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Editorial

Mehmet Topçu (Editor in-Chief)

JOURNAL of DESIGN for RESILIENCE in ARCHITECTURE and PLANNING (DRArch) has published Volume 2 Issue 2, which includes up-to-date research problems with qualified articles. As you have already known, DRArch is an open-access journal which means that all content is freely available without charge to users or institutions. Users can read, download, copy, distribute, print, search, or link to the full texts of the articles, or use them for any other lawful purpose, without asking prior permission from the publisher or the author. This is in accordance with the BOAI definition of open access. All publications in this journal are licensed by the Creative Commons Attribution 4.0 International License. Despite a very short period, DRArch journal has been indexed in the following abstracting, databases & indexing; EAAE (Architectural periodicals database), BASE (Bielefeld academic search engine), Dimensions (A comprehensive database), Google Scholar (Academic search engine), IdealOnline (Academic search engine), Microsoft Academic (Academic search engine), Open Archives (OAI-PMH registered data providers), PKP index (Public Knowledge Project index), Scilit ("scientific" and "literature" academic search engine), Worldcat-OCLC (The world's largest library catalog), ICI (Index Copernicus world of journals), OpenAIRE (Open Access Infrastructure for Research in Europe)

As the DRArch team, we have again good news in this issue. DRArch journal started to be indexed in the following new abstracting, databases & indexing as;

- CiteFactor– Directory Indexing of International Research Journals
- Core- Collection of open access research papers
- Sherpa Romeo- Presents journal open access policies
- Asos Indeks- A comprehensive database
- Norwegian Register- The register for scientific journals, series, and publishers

In the Volume 2 Issue 2, there are studies under three different groups, namely the theory of resilience, sample area and education. In keeping with our tradition, this issue also includes articles from different geographies and disciplines. We are honored to have published qualified articles in the fields of urban design, architecture, and education.

The visual on the cover is a reference to the perfection in details providing durability. The cover of this issue is a detail from the Greek Orphanage in the Princess Island in İstanbul, Europe's first and World's second-biggest wooden structure designed by architect Alexandre Vallaury and constructed in the late 19th Century. The photo was taken by architect and photographer Sena Özfiliz in 2006.

Volume 2 Issue 2 begins with the study by Ali A. Alraouf which entitled "Towards a holistic interpretation of resilient cities' concept: The case of Doha, Qatar". The study intends to identify the resilience and resilient cities in the current architecture and planning discourse. This study calls for a more holistic understanding of resilience and its impact on the way cities are designed, planned, and developed. Using the case of Doha, the paper illustrates a new conceptual understanding of cities' resilience providing a worthy case of resilience that allows the city to successfully cope with the consequences of all the major shocks, stress, and unforeseen challenges.

Another interesting conceptual paper is titled "Re-viewing the role of culture in architecture for sustainable development" comes from Neslihan Dostoğlu. The author explains the context of urban identity, spirit, cultural and natural heritage, effective and sustainable urban structure as the architectural approaches adopted after Modern Architecture, within the framework of economic, technological, and socio-cultural developments in the world.

The article "Typo-morphological assessment of Ludlow and Famagusta old town" by Nevter Zafer Cömert and Şebnem Hoşkara identifies the architectural and planning dimensions of urban morphology for Ludlow and Famagusta, which carry similar morphological characteristics on the planning level and different typological characteristics on the architectural level. The content of this study includes urban morphology based on the two pioneering morphological approaches, and then it will guide future interventions, design, and planning policies.

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The fascinating piece of work comes from Damla Özinal and Onur Erman with the article titled “Housing flexibility in terms of changes, opportunities, and sustainability of goals and values”. This study, which focuses on housing flexibility, aims to determine the demands of the users regarding the flexible use of housing and to understand the internal dynamics of the process that determine the housing flexibility in this context. Within the scope of the study, it is thought that the housing flexibility is formed by evaluating the changing demands of the users within the framework of the sustainability of the goals and values and realizing them according to the existing capabilities.

Sevkiye Sence Turk is the author of the fifth article titled “Three key issues of urban renewal: Approaches for Turkey”. This study provides insight into policies that can help support urban renewal in the Turkish case of 'land assembly', 'recovery of urban infrastructure' and 'social sustainability' concepts, which are part of urban regeneration processes.

The authors, Javad Eiraji and Seyed Ahmad Reza Yekani Fard, aim to explain the control of the transition from tradition to modernity with culture and architecture, with Iranian architecture of the First Pahlavi Period. The authors mention a quick review on Iran during the first Pahlavi era and its contemporary social and political history and tradition and modernity in its architecture and they also analyze the architecture of two famous foreign architects, Nikolai Markov and Andre Godard who were invited by the government to bring reformation and modernization.

The last group of articles in Volume 2 Issue 2 of DRArch is about educational theories and practices. We hope that the experimental works of three different architectural schools with a contemporary understanding of education will be interesting for DRArch readers.

The first article of this group was prepared by İlkay Dinç Uyaroğlu with the title “Resilience in interior architecture education: Distance universal design learning in the COVID-19 pandemic”. This article is about the COVID-19 epidemic and urgent adaptation to the distance education process. This study is about the teaching and learning experiences of Universal Design (UD) course conducted in the Department of Interior Architecture and Environmental Design, Atılım University, of the experiences, limitations and potentials experienced in the distance education process.

Nilgün Kuloğlu and Ali Osman Asasoğlu discussed a unique subject in the context of design ideology and education in their article titled “Village institutes as a design approach”. In this study, besides examining the possible intellectual, architectural approach and design method preferences as architectural products in Village Institute buildings, their contributions to architectural project education were revealed through the area where Trabzon / Beşikdüzü Village Institute is located in the 2018-2019 Fall Term in the Department of Architecture at Karadeniz Technical University.

The last article of education part, which is titled “Designing a subway station for your campus: Case of transit architecture elective at AGÜ”, was written by Özgür Öztürk. As of 2019-2020 Fall Semester, Abdullah Gül University Department of Architecture has developed a critical perspective on current prescriptive design methods for transportation buildings and their environments in the elective course called ARCD 110 Transit Architecture. Discussions on the design method, starting from multimodal and micro-mobile transportation possibilities, follow the personal space as a design parameter. These arguments are followed by sustainability from the triple bottom line perspective and the possibilities of different technologies their effect on transportation-related buildings. In this study, a selection of examples from which simulation tools were also tested in order to test the design situations in different conditions are included.

We believe in the strong relationship between the concept of resilience and education, which is necessary when designing the places, cities, and lives of our future. We plan to include studies on education in our next issues. As the editor-in-chief of second issue DRArch, I would like to extend my deepest gratitude to all participants and all our readers for the support they provide to the Journal. And I would like to a special thanks to the referees. We look forward to your comments, contributions, suggestions, and criticisms.

Best regards...

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Following names that provided valuable contribution as referees of articles in this issue are:

Alper Çabuk (Prof. Dr.), Eskisehir Technical University, Turkey

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Cover photo: Image copyright © Sena Özfiliz, İstanbul, (2006). The image on the left is detail from the Greek Orphanage in the Princess Islands in Istanbul, Europe's first and World's second biggest wooden structure
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DRArch's objectives are:

- to question how future building technologies are revolutionizing architectural design, city planning, urban design, landscape design, industrial design, interior design and education,

- to catalyze the processes that lean on interdisciplinary and collaborative design thinking, creating a resilient thinking culture,

- to improve the quality of built environment through encouraging greater sharing of academicians, analysts and specialists to share their experience and answer for issues in various areas, which distributes top-level work,

- to discover role of the designers and design disciplines -architecture, city planning, urban design, landscape design, industrial design, interior design, education and art in creating building and urban resilience,

- to retrofit the existing urban fabric to produce resilience appears and to support making and using technology within the building arts,

- to discuss academic issue about the digital life and its built-up environments, internet of space, digital in architecture, digital data in design, digital fabrication, software development in architecture, photogrammetry software, information technology in architecture, Archi-Walks, virtual design, cyber space, experiences through simulations, 3D technology in design, robotic construction, digital fabrication, parametric design and architecture, Building Information Management (BIM), extraterrestrial architecture, , artificial intelligence (AI) systems, Energy efficiency in buildings, digitization of human, the digitization of the construction, manufacturing, collaborative design, design integration, the accessibility of mobile devices and sensors, augmented reality apps, and GPS, emerging materials, new constructions techniques,

-to express new technology in architecture and planning for parametric urban design, real estate development and design, parametric smart planning (PSP), more human-centered products, sustainable development, sustainable cities, smart cities, vertical cities, urban morphology, urban aesthetics and townscape, urban structure and form, urban transformation, local and regional identity, design control and guidance, property development, practice and implementation.

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Editorial Team

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Research Article
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Towards a holistic interpretation of resilient cities' concept: The case of Doha, Qatar

Ali A. Alraouf*

Abstract

Resilience and resilient cities are heavily used terms in the current architecture and planning discourse. Given the mixed interpretations of the concept of "Resilient Cities", this paper calls for a more holistic understanding of the concept and its impact on the way cities are designed, planned and developed. By labelled as resilient, cities should transcend the current limited definition of the resilient cities concept which focuses merely on facing environmental challenges and readiness for climate change impact and other forms of natural disasters. Resilience as an attribute for cities and as will be shown in the case of Doha, the capital city of Qatar, should be holistic and inclusive to embrace all aspects of city development including economical base, cultural assets, social structure and urban development. Using the case of Doha, the paper illustrates a new conceptual understanding of cities' resilience. The paper analyses the contemporary evolution in Doha and highlights the milestones in structuring the new vision for Doha's development as a resilient city holistically. In the last decade, the city was subjected to several radical transformations started from winning the bid to host the 2022 FIFA world cup, decrease in oil prices and finally the sea, air and land blockade imposed on Qatar by its adjacent neighbors. The paper illustrates Doha's model in providing a worthy case of resilience which allows the city to successfully cope with the consequences of all the major shocks, stress and unforeseen challenges, the city have faced in the last decade.

Keywords: resilient cities, holistic resilience, Doha, Qatar, urban resilience, Doha sustainable development, climate change, urban impact.

1. Introduction

Cities worldwide are challenged by a high complexity of acute and chronic problems, including challenges related to economic development, social polarization and segregation as well as climate change and ecological degradation. Hence, cities must become resilient to a wider range of shocks and stresses. The notions of urban resilience and the resilient city have gained considerable attention and interest over recent years**.** Urban resilience is a broad concept that is sometimes blurred and abstract. In the scope of this research, we are also interested to relate the concept of urban resilience with the concept of urban sustainability. Our position as explained in the case of Doha, Qatar suggests that the resilience of cities facing variable conditions, threats and forces should also consider the sustainable future of the local communities and the urban territories they

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belong to. As Zhang and Li (2018) indicate that rational urban development can be achieved only when it is both resilient and sustainable. Hence, urban planners, policymakers and researchers should pay equal attention to both urban resilience and urban sustainability before decision-making. In current studies, some scholars hold the view that urban resilience has already replaced of urban sustainability as the mainstreaming concept in the discipline of urban studies (Baldwin, 2018; Coaffee, 2017; Meerow, 2016).

The selected case study for the paper, Doha city represents another crucial aspect related to the size of the city and the state and to which extent this would accelerate or hinder the impact of threats, risks and challenges. This paper will explore various aspects of the resilience and its relevance to the design of the built environment in urban areas such as Doha. After familiarization with the concept of resilience and the paper discuss solutions to prepare the neighborhoods, buildings and infrastructures to withstand and recover quickly from unprecedented events.

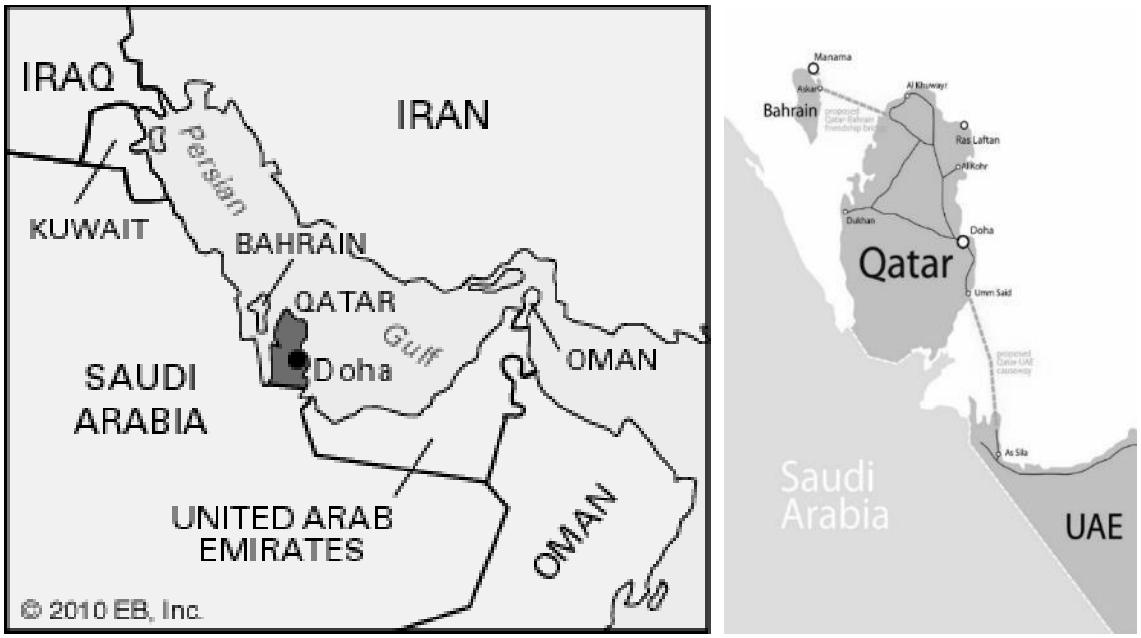

Figure 1 Contextualizing Qatar and Doha within the Geography of the Middle East and the Gulf states (Source: MME Qatar).

Figure 2 The emerging urbanity of Doha (Source: Author).

2. Interrogating the Standardization of Planning Concepts: The Case of Resilience

In the last decade, resilience is becoming the most recent terminology used in the realm of urban planning and development. Accumulated literature, conferences and journal papers, are discussing

the topic in the domain of urbanism and planning. Conferences are organized around the globe to discuss how to make cities resilient? Yet, we never pause and question the validity of having a sequence of concepts which would emerge every decade or so to dominate urban planning thinking. Lately, resilience has become an important goal for cities, particularly in the face of climate change. Yet, for a lot of cities around the world, the concept of resilience is still ambiguous. Cities are deeply complex, sophisticated and adaptive systems. The city is the most complex and typical social-ecological system shaped by human beings. Hence, every single city has its own narrative. The mechanistic model of urbanization which is merely using globally accepted concepts coined by international organizations like UN-Habitat should be contested. During the last four decades, UN Habitat, World Bank, International Monetary Fund and other development agencies supported by researchers and academics maintain the ritual of inventing a description for the successful city and change it every five to ten years. Cities in the whole world and particularly in the developing countries were kept confused whenever a new concept emerged; modern, sustainable, smart, green or resilient city. Once a city tries to use its local resources to fully understand the concept and how it will positively affect its development, a new one and even more sophisticated and ambiguous is introduced.

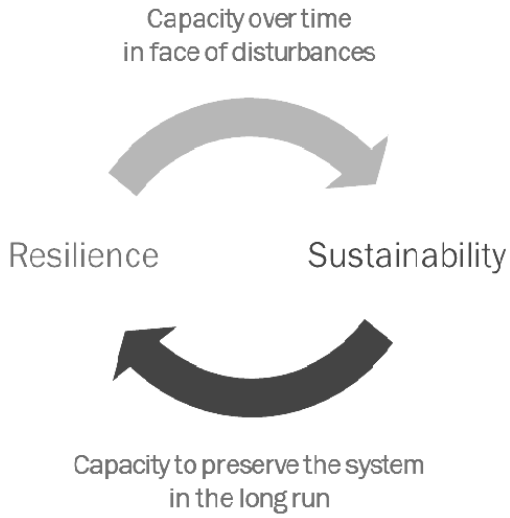

Figure 3 The dynamic relation between resilience and sustainability (Source: Author).

In an increasingly complex and changing world where global problems are felt locally, the approaches used to plan, design, and build our urban neighborhoods are failing due to the adoption of standardized planning concepts. Primarily, the evolution of cities through rigid, top-down action proved ineffective particularly with the continuation of the same problems including environmental threats, urban poverty, housing crisis, car dominance urbanism and other constant challenges. Campbell (2018) argues that the key to fixing our broken patterns of urban development does not lie in grand plans or giant projects; rather, it lies in the collective wisdom and energy of people harnessing the power of many small ideas and actions to make a big difference. He calls this making "Massive Small" change. Such perspective is significant for the discussion of the emerging concept of resilience in cities and urban areas. Hence, a shift towards a holistic understanding of the local context and engaging the local community would pave the way to an authentic and credible urban resilience related to people and places.

To create resilience in urban systems, cities need to be able to learn, adapt and transform across sectors and levels. One definition of urban resilience is the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow regardless of the kinds of long-lasting pressure and severe shocks they experience. Cities are very vulnerable when any of their subsystems are destroyed or fail to adapt to new challenges. Such a situation may lead

to a fatal crisis or even destruction. Uncertain factors, such as natural disasters, climate change, energy crises, political instability, financial crises, food security and terrorist attacks play an important role in threatening urban development (Spaans & Waterhout, 2017). In other words, the concept of resilience should be overextended and transcend the main topic it is associated with; climate change. As explained, cities face plenty of negative and positive challenges which require resilient policies and strategies articulated from within and not imposed by outsiders.

3. Conceptualizations of Resilience

Resilience is the ability of a system, community, or society exposed to hazards to resist, absorb, accommodate to, and recover from the effects of a hazard in a timely and efficient manner (Jha and al., 2013). The paper initiates a discussion of how the definition might serve as a boundary object, with the acknowledgement that applying resilience in different contexts requires answering: Resilience for whom and to what? When? Where? And why? Using general terms and global concepts won't help in achieving any level of tangible change as long it is not coupled with a sincere attempt to fully understand the local condition and adopt the concept to the realities on the ground. In the work of great urban theorists such as Jane Jacobs, Christopher Alexander, and E. F. Schumacher, the main invitation for urban planners is to consider locality and value small actions and humble interventions. After reviewing the scholarly literature on urban resilience (Meerow and el., 2016) have concluded that the term has not been well defined. Their justification was based on that existing definitions are inconsistent and underdeveloped with respect to incorporation of crucial concepts found in both resilience theory and urban theory. (Pizzo, 2015) problematizes the introduction of the concept of resilience into the planning domain from three main starting points: 1. The nature of the events which are said to require resilience; 2. The different nuances in meaning that resilience assumes according to those different events, and 3. The theoretical and operational problems the concept entails. The paper sustains that multiple sub meanings are embedded within one interpretation of resilience that leave the concept open to rather large margins of ambiguity, which emerge considering its operationalization. The concept seems to fit and to be appropriate within different paradigms, planning traditions and policy frameworks. Its alleged 'neutrality' is one of the main reasons of its pervasiveness, but also of its ambiguity, showing latent controversial implications, which are progressively emerging in critical planning theory.

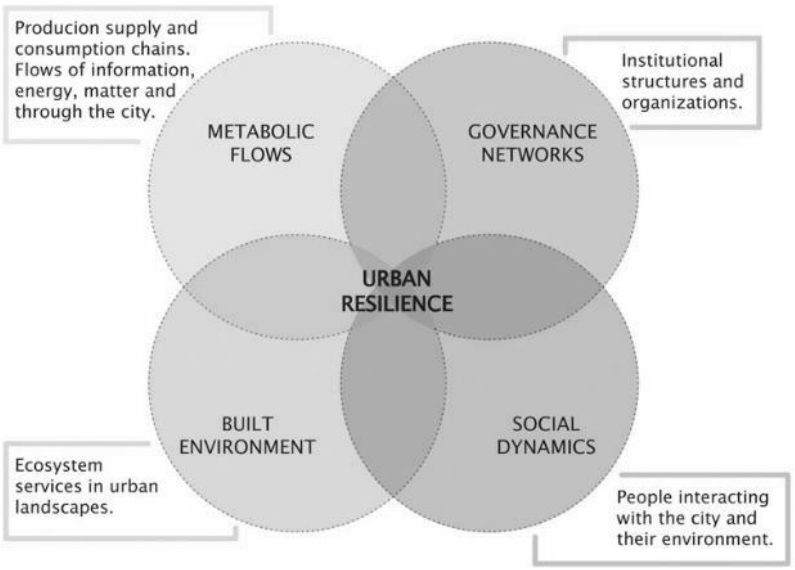

Figure 4 The holistic approach to urban resilience (Source: Author).

