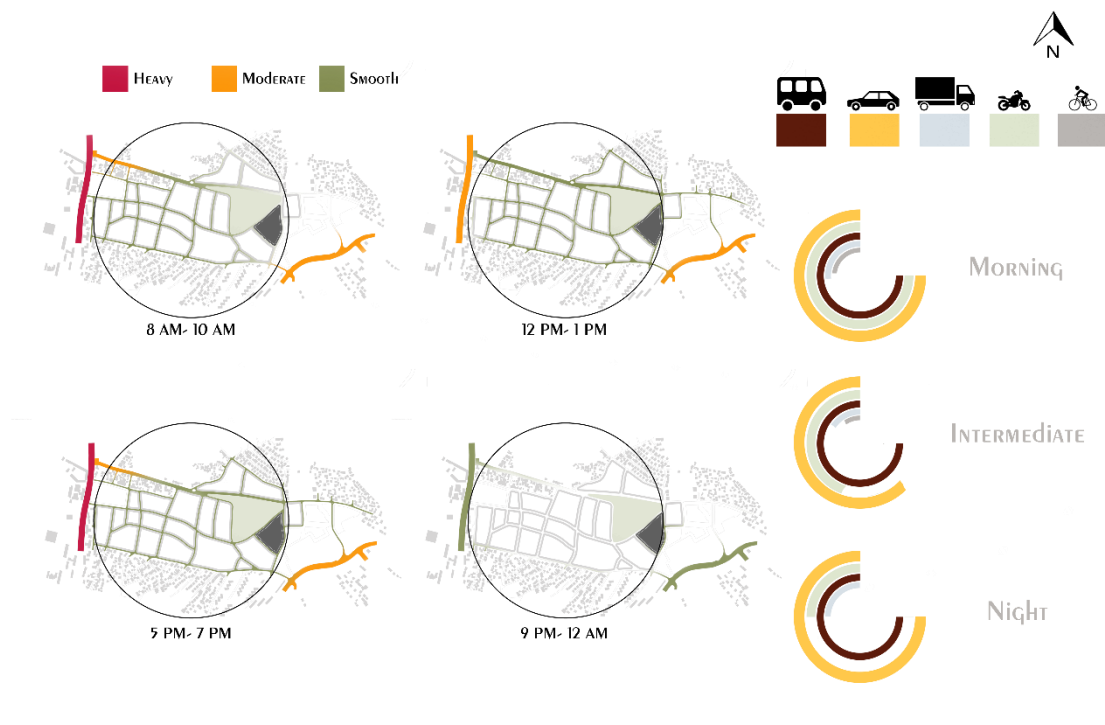


Figure 43 Traffic intensity

5.1.6 Diverse / Active program all day long

During the same day, the 15th of February 2018 observation took focus also in the activity of people. In the figure below is explained the activity of people on “Muhaxhirët” neighborhood during the day. As it is showed the most activity happens from 16:00 to 21:00 o’clock, including all the activities during the day.

Diverse / Active program all day long

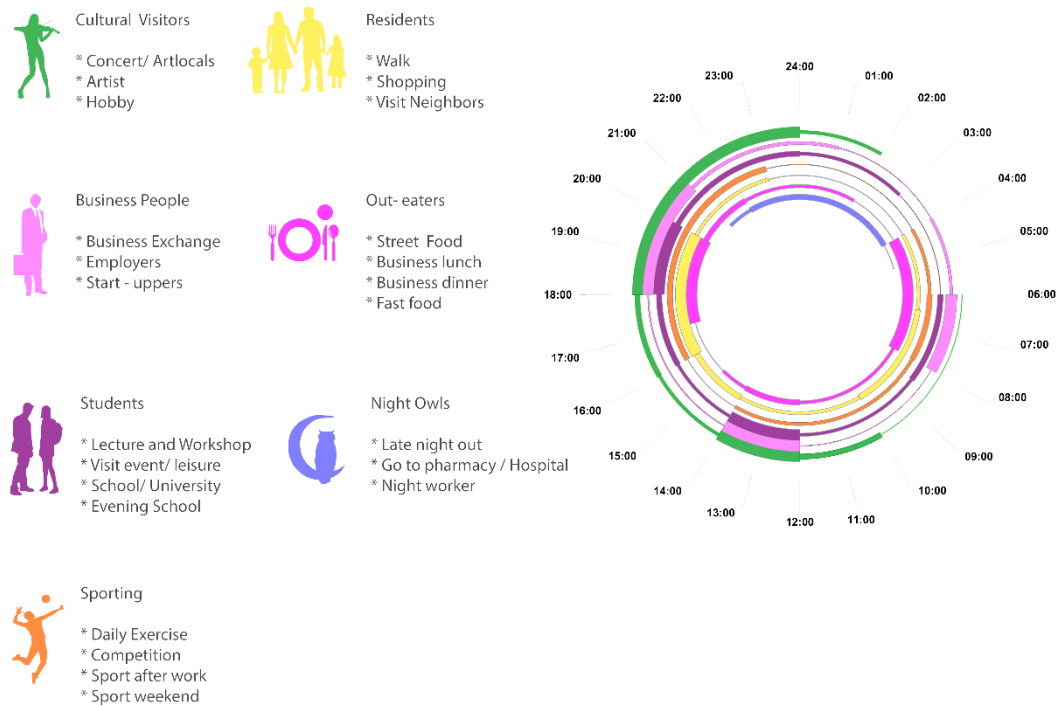


Figure 44 Diverse / Active Program all day long

5.1.7 Walking Distance

In the Figure 45 is presented the map of “Muhaxhirët” neighborhood. It is explained by two radii that represent distances of 500 m and 1 km, to show the average time that is needed to pass them.

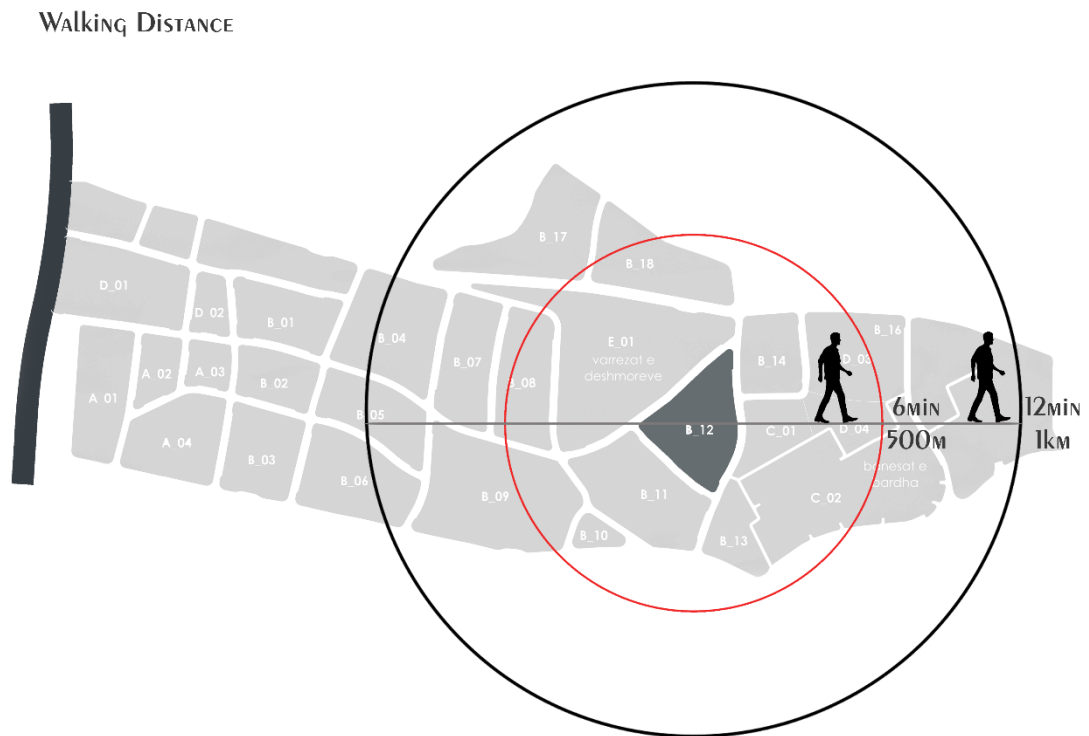


Figure 45 Walking Distance

5.1.8 Hybridization

Location is particularly lived by all group ages. Using these benefits architecture could be more social, accessible, healthy, add services and volunteering programs that compensate for upcoming social and physical deficits, which will benefit all age groups including the young, the busy and lazy.

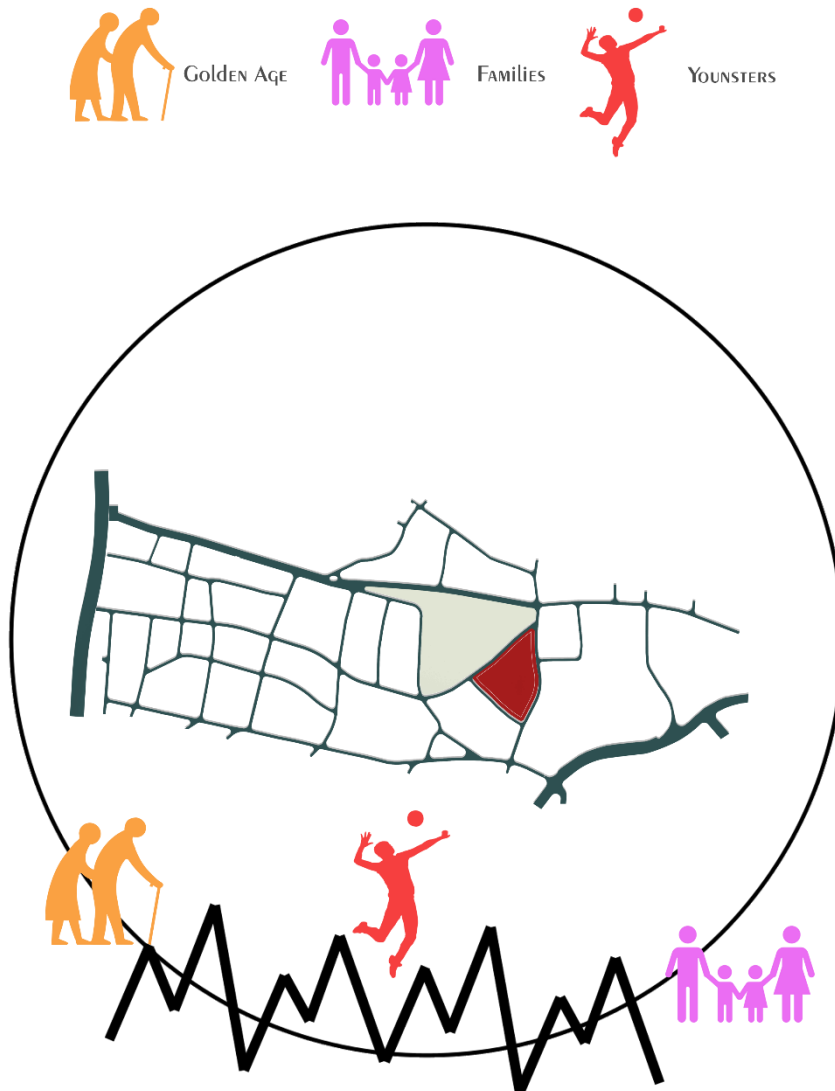


Figure 46 Hybridization

5.1.9 Pedestrian path and movement

Figure 47 represents the most crowded places during the day. In the morning the site becomes more crowded by the main roads. By afternoon the movement decreases by 15% in the center of the city and 20% in the other parts of the city. Meanwhile, when the city falls asleep by midnight, night owls destine the center of the city.

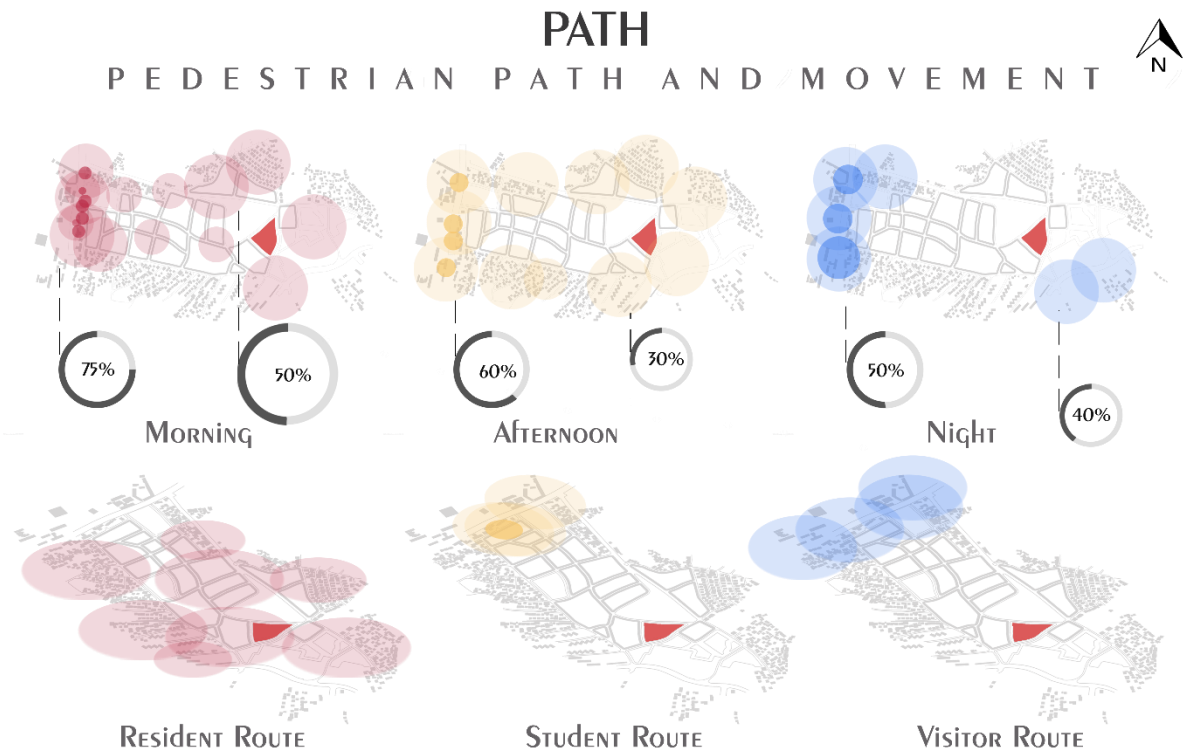


Figure 47 Pedestrian path and movement

Figure 48 presented below shows the bus station, and the distance that is needed to go there. By regulatory plan in the primary road is planned to integrate new bus stations, in this way it could be easier for the pedestrians to take the public bus for transport. In the same time, this could have a huge impact on the environment.