3.1. Resilience in Urbanism and City Planning

The holistic understanding of urban resilience resonates with the Sustainable Development Goals (SDG) as compiled by the UN Habitat. Particularly, goal 11 suggests the importance of creating inclusive, resilient, sustainable and safe cities. This paper provides an overview of the development of the resilience concept in the domain of urban development and planning. Over the last two decades the concept of resilience has experienced escalating interest. However, due to a lack of consistency in defining and measuring this theoretical construct within and across disciplines, the recent explosion of literature on resilience has contributed more to confusion than clarity among researchers and policy makers. The notion of resilience is gaining increasing prominence across a diverse set of literatures on cities and climate change. Although there is some disagreement among these different literatures about how to define and measure resilience, there is broad consensus that: (1) cities must become resilient to a wider range of shocks and stresses in order to be prepared for climate change; and (2) efforts to foster climate change resilience must be bundled with efforts to promote urban development and sustainability (Leichenko, 2011). Hence, the paper calls for a need to revisit the concept and its utility to the prosperity of cities. However, resilience has been closely associated with sustainability for more than a decade, although without precise meaning and often as an additional label attached to pre-existing research (Timon, 2014). Urban resilience is a broad concept that is sometimes blurred and abstract. Part of the effort to render the concept to a clearer interpretation is first to assert that Urban resilience addresses adaptation as well as mitigation. It is associated with spatial planning policymaking in the context of different levels and forms of uncertainties. Therefore, urban resilience provides a new way of framing and responding to uncertainty and vulnerability. Considering this interpretation, urban resilience offers an alternative paradigm for planning strategies.

4. Contextualizing Doha: The Rising Competition between Gulf Cities

Before discussing the experience of Qatar, this section is contextualizing the State within the Gulf context and elaborates on the notion of the regional competition as a form of stress and challenge. While most people think of cities developing organically over hundreds of years, many who live in the Gulf are aware of how quickly some cities can grow, expanding exponentially in terms of buildings, infrastructure, and population. Much of the rapid transformation has been guided by an intense inter-city competition to attract investments, human resources and tourism particularly because of oil prices decline. The Gulf States have grown rapidly due to their large reserves of oil and gas. Being aware of ending resources, the era after the oil is already being planned by the governments in the Gulf region (Höselbarth, 2010). The Gulf States while mostly young and small, they are the largest builders and developers in the world. Every single capital Gulf city is characterized with shopping malls, skyscrapers, artificial islands, gigantic airports, real-estate fantasies and signature museums. Yet, they have also realized that another transformation is needed from oil-based to post-oil societies. With oil resources running out, a focus on the post-oil era is a priority.

The first wave of competition was manifested in using the lucrative oil revenues in constructing a distinct image of modernity and approaching the global paradigm. Dubai was the initiator of this wave with the deliberate focus on iconic developments resulting in a model which was blindly adopted in other Gulf and Middle Eastern cities. The second wave of Gulf cities' competition emerged from the realization of the depletion of carbon resources or the gradual loss in its global value due to advances in renewable energy sources. A fact which was substantiated by the sever decline in oil prices which construct the backbone of Gulf States' economic base. As these cities compete, aiming to highlight their unique offerings and attempting to clearly distinguish themselves from other cities, they have chosen to rely on place-branding as a tool. The staging of events of international importance (such as Formula One Races in Bahrain and Abu Dhabi, upcoming World Expo 2020 at Dubai and prospective 2022 FIFA World Cup at Qatar), the emphasis

awarded to star-architecture and the emergence of strongly themed mega-projects characterize such development. Thus city-positioning and place-branding begin to assume the status of urban development models (Mishra, 2016). All Gulf cities are in the process of diversifying their economic base, with the vision of transitioning to a sustainable post-oil future, they are positioning themselves as places to visit, work and live. Place-branding has emerged as a significant trend across the Gulf cities in the construction of this image and consequently in the production of places.

Questions about the future of contemporary Gulf cities are important as the drastic changes taking place particularly in the economic side, indicates a necessity to consider a new blueprint for Gulf cities' future. Replacing glittering facades, high-end hotels, artificial islands, huge shopping malls, and the tallest constructions of the world, the region nowadays need to attract people from all over the world to contribute to a different kind of economy. The catalyst for the old model of development was the discovery of huge amounts of oil and gas resources in the 1960`s leading to prosperity (Gremm and els., 2015). But oil reserves will be exhausted soon. How do the cities of the Gulf region respond to this drastic change? Are they, like so many other cities in the world, trying to reach the status of a knowledge or creative city? Is it indeed a target of these wealthy oil-based cities to set up a knowledge society based on knowledge economy not mere natural resources?

5. The Narrative of Qatar: A Small State with Big and Legitimate Aspirations

The skeptical positon regarding Qatar's ability to construct an inspiring model of development is based on its small size, limited population and the massive presence of expatriates. Roberts (2015) stresses the concept of "brand Qatar" as a catalyst which helped the small size State to gain global recognition and changed its character so completely in so short a period. He based his interpretation on shifting the leadership in 1995 to an emerging leader with a progressive vision for the future. The State of Qatari's cultural identity, which was formed throughout the history, represents a balanced combination between conservatism and liberalism. The pillars of this progressive vision are diversified and balanced foreign relations, establishing a leading role in media through Al Jazeera network, and extensive investment in gas production and liquefaction. Ultimately, bold initiatives require bold leadership and Qatar is yet again, blessed with this resource (Richer, 2014). Additionally, Kamrava (2013) argues, Qatar's enormous oil and gas wealth has permitted the ruling Al Thani family to exert a disproportionately large influence on regional and even international politics. Qatar is, as Kamrava (2013) explains is a "tiny giant": although severely lacking in most measures of State power, it is highly influential in diplomatic, cultural, and economic spheres. Kamrava presents Qatar as an experimental country, building a new society while employing what he calls "subtle power." It is both the headquarters of the global media network Al Jazeera and the site of the U.S. Central Command's Forward Headquarters and the Combined Air Operations Center. Qatar's effective use of its subtle power, Kamrava argues, challenges how we understand the role of small states in the global system.

The fact that Qatar is a small State amplifies the need for a more comprehensive understanding of the elements of this small state's strength which led to its ability to convert a crisis targeting its leadership and sovereignty to a case of a positive and smart resilience and resistance. As (Abdelmoula and Taguia, 2018) argue, Qatar smartly used the notion of soft power as one of the elements of Qatar's strength and resilience in the face of the blockade. One of the major miscalculations of the blockading countries is that they consider Qatar as a weak rival due to its small geographical size and limited population. They failed to acknowledge the previously emerged tier of States and cities where size doesn't matter as other forms of influence are considered including soft power and subtle diplomacy. Hence, the effective and influential small is by far better the useless big.

Figure 5 and 6: Doha's Evolution from a humble traditional settlement (1940s) to a metropolitan urbanity (2021) (Source: Courtesy of Ministry of Municipality).

Qatar has invested heavily in soft power during the past two decades. In this regard, Qatar operates on seven integrated fronts forming a strategic shield by which attacking it would seem difficult without the whole world noticing. These fronts are: diplomacy, media, economy, humanitarian efforts, culture, sports and tourism. As Nasser Al Tamimi argues that by targeting these components, the blockade axis has failed (In Abdelmoula and Taguia, 2018). The influence of art and culture can be seen as an engine to promote the resilience of regional and urban economies (Cooke and Lazzeretti, 2018). The contribution of some creative regions and cities as places in which processes of transformation, innovation and growth are activated in response to external pressures. Hence, cultural and creative resources may offer a sustainable model which was followed by Qatar by investing heavily in such domains.

6. Contesting Doha's Model of Resilience

In this section, an analysis of the most dominant forces that challenged the development of Doha city in the last decade will be provided. Hence, all the strategies, processes and policies which were adopted by the city will be shared to illustrate the city's resilience model. Interestingly, some of these dominant forces were celebrated like winning the bid to host the 2022 FIFA World Cup, while other were a substantial shock and have created a seismic impact on the city's people, economy and development. Doha was alert for the critical need for a flexible and dynamic approach to building resilience that goes beyond risk mitigation. Therefore, in the coming sections, three main challenges will be narrated and Doha's answer to each of them will be illustrated. Three milestones which are representing the most alarming challenges that Doha have faced in the last decade, analyzed in a chronological order. The analysis provided illustrates the wider interpretation of the challenges which require a resilient plan. The notion of a city challenge is also extended as it does not all the time implies negativity. Cities need resilience also to deal with positive challenges facing its development and progress. Therefore, the milestones analyzed go all the way from economical threats, hosting a global event to a comprehensive blockade.

6.1. Challenge One: March 2008; the Inevitability of the Post-Oil Paradigm

A major challenge which the paper addresses is the fluctuation of oil prices and how Doha is structuring a vison for the city in the post-carbon paradigm. Such a paradigm implies a move from oil-based economy to a knowledge-based economy and how to plan the city to facilitate such a new economical paradigm. With an unprecedented financial resources, creative strategic thinking and political commitment, Qatar is constructing a new development and urban brand; Dohaization

which is a brand but also a continuous dynamic process1. The case of Doha is stimulating as new mega projects are made to pave the way for a new development vison structured upon the value of knowledge economy and knowledge-based urbanity. By any measure, Qatar's growth is phenomenal; in the past decade, the population has trebled, and the size of metropolitan Doha has increased fourfold. From its humble origins as fishing and pearling village, Doha has emerged as an expanding world city, where ambition and means are fueling exciting experiments in education, health, sports and culture (Framherz, 2012; Jodido, 2014; Alraouf, 2016).

Figure 7 Facing the decrease of oil prices is one of the significant challenges facing Qatar as oil and gas revenues are still the backbone of its economy (Source: Author)

For a better understanding of how Doha came to structure its current identity, an investigation into the State's main strategy and the articulation of Qatar's role regionally and internationally is crucial. In this section, we will discuss the State's main strategies which affected the development of Doha. The Paper sheds light on the concept of Doha's attempt to construct a new identity which transcends the model that was created by Dubai's iconic development and real-estate fantasies. Then, the notion of knowledge economy as adopted by the State and clearly articulated in QNV 2030 will be analyzed to illustrate the quantitative and qualitative shift towards knowledge-based urban development in Doha. Evidently, in the last decade a new pattern of planning interventions can be clearly observed in the urban fabric of Doha. These new interventions described as the city's mega projects due to its size, location, population served and visual and urban impact.

[1] The term *Dohaization* was coined and used for the first time in Gulf Research Meeting at Cambridge and later published in Alraouf, Ali. 2016. "Dohaization": An Emerging Interface between Knowledge, Creativity, and Gulf Urbanity. pp.: 47-68. In Katodrytis, G. and Syed, S. Gulf Cities as Interfaces. Cambridge: Gulf Research Centre Cambridge.

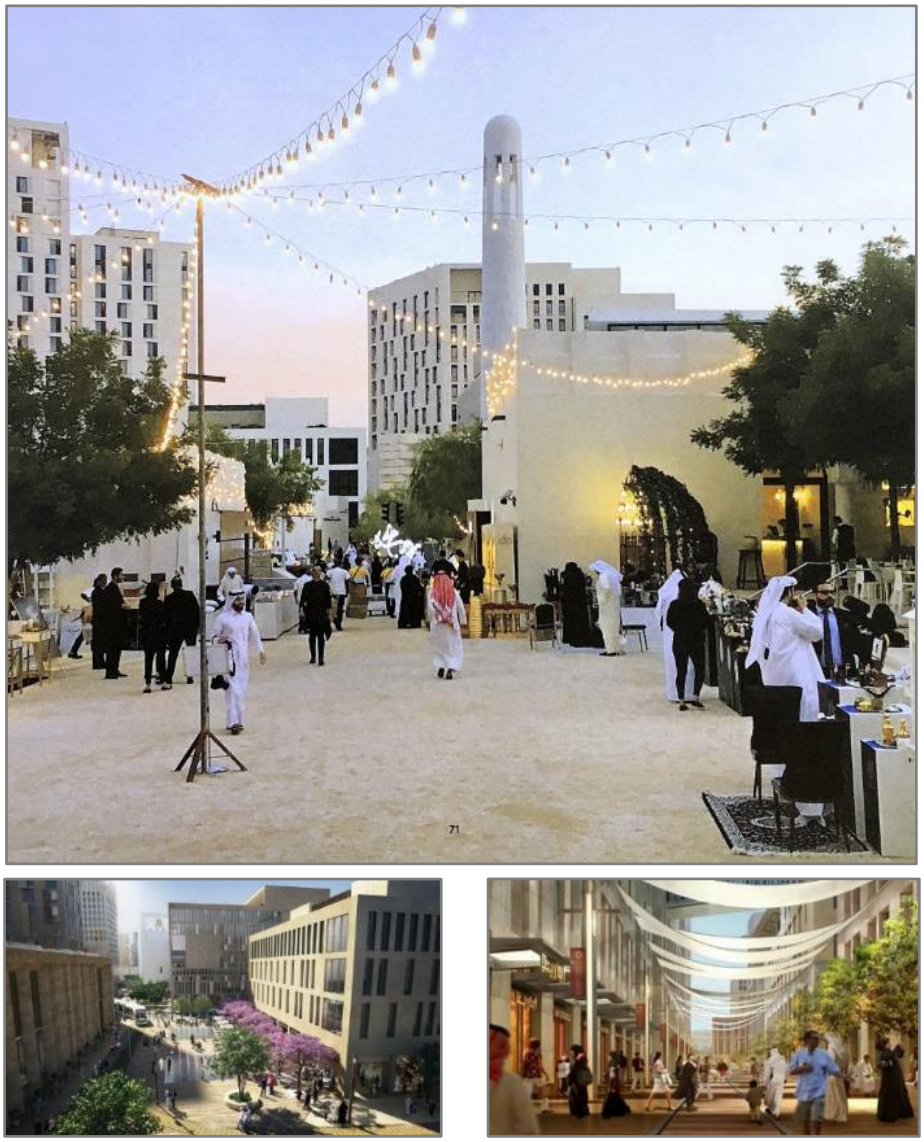

Figure 8 and 9 The post-oil urbanism suggests a paradigm shift towards walkability and the significance of vibrant public spaces, the Case of Doha City Center (Source: Author).

Figure 10 A tranisti oriented developmt strategy was adopted in Doha to mitigate the impact of post carbon era's development.

Doha is considered by many indicators as the most advanced city within the Middle East to adopt knowledge economy as a conceptual base for its 2030 vision. Qatar did a radical transformation to go beyond the typical image of a Gulf city relaying on presumably endless assets of oil and gas. A move towards being a regional center for education, knowledge and culture is the new aspired sense of identity for the Gulf State. A major investment in knowledge-based urban development characterizes major projects in the country during the last five years (Alraouf, 2008; 2014). This new identity of Qatar paved the way for a new paradigm in Doha's urbanity which can be best described as the Knowledge-based urban Development Paradigm. Qatar has become a showplace for renowned architects, several U.S. universities have established campuses there, and it will host the FIFA World Cup in 2022. The quantity and the quality of architectural and urban projects which will be added to the city's urbanity to facilitate hosting the 2022 FIFA World Cup would definitely make Doha a very unique world destination. Significantly, Doha has gained global significance through the growth of knowledge economy related projects. The city's new urban development and its spatial qualities contribute to the global attractiveness of Doha for knowledge economy investments, firms and people. Such urbanism fulfills the requirements of Knowledge workers coming to the city from literally every spot of the globe anticipating an attractive smooth quality of life which would foster their creativity and innovation.

Figure 11 and 12 The new cultural districts help Doha in establishing a new form of Knowledge-based Urban Development (KBUD).

With increasing awareness about the carbon emissions and the negative impacts of climate change, the paper evaluates Doha's attempt to transform its urban movement pattern from purely car-dependent city to a model for a transit-oriented development with the vitalization of connected network of public transportation, pedestrian streets and bicycle routs. Doha's model of urban resilience as reflected in the city's masterplan is answering the fundamental question of how to design and operate the city so it can withstand major threats and how to recover from them? Yamagata and Maruyama (2016) argue that land-use planning and carbon-neutral scenarios for urban planning are fundamental tools in urban management leading to a better urban resilience.

As a conclusion, Doha's readiness for the post-oil paradigm can be perceived on three levels: strategically, urban planning and architecture. As explained in the earlier section, Doha is moving strategically towards a development vison articulated around the concept of the inevitable move towards knowledge and creative economy. On an urban planning level, Doha is moving towards a compacted model of urbanism by relaying on multicenter-city development to stop the unsustainable sprawl which was the dominating pattern in the last three decades. In addition, the city is activating a solid transit-oriented development approach to consider public transportation as the main mode of transportation within the city. Finally, on the architectural level, both Qatar Green Building Council (QGBC) and Gulf Organization for Research and Development (GORD) were established to produce, develop and monitor the implementation of green and sustainable architecture principles in the new buildings designed and built in Doha and all Qatari cities.

Figure 13 Education City as a manifestation of Doha' strategic vision to move towards being a creative and knowledge city. A city dedicated to establishing a culture of education, research, creativity, and innovation (Source: Author).

6.2. Challenge Two: October 2010; Winning the Bid for Hosting FIFA 2022

Qatar's interest to brand itself as an appropriate choice to host mega sports events started with preparing Doha to be the sports capital in the Middle East. A fact which was successfully demonstrated when the country organized the 2006 Asian games and gained the world respect. Doha was the first city in its region and only the second in West Asia (following Tehran in 1974) to host the games. Later, Qatar has lost its bid for the 2016 Olympics, but has vowed to try again. On the second of December 2010, Qatar was selected as the host country for the 2022 FIFA World Cup. The model of Qatar hosting a major global world event generates number of interesting issues. Some crucial questions emerge; how the city/State was able to win the bid? How the city/State is using the event to brand Qatar, Gulf and the Middle East? How the city/State is moving beyond hosting the event to creating a continues legacy which will positively and sustainably contribute to the prosperity of the State. All the lessons learned from analyzing the different world experiences in hosting major global sports inspired Qatar to take a different route. One can observe the transformation in strategic thinking towards the whole process of hosting the FIFA event in Qatar. When Qatar was declared as the host country for the 2022 FIFA World Cup, an immediate decision to form an organizing committee with outstanding authorities and capabilities was issued. The committee was called 2022 FIFA World Cup Supreme Committee and it has an excellent team of consultants, advisors, strategic thinkers, logistics experts and some members from the team who prepared the successful file that won the bid. Later and considering the new understanding that hosting the event is a catalyst for future progress and community development, the whole conceptual approach has changed. Also, the title and the responsibilities of the committee have altered. The new title for the 2022 FIFA World Cup organizing body in Qatar is Supreme Committee for Delivery and Legacy (SCDL). The model as discussed in the outcomes of the supreme committee has learned profoundly from recent experiences in hosting the FIFA cup particularly in Brazil and South Africa. The main responsibilities of the committee are being confident that Qatar will provide a state of the art experience in hosting the event but more significantly that the event will positively

affect the future prosperity of the country and create a sustainable legacy that would last for generations to come.

Figure 14 Doha is balancing hosting the 2022 FIFA World Cup with the future aspirations of the city.

Qatar is consciously aware of the day after oil and is using the unprecedented opportunity of hosting the 2022 FIFA world cup as an engine to inspire a new blueprint for the future of its people and cities (Nadine, 2014). The strategic thinking transformation towards how to host a global sports event in Qatar resulted in a new blueprint and a road map. This blueprint was based on several integrated aspects. All of which were designed and assembled in a way to guarantee that the process of hosting the event will be successful not only during the thirty days of the competitions but for decades to come. Qatar has been using sports strategically as a foreign policy tool that contributes to national security and allows the country to gain soft power. Even on the level of enhancing the global image after the blockade, Qatar smartly used sports to deliver a positive message about its stability and commitment to global investment. Current evidence particularly during the events of the 2018 FIFA world cup in Russia and the excellent presence of Qatar suggests that The 2022 World Cup in Qatar will happen, although not everybody might like that. As explained earlier, hosting the Cup will be a turning point for Qatar and would substantiate its global reputation but it is not the goal. The goal as explained in the paper is to use hosting the event as a catalyst for a better post 2022 Qatar. Hence, the development associated with hosting the 2022 World Cup in Qatar is for people and future not only for a time restricted event.

6.3. Challenge Three: June 2017; A City under Siege: A Plight or a Historical Opportunity

The paper reveals the exclusiveness of Qatar's experience in management of the crisis and resistance of the blockade in terms of the strategies used to overcome the impact on its urban development and social integration. The other significant aspects like economy, politics and security were investigated in other research projects primarily (Abdelmoula and Taguia, 2018; 2017) and (Roberts, 2017). Qatar's confrontation of the land, sea and air blockade imposed on it by Saudi Arabia, the United Arab Emirates (UAE), Bahrain and Egypt on 5 June 2017 forms the third and most threatening major challenge that the small State faced in its modern history. On June 5, 2017, Saudi Arabia, the UAE, Egypt and Bahrain announced the implementation of an air, sea and

land blockade of Qatar. This came after they accused the government of supporting terrorism in the region, a claim that Qatar has refuted. One of the major forces which led to unprecedented challenge for Doha and Qatar is the blockade imposed by its close neighbors. The blockade as the paper illustrates opened new dimensions in the city's acknowledgment and comprehension of resilience. Ironically and surprisingly, in the 50th anniversary of the six days war in 1967 where Arab armies were humiliated and defeated, four Arab States decided to activate an unprecedented sea, air and land blockade against Qatar2. The whole Middle East and the world wake up on the fifth of June 2017 reading the news about the decisions imposed by Saudi Arabia, United Arab of Emirates, Bahrain and Egypt on their neighbor and founding member of the Gulf Cooperation Council (GCC), Qatar. Pressure mounted further after relations with its regional neighbors hit rock bottom last June. Since then, Saudi Arabia has led a boycott of Qatar, with full participation from Bahrain, the UAE and Egypt. Planes have been prohibited from flying to Doha, banks from dealing with Qatari banks, and the country's influential satellite TV channel, Al-Jazeera, remains off the airwaves throughout most of the Arab World. Given that prior to the blockade some 60% of Qatari trade moved through either Saudi Arabia or the UAE, officials at once began implementing measures to protect the economy from disruption

The blockading countries tried to use the Gulf Cooperation Council (GCC) as a tool to suffocate Qatar and isolate it both from the Gulf and the Arab world. Qatar conducted a swift and effective diplomatic campaign in the main regions in west and the east. At the Gulf level, the neutrality of both Kuwait and Oman provided leverage for Qatar, albeit without direct support. As (Abdelmoula and Taguia, 2018) illustrate, Qatari efforts that succeeded in positively neutralising the positions of these two countries were based on four levels of power: the media, moral power, diplomacy, and investment prospects. The effective diplomatic campaign also resulted in an interesting change in the USA's position. As Patrick Theros (in Abdelmoula and Taguia, 2018) argues despite Qatar's delay in the competition for Washington's heart and mind, Doha succeeded in record time to win American institutions over and change the position of the US administration, as well as President Donald Trump himself, who appeared to be in favour of the blockading countries at the outset of the crisis. The rebuilding of Qatari- US relations was launched on a stronger basis than in the past and Qatari efforts led to the holding of the strategic dialogue sessions in 2018. Qatar responded by implementing a series of reforms, seeking out new trade partners and amplifying economic diversification efforts. The blockade has also fuelled greater self-sufficiency in sectors such as agriculture. Since 2017 Qatar has imported thousands of cows and chickens, rapidly expanding domestic agricultural capacity. The country now produces all of its own dairy and fresh poultry, whereas in 2017 domestic production of each stood at only 20% and 10%, respectively. In 2019 the country even began exporting milk to Afghanistan, Oman and Yemen.

6.3.1.The Social Cohesion as a Catalyst for City Resilience

Baldwin and King (2018) emphasize that strong social networks and social cohesion can be more important for a community's resilience than the actual physical structures of a city. That what was exactly noticed in Doha after the activation of the blockade. More significantly, urban planning and design support these critical collective social strengths by stressing the necessity of creative spaces for all and enhance the inclusivity of the city's urbanity. In the process of realizing the goal of both sustainable and resilient development, we should see the dominant role of social factors such as urban governance in the process of urban adjustment and adaptation. The social aspect will be also addressed in the paper as Doha, like most of Gulf cities, has a much-diversified population coming from all corners of the world.

[2] The claimed justifications of the crisis were based on fabricated statements attributed to the Emir of Qatar posted on Qatar News Agency's website by hackers supported by the UAE.

Figure 15 The city spaces are planned to accommodate the different social groups and emphasize the social cohesion (Source: Author).

The city is taking several measures to create better connections between expatriates and the city significantly sense of belonging and ownership which would radically help in inspiring the city's overall population of locals and expatriated to better defend the city and take a solidifying position towards realizing its future aspirations. The paper concludes with articulating a more holistic framework for city resilience which takes into consideration the multifaceted nature of the city and better prepare it for different forms of changes and transformations which might occur in the future. Coaffee and Lee (2017) examine how the concepts and principles of resilience exert increasing significant influence over the form and function of planning. Their discussion of the 'politics of resilience' in which fundamental questions of social and spatial justice are posed is relevant to the notion of social cohesion in Doha after activating the blockade.

The Role of Unique Infrastructure (Ports and Airports)

An immediate effect of the blockade was the re-orientation of Qatar's trade away from its Gulf neighbors. Data from the Ministry of Development Planning and Statistics showed imports to Qatar fell by some 40% immediately after the announcement of the blockade, as the sanctions cut off the country's main trade routes. Iran and Turkey offered assistance by delivering various consumer products by ship and plane, while Iran also opened its airspace to commercial flights headed to Qatar, offsetting the closure of connections with the blockading countries. The trend has continued over the past two years, with Qatar shifting its trade relationships towards new partners. To facilitate such new trends and enhance the pace of new connections, the city must be prepared with unique urban infrastructure particularly in the domain of external and internal transportation. The investment in smart infrastructure particularly in the field of urban transportation and applying the concepts of transportation hubs in envisioning the roles of Qatar port and airport, allowed Qatar to quickly overcome the impact of the blockade. As Nasser Al Tamimi (Abdelmoula and Taguia, 2018) discusses the importance of having completed the expansion of Hamad Port six months ahead of the set plan as an economic leverage for Qatar and as an important tool in facing the blockade through the provision of direct international shipping lines. This sea port is one of the largest in the Gulf region and the Middle East and has been able, in record time, to free Qatar from its previous reliance on the port of Jebel Ali in Dubai and land lines with Saudi Arabia. Complementing these measures is the launch of Qatar's inaugural special economic zones (SEZs). Both the 34-sq-km Um Al Houl SEZ, located next to Hamad Port, and the 4-sq-km Ras Bufontas site, next to Hamad International Airport in Doha. The first will focus on maritime industries,

petrochemicals, building materials and logistics, while the second is expected to feature investment opportunities for companies operating in aerospace and advanced technologies.

Figure 16 The unique airport, the state of the art Hmad port and the adjacent economic zones developed around the port facilitated the move of the city towards building new trade connections to overcome the impact of the blockade (Source: Courtesy of Ministry of Municipality).

Conclusion

The Model of Doha, Qatar extends the conceptualization of resilience to go beyond the well-known risks and move to planning the city to face different forms of crisis. More significantly, prepare the city to face uncertainty as the case with oil prices fluctuation and its impact on the economic stability of the country. Such a model matches with Coaffee and Lee (2017) calls for a focus towards an integrated and adaptable model for coping with risk, crisis and uncertainty. In such time of uncertainty, urban planners are increasingly tasked with the responsibility of safeguarding the future of urbanized centers and those that live in them. In facing an unprecedented blockade from the closest allies and adjacent neighbors, getting ready for hosting the biggest sports event on earth; FIFA world cup and coping with radical changes in its economic base as a rentier capital, Doha provided a worth analysis and appreciation case. Observing Qatar after more than a year of blockade and compare its status in relation to the situation in the blockading countries would assert that Qatar provided a model to other small states on the resilience level (Abdelmoula and Taguia, 2018). The experience of Doha after the blockade asserts that an urban rational and holistic development mechanism could help improve the urban capability more effectively to cope with the various crises involved. The model of Doha illustrates the difference between process-oriented resilience than an outcome-oriented. Hence, Doha provides a rational urban development model because it is both resilient and sustainable. Part of the city' success story stems from the fact that social cohesion was considered as a pillar in enhancing the resilience capabilities of the city. It describes and illustrates the ideas, tools, and tactics being used to help engaged citizens, civic leaders, and urban professionals to work together to build viable urban society. The provided analysis illustrates that the Qatari model in delivering flexible and resilient cities capable of handling variables, risks and harsh changes without losing the rhythm of its growth and its insistence on preserving the status which was obtained on regional and

global levels in the last decade, especially in the areas of integrated development and holistic modernization.

In contrast to most literature that views a small state's natural position in the global system should be that of weakness, attachment and ineffectiveness, Qatar has provided a model to the world that defies this prominent belief. Qatar's intelligent employment of its economic power, active diplomacy, coherent internal front, and relations and alliances has contributed to maintaining its stability, challenging the blockade, and defusing its impacts on all levels. Indeed, the case study of Qatar provides an interesting model for resilient cities because of the commitment to a set of strategies that brought about a qualitative difference in how to deal with various challenges, risks and unforeseen threats. Qatar' strategy as a model for resilient cities emerged from a number of fundamental pillars:

Weathering the storm by perceiving it as an opportunity is evident in the Qatari narrative. Despite facing these significant challenges, the broader Qatari economy has continued to grow. GDP expanded by 1.6% in 2017 and 2.2% last year, according to the IMF, with the economy forecast to expand by 2.6% in 2019, well above the 0.3% average predicted for the Middle East. "Qatar's economy has successfully absorbed the shocks from the 2014-16 drop in hydrocarbon[s] prices and the 2017 diplomatic rift," as declared by the International Monetary Fund (IMF). Increased natural gas production, major infrastructure investment and the use of significant financial reserves from the country's sovereign wealth fund have all been highlighted as contributing factors to the stabilization of the economy. Depending on the mounting knowledge economy as an alternative economic base and set up the needed infrastructure for education, scientific research, culture and knowledge production which makes the transition from a resource to knowledge economy smoother. Intensifying the idea of a balanced social inclusion between major population sectors; the local citizens and working expatriates to create a sense of belonging, appreciation and recognition of mutual value and distinct roles of the country's rich human mosaic. Adopting the principles of sustainability and environmental compatibility as the main pillars of development for Qatar National Master Plan (QNMP). ONMP is based on a set of sustainable urban development values like transit-oriented development (TOD), sustainable urbanization, social balance and the preservation of the historical and cultural identity. And finally, dealing schematically and planner with major cities especially Doha as a framework for knowledge-based urban development through a network of research centers, universities, museums and the knowledge forums and make it available to all sectors of society in a way which would stimulate citizen and resident alike in a balanced manner.

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Resume

Prof. Alraouf is an architect and urban designer with 35 years of academic, research and consultancy experience around the Middle East, and the world. He is interested in research and practice related to architectural, urban and sustainable people-based design and architecture. He was a Visiting Scholar at University of California at Berkeley-USA. Alraouf' s research interests are post-carbon architecture and urbanism in the Gulf, inclusivity and diversity in contemporary cities, knowledge and creative cities, democratic public spaces and just cities, museums' architecture and Doha's architectural and urban model. He published more than 130 journal refereed papers, critical reviews, essays, in addition to books and book chapters. He serves in editorial boards and acts as a reviewer for international journals and conferences. He has been invited to present his research work at international institutions in over 30 countries such as UC Berkeley, University of Cambridge, Drury University, University of Oregon, International University in Malaysia, American University of Beirut, and American University in Sharjah. He is the recipient of number of awards including Modern Science and Arts University (MSA) Teaching Excellence Award 2004, Best Research Paper in Sharjah International Conference for Urban Planning 2008, Research Publication Achievement Award from University of Bahrain 2009, 2012 Excel campaign at Qatar University, Best Research Paper in IASTE Conference 2018 and Best Book Award by ISOCARP in 2018. Alraouf currently acts as head of research and development at Qatar Urban Planning Dept., a Board member in the international society of city planners and leader of Green Urbanism and Planning Group at Qatar Green Building Council.

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Re-viewing the role of culture in architecture for sustainable development

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Abstract

Architecture is most often defined as the art and technique of creating space. The understanding and use of space in a society is the most important means that concretely reflects the cultural system and way of life, which is the sum of all the experiences, talents and values of that society. While the physical environment created by people in history is mostly shaped according to local values, the spaces designed by architects have been the scene of conflict among universal and regional values, especially after the Industrial Revolution, with the development of Modern Architecture. This study which evaluates the architectural approaches adopted after Modern Architecture, within the framework of economic, technological and socio-cultural developments in the world and discusses them with their reflections in Turkey, emphasizes the validity of striving for lasting values instead of fashions in architecture. In this context, the issue of culture and identity comes to the fore. Cities have their own unique appearance, physical structure and way of life, as well as a "spirit" that makes them distinctive. The characteristics of the city which make it different from the others constitute "urban identity". Especially in developing countries, many cities face the risk of losing their identity in the process of urban development, which consists of the expansion of the streets and the demolition of buildings that can actually be evaluated. The cultural and natural heritage that makes cities different is also the foundation of urban identity. These values are also a prerequisite for the sustainability of cities. Cultural heritage can be considered not only as a trace of the past, but as a wealth for the future of people. When properly managed, there are many opportunities to create a strong relationship between identity, culture and heritage. Since these opportunities vary in each settlement, different solutions need to be developed. However, it is important that different solutions are produced in a consistent and meaningful integrity, and not as independent initiatives of cities that share the same geography and culture in regional scale. In this process, it is necessary for central administrative bodies, local governments and civil society to work together for an effective and sustainable urban structure.

Keywords: architecture, cultural values, sustainability.

1. Introduction

It is becoming increasingly more difficult to find environments with distinctive identity, because globalization advocates similar approaches on a worldwide scale, eliminating cultural identities, as values and judgments tend to become similar globally. With the widespread use of television and fax in the 1980s, and mobile phones and the internet in the 1990s, there were rapid developments

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in technology and communication systems, and the Industrial Revolution of the 18th century was replaced by the Information Revolution in the 20th century. In this process, which has continued also in the 21st century, globalization has been effective on various scales, i.e. local, regional, national and global, affecting and changing these environments while also being influenced by them. In fact, it is interesting to note that globalization, which has been criticized for eliminating cultural identities by advocating similar approaches, is also being adopted because it emphasizes some universal values that do not contradict local values. Acknowledging differences in language, religion and culture as a wealth, protecting cultural and natural assets, defending gender equality and saving energy can be given as examples to such values.

In terms of the future of urban development and physical environment, some dilemmas such as globalization/regionalism, universality/nationality, consumption/sustainability need to be understood and interpreted. In this study, relation of architecture and culture will be evaluated in the context of such dilemmas in order to highlight possibilities for creating environments with their distinctive identity.

2. Globalization and Sustainability

In the process of globalization, the world is shaped within the framework of the hierarchy of core, semi-periphery and periphery countries, and some cities in core countries play an important role in controlling developments in the world (Wallerstein, 1974). In order to understand the dilemma of globalization and regionalism, the concept of sustainability must be emphasized in particular. The word 'sustainability' was first used at a conference organized by the United Nations in 1970. However, the most commonly used definition of this concept is contained in the Brundtland Report published by the World Commission on Environment and Development in the UK in 1987. Sustainability in this report was defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (Pugh, 1996) (Figure 1).

Figure 1 The Brudtland Report (United Nations World Commission, 1987)

For a long time, sustainability was addressed only in its physical dimensions. However, subsequent assessments have shown that sustainability has environmental, social/ cultural and economic dimensions. One thing that should be emphasized at this point is that the different dimensions of the concept of sustainability are related. Environmental sustainability means the protection of natural resources and ecosystems. It is also interpreted as ecological sustainability. Social sustainability involves maintaining and developing the social position and ensuring the balance and cultural diversity of social systems; cultural sustainability is related with preserving and developing cultural values such as cultural heritage, cultural life and cultural activities, which should be passed on to future generations; and economic sustainability refers to ensuring the maximum

flow related to economic well-being while preserving existing savings. (Pugh, 1996, Nystrom & Fudge, 1999)

It should be noted that part of the physical environment may comprise different functions and meanings according to the socio-cultural, economic and technological changes that occur in the historical process. Therefore, the physical characteristics of the environment can be more permanent than its functions. In this context, it turns out that environmental, social, cultural and economic dimensions should be evaluated together in order to improve the quality of life in a city and ensure urban sustainability.

In spite of all the technological and social developments improving the conditions in various fields during the twentieth century, this can be considered as a period of turmoil. Two world wars took place with all their sufferings, urbanization accelerated, and the phenomenon of globalization affected the whole world as a result of rapid developments in technology and communication systems. When the situation at the beginning of the twenty-first century is examined, it can be observed that the world population continues to increase, and urbanization caused by the proliferation of the number of cities and the growth of existing cities in terms of both population and size continues at full speed. This means that all related parties, including central and local authorities, non- governmental organizations and the civil society itself, need to find alternative ways to make urban environments more sustainable and livable and to increase the sense of belonging by attributing unique, distinctive identity to these environments. Cultural factors become significant in this process.

3. Culture: Definition and Context

Culture is the total way of living, comprising material and spiritual values, talents and skills, arts and traditions of a society (Güvenç, 1997). Based on this definition, it can be emphasized that the importance given to cultural heritage can help shape the environment with greater confidence, with more identity and through social solidarity. Cultural heritage can also be considered as a new economic opportunity as it creates new sources of business and income. At the same time, it helps to create new forms of partnership between the public sector, the private sector and civil society, and leads to new opportunities in directing social risks.

Cultural tourism has become an important alternative type of tourism for many countries in the world. This is a form of tourism that is favored in terms of preserving cultural values as well as its income-generating effect. At present, a significant share of cultural tourism in the world is made up of natural and cultural assets on the UNESCO World Heritage List. In fact, areas that are included in the World Heritage List are considered to have a rising value. However, in cases where the balance between protection and use is not achieved, these regions with outstanding values are adversely affected. It can be observed that some areas are saturated in terms of usage today and even suffer from negative image, noise, environmental and infrastructure problems. The concept of globalized tourism in such areas has a negative effect on the traditional life culture. In this context, management plans including vision studies for the future should be made and implemented in relation to the areas that are included in UNESCO World Heritage List.

The World Heritage List consists of cultural and natural entities that are deemed to have an important value for the whole world, by complying with the 'World Heritage Criteria' which the countries (state parties) signing the "Convention Concerning the Protection of the World Cultural and Natural Heritage" guarantee to protect. In order for an area to be included as a cultural or natural heritage in the UNESCO World Heritage List, it must meet at least one of the 6 cultural and 4 natural criteria set by the World Heritage Committee, which measures outstanding universal value. It is also expected to meet the conditions in terms of authenticity and integrity. After 2000, UNESCO began to look for the preparation and implementation of "Site Management Plan"s as a prerequisite for the inclusion of protected assets and areas on the World Heritage List. Thus, the

specific entity or area is aimed to be protected with all of its characteristics and with the participation of all parties concerned (Feilden, B. M. & Jokilehto, J., 1993).

In this context, the World Heritage Committee first declared 12 sites meeting one or more of the above-mentioned criteria, as World Heritage Site, in 1978. As of 2020, the number of heritage sites on the World Heritage List has reached a total of 1121, of which 869 are cultural, 39 are mixed and 213 are natural. The number of sites on the list changes according to the World Heritage Committee meetings that take place annually (Figure 2 and Figure 3).

Figure 2 Cultural Heritage Example on UNESCO World Heritage List, Cumalıkızık, Bursa (Metropolitan Municipality of Bursa Archives)

Figure 3 Natural Heritage Example on UNESCO World Heritage List, Iguazu Falls, Argentina / Brazil (URL-1).

4. Different Architectural Approaches Related to Social and Cultural Values

Architecture is most often defined as the art and technique of creating space. The understanding and use of space in a society is the most important means that concretely reflects the cultural system and way of life, which is the sum of all the experiences, talents and values of that society. While the physical environment created by people in history is mostly shaped according to local values, the spaces designed by architects have been the scene of conflict among universal and regional values, especially after the Industrial Revolution. At this point, it is useful to remember the definition of vernacular architecture. Paul Oliver, an architectural historian who studied vernacular

architectural traditions around the world since the early 1960s, describes vernacular architecture as "…comprising the dwellings and all other buildings of the people". In Oliver's words, "All forms of vernacular architecture are built to meet specific needs, accommodating the values, economies and ways of life of the cultures that produce them." (Oliver, 1997) (Figure 2) It is the architecture of the people and the architecture produced by the people, which is different from the architecture for the people, a concept developed after the Industrial Revolution.

At this point, the changes taking place in the architectural milieu after the Industrial Revolution will be reviewed. In fact, the Industrial Revolution can be considered as a turning point in architectural history, as it prepared the way to the development of Modern Architecture. In order to understand Modern Architecture, it is necessary to re-evaluate the concept of 'modernism'. The word 'modern' or Latin 'modernus' was first used in the 5th century to identify the period when Christianity was officially accepted as different from the Roman and Pagan past. Modernism in architecture emerged with the technical, social and cultural changes related with the Industrial Revolution, which began in the middle of the 18th century (Habermas, 1990). With the development of new materials and techniques and the formation of new requirements, the innovations first seen on railways and bridges and initially implemented under the leadership of engineers and technicians began to take effect in buildings (Benevolo, 1977).