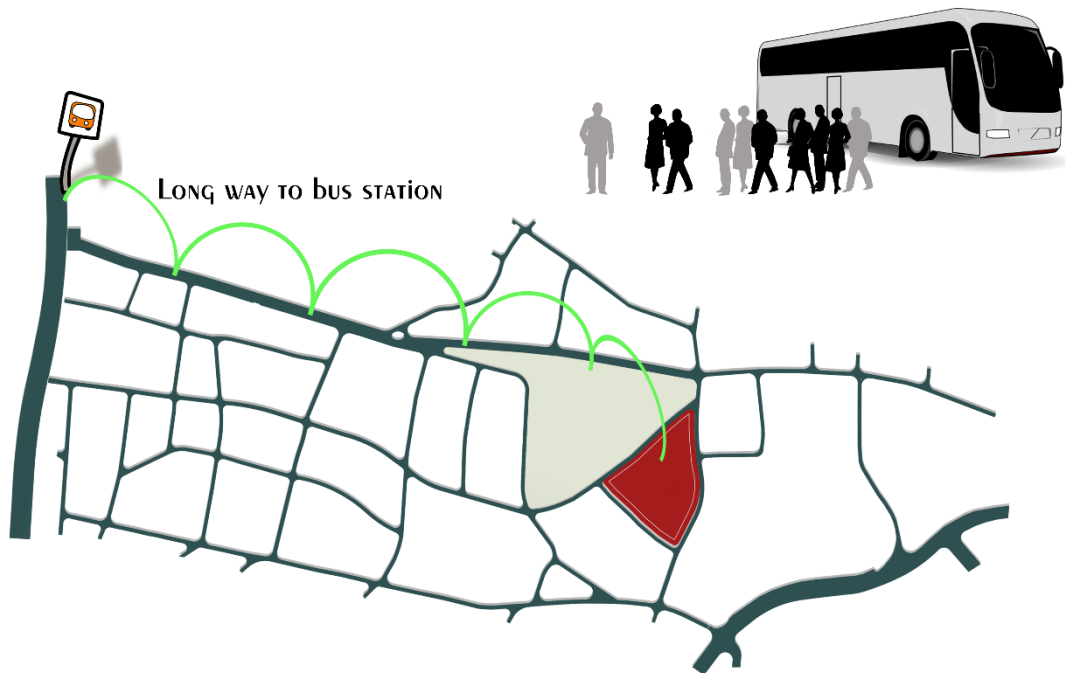


Figure 48 Bus station

5.1.10 Site Level

The location has a high site level difference, reaching up to 40 meters, a challenge that will have a big influence on architectural design. Figure 49.

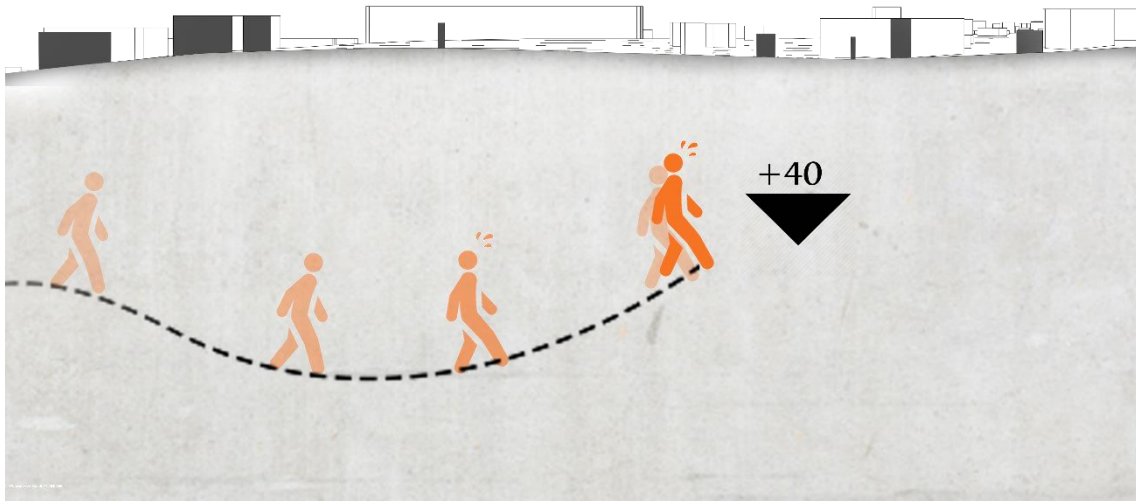


Figure 49 Site Level

5.1.11 Nodes

Since the location is close to the city center, nearby are many public buildings that effect to raise the flux of people. Figure 50 shows the map with primary and secondary nodes. The primary node represents places where people gather most of the time regardless if the peak hour is over. Meanwhile, the secondary node represents places where the crowd gather at specific hours and fade off later.

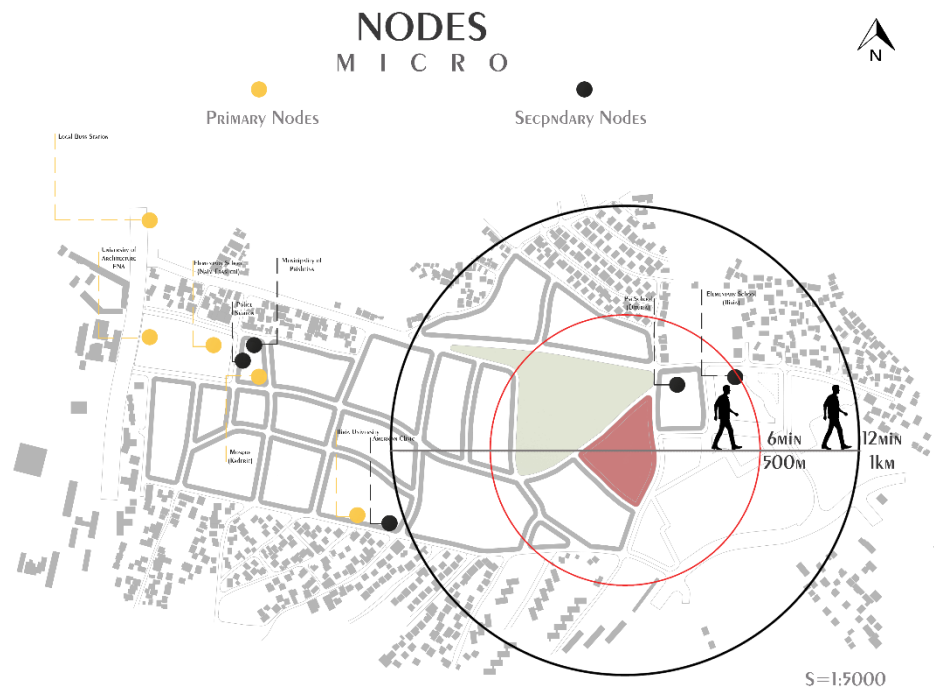


Figure 50 Urban nodes

5.1.12 Destination

Destination of the site is represented in the following figure 51. It is particularly a mixed zone, while residential is dominating.

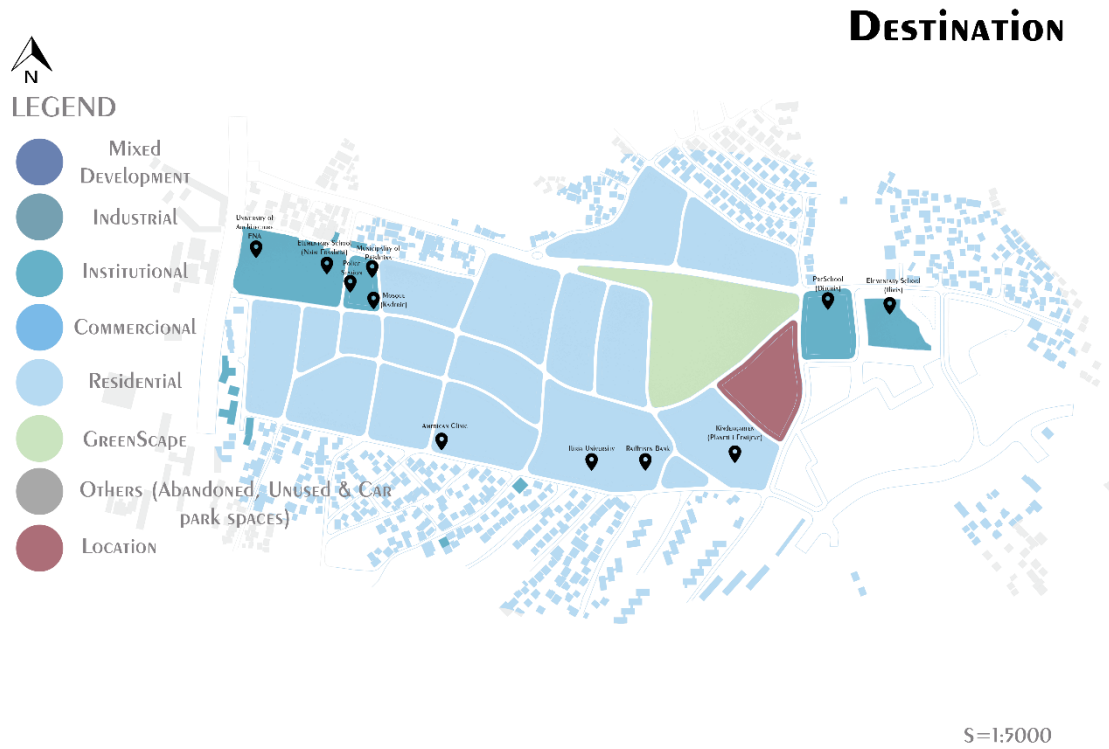


Figure 51 Destination of urban plots

5.1.13 Private and Public Zones

There is a great lack of property information in Kosovo. The cadastral system is being reorganized, but there are still gaps in gathering information. The map presented is the latest state of Pristina municipal cadaster. (Explanation of the regulatory plan – Muhaxhirët, 2012)

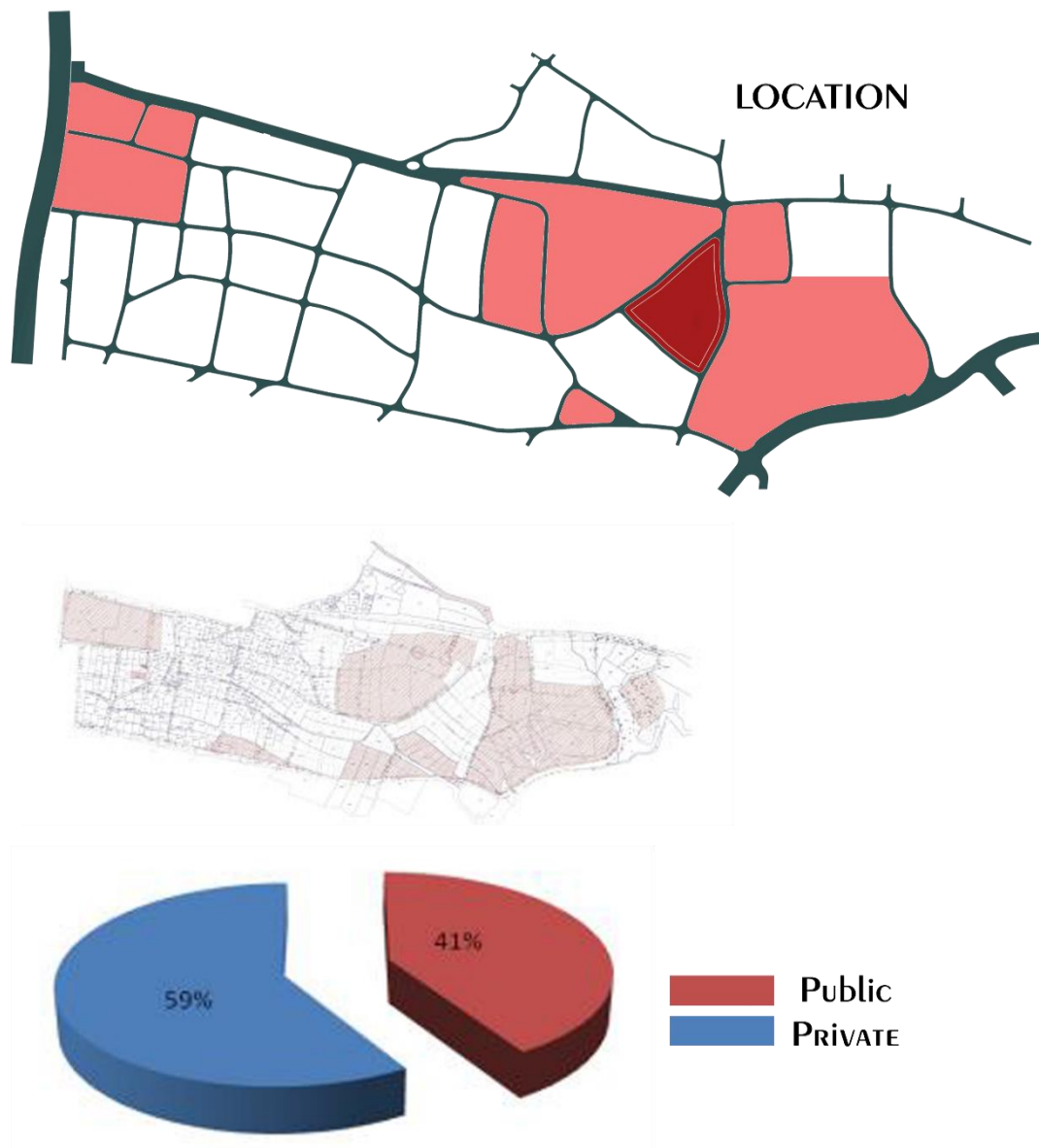


Figure 52 Public / Private zone according to PRRU

5.1.14. Urban Block

The neighborhood has a structure of five constituents:

- a) Mixed Zone “ZM” (constituent A)
- b) Mixed Zone “ZM” (constituent B)
- c) Conserved Residential Zone “KB” (constituent C)
- d) Conserved Public Zone “KP” (constituent D)
- e) Memorial Park Zone “PM” (constituent E)

The treated site is in constituent B. Because of its large area in the central part, it divides into four subtrees, to enable more accurate necessary analysis for implementation. The treated urban block is named B_12.

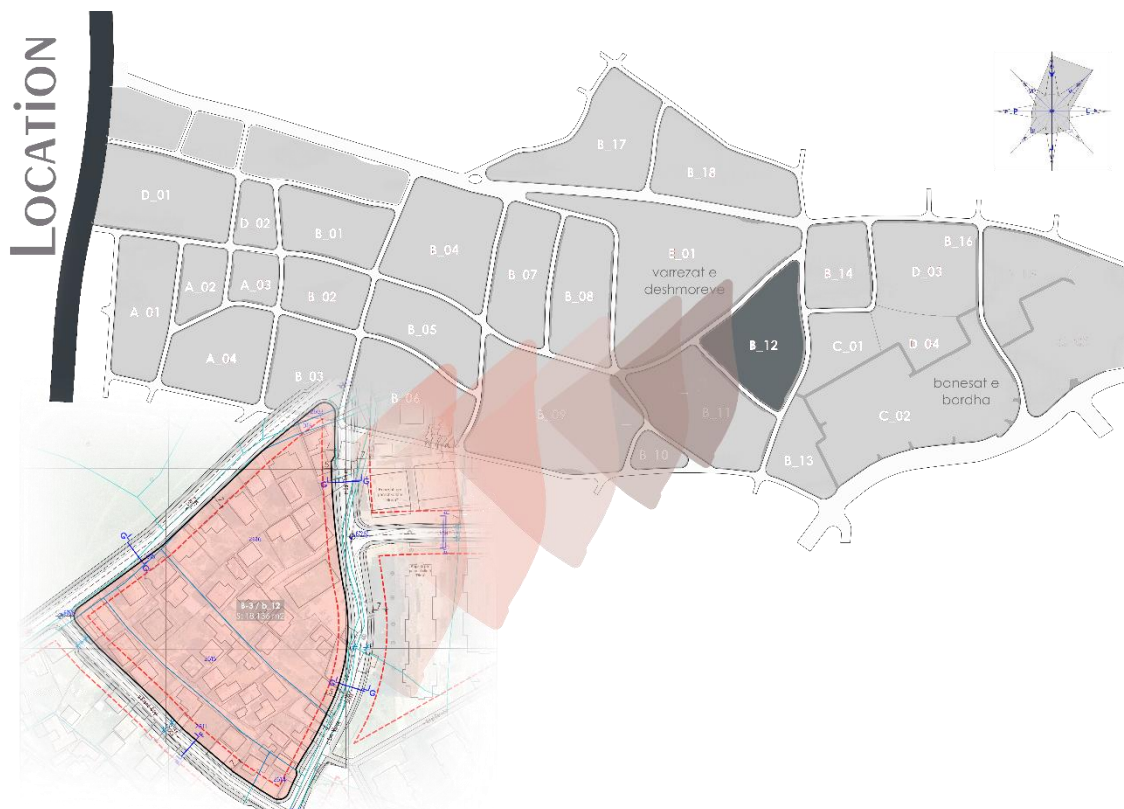


Figure 53 Urban Block - Site

5.1.15 Private Site

Since the location consists of private cadastral plots, the municipality expropriated the parcels, and they will compensate the owners for plots with square meters. Block plots together with roads have an area of 20445.28 m². After removing the area used for the road, there will be a total of 18178.92 m² for the block to be developed. The upper floors will compensate the used surfaces for the road, exactly 2266.357 m².