In late 19th century, the Art Nouveau movement in Europe, which under the leadership of John Ruskin and Henry van de Velde, included a new sense of style to replace the imitation of old styles, but remained on a more ornamental scale, on the one hand, and the rational architectural approach based on steel construction and modern techniques, that emerged in Chicago in the United States and developed under the leadership of William Le Baron Jenney, Daniel Burnham and Louis Sullivan, on the other hand, laid the foundations of modern architecture. Starting in the 1920s, the principles of modern architecture were developed by architects such as Le Corbusier, Walter Gropius and Richard Neutra. These principles, which can be summarized as decoration-free simplicity, expression of function in form, belief in technology, universal solutions free of historical references, were embodied in the first five of the ten CIAM meetings organized from 1928 to 1956 with the participation of representative architects from many countries. As stated in the De Stijl manifesto published in 1918, ensuring "international unity in life, art, culture, either intellectually or materially" was the aim of avant-garde architecture (Conrads, 1975). It is possible to draw parallels between this approach developing in architecture and the capital's desire to create an international sovereignty through technological progress.

Indeed, in the discourse of Modern Architecture, architecture was considered as a functional object like other industrial products, and an approach that advocated the universal application of prototypes was adopted in general. Le Corbusier's famous phrase "A house is a machine to live in" clearly expresses this approach. (Figure 4, 5) Le Corbusier, who finished his book Towards a New Architecture with a photo of a pipe, wanted to point out that architecture should have the same values as such a product with both personal and universal standards. Le Corbusier, believing in the role of the architect as a hero and a savior, concluded his book with the following sentence: "Architecture or Revolution. Revolution can be avoided." (Le Corbusier, 1970) (Figure 6).

Figure 4 Le Corbusier (URL-2)

Figure 5 Le Corbusier's Voisin Plan Model, 1924 (URL-3)

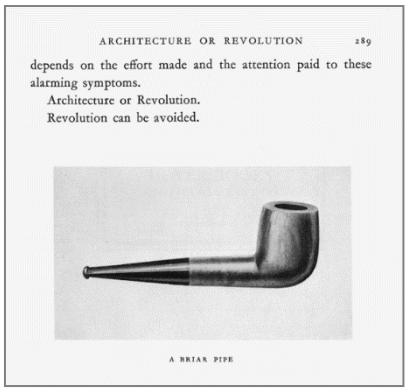

Figure 6 The pipe in Le Corbusier's book, (Le Corbusier, 1970)

While Modern Architecture is generally defined according to the above-mentioned principles, we should indicate that there are different approaches within this general framework. There are even cases when the same architect has adopted different styles in various periods. In this context, it should be emphasized that in Post-Modern Architecture discourse, views that often consider Modern Architecture as a homogeneous approach and call it a complete failure, ignore that this movement has contributed to the development of new design methods and social concerns, although not comprehensive enough.

There were also some conscious critical approaches towards Modern Architecture. The first substantial criticism came from some young architects within CIAM (Congrès Internationaux d'Architecture Moderne). As a result of the discussions at the 6th CIAM Congress held in 1947, after a ten-year interval due to World War II, architects such as Aldo van Eyck, Alison and Peter Smithson, (Figure 7) Jacob Bakema, Georges Candilis formed the Team 10 Group and advocated an approach that emphasized identity rather than universality, place rather than space, circumstance rather than era, the hierarchical elements of public life such as house-street-district-city, rather than treating the city as divided into autonomous areas, i.e. zones based on four functions of dwelling- work - recreation -transportation, as advocated by CIAM (Figure 8,9). However, the views of TEAM 10 group related with social life remained on a general scale and did not provide an adequate basis for healthy design proposals.

Figure 7 Alison and Peter Smithson (URL-4)

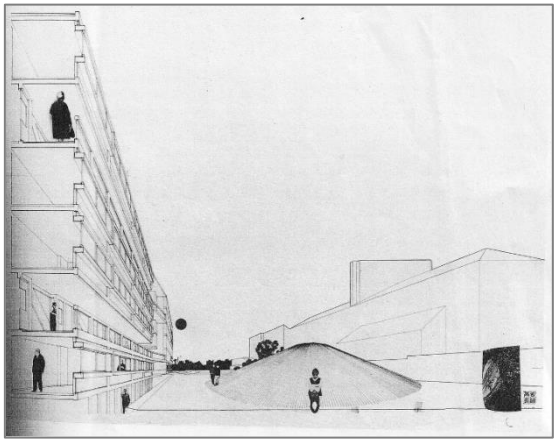

Figure 8 Alison and Peter Smithson, initial drawing of Robin Hood Gardens (URL-5)

Figure 9 Robin Hood Gardens, Street in the Air (URL-5)

Finally, two books published in the early 60s formed the premises of the views that shook the foundations of Modern Architecture towards the end of that decade. One of them is Kevin Lynch's book The Image of the City published in 1960. (Figure 10) In this book, Lynch talks about images that develop in the public memory of the inhabitants of the city, arguing that in order for a city to have identity, structure and meaning, and to prevent alienation, it must have physical qualities such as paths, edges, districts, nodes and landmarks, which he defines as city image elements in general.

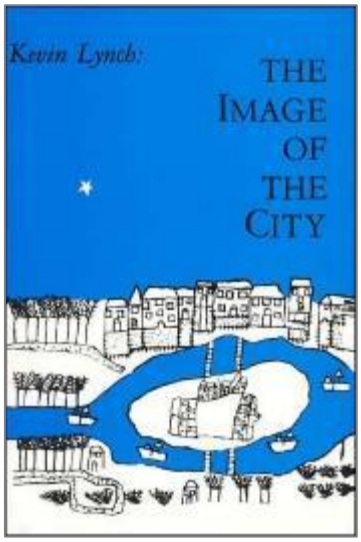

Figure 10 The Image of the City (Lynch, K., 1960)

Jane Jacobs's book The Death and Life of Great American Cities, published in 1961, criticizes orthodox modern urban planning and architectural design, arguing that conditions such as multiple functions and multipurpose use, low blocks, a mix of old and new buildings and sufficient human density must be provided for vitality, diversity and economic wealth in cities. (Figure 11) In this sense, while both books glorify practical, picturesque experiences against the utopian approach of Modern Architecture aimed at finding universal solutions to urban and architectural problems, we can indicate that the first book has influenced the New Classicist approach that developed after 1966, with concepts such as “public memory” and “image”, and the second book has influenced the Eclectic-Populist approach with its emphasis on the ordinary and familiar.

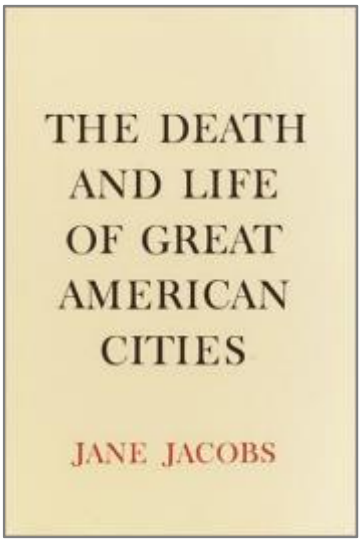

Figure 11 The Death and Life of Great American Cities (Jacobs, J., 1961)

1966 is a turning point for the criticism of Modern Architecture. With the publication of Robert Venturi's Complexity and Contradiction in Architecture in USA in 1966, (Figure 12) and the publication of Aldo Rossi's The Architecture of the City in Italy in 1966, (Figure 13) a new era began in architectural discourse. However, unlike previous criticisms, Venturi's approach advocating references to multiple meanings in design, and Rossi's idea that permanent forms can lead to new uses and new meanings over time, which includes the reinterpretation of the types in public memory, laid the foundations for the approach known as "postmodernism" in architectural discourse. It should be emphasized that while approaches that could be an alternative to modern architecture were mentioned, the title "postmodern" was not used in these books.

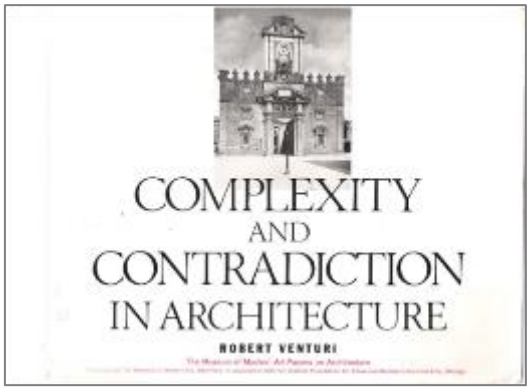

Figure 12 Complexity and Contradiction in Architecture (Venturi, R., 1977)

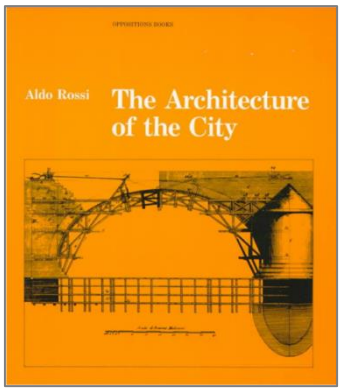

Figure 13 The Architecture of the City (Rossi, A., 1982)

As Zeka points out, the "post-" prefix contains the dimension of "a subsequency, a rebellion". The concept of post-modernism also means a reckoning with modernity above all. The labyrinths, mirrors, allegories, diversions, riddles, mythologies, parodies in Borges's writings were an inspiration for postmodernism (Zeka, 1990).

Postmodern Architecture has developed in parallel with economic, technological and socio-cultural changes in the world, similar to Modern Architecture. In fact, after the 60s, which is defined as the post-industrial period, industrial society was replaced by information society and labor/production paradigm was converted into information paradigm. As it is not possible to talk about homogeneous Modern Architecture, it is not possible to define Post-Modern Architecture as a single approach. In this context, Zeka points out that postmodernism can be defined as “heterogeneity, polyphony, division, as well as an attitude that affirms misunderstandings, misconceptions, delusions, and even sees them as the basis of legitimacy" (Zeka, 1990, 12).

In short, in the pluralistic critical environment, which began with the launch of the Team 10 Group in 1947 and was later maintained by architects described as 'Post-Modern', a general interest in history, natural and regional features, social values and identity began, but many architects continued this interest as if following a fashion, ignoring the philosophical dimensions of the approach (Dostoğlu, 1995).

5. Architectural Developments in Turkey After The 1980’s

When we consider the developments after the 1980s in Turkey within the framework outlined above, it is possible to discuss three main architectural approaches in a pluralistic table. The first can be summarized as adopting architectural approaches popular in developed countries, the second is focusing on local resources in Anatolia, and the third can be summarized as aiming to produce lasting values by addressing the unique conditions in Turkey together with the universal developments in architecture.

In the first group, there is a wide range from Merih Karaaslan to Şefik Birkiye, who have adopted the eclectic, populist approach of Post-Modern Architecture. (Figure 14) Among the reflections of the new classical approach in Turkey, we can cite Semra-Özcan Uygur's Ankara Yüksek İhtisas Hospital Annex as an example. When we examine the recent Turkish architecture within this framework, it is possible to state that Postmodernism was adopted in Turkey, often without the ideological accumulation in the West, by producing 'kitsch' in the form of a binary structure of foreign and domestic types. In addition to the architects who have adopted Post-Modern approaches in the West literally, architects such as Sezar Aygen, who interprets Modernist tendencies, and architects inspired by the deconstructive approaches in the West can be considered as another category within this group.

Figure 14 Şefik Birkiye, Klassis Hotel (URL-6)

The second architectural approach in Turkey focuses on local resources. The best example for this is the architectural approach of Turgut Cansever, as applied in Demir Vacation Village particularly, which has been defined by some people as "platonic", "moralist", "boring", "conservative" (Figure 15).

Figure 15 Turgut Cansever, Demir Vacation Village (URL-7)

As an example of the third approach, we can point out Mehmet Konuralp and Salih Sağlamer's Sagra Residence and Guest-House buildings in Ordu, (Figure 16) Şaziment-Neşet Arolat's Kervansaray Termal Hotel in Bursa, Cengiz Bektaş's Olbia Sosyal Özek project, (Figure 17) Han Tümertekin's B2 house. (Figure 18) In these examples, it can be indicated that a response to the universal / regional dilemma in the handling of the place is sought in a philosophical way. In the Sagra project, the architects evaluated the seranders, which were traditionally built on poles in order to protect products such as hazelnuts and corn, from animals and ground moisture in the Black Sea Region, from a typological point of view in the buildings of Sagra, a modern hazelnut marketer, and designed them with contemporary materials and techniques by interpreting the serander type.

Figure 16 Mehmet Konuralp and Salih Sağlamer, Sagra Residence and Guesthouse, Ordu (URL-8)

Figure 17 Cengiz Bektaş, Olbia Sosyal Özek project, Akdeniz University (URL-9)

Figure 18 Han Tümertekin, B-2 House (URL-7)

Evaluation

The architectural approaches that developed in late 1940s, based on the criticism of modernism gradually gained legitimacy on a universal scale with forms evoking "Disneyland Architecture". However, as Huxtable points out, the approaches of postmodernists, who have accused modernists with their phrase "Less is a bore", have become boring after a while. (Huxtable, 1985) In this context, the number of people who define postmodernism as a fashion and postmodernist architects as fashion designers is not small. Indeed, Post-Modernity was treated by many architects not as a new perspective on space and culture, but as a formal attitude that should be copied.

Starting in the 1990s, critical regionalism, which he has been pioneered by Frampton since the 1960s, Rowe's "Collage City" idea, which advocates the unity of traditional and modern, and the Deconstructivist approach, which can be summarized by the concepts of "discontinuity", "uncertainty", "currency", "insolvency" developed by architects such as Eisenmann, Tschumi and Hadid inspired by Russian Constructivists, appear as the three main critical attitudes in architectural discourse. In short, concepts such as pluralism and diversity brought about by the post-modern situation and the basis of freedom create the possibilities for the establishment of consumer society culture, as well as the criticism and transformation of this culture (Güzer, 1994).

This study which evaluates the architectural approaches adopted after Modern Architecture, within the framework of economic, technological and socio-cultural developments in the world and discusses them with their reflections in Turkey, emphasizes the validity of striving for lasting values instead of fashions in architecture. In this context, the issue of culture and identity comes to the fore. Cities have their own unique appearance, physical structure and way of life, as well as a "spirit" that makes them distinctive. The characteristics of the city which make it different from the others constitute "urban identity". Especially in developing countries, many cities face the risk of losing their identity in the process of urban development, which consists of the expansion of the streets and the demolition of buildings that can actually be evaluated.

The cultural and natural heritage that makes cities different is also the foundation of urban identity. These values are also a prerequisite for the sustainability of cities. Cultural heritage can be considered not only as a trace of the past, but as a wealth for the future of people. When properly managed, there are many opportunities to create a strong relationship between identity, culture and heritage. Since these opportunities vary in each settlement, different solutions need to be developed. However, it is important that different solutions are produced in a consistent and meaningful integrity, and not as independent initiatives of cities that share the same geography and culture in regional scale. In this process, it is necessary for central administrative bodies, local governments and local people to work together for an effective and sustainable structure.

On the other hand, buildings that have been repaired or restored without thoroughly addressing their functionality are sometimes unusable and remain empty. Therefore, it is important to protect and revive buildings and urban spaces of historical importance by giving contemporary functions without disturbing the characteristics of the physical environment for historical, social and economic reasons. Cultural heritage does not only involve the physical environment, but also the ways in which it is perceived and used. Therefore, new functions should be given to historical environments and buildings after extensive evaluations, respecting their integrity, character and form. (Ahunbay, 1996) This process is of great importance for historical continuity, sustainability, and social awareness about identity, improvement in quality of life and economic rationality.

Finally, as the closing remarks of this article, I would like to re-view the relationship of architecture and culture, which is important for sustainable environments. The basic occupation of the architectural profession, evolving since 3000 BC, is "space", which is a formation that is affected by the characteristics of the specific period, socio-cultural environment and economic values. Space can be defined as a phenomenon created by the bounded space and the bounding elements together, determined by movement, and existing with light (Kuban, 1984). In addition to the closed 'indoors' bounded by the building elements, there are also 'outdoors' defined by elements such as buildings, trees, walls and roads. In fact, the concepts of interior and exterior are not independent from each other; on the contrary, they are intertwined, that is, architecture is more dependent on environmental conditions than any other field of art. In other words, it is necessary to examine the built environment not as an individual architectural product, but as a spatial pattern that exists as a result of the combination of open and closed spaces. As Erzen emphasizes, humans, unlike animals, have always sought a place for their actions, and they have defined an area with boundaries for their actions, even in open spaces, stating that “the physical elements that make up the space gain meaning with cultural values and the form of the spaces gives clues about how a culture is in a relationship with the environment (Erzen, 2013).

Figure 19 The Dialogue of Culture and Environment in Cumalıkızık (Author)

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Resume

Prof. Dr. Neslihan Dostoglu studied architecture at Middle East Technical University in Turkey (B. Arch. 1978, M. Arch. 1981), and received her Ph.D. in Architecture from University of Pennsylvania in USA in 1986. After working at Uludag University in Bursa for sixteen years, she started teaching at İstanbul Kültür University and became the Dean of the Faculty of Architecture, and the Head of MIDEKON, the Council of Deans of Faculties of Architecture in Turkey and Northern Cyprus. Dostoglu, who is the Manager of UNESCO World Heritage Site in Bursa, is the author and the editor of several books. She has also contributed articles to many national and international publications and has received various awards in architectural design competitions. Her study areas are architectural design, architectural education, revitalization and sustainability, and site management.

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Typo-morphological assessment of Ludlow and Famagusta Old Town

Nefter Zafer Cömert*
Şebnem Hoşkara**

Abstract

In the field of urban morphology, different scholars have developed different approaches. The pioneering approaches are the procedural-typological approach of G. Caniggia and G.L. Maffei and the historico-evolutionary approach of M.R.G. Conzen, which are the focus of this paper. However, it is also worth mentioning J.W.R. Whitehand (1981), who integrated the analysis of changes to the built fabric with the study of the individuals and organizations involved in the various aspects of property development, users, planners, and architects. As well, Kropf (2009) named four distinct approaches – spatial analytical, configurational, process typological, and historico-geographical – for the purpose of determining more explicitly which aspects are included in the different approaches to urban morphology. Based on the theoretical approaches of the above-mentioned scholars, in the scope of this article, the architectural and planning dimensions of urban morphology will be discussed for Ludlow and Famagusta, which carry similar morphological characteristics on the planning level and different typological characteristics on the architectural level. Ludlow is a small market town in the south of Shropshire, England; it is a few miles east of the Welsh border. Famagusta, with its Old Town, is a small market town in the eastern part of Cyprus. This article explores urban morphology based on the two pioneering morphological approaches, and then it sets up a typo-morphological basis for Ludlow and Famagusta through an integrated approach. The belief is that such an integrated approach will drive future interventions, design, and planning policies towards their conservation.

Keywords: urban morphology, historico-geographical approach, procedural-typological approach, Ludlow, Famagusta.

1. Introduction

Morphology (first used in 1885) refers to the study of the history of variations in a comprehensive form and was originally defined by von Goethe as “the study of the physical (or built) fabric of urban form, and the people and processes shaping it” (1952, p. 51). In the field of urban morphology, various scholars developed different approaches; some of the pioneering approaches include the historico-geographical approach of Conzen (1960) and the procedural-typological approach of Muratori (1950) and Caniggia and Maffei (2001). These are used as the basis for theoretical discussion of the cases in this paper.

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Saverio Muratori presented the procedural-typological approach in Italy at the beginning of the 19th century. According to Muratori, procedural typology was a dialectic relationship between complementary and reversible complexities in typological research and in stages of design development (Cataldi, 1998). He also worked on analyzing built-environment concepts at various scales by identifying building constituents; determining the shape, structure, and various uses of buildings; and taking measurements of the scale of clusters, urban organisms, and territories. This approach guided designers and researchers to understand the rules at the root of the structuring of building fabrics, urban organisms, and territorial ranges (Caniggia & Maffei, 2001). Following Muratori, Caniggia and Maffei (2001) developed the dynamics of urban form as shaped by its component types and their evolution throughout historical development. This is called the procedural-typological process. Caniggia and Maffei's main concerns were the historical formations and transformations of these types, as well as the urban fabrics that resulted (Levy, 1997). They searched how typological processes were linked to more general tools of cultural transmission between generations. Caniggia and Maffei's (2001) work focused on the concept of architectural design and composition. They used their philosophy and theory to construct the means by which buildings come together as cities; these are divided into four levels: (a) buildings, (b) building fabrics, (c) cities, and (d) settlements.

In line with the work of Caniggia and Maffei, Conzen worked in the UK on urban morphogenetics and he considered maps of settlements, towns, and various city types throughout the whole region, symbolically showing the complete range of rural to urban settlement forms (Whitehand, 1987). Conzen emphasized that a town plan was a combination of three distinct but integral plan elements that included the streets and their street system, the plots and their plot patterns, and the building arrangements within these patterns. He explained the present structure of a town plan by examining its historical development, which he called evolutionary theory based on the historico-geographical approach (Conzen, 1981).