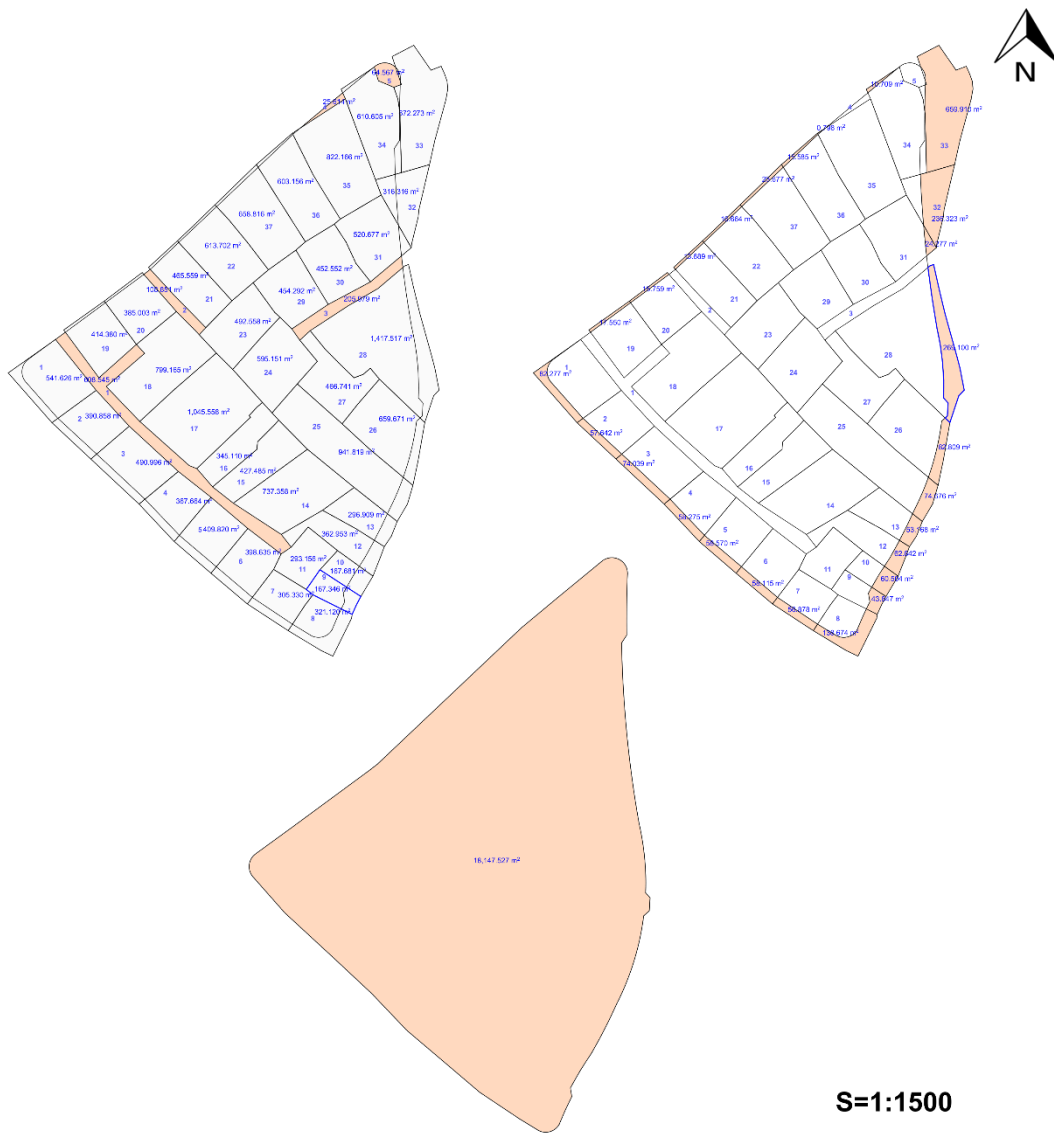


Figure 54 Private Plots - Site

No.	Parcel No.	Area	Area Used for Road		Left Area
1		541.626	82.277		459.349
2		390.858	57.642		333.216
3		490.996	74.039		416.957
4		367.664	58.275		309.389
5		409.82	58.57		351.25
6		398.635	58.115		340.52
7		305.33	56.878		248.452
8		321.12	138.674		182.446
9		167.346	43.847		123.499
10		167.681	60.504		107.177
11		293.156	0		293.156
12		362.953	62.842		300.111
13		296.909	53.168		243.741
14		737.358	0		737.358
15		427.485	0		427.485
16		345.11	0		345.11
17		1045.558	0		1045.558
18		799.165	0		799.165
19		414.38	17.55		396.83
20		385.003	15.759		369.244
21		465.559	13.689		451.87
22		613.702	16.664		597.038
23		492.558	0		492.558
24		595.151	0		595.151
25		941.819	74.676		867.143
26		659.671	82.809		576.862
27		466.741	0		466.741
28		1417.517	269.1		1148.417
29		454.292	0		454.292
30		452.552	0		452.552
31		520.677	24.277		496.4
32		316.316	236.323		79.993
33		672.273	659.91		12.363
34		610.605	10.709		599.896
35		822.166	0.798		821.368
36		603.156	15.585		587.571
37		658.816	23.677		635.139
1		608.545	0		608.545
2		108.851	0		108.851
3		205.979	0		205.979
4		25.614	0		25.614
5		64.567	0		64.567
Total:		20445.28	2266.357		18178.92

Figure 55 Area of Plots

5.1.16 Current Context

To get the proper analysis, we will get closer to the site. The figure below represents the site on a smaller scale. Presenting buildings, streets, vegetation and so on. So, the observation done on the site is going to represent a more detailed overview.

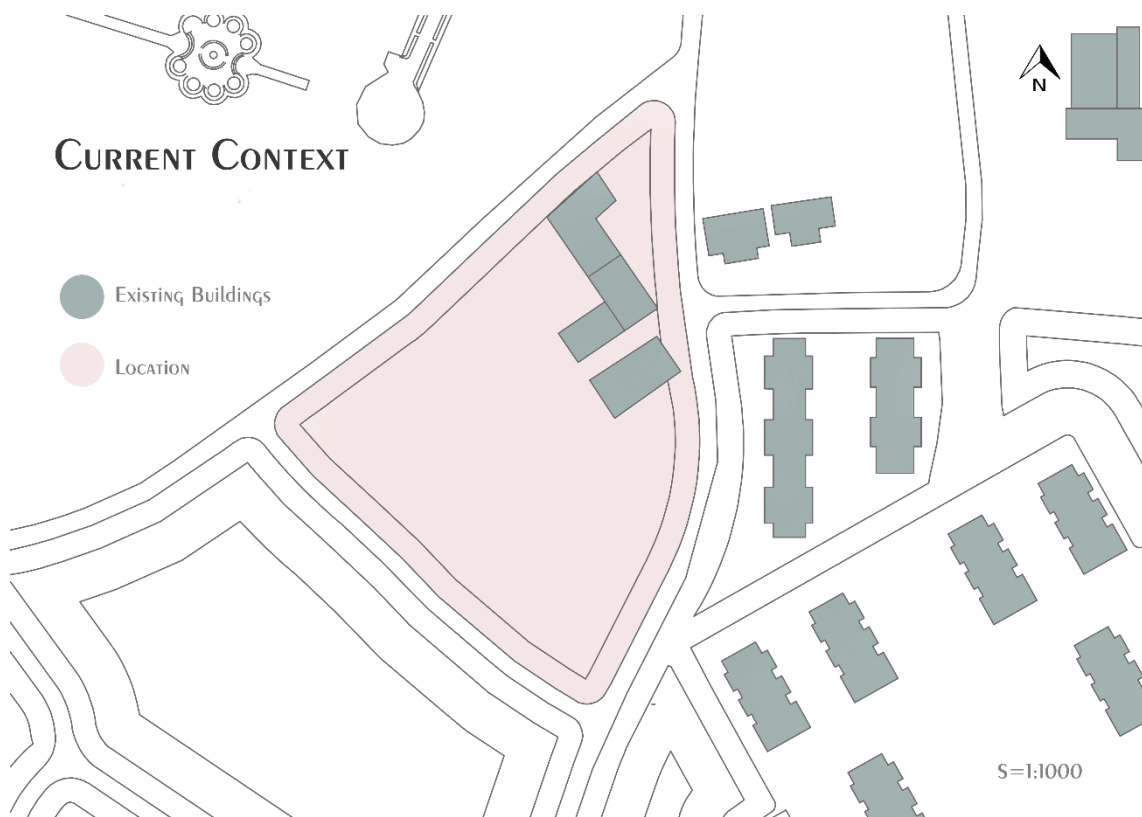


Figure 56 Current Context

5.1.17 Site Calculations

It's needed to calculate the areas to meet with the Urban Regulatory Plan. So, it could define the allowed area for building, to achieve a better architecture design. Template I represent calculations that define the area used for plot, the number of stories, index of parcels exploitation, floor area, green area, subterranean and basement.

5.1.18 Building Context

Residential buildings are surrounding the site, known as "Banesat e bardha". While in front of the site stands the grave of President Ibrahim Rugova. Meanwhile, new buildings will replace the old small houses. Figure 57 represents residential flats, "Banesat e Bardha", worst case buildings, buildings in the site, and existing buildings.

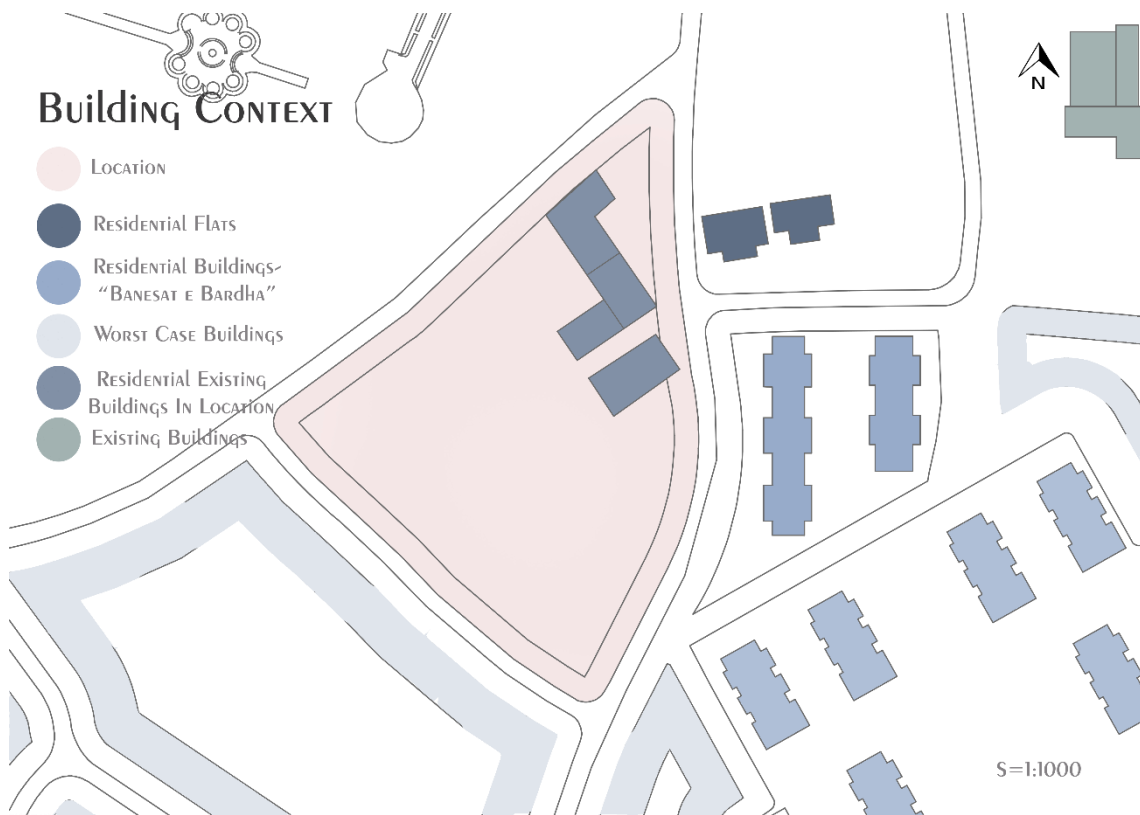


Figure 57 Building Context

5.1.19 Views

Figure 58 shows a few characteristics of the site that affect the process of the Architectural design: Existing buildings that are part of the urban block, the grave of President "Ibrahim Rugova" and the nearby existing buildings.



Figure 58 Characteristics of site - Views

5.1.20 Access to the site

There are three possible accesses in the location that we can incorporate. Two of them access from the main road while the last one is existing.

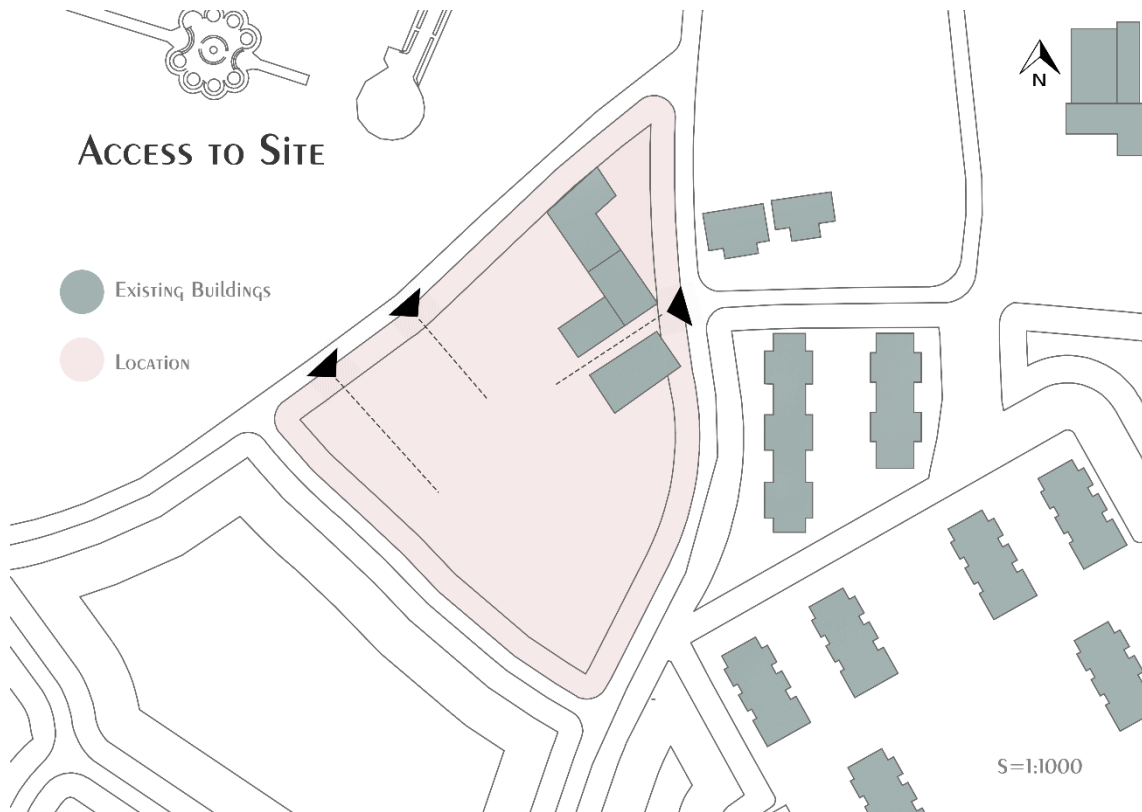


Figure 59 Access to site

5.1.21 Circulation

The following figure 60 shows the circulation of emergency, vehicle, and pedestrians. The emergency entrance can enter through the middle road. This could give the emergency to access every part of the buildings. Vehicles can access from each road of the location. Meanwhile, pedestrians have the opportunity to access depending on the building design.

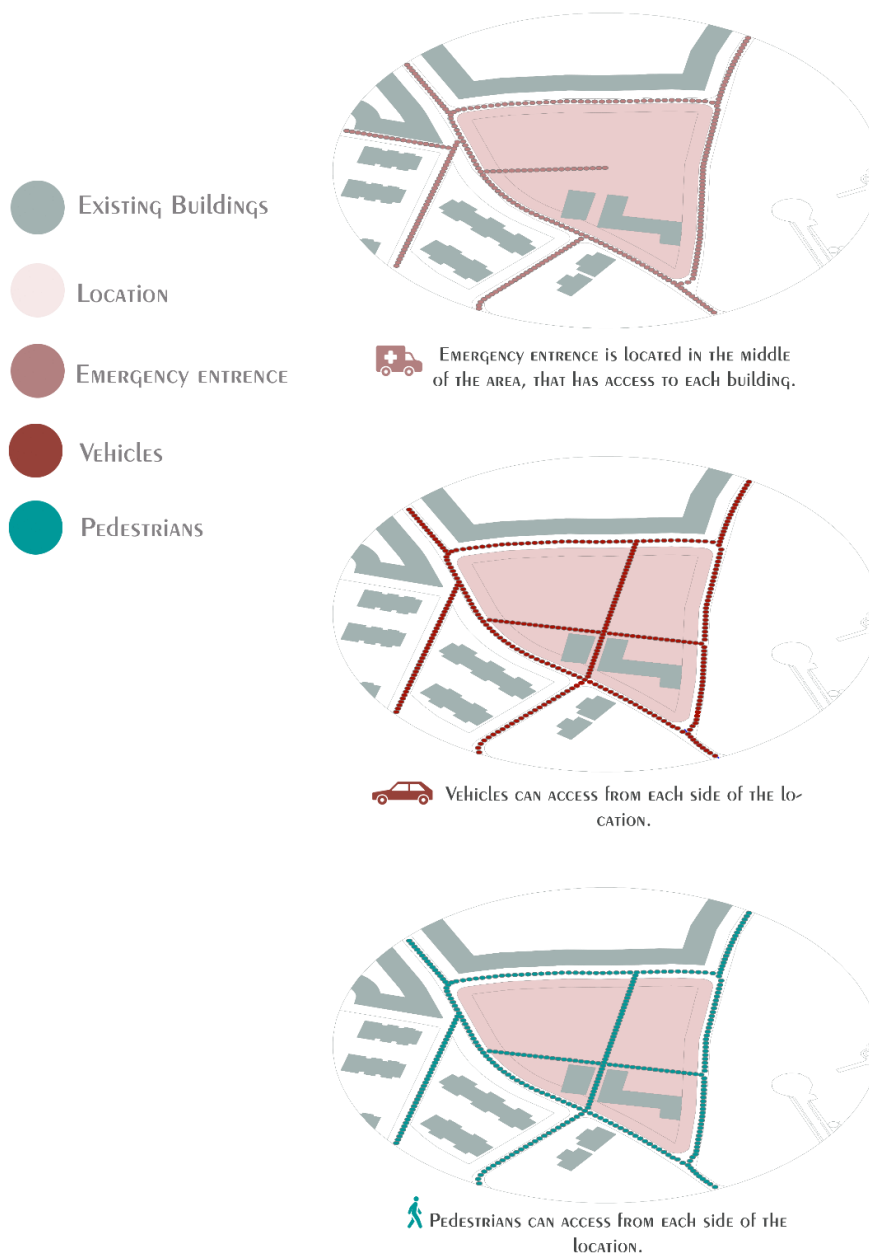


Figure 60 Circulation

5.1.22 Vegetation

Pristina has 3.8m² vegetation per person. Compared to the world recommendations and standards, it has ten times less than needed. This agreement should improve and protect existing green areas. Low vegetation covers most of the site. Meanwhile, there is a huge need for trees.



Figure 61 Vegetation

The site has a few deciduous trees as well as shrubs and no pine trees.

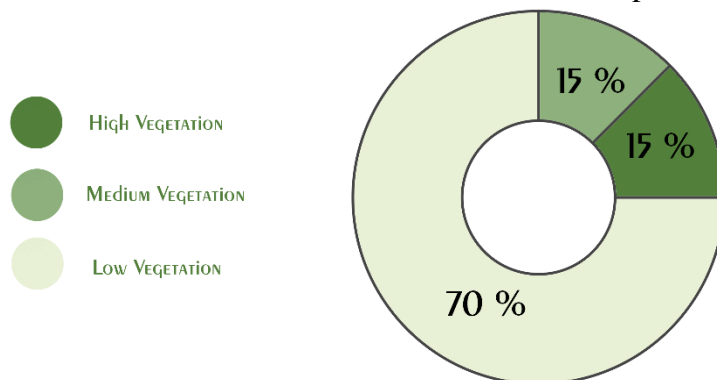


Figure 62 Percentage of Vegetation

5.1.23 Weather



In Pristina, the summers are warm and mostly clear and the winters are freezing, dry, and partly cloudy. Over the course of the year, the temperature typically varies from -5°C to 28°C and is rarely below -13°C or above 33°C. The warm season lasts for 3.3 months, from June 4 to September 14, with an average daily high temperature above 22°C. The hottest day of the year is August 4, with an average high of 28°C and low of 13°C. The cold season lasts for 3.4 months, from November 22 to March 4, with an average daily high temperature below 8°C. The coldest day of the year is January 15, with an average low of -6°C and high of 3°C. <https://weatherspark.com/y/86888/Average-Weather-in-Pristina-Kosovo-Year-Round>

Clouds



In Pristina, the average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year.

The clearer part of the year in Pristina begins around June 6 and lasts for 3.4 months, ending around September 20. On July 24, the clearest day of the year, the sky is clear, mostly clear, or partly cloudy 87% of the time, and overcast or mostly cloudy 13% of the time. The cloudier part of the year begins around September 20 and lasts for 8.6 months, ending around June 6. On December 7, the cloudiest day of the year, the sky is overcast or mostly cloudy 58% of the time and clear, mostly clear, or partly cloudy 42% of the time. <https://weatherspark.com/y/86888/Average-Weather-in-Pristina-Kosovo-Year-Round>

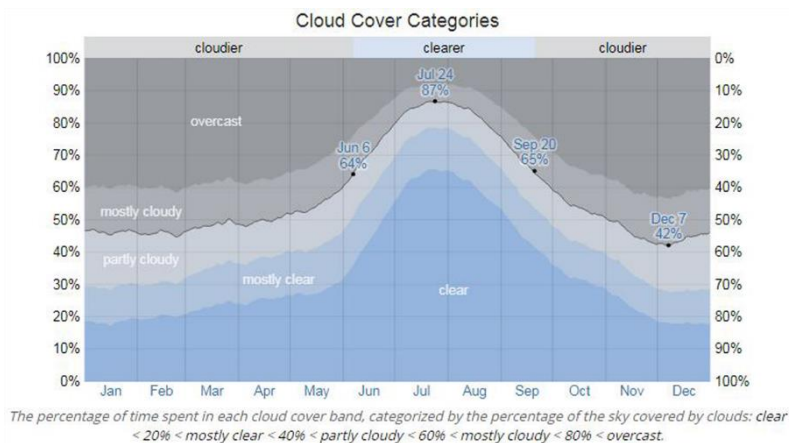


Figure 63 <https://weatherspark.com/y/86888/Average-Weather-in-Pristina-Kosovo-Year-Round>

Rainfall



To show variation within the months and not just the monthly totals, we show the rainfall accumulated over a sliding 31-day period centered on each day of the year. Pristina experiences some seasonal variation in monthly rainfall.

Rain falls throughout the year in Pristina. The most rain falls during the 31 days centered on October 8, with an average total accumulation of 2.1 inches.

The least rain falls around January 18, with an average total accumulation of 0.7 inches.
<https://weatherspark.com/y/86888/Average-Weather-in-Pristina-Kosovo-Year-Round>

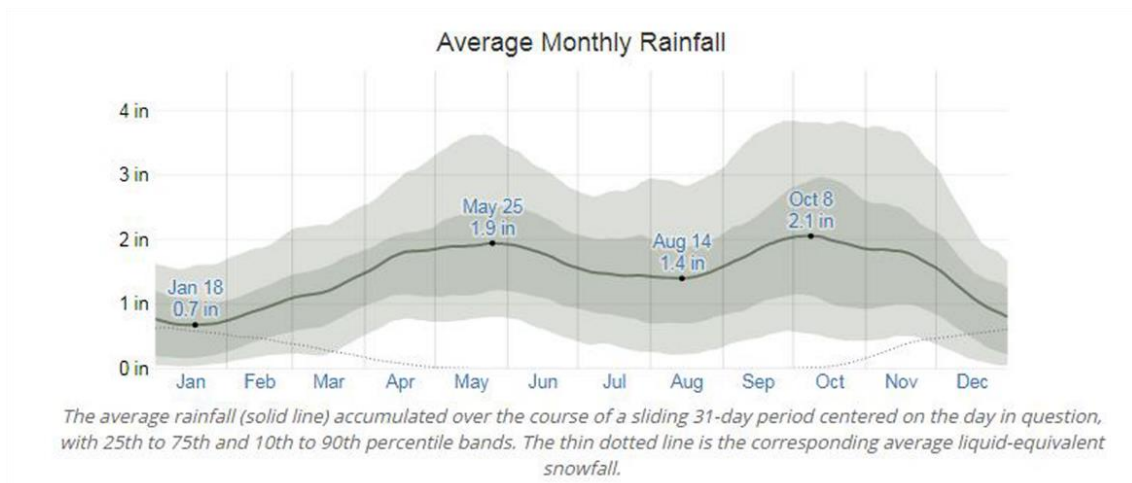


Figure 64 <https://weatherspark.com/y/86888/Average-Weather-in-Pristina-Kosovo-Year-Round>

5.1.24 Wind Analysis

5.1.24.1 Wind Rose

Figure 111 represents the annual wind rose of Pristina. It shows how many hours per year the wind blows from the indicated direction.

<https://weatherspark.com/y/86888/Average-Weather-in-Pristina-Kosovo-Year-Round>
Pristina annual wind rose

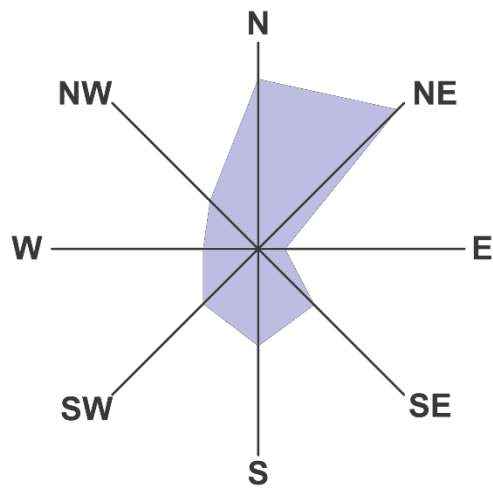


Figure 65 Wind Rose

5.1.24.2 Wind directions

The figure 66 below represents wind directions that go through the site during the year.

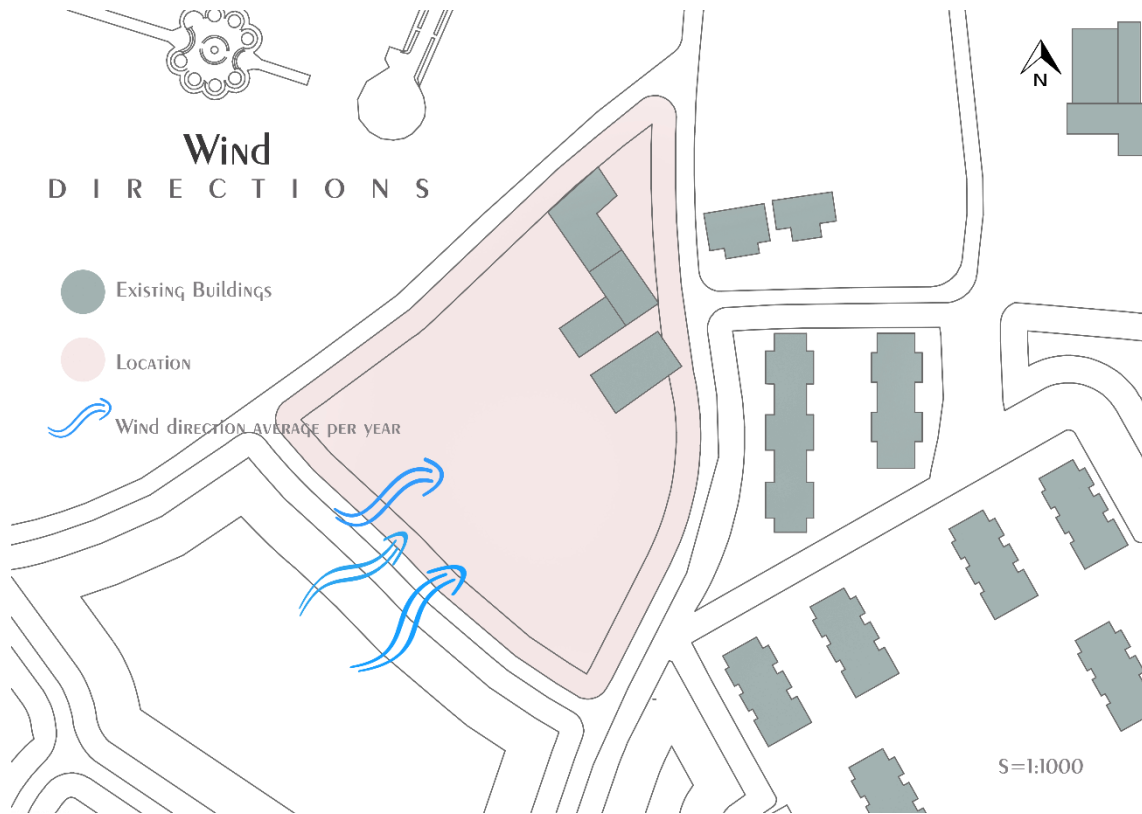


Figure 66 Wind directions

5.1.24.3 Average Temperature

The "mean daily maximum" (solid red line) shows the maximum temperature of an average day for every month for Pristina. Likewise, "mean daily minimum" (solid blue line) shows the average minimum temperature. Hot days and cold nights (dashed red and blue lines) show the average of the hottest day and coldest night of each month of the last 30 years. For vacation planning, you can expect the mean temperatures, and be prepared for hotter and colder days.