Together, these two approaches offer an opportunity to integrate two theories and create a common basis for comparative studies of different regions. By comparing these two theoretical frameworks, the study of a built environment becomes a means of regaining what has been lost, or at the least, conserving and preserving admired qualities of towns, cities, and their built fabric. For this approach, we combined Conzen's consideration of the analysis and concepts of urban morphology in three groups: (a) town plan, (b) townscape and (c) fringe belt with Caniggia and Maffei's conceptualization of urban form under three different headings: (a) building, (b) urban tissue, and (c) settlement/urban organism. One of the main aims of this paper was to establish a common theoretical background and common terminologies – with certain integrated commonalities – for analyzing urban form. Secondarily, it aimed to apply these integrated commonalities to a comparison of Ludlow and Famagusta.

2. Theoretical Framework of Integrated Methodology

Examination of the studies of Conzen, Caniggia, and Maffei revealed that their methodologies show some similarities; Conzen (1960) mostly considered town-plan analysis as an evolutionary method. The approach is historical and evolutionary in that it considers the form of the town resulting from the sequence of events during its formation. Conzen's (1960) work established a framework of concepts, terminology, and procedures for analyzing the town plan in an effort to explain the physical form of the town itself. One of the major contributions of his method is the systematic inclusion of plots as a primary element of analysis.

On the other hand, Caniggia and Maffei (2001) used the procedural-typological approach to study shifts in architecture and urban design. They worked on a proper basis for design through their knowledge of buildings. Their concern was the process of formation and transformation of the built environment and the immediate needs it accommodates rather than an abstract social or political program.

Conzen took, as his primary object of analysis, English towns of medieval origin, whereas Caniggia and Maffei focused on Italian towns, studying those that grew and were substantially transformed in the medieval period, but were, in many cases, of Roman origin. In both approaches, the researchers examined medieval towns of Europe, which present a great degree of similarity.

For Conzen (1960) and Caniggia and Maffei (2001), this period–from the Middle Ages to the end of the eighteenth century–was seen as having one tradition—a tradition now lost to modern society. They admired the traditional town and sought to understand how it came to be. Their admiration of traditional characteristics did not exclude examination of modern forms; rather, to understand the traditional town it is necessary to start with the town, as it is known today. Indeed, within the current town are the traces of everything that came before.

In addition, for Conzen, a geographer, examination of towns led to an explanation of the present form of the town as well as suggestions for conservation or preservation policies. Caniggia and Maffei took their study beyond explanations and policies; they attempted to use the lessons embodied in the towns as bases for design proposals.

In the conception of a town plan, these three researchers shared a fundamental assumption: the key to understanding the current town was understanding the town, as it was in history. According to Conzen, “Towns have a life history. Their development together with the cultural history of the region in which they lie, is written deeply into the outline and fabric of their built-up areas” (1960, 76 #). Moreover, he said, “An evolutionary approach, tracing existing forms back to the underlying formative process and interpreting them accordingly would seem to provide the rational method of analysis” (1960, p. 48.)

For Caniggia and Maffei (2001), there is “substantial correspondence between structure and history, a characteristic proper to all things which derive from a process of formation. Further, to understand the building structure is to read the urban organism a spatial realm using to understand the components as a part to whole together by starting to search from room as a part to whole” (p. 18)

As can be understood from these quotations, it is evident that the similarity in their views is found not only in the idea of history as the key to understanding the structure of towns. They all saw the town as the result of a formative process. They identified similar components and properties in the process and they identified differential rates of change between smaller elements, such as individual buildings, and larger elements, such as patterns of streets and blocks (Conzen, 1960; Caniggia & Maffei, 1984). Still Caniggia and Maffei posited a general mechanism for the evolutionary process, but Conzen did not.

Their conceptions imply a direct correlation between forms and the purpose and activities that the forms accommodate, as well as social and economic conditions under which they were formed — an implication made explicit by all three theorists. They also identified periods or phases in the process of the development and transformation of the built environment. In addition, with these common objectives and purposes and given the similarities in their overall view, they shared a desire to understand the physical form of towns.

In contrast, Conzen focused on buildings and their structure, plots and their components, and street patterns. He treated buildings, plots, and streets equally and overlaid them together to find the town-plan structure, whereas Caniggia and Maffei deeply researched buildings by focusing on building components (e.g. doors, windows, rooms), building materials (e.g. wood, stone, brick), and aggregates (e.g. concrete, sand). The latter urban theorists applied importance at the building scale first followed by block, route, town plan, and urban issues. They considered buildings important elements of a town plan, and for this reason, believed buildings should be analyzed thoroughly.

Relatedly, Conzen's plot and Caniggia and Maffei's lot, which refer to the same thing, are perhaps more direct, if vague, examples of urban tissues, of which the lot is the module demonstrating the similarity. The graphic similarity, while encouraging, is too vague to be a basis of comparison. Conzen identified two main types of entities: the plot and the block and plot series. He further specified plot heads and plot tails as subdivisions of the plot. In defining urban tissue, Caniggia and Maffei identified three main entities: the lot–made up of the built area and the pertinent area; the pertinent strip–made up of lots; and the built route–made up of the route and the pertinent strip. The block is mentioned but Caniggia and Maffei considered it equivocal.

While Conzen (1960) defined his plot as a parcel that is reduced to a parcel of land defined by boundaries on the ground, Caniggia and Maffei's (2001) definition of lot remained unchanged as "the area built upon together with the pertinent area" (46.). In both cases, the plot or lot is considered an area of land. At its most basic, these labels assert that the ground or surface of the earth is divisible; any one continuous division begins in an area in opposition to the limits of another continuous division. The dividing lines are the boundaries of the areas. The pertinent characteristics defining the areas are thus the spatial relationship on a two-dimensional surface with boundary lines. It is in these terms that Conzen's plot and Caniggia and Maffei's lot can be considered the same thing.

As Kropf (1993) noted, there is a similarity in outline–that is, the configuration of the boundary on the ground plane, and a similarity in the division and location of component parts–the built and unbuilt areas. Moreover, there is similarity in orientation to the street or route. The quotations also imply that a building is located within the plot in a similar relative position. Given these similarities, Conzen' plot and Caniggia and Maffei's lot refer to a similar set of characteristics and so may refer to the same or similar class of object, at least within the specified restricted areas.

Having confirmed the distinction between plot and building, or more strictly the distinction between two levels of form in the hierarchy occupied by buildings, respectively, the comparison of the level corresponding to the building can be addressed. The comparison is complicated by Conzen's distinction between town plan and building fabric. As a plan element in the town plan, building or block plan refers to the two-dimensional trace of a three-dimensional object. Though Conzen did not specifically define the building as an entity in his approach, his plan, section, elevation, and axonometric or isometric drawings are generally similar to those used by Caniggia and Maffei to illustrate building types. Given the lack of a specific definition of building on the part of Conzen, the definition of the plot as containing the building and the graphic similarities are the primary bases for establishing a correspondence between Conzen's building-building fabric and Caniggia and Maffei's building type.

Whereas Conzen only gave specifications about structure, material, building types, and building period, contrarily, Caniggia and Maffei's building type was deeply analyzed according to its material characteristics, structure, openings, and types. Caniggia and Maffei went on to define the parts of buildings, identifying three levels of form under the building level, namely rooms, structures, and materials. Although both approaches consider building as an important town element, their priorities for building components differ from each other.

Regarding the first issue, Conzen's geographical perspective meant he saw the town, or more specifically the form complexes and element complexes, in terms of discrete elements and their distribution patterns. Conzen, thus, identified elements and element complexes. Having identified distinct types of form–the building, plot, and street, he conceives the combination of any one type of element as the pattern of that one type throughout the entire town. Within each pattern, he then distinguishes different specific types of each element.

In contrast, Caniggia and Maffei saw the combination of a given element as another distinct type of object of which there may be many different types in the area of the town. For example, a combination of plots is not the plot pattern of the entire town but a single tissue, which is another

type of element. A combination of tissues may then be a town or part of a town. For Caniggia and Maffei, the pattern of any one element over the whole town was not an entity but an analytical tool. In their attempt to conceive of the town as it was built, the pattern of a given element in the whole town plays no direct part. Ultimately, Conzen, Caniggia, and Maffei used the pattern of single elements over the whole town to distinguish types.

For Conzen, it was not the pattern as a whole that contributed to the explanation of the town, but types distinguished within the patterns and their inclusion in plan-units. The types form each complex in and of themselves, and together in plan units, they are the entities used in explanation. The difference between Conzen's and the Caniggia-Maffei approach, in this respect, is more about specific procedures than the content.

Moreover, Caniggia and Maffei conceived the form in a way similar to that of Conzen. In the defining of plan units and plan divisions, a plan unit is a combination of buildings, plots, and streets in the same way that a tissue is a combination of buildings, lots, and patterns of a single element over the whole town. These are used for the analytical purpose of identifying the types themselves, distinguishing types from each other, and combining or arranging types to form objects of the next higher level of complexity. In terms of the general conception of form, this puts the emphasis, as Caniggia and Maffei did, on the specific types of form as constituents of a given town or urban area. The pattern of the forms of a single level was seen as a particular view of the town to be used for the purposes of analysis.

Assuming this conception, Conzen's building fabric, block and building pattern, and plot and plot pattern along with Caniggia and Maffei's materials, structures, rooms, buildings, and lots have been accounted for within the five levels adopted so far. It remains to determine the elements above the level of plot.

In addition to all of the above, these urban morphology pioneers focused on town form in their different approaches. They tried to figure out which town. For which Conzen was more interested in plot, street, and building that he overlaid to discover the relations of their functional patterns and form patterns. Ultimately, he focused on town development in detail. On the other hand, Caniggia and Maffei focused on figuring out the building form according to materials, organization of rooms, aggregates, and structure. From these, they identified the general typologies of buildings in each town, which led to detection of urban tissues according to block and route form. Finally, they combined all of these together to recognize the town form as a whole.

Altogether, for their block definition, the distinctive feature, relative to the plot series, is that the block is surrounded by streets. Caniggia and Maffei asserted that the block is a combination of pertinent strips – the result of the fusion of serial-built routes. One of the fundamental premises of the procedural-typological method is that attempts to reconstruct a town are performed according to the conception by which it was built. Additionally, Conzen defined the block similar to Caniggia and Maffei, claiming that the block is a combination of plot, street system, and buildings. They all maintained that without buildings blocks are only two-dimensional areas. When buildings are added to blocks, they start to transform into three-dimensional forms.

Caniggia and Maffei's definition of tissue included the street as a constituent part, as did most of the plan units identified by Conzen. It was possible to proceed this far without discussing the route because it is not internal to the forms that have been examined. Caniggia and Maffei (2001) defined route as the structure that allows a place to be reached. This definition gives no indication of the physical nature of the street except arrangement of materials. Within the suggested framework of elements, it would then occupy the primary position between that of materials and that of rooms. By extension, the street could then be considered to occupy successively the levels corresponding to buildings, plots, and tissue or plan units. As Caniggia and Maffei (2001) noted, a building cannot exist without a route nd they added that the route is perhaps one of the most fundamental and necessary structures created by man. In many cases, however, knowledge of

points of access to and from routes is essential in the explanation of forms. Access and movement to and through forms in the built environment are fundamental aspects of the way in which the forms accommodate human intentions and uses.

Returning to Conzen's view of the street, he did, in a sense, include both the street and block in his definition of the street system. He explicitly names the street as the element but the actual object determined by the definition is, in effect, the block. He does not refer to the street as a material object which can be outlined but as a space between blocks. It is possible, however, to define the street as a distinct object, as suggested by Caniggia and Maffei. As a structure, it is a composition of materials oriented horizontally and usually level with the ground with parallel sides at such and such a width and such a length.

Caniggia and Maffei stated that routes give the characteristics to urban tissues and each route hosts its own characteristics with buildings and its surroundings. Conzen agreed with this statement but added that street defines a space and space is a volume or area within particular boundaries.

Conzen's townscape and Caniggia and Maffei's urban tissue show some similarities to each other, but in detail, they show some differences. According to Caniggia and Maffei, tissue deals with the objects as types and covers the pertinent characteristics of connections to other objects in a typological process. It is a town or part of a town process that carries dynamic values of the components of tissues. Alternately, Conzen sought to determine the townscape with plan units by analyzing the building types and plot relations, making connections with street lines as well as building activity and building history.

When these three scholars considered the town's patterns in general, they agreed that two-dimensional elements and three-dimensional elements come together and form the urban tissue or townscape. Nevertheless, in detail, some of their components differed from each other. Tissue is mostly composed of buildings and their components, route types, blocks types, pertinent characteristics and such things, wherein building functions and unit characteristics are not important. Conzen, on the other hand, attributed importance to land utilization patterns and plan-unit patterns. Thus, the main difference between their perspectives was how they considered the functions of towns and buildings.

Caniggia and Maffei's urban organism and Conzen's morphological regions are at the higher level of town development analysis. Both of these analyses of town occur at the macro level. Caniggia and Maffei described urban organisms using analysis of the town, where the building is an element, the structure of elements is the urban tissue, and arrangement of tissues form regions or districts that together form the organism of the entire town. Caniggia and Maffei's urban organisms relate to arrangements or combinations of tissues. Such combinations are the plan divisions of urban organisms. An urban organism is a general class according to the typological process. The examination of this derivation or correlation was their attempt to find the basis for the built form created in a specific era. They observed that every era produces different types of dwellings. As such, the urban organism is modified according to changing social and economic conditions, revealing the typological process.

In contrast, Conzen defined his town plan as the topographical arrangement of an urban built-up area with all its manmade features. Combinations of town plan, building fabric, land utilization pattern, and the site form his morphological regions (Conzen, 1975). A morphological region represents a phase in the development of the town, which created distinctive material forms in the cultural landscape to suit the particular socio-economic needs of the society.

Caniggia and Maffei's urban organisms and Conzen's morphological regions exhibit some similarities to each other in their general context, but within their distinct approaches, their ways of analyzing towns are different. Based on their similarities, they can be placed in the same classification. The only difference is their components. For instance, in urban organisms, town is

the combination of buildings, tissues, regions, and districts in the context of economic and social changes, whereas a morphological region is a combination of land utilization, plan-unit pattern, and building pattern within the cultural context. So, both of them consider the social and cultural context but their physical way of analysis distinguishes them from each other.

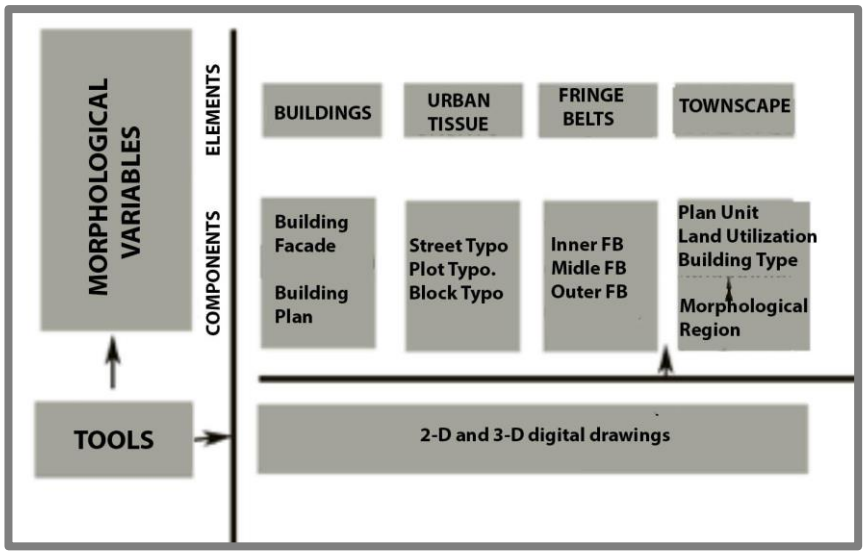
All of this discussion demonstrates how the two approaches can be integrated and used as a comprehensive method for urban morphological studies in cities in Europe or anywhere in the world.

3. Integrated Method by Synthesis of Historico-geographical and Procedural-typological Approaches

Following the discussion of similarities and differences between the approaches of M.R.G. Conzen and Caniggia and Maffei, it concluded that their approaches need to be integrated in order to produce measurable findings all around the world regarding the spirit of spaces. These theoreticians and others agreed that culture, the socio-economic situation, and political systems are major factors that directly affect the urban form, especially in morphological studies.

Within the scope of this article, buildings and streets are the parts of this effort interpreted from Caniggia and Maffei's approach on the architectural level, and fringe belts and the townscape phenomenon are taken from Conzen's approach. Hence, measurable variables are divided into elements—buildings, urban tissues, fringe belts, and townscapes—and their components. As shown in Table 1, the components of buildings are plan typology and facade typology; urban tissue components are street typology, plot typology, and block typology; fringe belt components are inner fringe belt, middle fringe belt, and outer fringe belt; and townscape components are plan unit, building type, and land utilization.

Table 1 Framework of integrated methodology (Cömert & Hoşkara, 2018)



In line with this integrated methodology, two medieval towns (Ludlow, England, and Famagusta, Cyprus) were measured to test if the new methodology is applicable. The common features of Ludlow and Famagusta are that they were fortified cities and were built in the medieval period in Europe, indicating that they have comparable features within morphological studies. Upon determining if the integrated methodology works in these cases, the authors questioned if the method could be applied in prospective morphological conservation plans.

4. Testing integrated methodology on Ludlow and Famagusta

For selecting cases, two different criteria were established. The first criterion focused on two different cultures or civilizations in Europe, and the second criterion is concerned with how these cultures and civilizations affected urban form in different parts of Europe. Within the scope of the research, two cases were selected from the United Kingdom and Cyprus.

Cyprus is a Mediterranean island located at the crossroads between Western and Eastern civilizations and it served as host to many cultures. Throughout the ages, there were always cultural interactions with other countries that had a shore on the Mediterranean Sea. Therefore, old town Famagusta has hosted varying and mixed cultures throughout its history. Until 1191, many civilizations passed through the island, including Egyptian, Byzantine, and Arab. Old town Famagusta was cited to show the generative structure, both culturally and socially, from 1191 onward The history of the old town, or walled city, dates back to the first century AD and its development has been structured on successive periods: the early period (648-1192 AD), when the foundations of the city were laid; the Latin period (1192-1571); the Ottoman period (1571-1878); the British period (1878-1960); the period of the Republic of Cyprus (1960-1974); and the post-war period (1974-present). However, because of lack of documentation from previous periods, this study focuses on the 13th century (1464) and its aftermath, called the medieval period.

In contrast, Ludlow is a small market town in the south of Shopshire, England, a few miles east of the Welsh border. Ludlow's history dates back to the 11th century with establishment of a castle at the edge of the River Teme. Its beginning is clearly related to this castle as its pre-urban nucleus, which in its original smaller form most likely dated from 1086 to 1094 (Conzen, 1988). The town's development is based on successive periods in the 12th century as Conzen (1988, p. 263) stated, "Continent outside the area of Roman-Medieval settlement continuity, such pre or proto-urban settlements have been known to historians for a long time by various medieval Latin terms. The 13th to 16th centuries are known as the Tudor Elizabethan and Jacobian periods; the 16th to 19th centuries are known as the Georgian and Regency periods; and the 19th to 20th centuries are known as the Late Victorian and Edwardian periods." Based on this, old town Famagusta unveils heterogeneous cultures, whereas Ludlow has had a homogeneous cultural background. Although there were different historical periods with different emperors, both of their backgrounds have roots in British culture.

The justification for selecting cases from these two countries is that England is located in the northwestern part of Europe, while Cyprus is in the southeastern part of Europe. This separation provided two opposite poles and an opportunity to understand differences, if any, in terms of urban morphological characteristics of settlements that are distant from each other. Another reason to select these cases was to find how different civilizations affected urban form. One motivation to select the case from the U.K. is that Conzen studied that country on the geographical level and tested his method on Ludlow in approximately 1978. In his 1988 article, "Morphogenesis, morphological regions and secular human agency in the historic townscape as exemplified by Ludlow," Conzen discussed his work in Ludlow during the 1970s. Thus, Ludlow was considered a relevant case for continued analysis and purposes of comparison.

The old town in Famagusta is a good case because of the heterogeneity of its civilization. This feature provides the opportunity to test whether this method can be applied on a case with such character. Other significant reasons to select Old Town Famagusta were its physical location and origin, its standing as a medieval walled city with intact fortifications in North Cyprus, and its position as part of the town that borders the water. In the UK, Ludlow exhibits the same physical characteristics as Famagusta. Thus, the areas of their walled cities were selected for analysis.

In earlier studies, procedural-typological methods were applied only in the CBDs and historico-geographical methods were applied to the whole towns. The aim of this analysis is to systematize

the findings and start to move toward the macro scale, in other words, to establish a principally inductive approach. Generally, 2D surveys were applied to the whole towns in detail, and 3D searches were applied to the town centers in detail. One reason to analyze the towns in two stages is their size; the study area in Ludlow is half the size of Famagusta's study area. Furthermore, although the character of the residential units of both towns as well as the middle fringe belts are not significant elements for performing typo-morphological analyses, to measure their developmental processes, the whole towns should be analyzed to facilitate further research.

To understand the similarities and differences between the selected cases, the towns were evaluated according to geographic location and their physical, functional, periodical, and cultural characteristics.