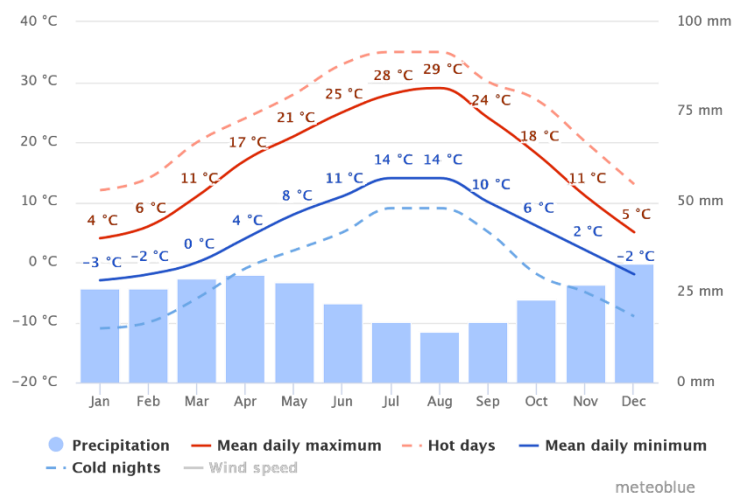


Figure 67 Average Temperature

5.1.24.4 Wind Speed

The diagram for Pristina shows the days per month, during which the wind reaches a certain speed.

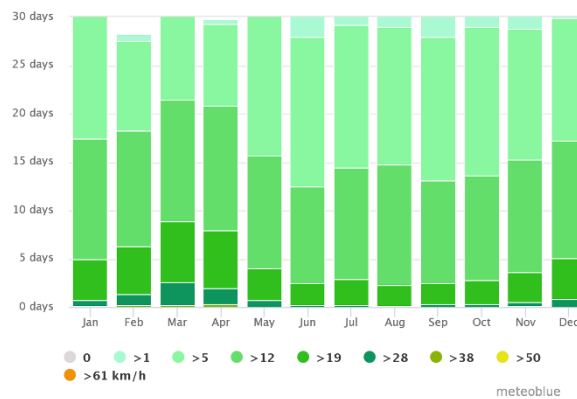


Figure 68 Wind Speed

5.1.25 Noise

Since the location is near the primary roads, then the noise will be one of the possible barriers that will affect during the architectural design. Figure 69 shows where the noise comes to take precautionary measures.

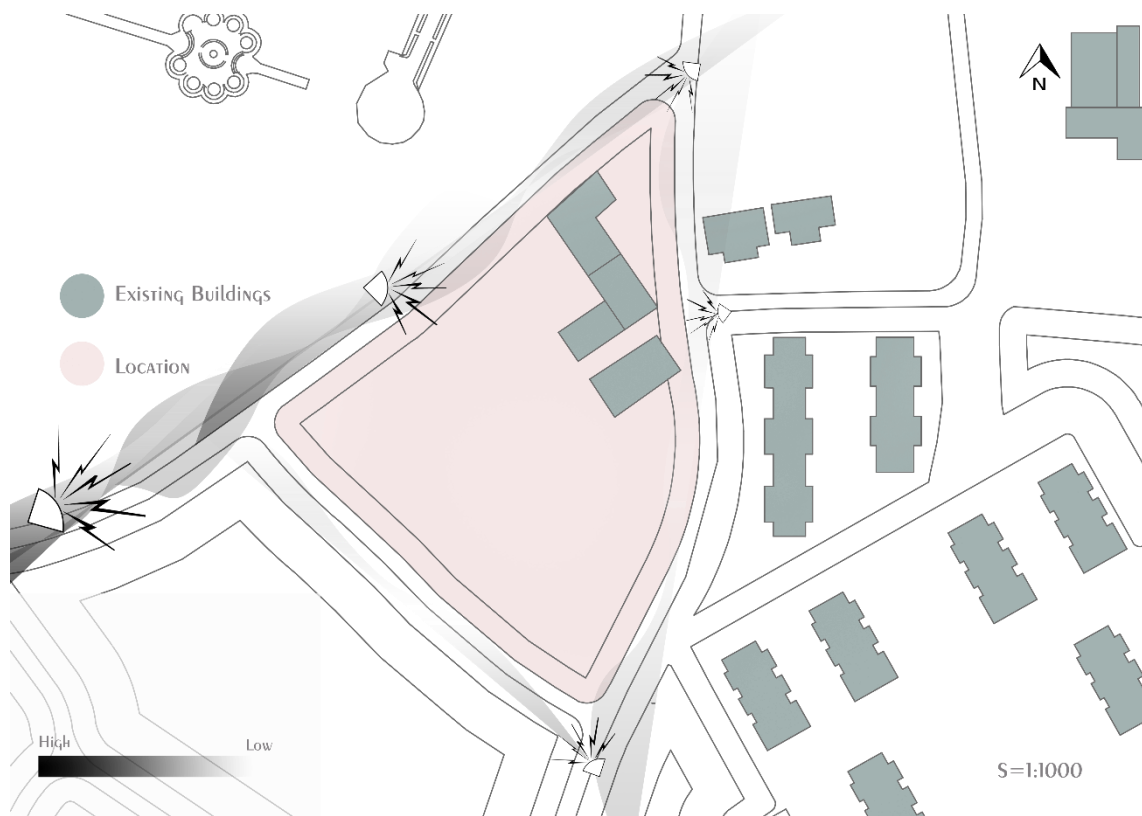


Figure 69 Noise

5.1.26 Waste

Over the last four decades, we human beings have tripled our consumption of the earth's natural resources. And according to the World Resources Institute "one half to three-quarters of annual resource inputs to industrial economies is returned to the environment as wastes within just one year." Currently, residents throw their waste in the garbage.

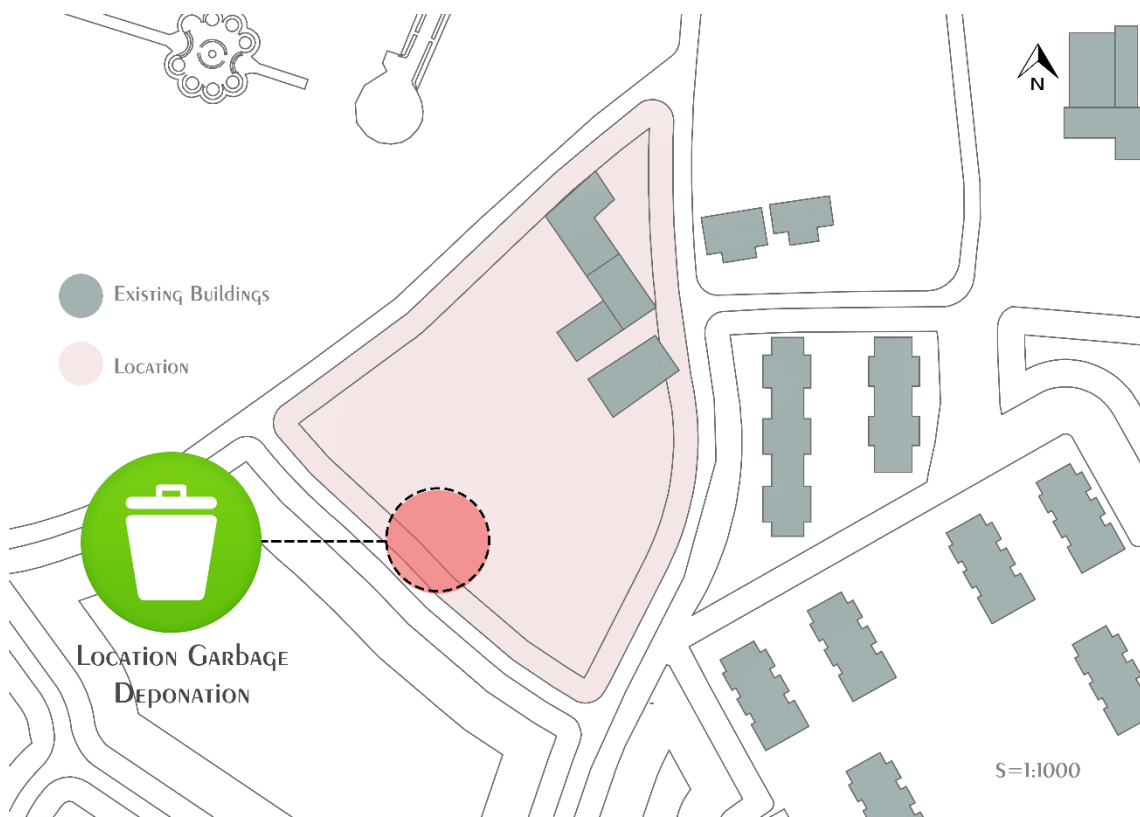


Figure 70 The actual location of garbage deponation

5.1.27 Sun Path

The following figure shows the sun path analysis, done by Rhinoceros program. At first, it's analyzed the position of the location to define the reference radius of the north, which determines the sun path. Figure 71

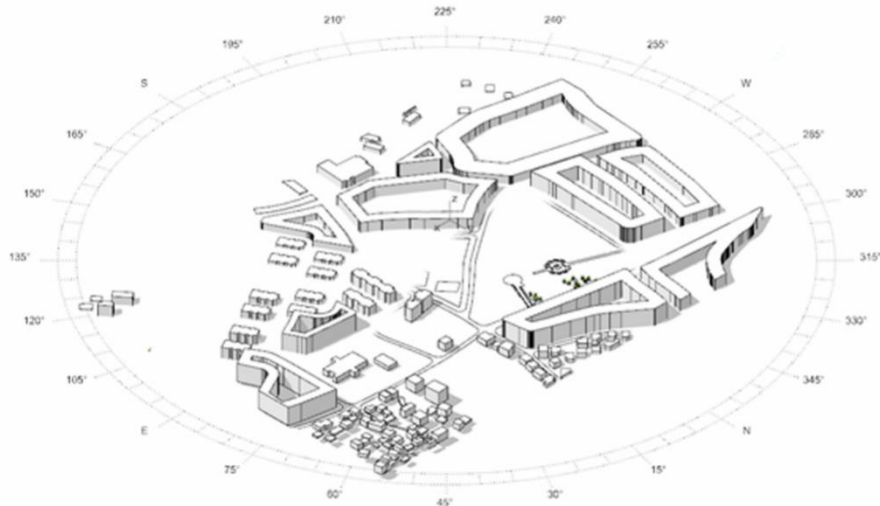


Figure 71 Sun Path -Radius

Six trajectories Figure 72 presents the months of the year, through which the sun will go through depending on the month. Figure 73.

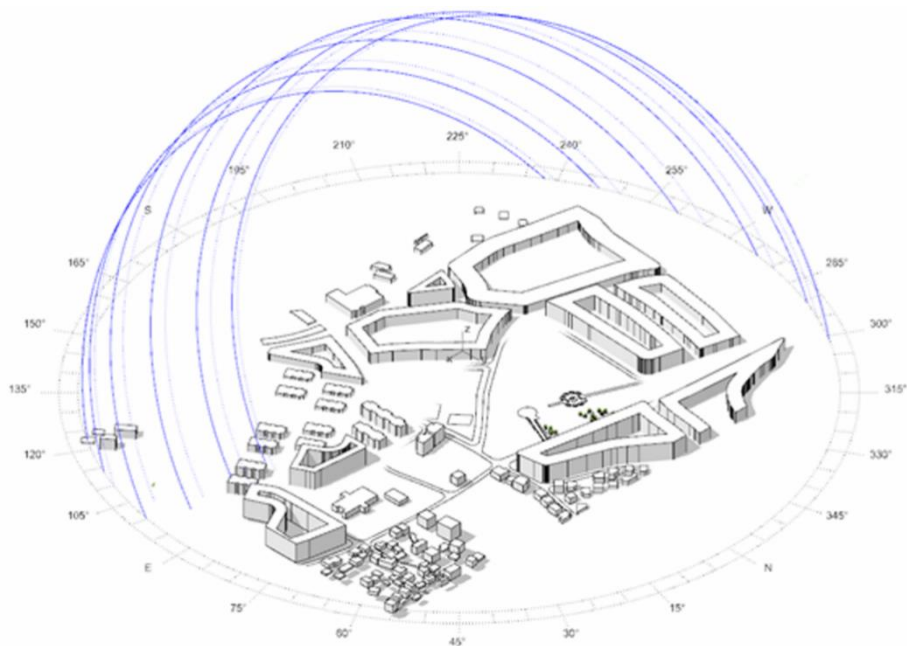


Figure 72 Sun Path - Months of the year

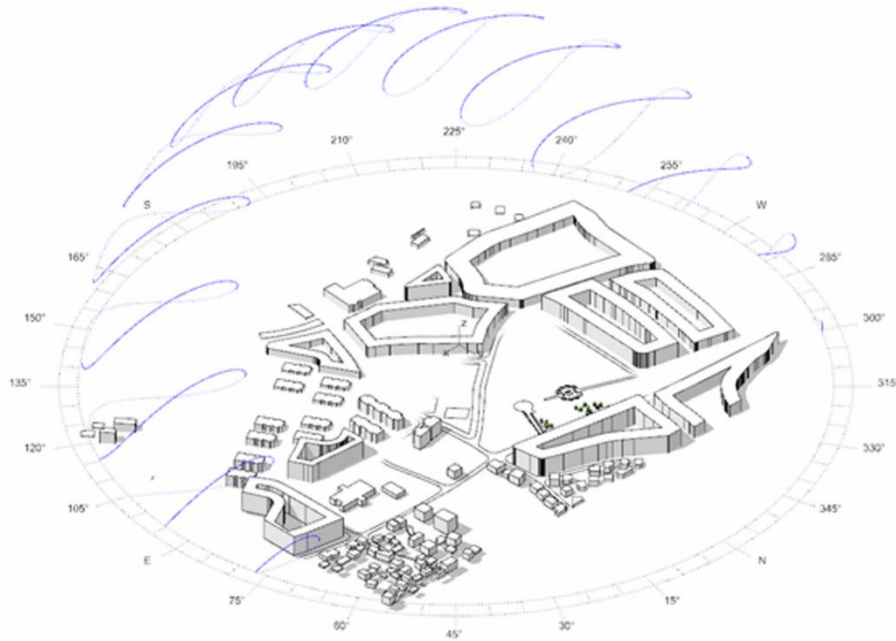


Figure 73 Sun Path- Movement per month

Figures 74 and 75 represent the most extreme cases of sun positions. In the figure 74 sun path moves through all hours of the day during the seventh month of the year. It shows the building shadows which doesn't affect the site.

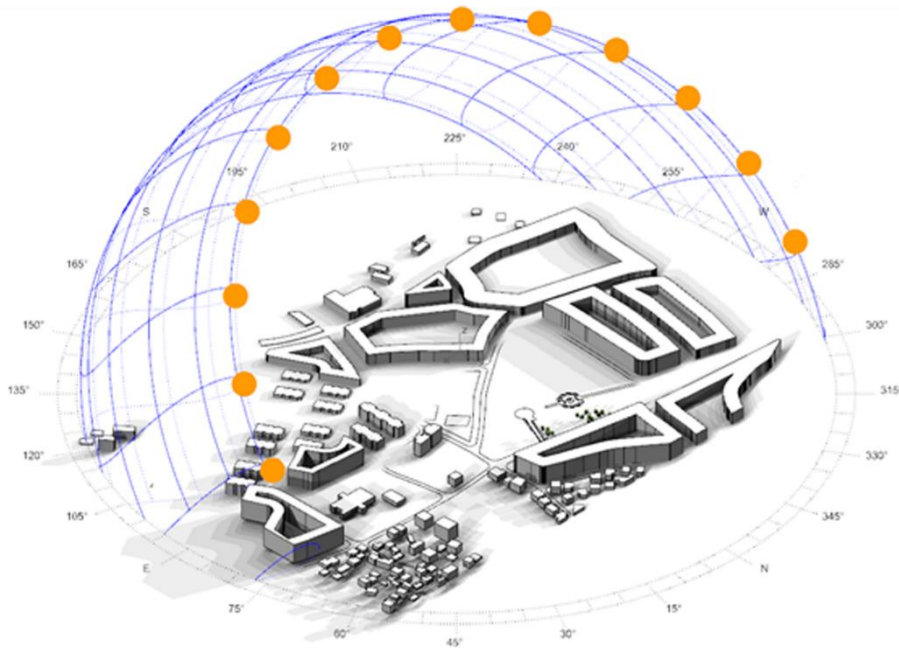


Figure 74 Sun Path – Seventh month of the year

As for the other case when the sun passes through the first trajectory, (First month) the shadows touch a part of the site. In the morning shadows are bigger.

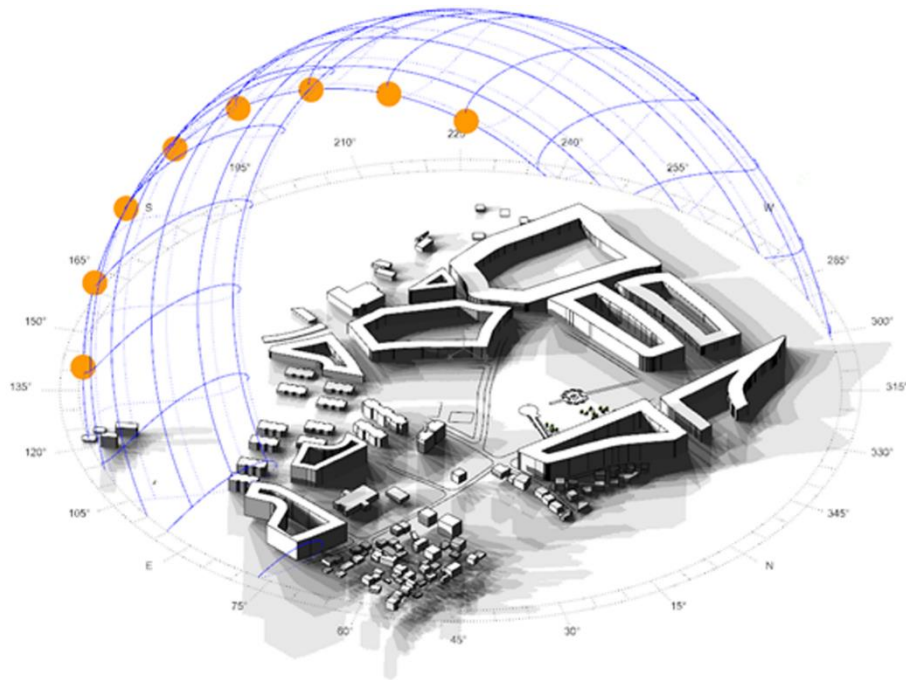


Figure 75 Sun Path- First Month

The following figure (76) shows the sun perpendicular ray at 12 AM, through 12 months. During this sun movement, the building shadows don't affect the site.

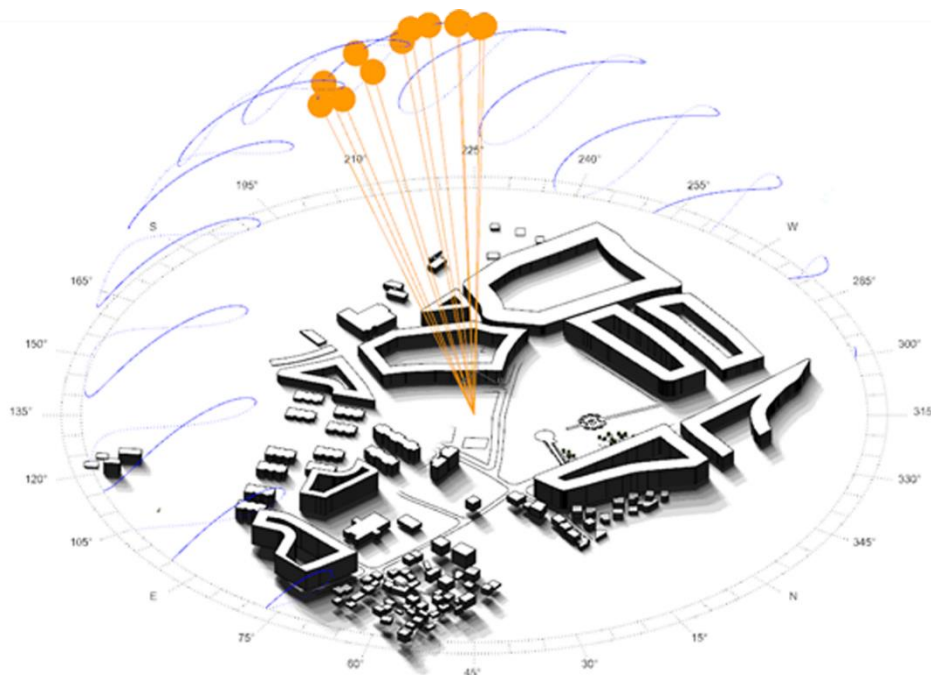


Figure 76 Sun Path- Perpendicular ray

5.1.28 SWOT Analysis

The last section of Site Analysis includes “SWOT” analysis. This is a strategic planning technique that is used worldwide to identify strengths, weaknesses, opportunities, and threats related to the design.

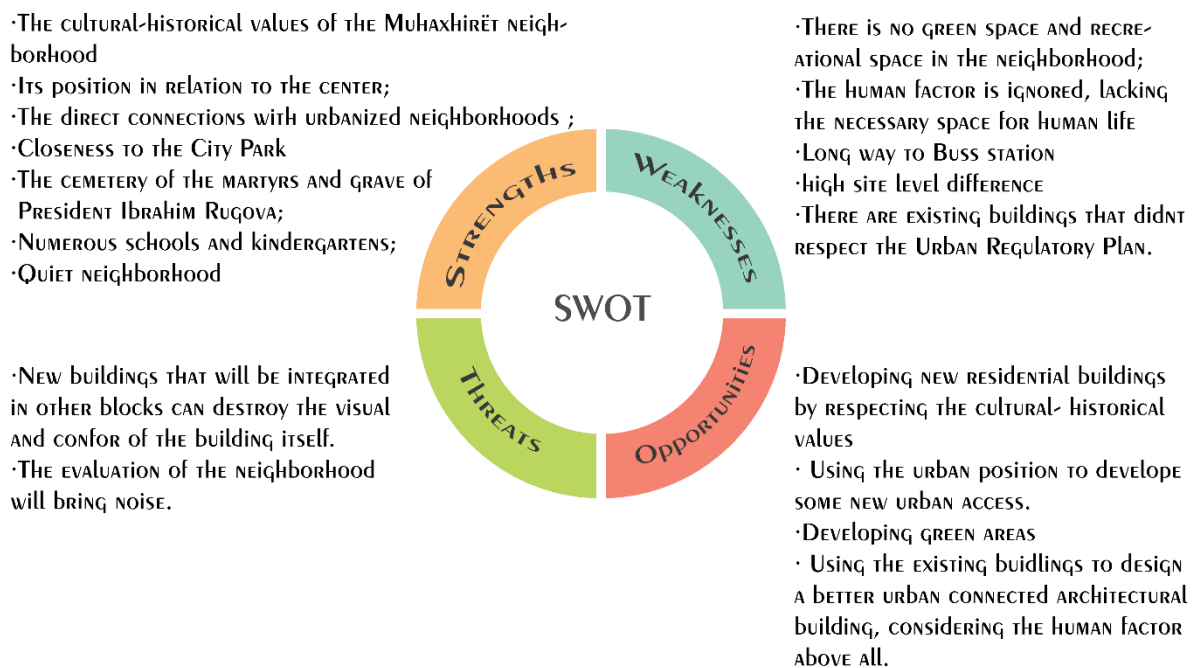


Figure 77 Swot Analysis

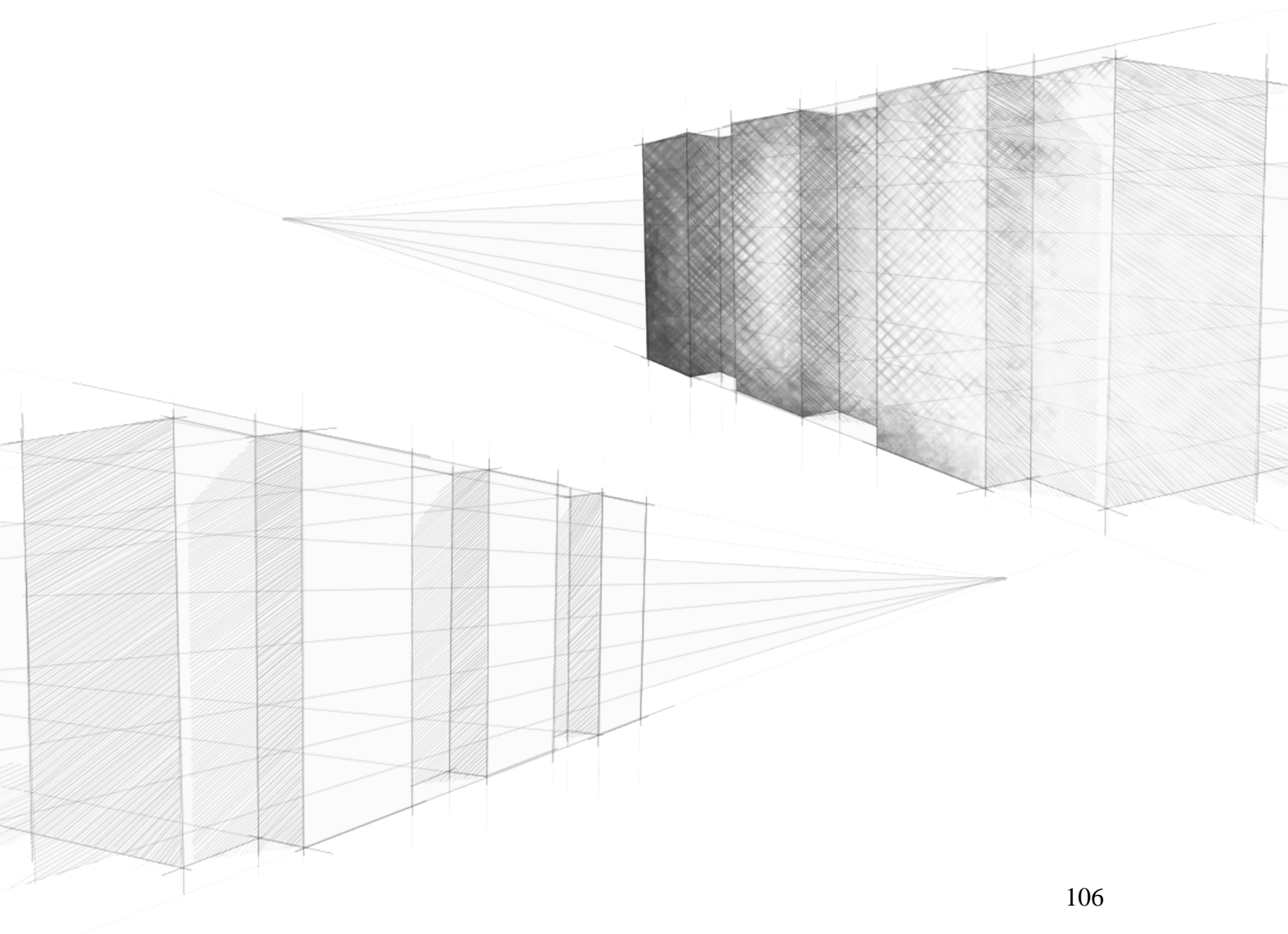
5.4 Scenarios

5.5.1 First Scenario - Replication

Replication has practically been around since crafts exist. Replicas, in essence, are the identical copies of the same original, without adding any innovation or modification to it. Various examples of it can be found as many styles have used replicas, especially the one belonging to modernism.

Examples like this have been used in the suburban areas in the United States, in the Soviet Union architecture, or the European neighborhoods with “similar houses”.

Replication in architecture was made possible also from the prefabricated elements which were quite popular in the Soviet era.





5.5.2 Second Scenario -Fluidity

To build something that visually strikes the observer and gives a unique feeling to the pedestrians, utilizing techniques of shape and form is something essential. By incorporating sleek lines and soft curves in the design, we can create a beautiful and flowing appearance.

Although creating a design with angular and sharp forms is a way of creating the shape of the building, smooth and infinite structures surely attract the imagination and the taste of many more.

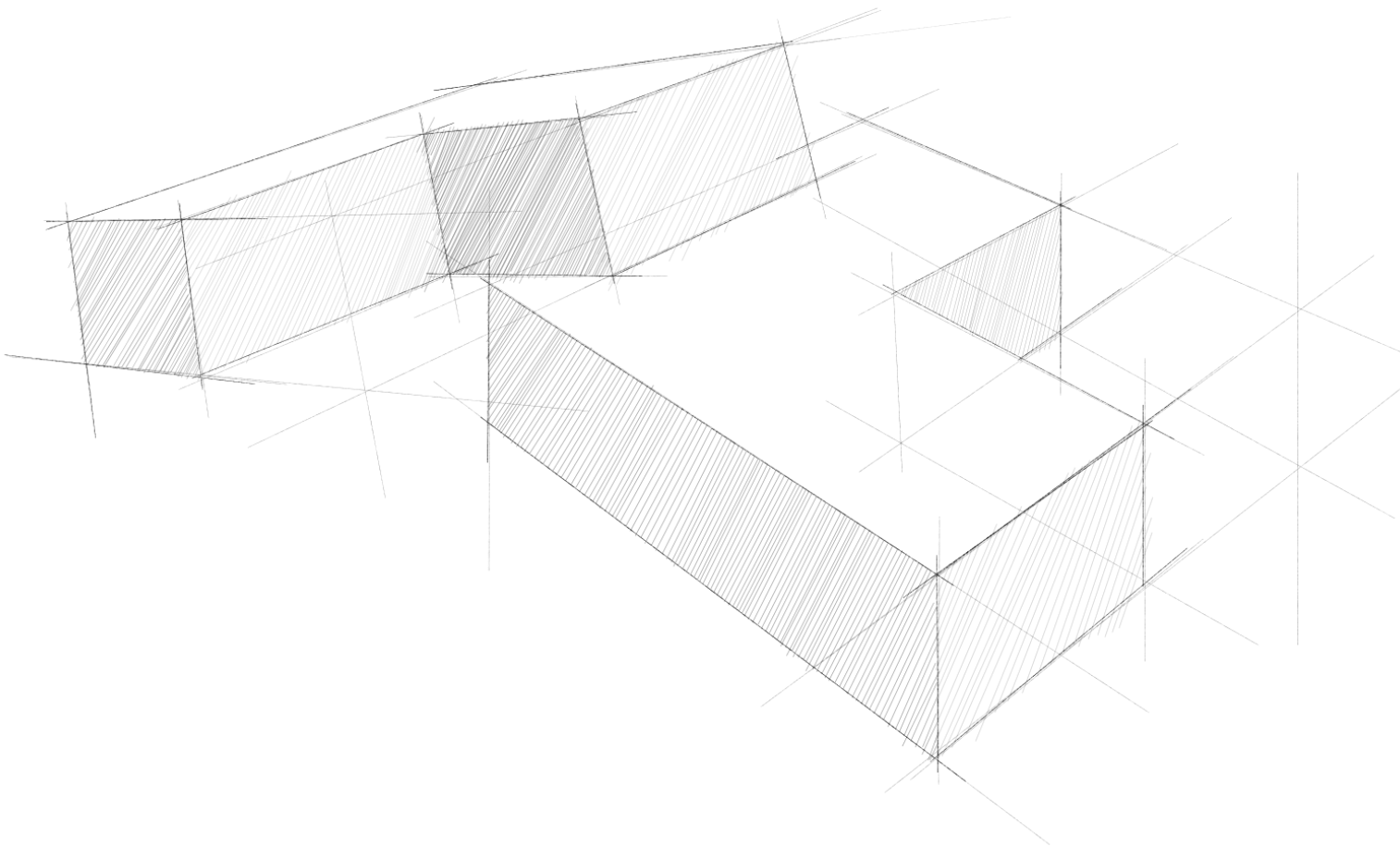
From enchantingly interior design to building that looks like amazing sea creatures, fluid architecture surely amazes the viewers by its charm looks.