The first concerns in the analysis of these cases are the water elements related to their geographic locations. In Ludlow, the River Teme delineates one edge of the town and is labeled as one of the outer fringe belts of the city. In Famagusta, the Mediterranean Sea meets the edge of the city and is considered one of the outer fringe belts of the old town as well. The castle of each town is located at the edge of the water feature, the castles and walls define the inner fringe belt, and fortifications define the outer fringe belts of the towns. The fringe belt developments of the two cities show the same characteristics, especially when considering features of the inner fringe belt and the outer fringe belt.

Physically, Famagusta is larger than Ludlow; Ludlow covers half the area of Famagusta. When comparing built density, although the sizes of the towns are different, they have similar densities. Additionally, CBD size and density show the same characteristics, both with areas of approximately 1 km^2. Both of the towns have fortifications surrounding their historic cores, which have survived until today. The Famagusta town plan is organic, whereas Ludlow seems to have more of a grid-like plan organization even though some theoreticians categorize it as an organic plan (Slater, 1990; Larkham, 1991). In addition, from the perspective of land utilization characteristics, the cities both have commercial activities in the core zones with religious enterprises located at the edges of the core zones. Residential functions surround the core. In addition, shopping and retail activities begin at the edge of the market square and continue in a linear organization along the streets connected to the square.

The third point of analysis revolves around both towns' origins in the medieval era. Functionally, at the beginning of the medieval era, Ludlow and Famagusta's economies were based on trade activity, and the cities were important trade centers in their regions (Uluca, 2006, p.22; Faraday, 1991, p.43). The economic growth of the towns is an important factor related to town development. Ludlow had a strong trade economy throughout the ages.

The historical conditions also played a role in the towns' economies and forms. In Famagusta, after the British period, and shortly after the foundation of the Republic of Cyprus, there was ethnic conflict between the Turkish and Greek Cypriots until 1974. Until that time, the economy was well; unfortunately, the economy weakened over time following the war. Ludlow continues to have the same function today, but Famagusta does not. Additionally, for a specific period in its history, Famagusta became a military base rather than a trade center. Although they were important trade towns in their past, they have lost their popularity in recent times, although some trade activities continue.

Culturally, Famagusta shows a heterogeneous character, whereas, in Ludlow, a cultural homogeneity has existed through the ages. Thus, it can be stated that Ludlow presents a monoculture structure because the locals share the same Anglo-Saxon cultural background. Famagusta's cultural background through the ages has shifted from Italian, French, Ottoman, and British to Cypriot.

These findings and discussions reveal that analysis of town development and morphology in different parts of Europe provided an opportunity to test whether these two pioneering methods are valid throughout Europe.

Table 2 Similarities and Differences in Famagusta and Ludlow's characteristics (Cömert, 2013)

	Similarities	Differences	
		Ludlow	Famagusta
Geographical	They are on the same continent.	Northwestern Europe	Southeastern Europe
Physical	Towns have fortifications. They have water features.	Half-size smaller than Famagusta Grid organization	Two times larger than Ludlow Organic pattern
Functional	They were based on trade activity.	Strong economy	Weak economy
Periodical	Medieval origin		
Cultural (civilization)		Homogenous structure Monoculture structure	Heterogeneous structure Cultural diversity

Table 2 Similarities and Differences in Famagusta and Ludlow's characteristics (Cömert, 2013)

As seen the summary in Table 2, those three fundamental issues make the study of these cases comparable because their political systems and socio-economic evolution have more or less followed the same patterns. The cultural background differences also aid the comparison.

Consideration of the elements and components of the two approaches helps to analyze the existing urban forms according to morphological criteria. This analysis aims to determine unique morphological forms according to town character and helps in making a wide range of comparisons possible, especially for towns of medieval origins that survive today.

In building typology, there are two types of morphological analysis: plan typology and street facade typology. In plan typology, the towns showed different plan organizations. Culture played a critical role in such formations. However, when Famagusta and Ludlow are compared with each other, their evolutionary process reveals the same order. Building plans in both towns bear the same developmental features, starting with base type, continuing with leading type, and carrying on to synchronic variants of base types. As seen in Figure 1, because of the cultural differences, they do not show common features in their plan organization, but they endured the same evolutionary process. During the pre-modern period, both towns' base plans conveyed the same typology whereas their leading types and synchronic variants showed differentiation in external factors.

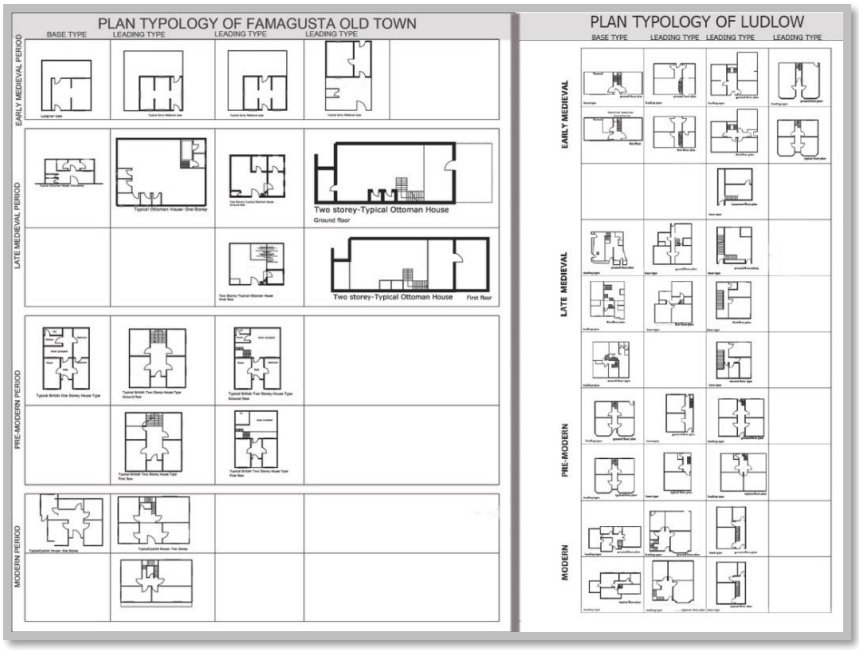


Figure 1 Plan Typology of Famagusta and Ludlow (Cömert, 2013)

Regarding facade typology, like plan typology, the facade characteristics and ratios are completely different in the two towns. One explanation for this discrepancy is the cultural differences, and another explanation is the use of local material and techniques. However, the evolution of the towns followed the same processes. Morphological analysis techniques in building façade typology can be applied to both towns, and they provide an opportunity to compare their processes within those analyses. It was observed that each town contains procedural-typological development starting from base type and moving to leading type with some synchronic variants observable by means of solid-void ratio, material choices, and construction techniques. Usually local materials on the façades and construction techniques defined the towns' unique character. The cultural heterogeneity in Famagusta is clearly observed in the building façade ratios and construction techniques. Although this seems to be the dominant feature for the base types, the ratios representing each cultural shift were affective in the typological development together with the period features. On the contrary, as shown in Figure 2, due to the cultural homogeneity Ludlow's façade typology shows procedural consistency between the periods.

Figure 2 Façade Typology of Famagusta and Ludlow, (Cömert 2013).

As was listed in Table 1, components of the urban tissue are plots, blocks, and streets, and urban tissue deals with their relations. Plots are an important element in morphological analysis. The findings indicate in Figure 3 that each town's plots have been divided into smaller and smaller portions from the medieval era to modern times. Today, the plots take their final form and they are observed to be linear and rectilinear formations in Ludlow, while rectangular, L-shaped, and irregular shapes are seen in Famagusta. Their town-plot division ratios and their forms differ; however, plot amalgamations and divisions show consistency in both towns. The street forms indicate that each town has a unique character regarding shape, order, length, and width. Both of the towns have an organic street character, but the degree to which they are organic differs. For example, in Famagusta, the main street and others are moderately curved and one street may have varying widths, meanwhile in Ludlow, the streets are not as curvy as in Famagusta yet they display varying widths. Thus, in both towns, the streets present an organic medieval form. Additionally, in Ludlow, some of the major streets are parallel to each other, but in Famagusta, major streets usually show irregular organization, constituting the primary difference between the two towns. Moreover, in general terms, the two towns show the same medieval characteristics and other street formations based on those streets.

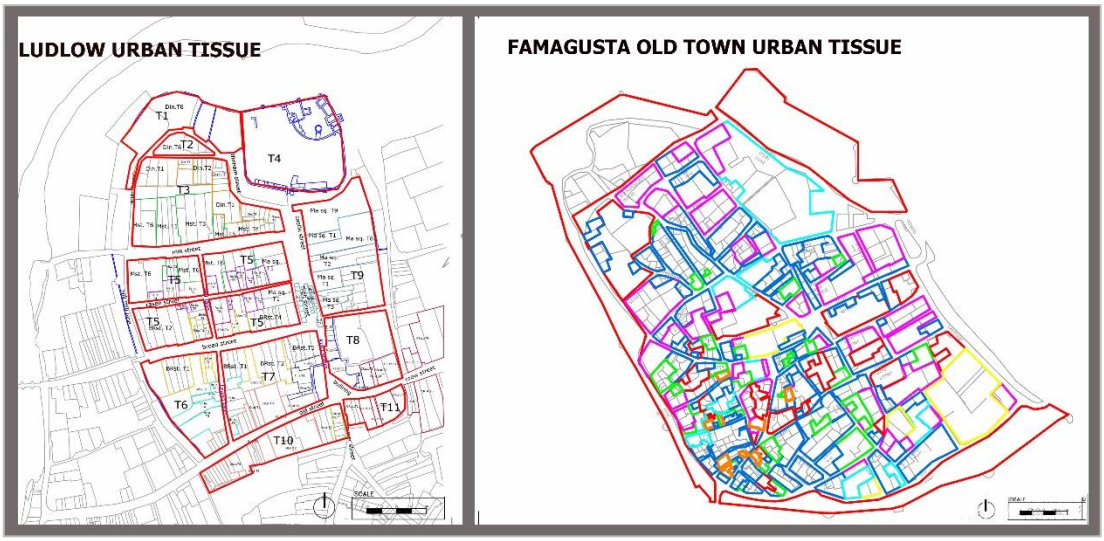


Figure 3 Ludlow and Famagusta Old Town Urban Tissues

Block typologies in figure 4 have developed until the present with differences revealed in both cities. Discontinuity is observed in block typologies in Famagusta, and the most important reason for this is the irregularities in the parcel ratios and the organic street texture, which formed accordingly. On the other hand, proportional division or amalgamation of the plots following the initial formation in Ludlow also affected the block formation and a consistency between the blocks was observed. One of the main differences between these two cities is the cultural diversity that is a determining factor on one hand, and the proportional or disproportionate changes in the plot ratios are the factors that determined block transformation on the other hand.

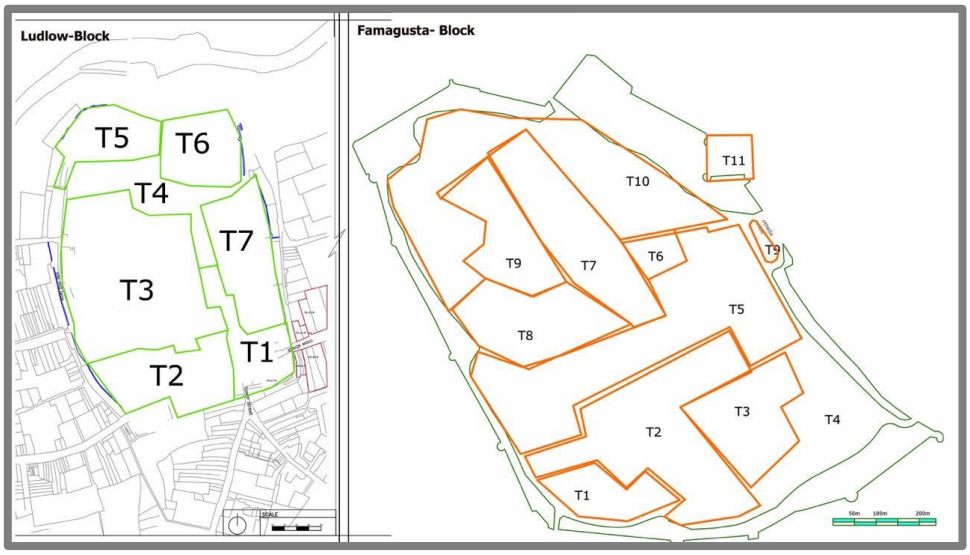


Figure 4 Ludlow and Famagusta Block Typology (Cömert, 2013).

Additionally, analysis of urban tissues revealed that all of the building façades or front yard walls, from the medieval period until the 17th century, had a direct relationship with the street. After the 17th century, each town's urban tissue formation shows certain differences.

The urban tissue analysis showed that there could be no open space evaluations. One of the reasons is that in medieval times, all of the plots were fully occupied by buildings—there were no empty plots without buildings. The only open spaces in urban tissues were streets and squares. Regarding this characteristic, the two towns are the same.

When fringe belts were analyzed, both Ludlow and Famagusta Old Town showed similar fringe belt formation. Castles defined the inner fringe belt formation with their walls identified as fixation lines. Both towns are located in the inner belt. In this context, plots, buildings, and land uses created by public and semi-public buildings in the inner fringe belt show that these areas are actually located around the center.

The townscape, composed of land utilization, building types, and plan units of towns, is an important element in morphological analysis. The townscape analysis provides an overall image of a town and is classified according to Conzen by overlapping plan unit, land utilization, and building type. Within this context, the two towns' land utilization can be analyzed easily to understand formation of the center, where the institutional and public functions are located, or the borders and how the residential units developed. This makes it advantageous to follow land-use patterns of settlements.

As seen in figure 5, Ludlow and Famagusta, town-center functions consist of shops, offices, and professionals with or without residences. The towns' open space functions were observed near religious facilities and castles. Other functions were spread throughout the towns. This provides an opportunity to understand the functional distribution of towns in terms of certain criteria. This approach shows that if those five functions are analyzed, it will provide an opportunity to compare the towns' functional distribution.

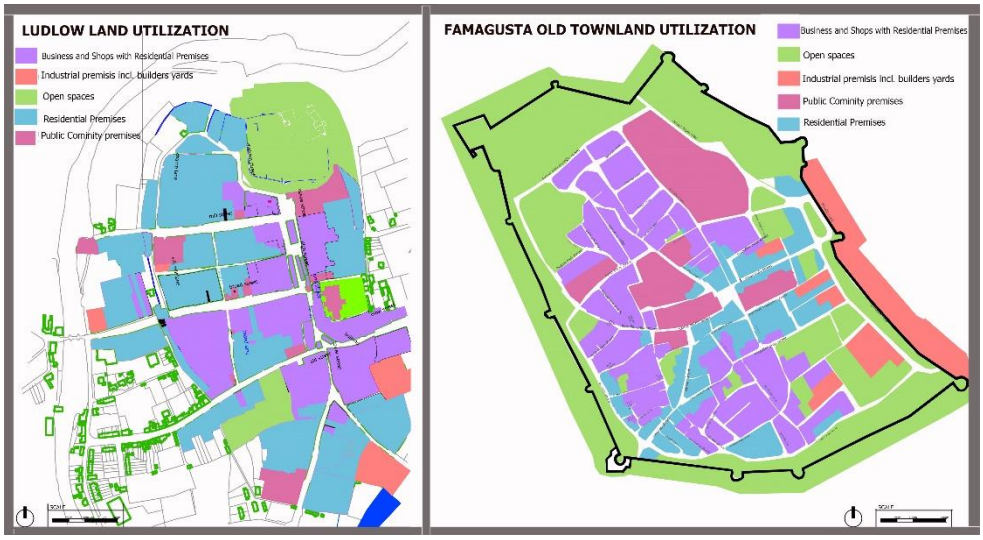


Figure 5 Ludlow and Famagusta Land Utilization

Building type analysis in both towns revealed differences caused by cultural and geographical differences. As observed in Figure 6, the analysis shows that most of the medieval buildings that survive today are located in the centers of the towns, compared with other buildings from later periods that were built more randomly on their plots. One common characteristic in both towns is their construction techniques and materials. Construction techniques, according to periods, are similar both towns, along with the use of mud-brick or local stone as a building material. The towns can be compared readily according to their historical construction periods, materials, and techniques.

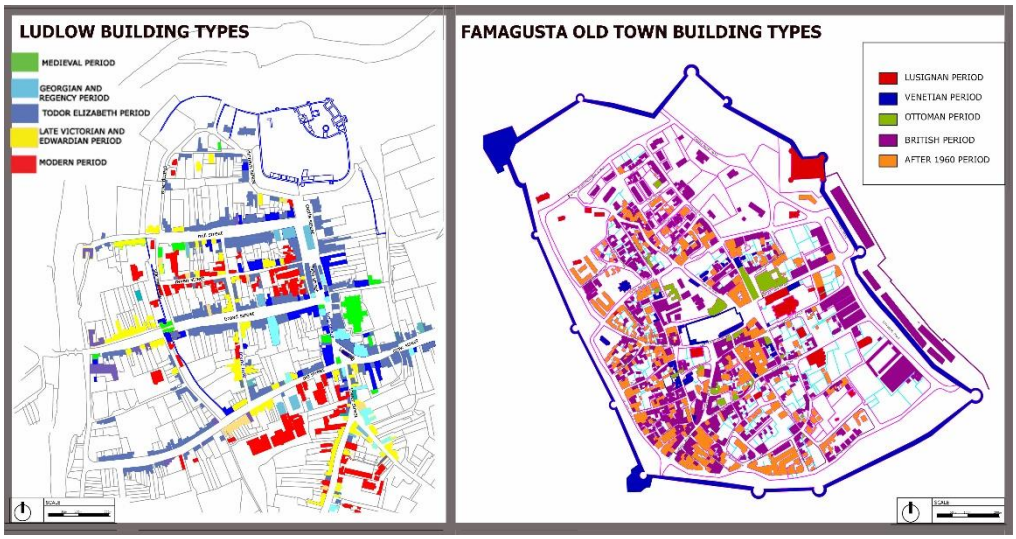


Figure 6 Ludlow and Famagusta Building Type

In figure 7, plan-unit analysis indicated that both towns had special plan units based on their street character and plots, streets, and building relations to each other. Ludlow transformed plan units along with street evolution and it has a unified plan-unit character. On the contrary, in Famagusta, there is a fragmented plan-unit character on one street and this caused heterogeneity of the plan unit.

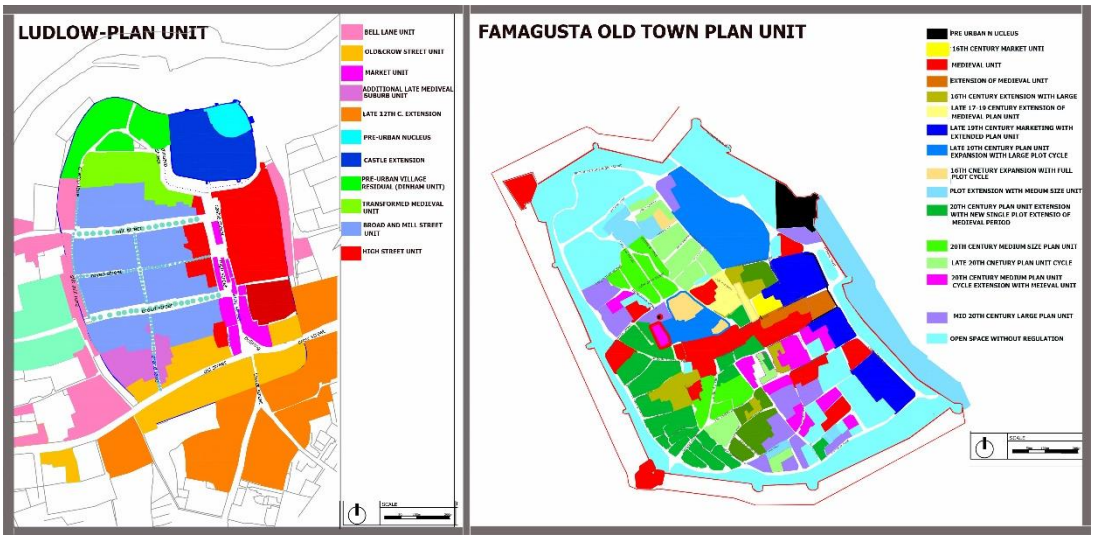


Figure 7 Ludlow and Famagusta Plan Unit

The townscape analysis helps to understand the evolution of town plans until the present day and creates a basis for townscape conservation in the present and the future. In other words, it shows how the townscape formed throughout time and whether there may be a new development area or new planning strategies. This analysis suggests how new formations might appear.

A major challenge for conservation planning is to identify methods by which townscapes can be maintained as functioning entities without losing their essential historicity. All too often, urban development in both Ludlow and Famagusta has been allowed to proceed without sufficient recognition of the need for sensitive conservation of historically distinct urban landscapes. This is especially true with respect to the importance of maintaining the integrity of the historical urban landscape as a whole rather than treating individual sites in isolation.

All of the findings indicate that towns of medieval origin have a unique character. Accordingly, a morphological analysis method helps to understand the evolutionary form of the town throughout the formative process. Within this context, integrated morphological analysis – including building typologies, plots, streets, urban tissues, fringe belts, and townscapes – shows the overall formations of the towns and presents an idea of the future forms of the towns. When this analysis is complete, the discussions suggest that these morphological techniques can be applied to any town on any continent with any culture. Although their morphological character would be different from one another, the method presents the opportunity and the means to discuss, analyze, and compare towns on different continents with one another.

Many different methods have been established in morphological studies that include multi-layered studies. Unfortunately, most of those methods only account for measurement and evaluation in their own region, both at the architectural level and at the planning level, which does not constitute an obstacle to the comparison of different regions today. In particular, the analysis of morphological elements with a common denominator is necessary in order to facilitate a general discussion. While on one hand, façade studies at the building scale help to share information about the transformation of morphological structure at the urban scale, on the other hand plan organizations actually shed light for researchers when determining the meanings of cultural differences. In addition, building and plot ratios and street formations are the most determining elements of the urban fabric. Similar evaluation of the characteristics of all of these in different geographies shows the importance of urban morphology in comparative studies. Besides, how the fringe belts of each city develop and transform enable the researcher to predict transformations of public spaces and to take readings from different examples while conservation plans of the cities are being made.

It is understood from this study that the plan units, land uses, and building types that make up the townscape should be measured using different criteria for each region. While much more regularly transforming, plan units and block typologies were observed in Ludlow. At the same time, this study showed how difficult it is to apply these in an organically developed city like Famagusta. However, it is necessary to measure townscapes by generalizing in order to see the whole in morphological studies.

5. Conclusion

Urban morphological concepts may provide a specific structure of reference for comparative urban studies (Conzen, Gu, & Whitehand, 2012). Comparative studies help not only to understand how widely generalizations that are true in one region can be demonstrated in another, but also reveals unique historical urban forms as configurations of characteristics related to particular urban processes. While making conservation policies, at least in urban areas, they should be produced by putting certain criteria under the protection of urban morphologies. Since these criteria are arbitrary today, it is important for these studies to protect the urban form, especially within the scope of urban landscapes.

Comparative studies in morphological research broaden the discussion, especially by providing a common background for further studies. The integration of procedural-typological concepts and historico-geographical concepts provides a strong tool for urban morphological analysis, conservation, and planning strategies. Although the theories of Conzen and Caniggia and Maffei developed separately, with this proposed integrated methodology, some complicated values can be made measurable, set on a common ground, and evaluated by comparing them for all cities in a systematic way. The methods identifying the morphological analysis of the two different towns of medieval origin, which characterized the features of the urban pattern, were determinant and examined. Analysis indicates that all of the elements and components of urban morphology can be tested on different settlements that have different historical backgrounds.

It is believed that this integrated method for morphological analysis helps to clarify and understand (a) the future development of town guidelines, (b) long- and short-term planning guidelines, (c) ways to improve historical town conservation planning, and (d) an overall point of view about the morphology of settlements that inspires appropriate or compatible uses and forms in the urban environment. Additionally, this morphological analysis can be applied not only to historically originated towns; it also provides a wide range of opportunities to study new or modern settlement development.

As a result of considering the findings of the research summarized above, it can be concluded that an integrated method derived from Conzen and Caniggia and Maffei's methods can be applied to different civilizations in different regions and geographies. In addition, this analysis contributes to an understanding of the spirit of cities from medieval times until today and initiates a discussion regarding how the urban organism has been developed and conserved using those morphological methods. This comparative study provides the means to compare towns according to the same criteria, which establishes a method of equivalent comparison via morphological studies to understand and compare cities for more comprehensive results.

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Resume

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Housing flexibility in terms of changes, opportunities, and sustainability of goals and values

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Onur Erman**

Abstract

Flexible design in architecture is the ability of buildings to adapt to changing situations in their use, functioning, or context. The ability of the users to change the space and control it according to their requirements and demands is the strongest aspect of flexible design. Flexible design, integrated into design practice with modern architecture, plays a key role in the solution of many design problems. This study, which focuses on housing flexibility, aims to determine the demands of the users regarding the flexible use of housing and to understand the internal dynamics of the process that determine the housing flexibility in this context. Within the scope of the study, it is thought that the housing flexibility is formed by evaluating the changing demands of the users within the framework of the sustainability of the goals and values and realizing them according to the existing capabilities. This process has been attempted to be conceptualized by defining it with sub-elements belonging to three components that are involved in the process defined as change, goals-values, opportunities. In the conceptual model, at the first stage, sustainability works as a control mechanism to ensure the realization of change demands arising from various factors. While sustainability checks the suitability and validity of the demands, the opportunities organize these demands to be accomplished. According to the model, the goals and values must be suitable for sustainability to the demands for change to be realized. However, to realize the demands and achieve a flexible solution, the existing opportunities must be suitable. Within the scope of the conceptual model, the effect of the process components on housing flexibility is attempted to be determined through questioning the flexibility demands of the users. In line with these aims, a questionnaire survey was conducted. 450 subjects were reached via email and 322 of them replied. The findings of the study allowed us to understand that the expectations of the users in terms of the demands, goals, and values, sustainability, and opportunities regarding the change in providing housing flexibility. The results point out that the users demand flexible housing, which enables spaces enlarged and narrowed or divided and combined. In this context, it has been determined that the flexibility of the spaces should provide long-term use in accordance with the lifestyle within the scope of goals and values. For this purpose, the necessity of technological opportunities that provide modification of spaces is understood.

Keywords: Flexible design, housing flexibility, users' demands, conceptual model

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1. Introduction

In the world that spins with changes, days turn from night to daytime, seasons turn from winter to spring, life turns from youth to old age, and these transformations inevitably change the space and life within time. Living in an inevitable continuum state of change requires human adaptation to changing conditions. In this dynamism, housing, as the living space of the human being, and the representation of his existence, changes with him, adapts, and gains continuity. Undoubtedly, it is clear that the common feature of permanent and sustainable elements is being adaptable. Schmidt et al. (2010, pp. 17-19) associated the adaptability concept with capacity for change, the ability to achieve suitability for purpose or minimize inappropriateness, low-cost and high-performance value, and readiness for what might happen now and in the future. Also, it is possible to state that developing technology and the innovations it brings are directly related to the change and diversification of existing needs and requirements and the variations of living conditions over time. While talking about change, it is expected to have an effect of changes in architecture which is intertwined with life naturally.

Essentially, flexible architecture is a design in which a building easily responds to the variations that occur during its lifetime. This design approach; offers long-term use, is fit for purpose, allows user intervention, makes use of technical innovations, and is more economical and ecologically suitable (Kronenburg, 2007, p. 7). In addition, it has more potential to fit the changing cultural and social trends. In this respect, instead of trying to produce the most accurate or the most beautiful design, flexibility aims at the design that is the most suitable for the user and can adapt to the changes that may occur in long-term use. The capacity of the flexible design against changing conditions is associated with the design characteristics of flexible design being loose fit instead of a tight fit and its incompleteness in a way. (Hamdi, 1995; Forty, 2000). Thus, the flexible design is completed only when it is started to be used (Kronenburg, 2005).

Another feature of the flexible architecture is that it allows users to modify the space, use and control it in line with their demands by interacting with the users. This feature can be found in the first settlements used by human beings for sheltering (Estaji, 2017, p. 37-49). Tents as living spaces of nomadic people are portable and allow more than one function to be performed in the same place. Due to these reasons, they can adjust to changes by adapting to a dynamic lifestyle and changing conditions. The traditional Turkish house which is one of the most notable examples of flexible use shaped by the influence of culture is seen as the repetition of the nomad tent in terms of its central space configuration and use (Akın, 1990). The multi-functional rooms are the most important units of the traditional Turkish house, with the feature of performing more than one action in a single space (Figure 1).

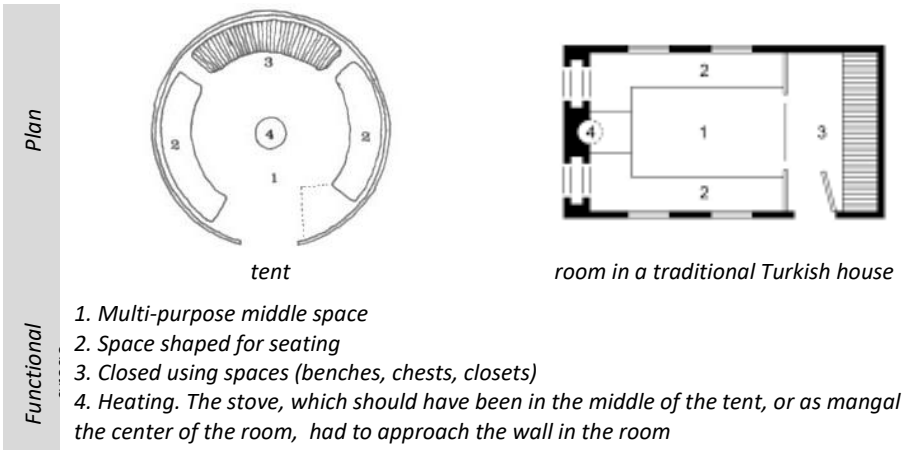
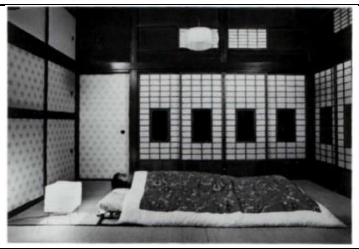


Figure 1 Multi-purpose using of a room in the traditional Turkish house and a tent (Küçükerman, 1985)

As characteristics of social life and cultural properties define the flexibility potential of the space, the inhabited area may be a reason for flexibility. Rasmussen (1994, p. 102) states that the traditional Japanese house was shaped under the effect of Japan's geography, which is an island country in an earthquake zone. Similarly, Bognar (1985, p. 35) states that traditional Japanese houses are shaped by climate and geographical conditions. They are in the most suitable form with wooden structure and lightweight separating elements which is useful to renovate rapidly after the destructive effects of typhoons and earthquakes and can resist in the humid climate. It has been a necessity for traditional Japanese houses to be resilient and adaptable as a response to environmental conditions. The multi-purpose use of the spaces that are divided or combined with lightweight and movable separating elements is the flexible use features of the traditional Japanese house. Although it is provided in different ways, the multi-functional use of spaces can be defined as a typical flexibility approach of the traditional houses (Table 1).

Table 1 Multi-functional characteristics of the traditional spaces, (Günay; 1999, Nergis; 2005)

	Turkish house	*Japanese house*
eating and gathering		
daily routines		
sleeping		

The knowledge about flexibility is mostly based upon studies that focus on the necessity of flexible design, its history, methods, and examples that consider changing purposes and use. This study attempts to understand that the process of flexible design through the residential user's perspective in the context of housing flexibility. With this aim, components of flexibility and their effect on the flexible design process within the context of housing flexibility have been tried to be defined and discussed. Therefore, descriptive factors of the flexible design conditions in the housing were specified, and then the relationship between these conditions in the process of flexibility was tried to be represented through a conceptual model. A case study was conducted based on the conceptual model, which allowed the determination of design expectations and priorities of the residential user.

2. Development of Flexible Housing Design Practices in Phases

The minimum dwelling idea offers ideal functional solutions that can satisfy the basic minimum requirements for a living (Teige, 2002). Minimum dwelling as a result of the modernization process has been a method aiming to quickly obtain the number of dwellings needed by the housing crisis after World War I. In modern architecture, spaces and functions are precisely defined and inseparably linked. As a result, spaces can only be used for predefined functions at certain times as the architect predicted, like day and night-time spaces. While the effect of minimal design attempts continues, the variety and changeability of needs in modern life have started to lead designers to new searches. With developments, the impact of technological innovation in both design and building has supported flexible use. Furthermore, open or free plan idea has emerged to make space use more efficiently, and that has been supported by the development of structural systems. As a result of load-bearing walls have lost their importance, new life patterns that the user can build and even change have begun to form (Schneider and Till, 2005, p. 157-166). For sure, the common goal of this entire attempt was that the spaces created with minimum standards can adapt to the life of the user. In free plan designs, the flexibility provided by the help of panels and divider components that move in a specified way was one example of this (Figure 2). In this period's examples, although spatial freedoms are provided to the user owing to the elements moved in a certain configuration with limited technical possibilities and certain space, pre-constructed configurations create flexibility. Gropius describes flexibility during this period as a kind of illusion that enables architects to sustain their authority and control over buildings in the future (Hill, 2003, p. 29). Although flexibility cannot find its full meaning in this period, it can be considered as a representation of modern life and the production of modernity.

a *b*

Figure 2 Flexible use arrangements with movable parts, *a)* Loi Loucheur, Le Corbusier, 1928 (Benton, 1984), *b)* Schröder House, G. Rietveld, 1924 (URL-1)

The second phase in housing flexibility that follows can be described with the industrialization of housing. In this period, architects focused on technical solutions for the housing problem that is prominent again and fabricated housing production has been started with industrial solutions used in construction systems (Schneider and Till, 2007). The idea that the housing problem can be solved with mass production has transformed the house into an industrial product that is produced with standardized and rational solutions, modular and prefabricated elements. In this period, the main purpose is obtaining the transformation and changeability of mass-produced housing, concerning the various users and diversified needs over time. In fact, Norberg-Schulz (1966) interpreted flexibility in two ways according to the spirit of the period. The first is the flexibility provided by parts that are added or removed in a way that does not impact the integrity of the structure. The second is flexibility, which allows the relations between the parts to be changed (Figure 3). At this phase, it can be said that technical solutions supported by standardization and fabrication are effective in providing flexibility.

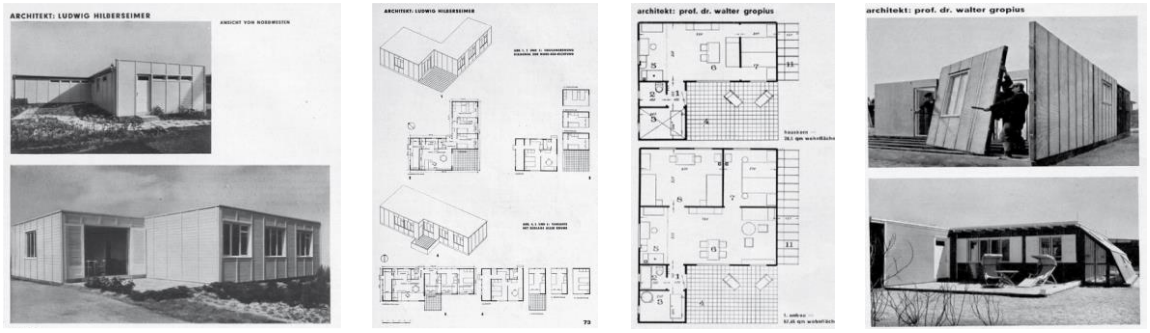


Figure 3 Growing House (Das wachsende Haus, 1931) working groups studies on standardization of housing, (Schlorhaufer, 2020).

Besides the thought of not just using technical possibilities will not be efficient for flexible design solutions, also the idea of increasing the effectiveness of the user in the design and usage process formed the foundations of the next period. At this point, it is seen that a flexibility approach that prioritizes user participation and user preferences has become widespread. John Habraken and John Turner have been pioneers of this approach which provides the user with greater variety and choice, gets together user participation and construction possibilities in the flexible design. Habraken opposed the idea of standardization of the dwelling and argued that the user should be involved in the design process. He has produced an alternative design method in which the user can have a say in housing design in line with his/her wishes and needs, instead of the standardization that occurs with industrialization in the housing. In Habraken's theory, the structure consists of supports designed as the main bearer of the structure and infills, which are short-lived equipment, components, or elements that can be changed and adapted by users, suitable for flexible design (Habraken, 1972), (Figure 4). In the context of the user-centred design approach, where constructional technical potentials are featured, the use of movable dividing panels that allow convertible and versatile use of spaces, bathrooms with replaceable pieces of equipment, and plumbing ducts, etc., drew attention.

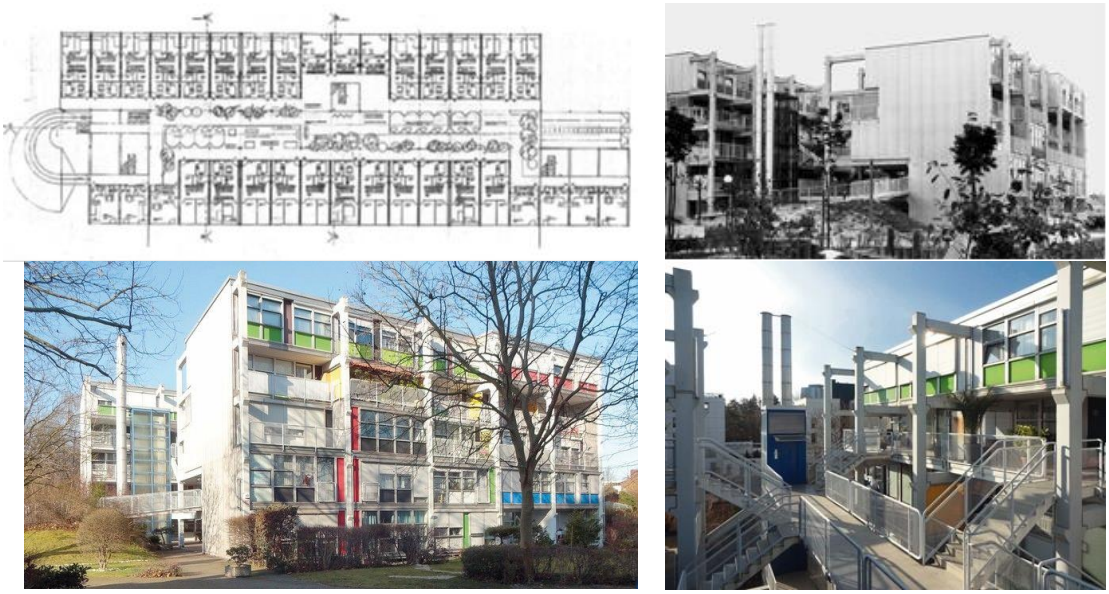


Figure 4 Supports and infills, 'Elementa', O. Steidle & Partners, 1972, (URL-2)

Another approach in this period, in which the user plays an active role, is polyvalence that was introduced by Hertzberger as a new concept. Polyvalence can be thought of as a combination of an open-plan approach where the relationship between function and space becomes ambiguous, and spatial redundancy that allows for more different uses has been caused by changes in user perception and life (Hill, 2003, p. 45). In other respects, the obvious negative consequences of mass

housing settlements, dissatisfaction, and the problem of alienation in housing areas have caused the designer to be more sensitive to the context of user demands. With this respect, flexibility has been tried as a tool to increase the quality of life in dwellings and to overcome the identity problem in settlements (Beisi, 1995; Altaş and Özsoy, 1998), especially in mass housing settlements where different sociocultural groups can live in the way they prefer. Nemausus (1985-1988) social housing project, designed by Jean Nouvel in different types of 114 houses, single-storey, two and three-storey, can be considered as one of these examples (Figure 5). Nouvel states that the core ideas of the design are user-centred design and changeability. He also states that with the help of flexibility in design, the dwelling can be personalized and the user can predict what kind of life he/she will lead in it in the future.

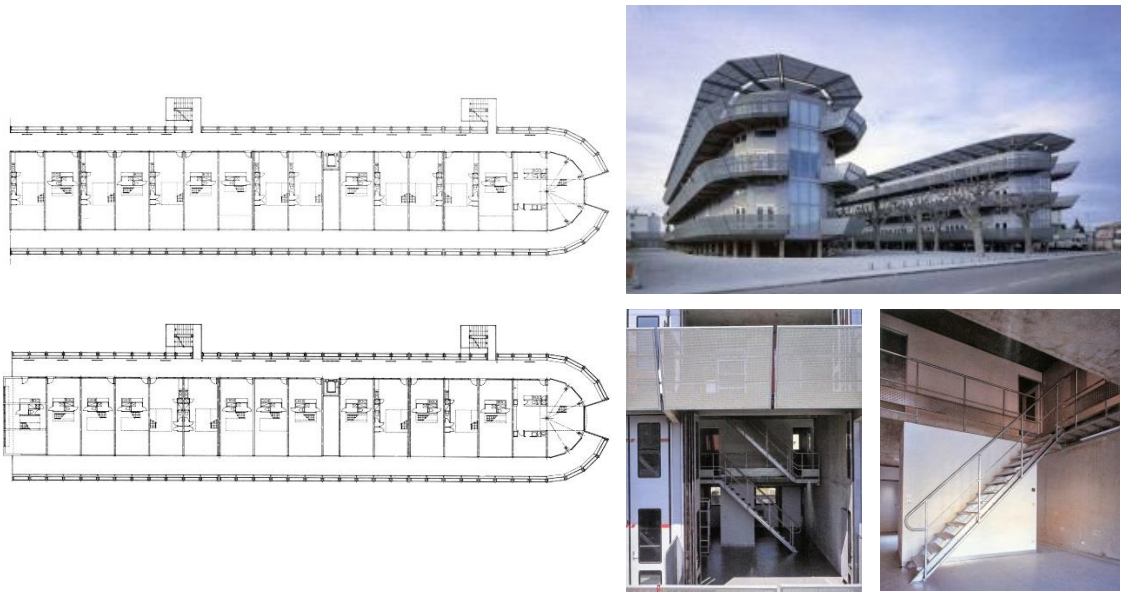


Figure 5 Nemausus settlement, J. Nouvel, 1987, (URL-3)

In this period, it is seen that flexibility is mostly used to overcome differences and eliminate uncertainties in housing design. Characteristic of the period, especially in social housing or mass housing design, can be described by providing the needs of an unidentified and inhomogeneous user profile and trying to allow for other components that cannot be predicted by the uncertainty of the future. While technical possibilities create an alternative for flexibility, it is seen that spatial characteristics come to the fore with user-centred design.