5.5.3 Third Scenario - Modularity

The modular architecture is a design approach that divides bigger components into smaller ones. These components are called modules, that can be used into different systems, therefore creating new ones.

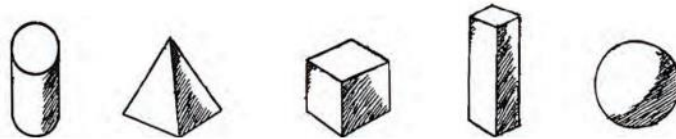
These modules are widely popular in recent times as it makes possible the recreating of forms and their industrial production. Modularity in architecture has been performed on several occasions to create different shapes and with low cost. Besides, there is quite a lot of flexibility in design.

A downside for modularity is that the low-quality modular systems are not quite optimized to have the best performance.



5.5.3.1 Formalization

“Preliminary shapes are beautiful because they are read clearly...Architecture is the masterly, correct and magnificent play of masses brought together in light. Our eyes are made to see forms in light; light and shade reveal these forms; ...cubes, cones, spheres, cylinders or pyramids are the great primary forms which light reveals to advantage; the image of these is distinct and tangible within us without ambiguity. It is for this reason that these are beautiful forms, the most beautiful forms. “ (Corbusier, 1976)



“Architectural forms, textures, materials, modulation of light, and shade color, all combine to inject a quality or spirit that articulates space. The quality of the architecture will be determined by the skill of the designer in using and relating these elements, both in the interior spaces and in the spaces around buildings.” (Edmund N. Bacon, 1974)

In the book 'Design, Project, and Development of Residential Buildings' the author illustrates the strategy of architectural design, mentioning two approaches, formalization, and perception. Shyqeriu describes the process of formalization (form-finding) by explaining the variety of strategies that can be applied. These strategies include stratification, proportions, modularity, rhythm, contrast, symmetry, composition, transformation, and so on. (Shyqeriu, 2016)

Relying on the strategies explained in the book 'Design, Project, and Development of Residential Buildings', the process of the scenario design starts with a Cube. This basic form goes through a various process that leads to the very final product; the module represented in Figure 78.

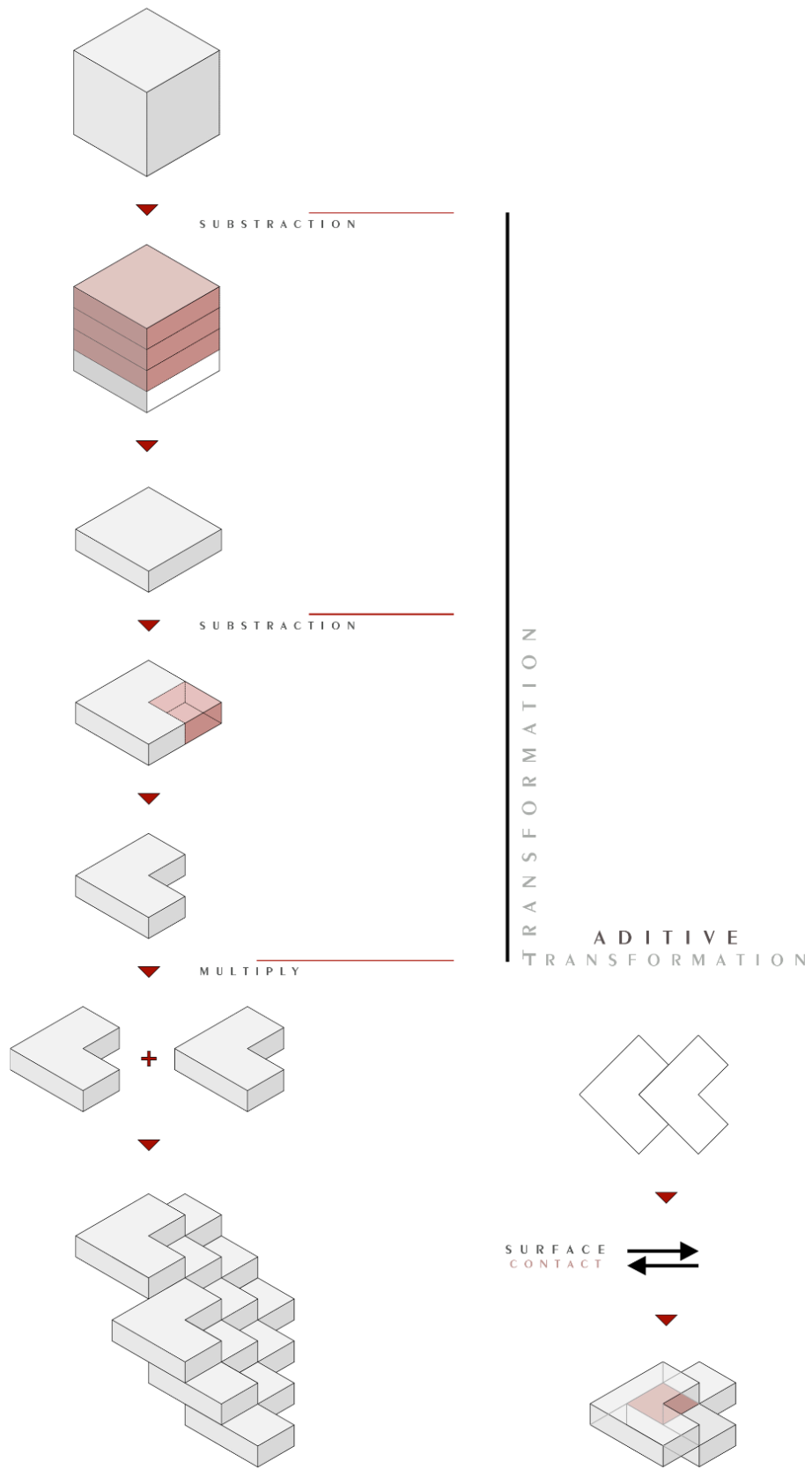


Figure 78 Formalization

5.5.3.2 Generative Evolution

Geometry, as a formal strategy through multiplication, alteration, transformation, transition and so on, can be used as a generator of forms and spaces. These operations generate articulations and topics such as; harmony, contrast, proportions, rhythm, symmetry, asymmetry, etc. Most designers adopt strategies that in nature are oriental or deductive. The essence of this approach lies in the fact that it is simultaneously educational and dissuasive of solutions. Oriental strategies do not rely primarily on theoretical principles but on experience and rules that aren't strict. (Shyqeriu, 2016)

One of the strategic design approaches is to identify and build "*primary generators*." "Primary Generators" should usually include issues that are likely to be central or critical to the design problem, such as function, structure, materiality, location, and so on, which serve as guiding principles. As such, the "primary generations" as design strategies not only initiate the design process but also guide it to the final design. (Shyqeriu, 2016)

Shyqeriu, in the book 'Design, Project, and Development of Residential Buildings' distinguishes three basic sources for "*primary generators*." (Shyqeriu, 2016) "*The first source is the program itself in terms of the radical obligations involved... The second source can be expected to be an important obligation that has a significant impact on designer thinking... In the third source, it is expected from designers to present their sequential program or guiding principles to carry the specific project.*" (Shyqeriu, 2016)

Relying on the strategic design approach explained above, the evolution of design identifies and builds "*primary generators*" considering site manners, to verify the design problem and solving it.

5.5.4 Schematic and Analytical Review

This section provides a concise evaluation of three proposed scenarios including:

- Function
- Circulation
- Access
- Natural Lightning
- Relation Plan- Section
- Geometry
- Massing
- Structure

5.5.5 Conclusion

Considering the Analytical Review all three scenarios complete a qualitative architectural design, that meet the needs of residents. But since this thesis aims for innovative architectural design the researcher will continue with the third scenario, Modularity.

6.0 Final Design

This chapter includes the final proposed design, the following templates represent:

- Floors
- Elevations
- Sections
- Modules
- Close view of particular functions
- Structure
- Materials
- Details
- Atmospheric views
- Interior Design

7.0 Conclusion

This research aimed to investigate the quality of new buildings in Kosovo and how contemporary architecture affects society. The researcher adopted a mixed approach, by using the quantitative approach to gather data of a high number of participants, in this case, Kosovo. And qualitative approach where the researcher collected data by interviewing respondents in the site of the proposed design.

A total of 6 respondents from 6 families were interviewed on the site. Meanwhile, 258 online questionnaires were answered by people in a wider area (Kosovo).

The first objective of this study was to determine the quality of new building in Kosovo. In order to gather information, the researcher interviewed respondents that live in Kosovo. The respondents were mainly concerned for the quality of the buildings in technical approach and esthetic approach. However, most of them indicated that the main disadvantages of these buildings include; Form and the design of buildings, the absence of community centers, small living areas, non-qualitative materials, noise, unsecure, the absence of necessary premises (utility, storage, wardrobe, and so on), cooling and heating, the absence of parking lots. Moreover, the researcher approached closer to the site and the respondents were asked for the quality of buildings in “Muhaxhirët” neighborhood. And most of them answered that the quality isn’t in desired condition.

The other objective was to inform about the contemporary architecture if this approach is adaptable to society of Kosovo and “Muhaxhirët” neighborhood in particular. The gathered responses actually approved that society in Kosovo is open to new approaches and technology as long as it offers a qualitative life.

7.1 Implications and Recommendations

From the above discussion it can be recommended that architects in Kosovo must be aware of the conditions and expectations of society, and what they are open to. The condition that occurred is not made by anyone else except from architects and it can only be solved by them.

Be aware that lands are overpopulating by buildings day by day and they need decades to be demolished, do not be the reason of architectural degradation!

8.0 Reflection on Learning

Writing a thesis is not an easy task and requires a lot of different steps to reach to the final result. Starting from structuring a first research proposal, in an early stage, to arrive in creating the research findings and conclusions, there are several times during the process that going back and forth is needed. This iterative procedure is continuous on-going process with the main ambition to learn and gather more knowledge regarding the chosen field of study, the process of conducting an academic research and yourself.

The researcher studied the architectural approaches in wide range and understood that Kosovo is left behind in many aspects and the architectural is one of them. Considering this the researcher decided to challenge the actual condition by designing a contemporary building where sustainability would be part of it without neglecting the human factor.

Finally, completing this thesis enabled researcher to gain knowledge and experience in both academic and personal skills that can help the researcher for further studies in this topic.

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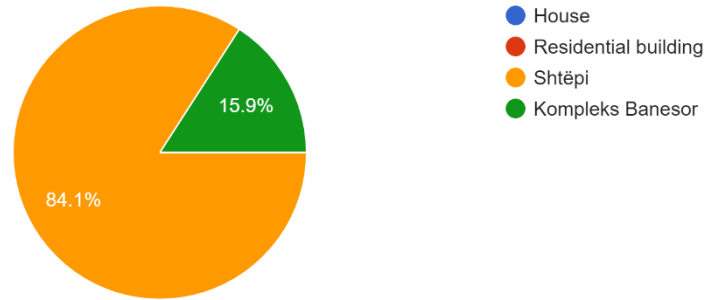
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Online Questionnaire results

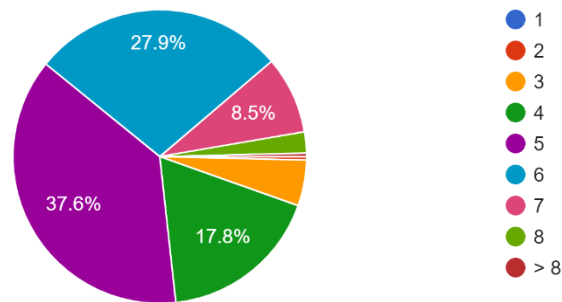
1. Where do you prefer to live?

258 responses



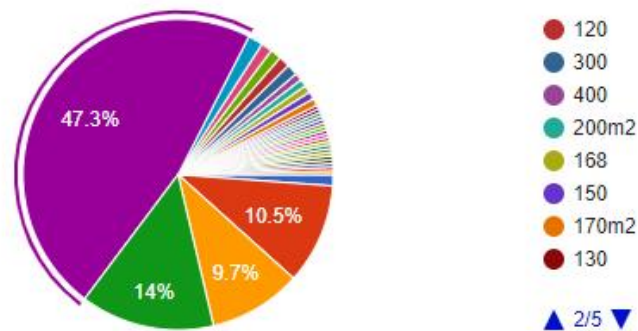
2. How many family members are there in your family?

258 responses



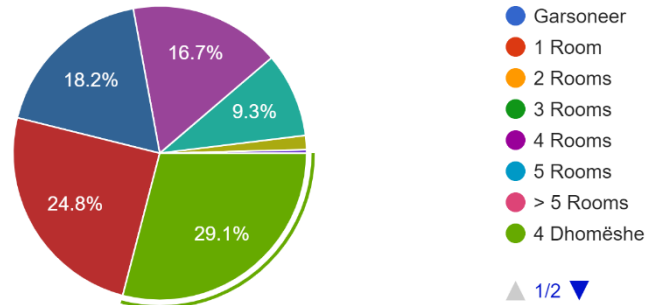
3. Describe the size of your apartment / house in square meters:

258 responses



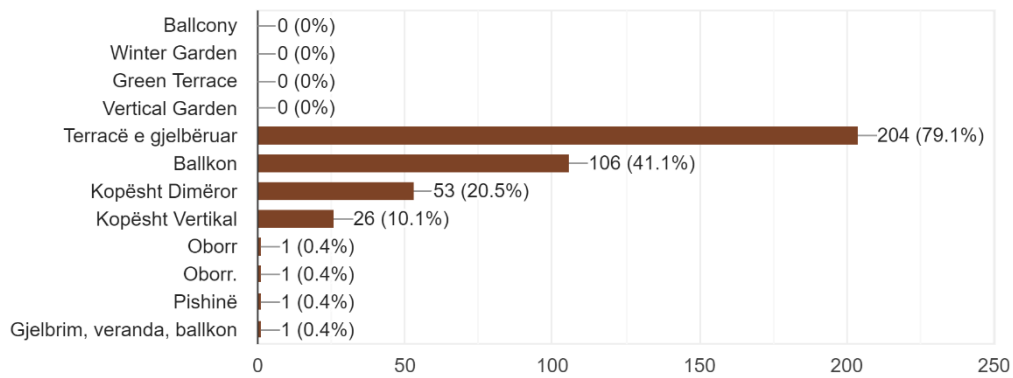
4. How many bedrooms does home / apartment have?

258 responses



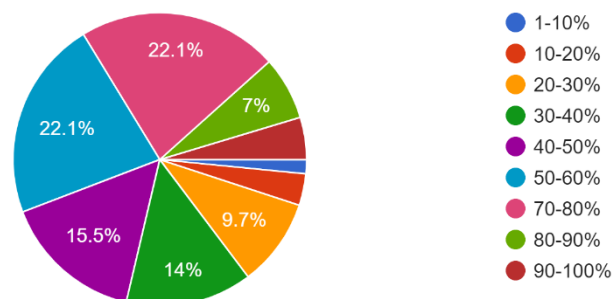
5. What are your preferences for outdoor spaces?

258 responses



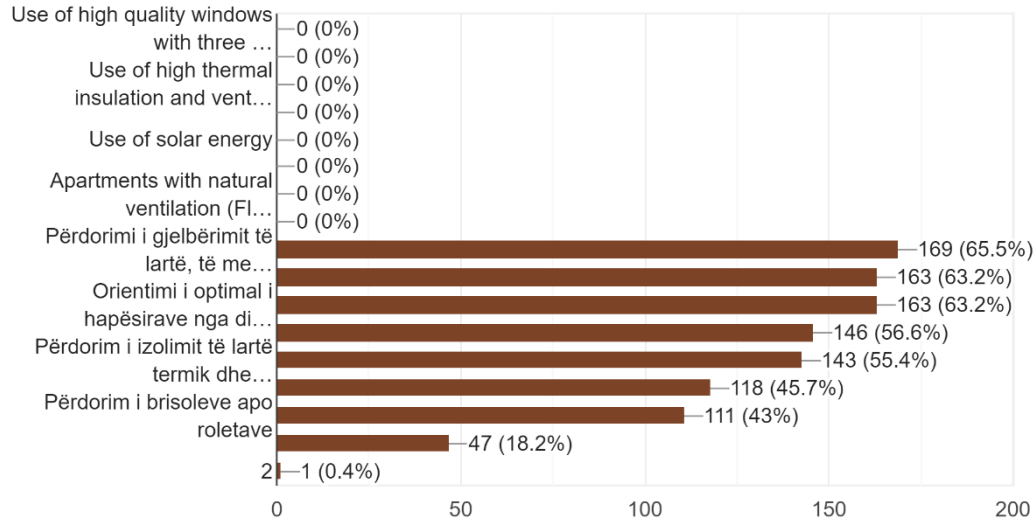
6. How much do you use outdoor spaces (terraces, balconies, etc.)?

258 responses



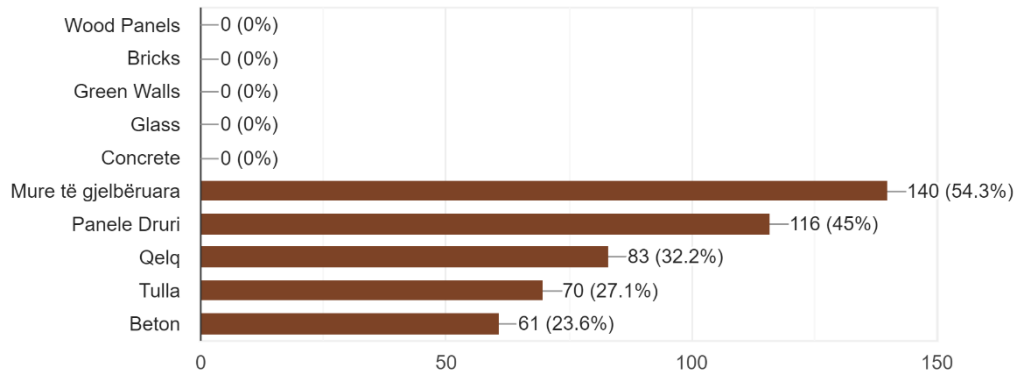
7. Based on your personal interest in sustainable development and implementation through green architect...lect the points you consider relevant.

258 responses



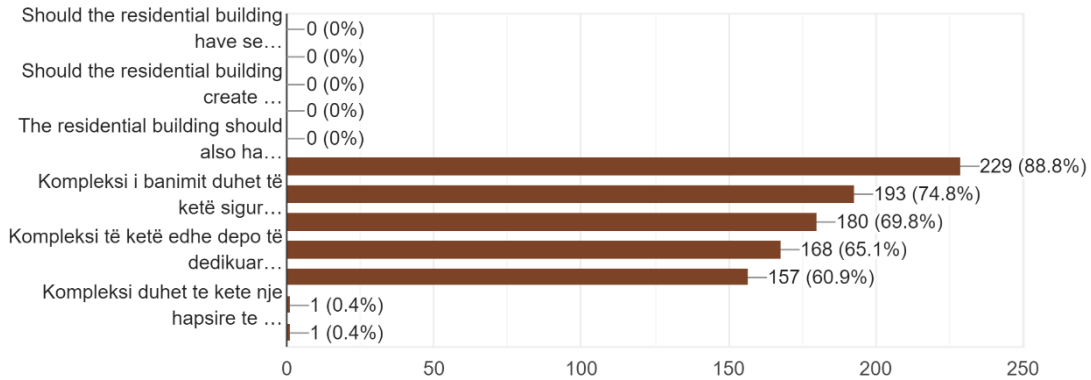
8. Pick the preferred material for the building facade and outdoor systems (balconies, terraces, etc.).

258 responses



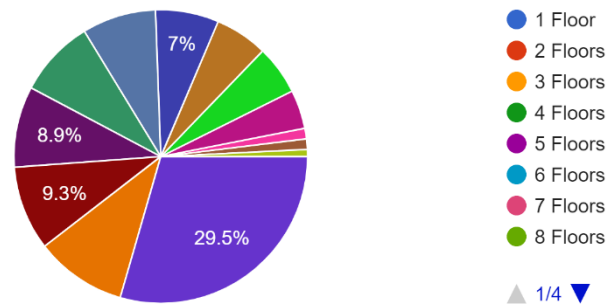
9. For home administration of the complex, select your preferences (choose all preferences)

258 responses



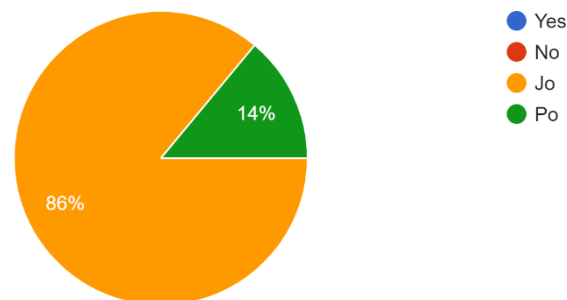
10. What is the number of floors that you would prefer for your building?

258 responses



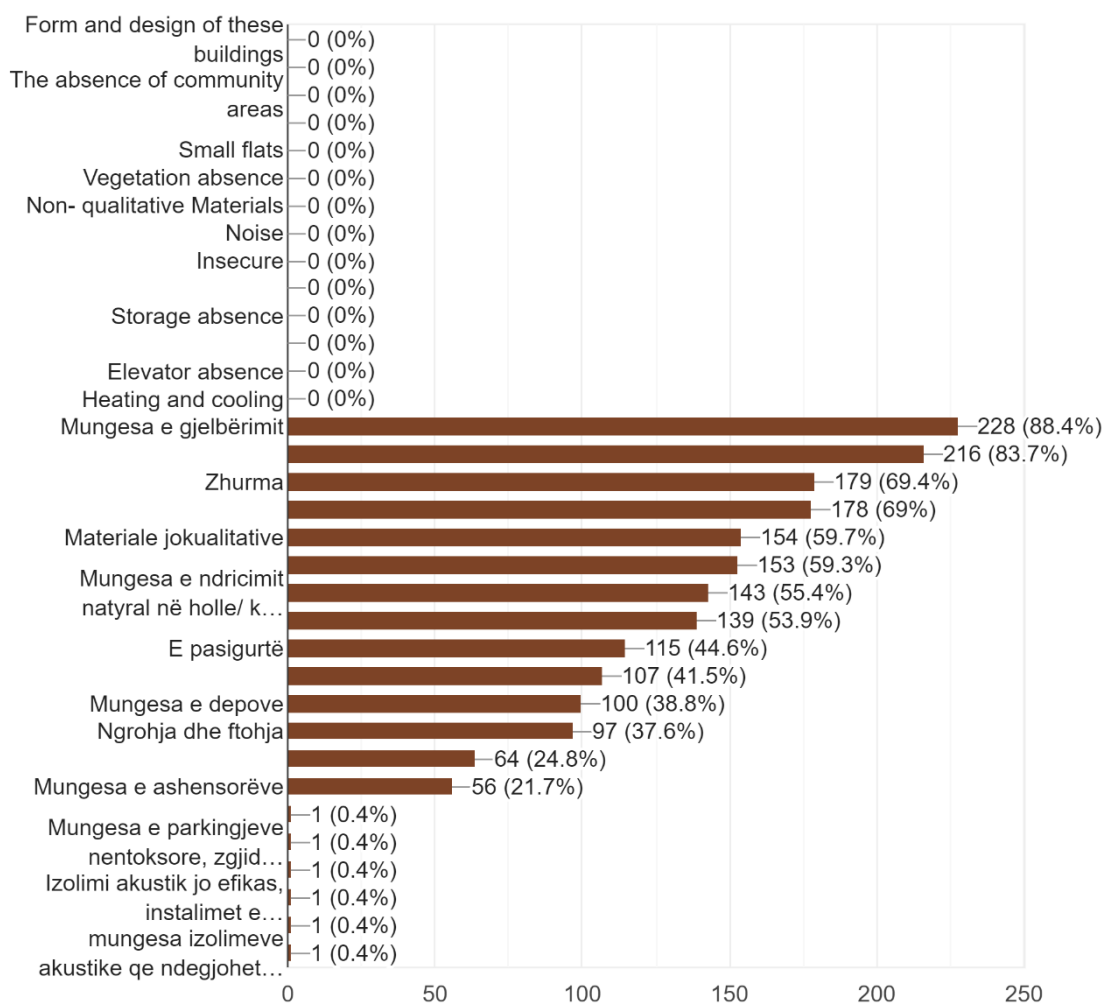
11. Are you satisfied with the quality of new buildings in Kosovo?

258 responses



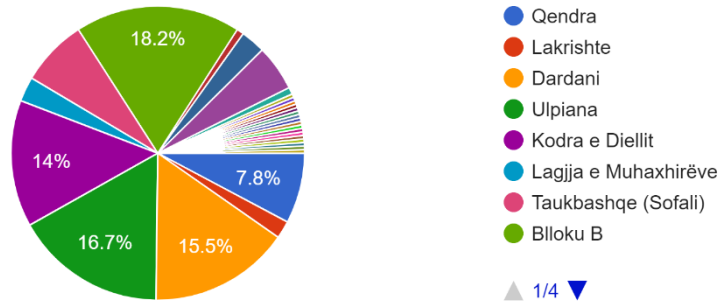
12. Which are the main disadvantages of these buildings?

258 responses



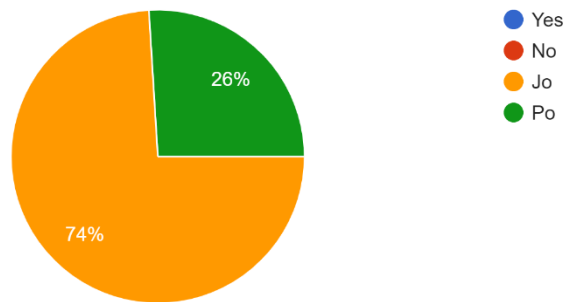
13. Pick one of Pristina neighborhood where you would like to live in:

258 responses



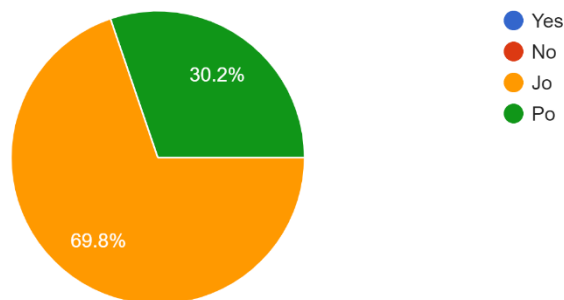
14. What do you think of urban development of "Muhaxhirët" neighborhood, is it qualitative?

258 responses



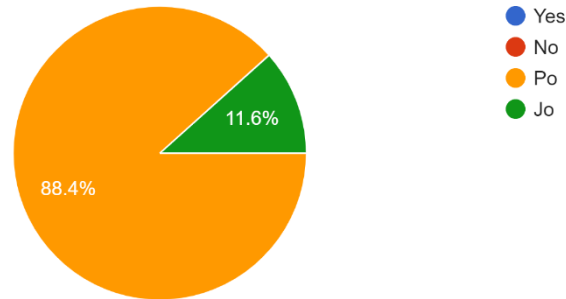
15. What do you think about new buildings in "Muhaxhirët" neighborhood, are they qualitative?

258 responses



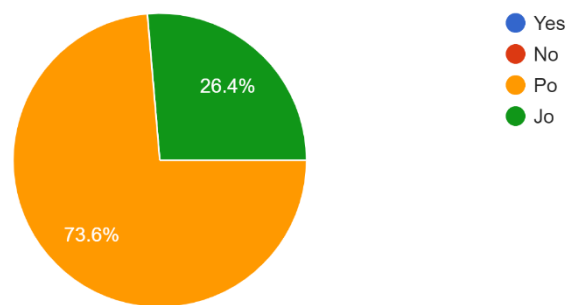
16. What do you think about Hybrid complexes, are they acceptable to you?

258 responses



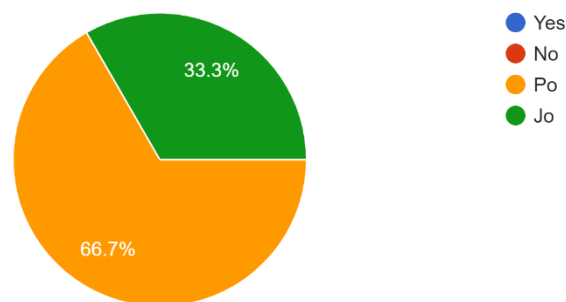
17. Do you know about the prefabricated buildings and the benefits that it provides?

258 responses



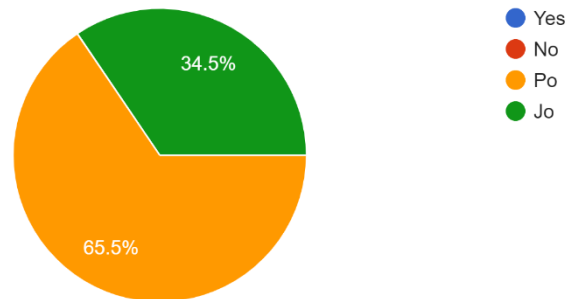
18. If you had the chance to live in an prefabricated building would you accept?

258 responses



19. Do you know about the underground buildings and the benefits that it provides?

258 responses



20. If you had the chance to live in an underground building would you accept?

258 responses