Today, it is seen that flexibility is in another phase and advanced technology provides several possibilities for flexibility. While producing innovative solutions with functional and dimensional content in the focus of space, flexibility has also come into prominence in design in terms of façade features. In this regard, flexibility has become a method for providing environmentally conscious design beyond user-centred design. Recently, not just user needs, but also environmental control, and sustainable design goals have been included in the field of activity of flexibility with the help of kinetic applications via the multi-sided effect of technology.

The developments that have emerged in successive periods show that the objectives and strategies regarding achieving flexibility change over time with the conceptual content. To summarize, it is seen that the conceptual content of flexibility has developed under the influence of modernism, in different lines such as minimal space and functionalism, industrialization and standardization, user participation, and sustainability. It is also seen that the practices are focusing on two centres as versatility and convertibility related to the flexible use of the space. Taken all together, it can be said that flexible design approaches put flexibility into practice in spatial applications, design and construction processes, and in the building system through technical possibilities. Thus, when the flexibility ideas and practices are evaluated, it is thought that flexible

design methods can be grouped in the following headings; functional flexibility, which includes spatial possibilities for different functions and multiple uses, spatial-dimensional flexibility, which includes changes such as the dividing, combining and expanding of space, and structural flexibility, which includes the contribution of structural elements that can be or not load-bearing and equipment to flexibility (Erman and Özinal, 2018), (Figure 6).

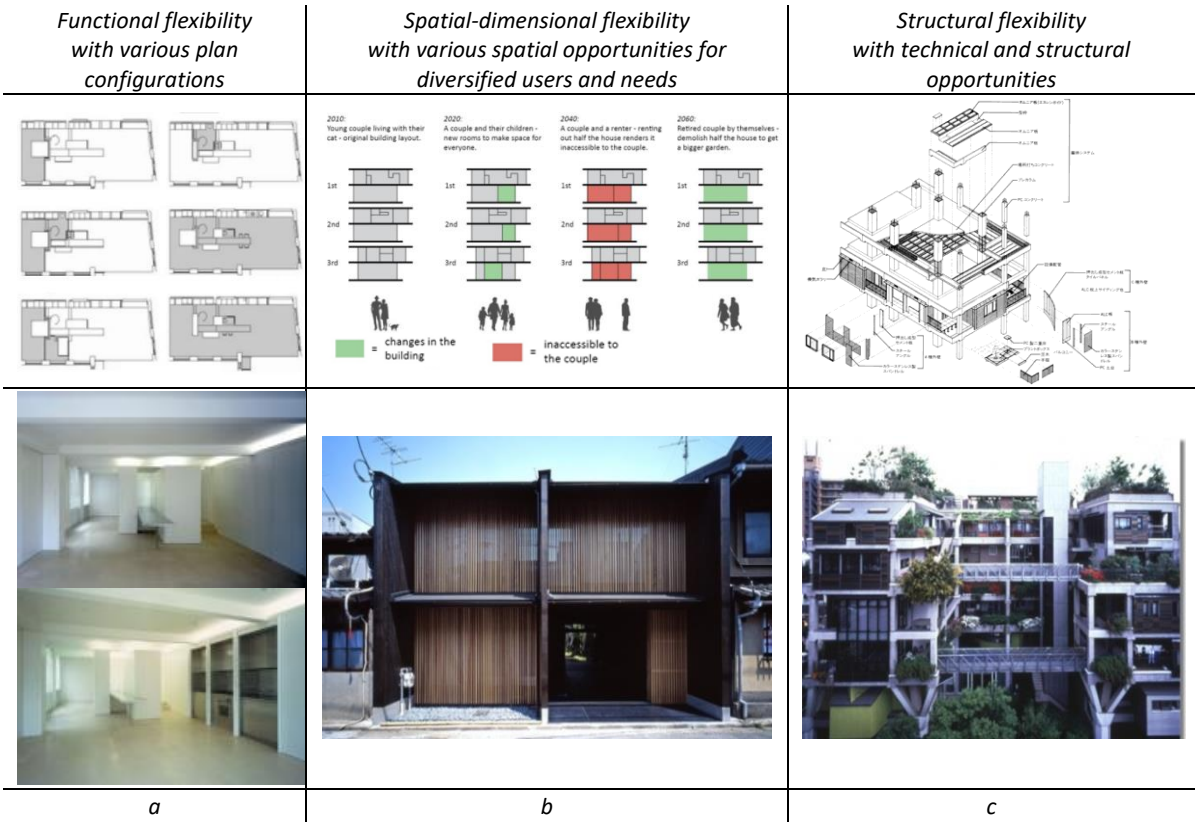


Figure 6 Flexibility types and methods, (a: URL-4, b: URL-5, c: URL-6)

3. Factors Determine the Conditions of Housing Flexibility

People's effort for adaptation is mostly formed in the housing space, and undoubtedly housing will also encounter changes in the future. However, as it can be understood from the previous section where the development of flexibility was considered, it is seen that some factors affect the realizing the requested flexibility although there are demands for changing. From this point on, effective factors can be defined as the user's demands for change, the sustainability of goals and values, and existing opportunities. The conceptual model of housing flexibility simply determines the factors that find out the demands for change, the goals and values that keep these factors under control, the existing opportunities for the transformation of the demands into flexible design practices, state the relationship of these elements and the flexibility achieved as a result (Figure 7).

Figure 7 The conceptual model on the relationship of the factors involved in housing flexibility (developed by authors)

According to the model, the factors related to change cause new requests and needs of the users in the living space of the housing, in line with the revealed conditions. The validity of the suggestions developed in response to changing requests and demands is based on their sustainability by coinciding with the goals and value system of the individual and the community. Sustainability works like a control mechanism, checking the suitability and validity of the demands, while the opportunities organize the realization of these demands. For this reason, the opportunities must be suitable for the change to take place although it fits the sustainability criteria. The elements involved in the housing flexibility process and their effects are explained below.

3.1. Factors Related to Change

As it is known, change stands out as one of the main reasons that require flexibility. The factors that affect the housing form and cause the change of housing can be listed as social factors, lifecycle, and household structure factors, technological factors, and economic factors (Uzel, 2001).

Social Factors: Considering that individuals constitute social groups, communities, and societies on a larger scale, it is expected that large-scale effects and happenings will not only affect the individual but also have consequences on society, and thus cause social change. In this respect, every circumstance that affects the individual or society causes a change and also creates the demands for adapting to the change. Social change can be caused by increasing human knowledge, economic and technological developments, expansion and acceleration of the communication network, and as well as social events and destructions that appeared as a result of epidemics, natural disasters, and wars. The effects of these situations impact social life, bringing about changes and innovations, and even their reflections can be seen on a spatial scale. As a matter of fact, while the Industrial Revolution and the World Wars had profound effects on the social scale, they changed people's lifestyles and created new spatial configurations. It is likely that the current Covid-19 pandemic that is experienced worldwide and whose social effects have begun to be seen, will cause a similar change.

Lifecycle and Household Structure Factors: Changes in the income of the family, the increase or decrease in the number of people living in the house due to joining or leaving of the children or elders, and diversifying of the needs depending on the living conditions may cause the changes in the spatial needs in the dwelling. In addition, changes in the lifecycle such as singleness, establishing a family, enlarging a family, the launching of children, and retirement naturally cause life to change and the need to make changes in the housing space arises (Atasoy and Ünügür, 1983).

Flexible design solutions can be developed by anticipating the demands that may arise to meet the needs of the user due to changes in the lifecycle and household composition (Figure 8).

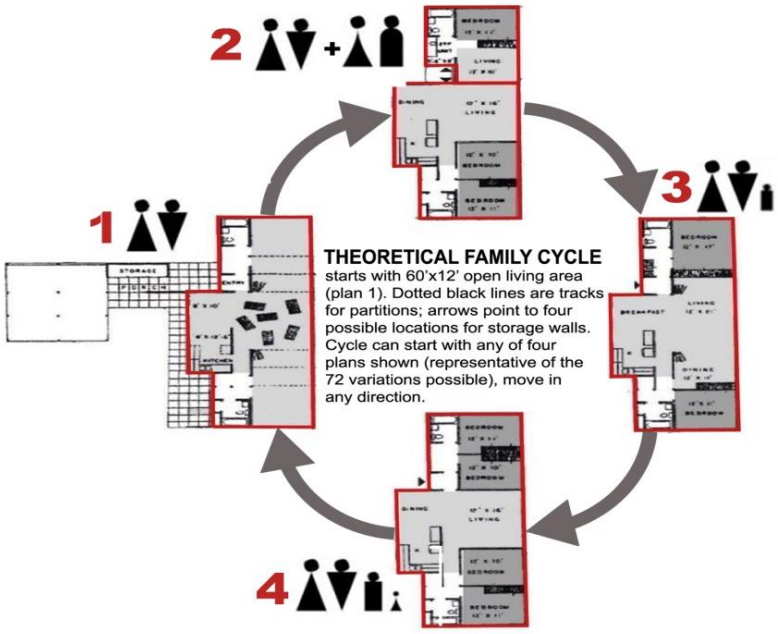


Figure 8 Modifying spatial order in a flexibly designed housing respecting the changes in the lifecycle, (Friedman, 2002, *revised by authors*)

Technological Factors: Changing working conditions with technological developments, innovations, and improvement in life, new tools, and equipment sometimes create the need for new spaces and sometimes cause the loss of some usages and functional areas. This situation can be interpreted as the effect of technology on life. In addition, innovations and developments in subjects such as production, construction, and structural systems are important technological changes that affect the design, construction, and use processes of architecture and cause the demands of users to change in a similar direction.

Economic Factors: The lifetime of the structures is related to their physical strength as well as their usability. As time passes, housing will inevitably become functionally obsolete in the conditions of the period. To ensure the usability of the house against changes, the user's ability to meet the maintenance, repair, and renewal costs or to have a more suitable new housing for himself/herself depends on economic factors. Today, the global economic crisis, the ever-increasing mortgage interest rates, and the fact that the house has become an element of rant make it difficult for everyone to move and alter the house easily. In this respect, the economy becomes a factor in the demands for change.

3.2. Factors Related to Sustainability of Goals and Values

Flexibility can be considered as the basic element of the sustainability of the building, as the building can respond to changing needs and preferences and bring long-term use (Broome, 2005). The realization of the demands formed by the new requests and needs that arise with change depends on the sustainability of the goals and values. While sustainability performs like a control mechanism to check the suitability and validity of the requests, opportunities organize the realization of these requests. Communities, individuals, and families aim to sustain life, habits, traditions, and thus their existence. Although innovation and change may seem like a positive development, they can sometimes contrast with the social agreements and values of the community and have a negative impact. In this case, the community may resist and reject the change that conflicts with its values. Therefore, sustainability becomes an eligibility criterion that supports or prevents the realization of the demands. The elements of the sustainability of goals and

values can be listed as the future goals of the community or individual, social-cultural sustainability, environmental sustainability, economic sustainability, functional sustainability.

Social-Cultural Sustainability: The potential to meet present and future users' needs determines the social sustainability opportunities of the house. Housing flexibility with practices such as design for all; does not allow the society to be grouped as the elderly, the disabled, and families with children, etc. Flexibly designed houses, which are not affected by the changes created by the life-cycle, eliminate the need to move and allow individuals to get older into the social environment they belong to. In addition, the ability of communities to sustain their lifestyle as they are and to keep it alive as a cultural value is an important criterion in terms of the social-cultural sustainability of the dwelling.

Environmental Sustainability: Housing inevitably creates an environmental impact throughout its construction process and lifetime. Reducing wastes, using renewable resources, saving energy and water use supports the environmental sustainability of the housing. Moreover, designing spaces for long-term and flexible use eliminates the need for destruction and renovation, helping to avoid wasting energy and resources.

Economic Sustainability: Flexible design, which allows for future changes, is economically sustainable as it reduces or eliminates the costs of requirements such as renewal, replacement, repair, and move in the long-term (Durmisevic, 2001). Also, it can be said that the increase in the adaptability potential of the housing can increase user satisfaction and decrease residential mobility. Reducing the costs in the use process is a component of economic sustainability. Thereby, in the demands regarding the renewal, transformation, maintenance, and repair of the house during its use, the economy becomes a factor in terms of sustainability.

Functional Sustainability; can be considered as the prevention of functional obsolescence, which is seen with the housing not responding to the needs, not keeping up with the life changes. Flexibility raises the lifespan of the dwelling because it increases the renewal and adaptability potential of the dwellings. Technological systems and spatial arrangements that enable flexible use of housing support functional sustainability. Thereby long-term usability of the house is obtained, and the request to move reduces.

Future Goals of the Community or Individual: As an individual or as a social community, the family has future goals within the scope of its existence. These may be goals such as the growth of the family, the fact that the children have their own rooms, the opportunity to work from home, and the desire to spend the rest of their life at that house. These goals also include aims and intentions for the future desired by the individual or the community and the spatial equivalents of them with their comfort conditions.

3.3. Opportunities

Although there are demands for change and the solutions developed are accepted as sustainable, the inadequacy or inappropriateness of existing opportunities affects applicability. Construction opportunities, economic opportunities, and technological opportunities which will be effective in the processes of design, construction, and use, enable to obtain flexible designs by taking into account change demands and sustainability conditions.

Technological Opportunities: Technology is a crucial element in ensuring the realization of proposed flexible use. Advances in design, construction and material technologies directly affect flexible design practices. Although the building is designed to be very suitable for flexible use, its construction depends on current technological opportunities.

Construction Opportunities: Existing construction techniques, production opportunities, use of materials, and research and development activities can be counted among the construction opportunities. In addition, technicians' professional knowledge and abilities can be evaluated

within these opportunities. Matrix tiles and raised floor systems are notable examples of construction opportunities. These systems create a flexible infrastructure that allows the installation pipes to be easily moved horizontally. In this manner, the wet areas difficult and costly to relocate such as kitchens, toilets, and bathrooms can be freely reshaped. In the same way, while a regular slab might have to be totally replaced, a raised floor system can be reconfigured more easily and economically (Figure 9).

a *b*

Figure 9 Matrix tile system and raised floor system applications (a: Kendall, 2016 b: Fukao, 2011)

Economic Opportunities: The economic value of the proposed flexible system is explained by the costs of construction, use, and maintenance. The specified use becomes possible within the economic limits determined by all these costs. Although there is an opinion stating that acquiring flexible housing will cost more than standard housing, flexibility provides profit in the long-term as it prolongs the life of the building (Schneider ve Till, 2005). Rabeneck, Sheppard, and Town (1974) suggested that the cost difference between flexible housing and standard housing construction is 5-7%. Considering that the flexibility may vary according to the project scale, materials and technologies used and the production system, it is not possible for this cost difference to be the same for every project. The fact that the flexible design is more economical for the users can be explained by the fact that the profit over the lifetime is higher than the initial investment (Gücesan, 2015).

Concisely; flexible design solutions can be achieved within the frame of the tripartite relationship defined by considering the sustainability of the goals and values of the community, the change demands supported by the opportunities such as construction opportunities, economic opportunities, and technological opportunities.

4. Examining the Efficiency and Relationship of the Factors in Housing Flexibility

At the time of the study, the contagious Coronavirus pandemic (COVID-19) has spread worldwide. There was lockdown, and people stayed at home in this period, and life continued with the applications support working at home and distance education. It is thought that the application of the survey questionnaire in this extraordinary period when users are questioning their expectations from “housing” can create important data in terms of determining in which direction the flexibility expected from the housing is. In the study, the focus of the question “What is the opinion of users regarding flexible design?” is to evaluate the demands for change in the housing space based on opportunities, goals, and values. Thus, it was tried to determine the thought of the users about the flexible use of the housing.

The survey was conducted during May and June in 2020, and the subjects who were adults, older than 18, voluntarily participated. The questionnaire link was sent to 450 contacts selected randomly in the authors’ e-mail database. 322 of 450 questionnaires were completed and response rate is 71.5%. The survey form consists of thirty-three questions designed by using multiple-choice, rank order, and Likert scale methods. 4-point or 5-point Likert scale was used concerning the question. To make a deeper analysis, the respondents are directed to the next question according to their

answers, so the number of answered questions differs among the respondents. Based on the relationships in the conceptual model, the first part asked about the demographic characteristics of the respondents', the second part asked characteristics of the household and the house currently in living, and in the final part, the expectations of the users from flexible design, their demands for change in housing and the opportunities of change, their goals and values were questioned.

The data were analyzed with different statistical methods using the "IBM SPSS 22.0". In addition to frequency distribution and cross-tabulation analyses, select case analyzes were conducted due to the selective progression of the questions and the formation of different groups according to the answers given. The Likert scale questions involving perceptual evaluations were tested by Cronbach's alpha.

4.1. Findings of the Study

Frequency distributions of the demographic data show that the majority of 322 respondents were female (210, 65.2%), most of them in 26-34 (94, 29.2%) and 18-25 (90, 28%) age groups, undergraduate graduates (177, 55%), and actively working (187, 58.1%). There is complete equality in the number of married (161, 50%) and single (161, 50%) respondents. The majority of respondents did not have children (180, 55.9%), while the respondents with children were mostly two (75, 23.3%) and had only one child (57, 17.7%). Most of the respondents live in metropolitan cities and the majority of them live in Adana (157, 48.8%). The number of respondents from the metropolitan cities listed as Ankara, Istanbul, Izmir, and Bursa is 81 (28.3%) in total. To understand the previous experience of the respondents, their knowledge about flexible design is asked. 220 (68.3%) of them indicate that they had no knowledge about flexible design.

Based on the assertion that flexible design emerges in line with changes and is realized with possibilities in the context of sustainability of values and social goals, the data obtained from the survey have been tried to be interpreted.

4.1.1 Findings on Change

First of all, using the questions in this section, reliability analysis was performed to estimate the internal consistency of the scales, and the Cronbach's alpha (α) coefficient was found. The values are 0.682, and 0.668, respectively. It was seen that the scales were consistent and in the acceptable alpha value ($0.60 < \alpha < 1.00$), (Kalaycı, 2010).

The primary findings on change are about the use, that the housing provides with flexible design. With aim of determining the leaded demands of the users about the change in housing flexibility, it has been tried to understand what the priority is in terms of spatial-dimensional, functional, and structural flexibility in housing flexibility. The combining and expanding capabilities of the spaces (271, 84.2%) were found as respondents' major priority regarding housing flexibility. Arrangements that support the lifelong usability of the house (196, 60.9%), and changing the location of spaces, including wet areas in the house (162, 50.3%) were defined as consecutive priorities. Results highlight that respondents demand spatial-dimensional flexibility first, followed by functional and structural flexibility, respectively (Table 2).

Table 2 Priorities regarding the flexibly designed house

What are your priority demands regarding a flexibly designed house?	*Agree*	*Neither agree nor disagree*	*Disagree*	*Undecided*	*Total*
Having features that allow the housing to be used for a lifetime	*196 (60.9%)*	73 (22.7%)	27 (8.4%)	26 (8.1%)	322 (100%)
The dividing, combining and enlarging, or narrowing of spaces within the housing	*271 (84.2%)*	31 (9.6%)	5 (1.6%)	15 (4.7%)	322 (100%)
Changing the location of the wet areas such as kitchen, bathroom, toilet, balcony)	*162 (50.3%)*	81 (25.2%)	55 (17.1%)	24 (7.5%)	322 (100%)

Cronbach alfa (α) factor is 0.682 ($0.60 < \alpha < 1.00$)

It has been stated that demands and requests are formed by changes occurring in life, named as social factors, factors related to the life cycle and household structure, technological factors, and economic factors. In this context, the respondents were asked what features they would like to have in the house in line with the occurred changes, to understand the needs of the respondents that may arise with change and their expectations about flexible design in housing. With this aim, a question was composed with a Likert scale with five options that have a neutral one at the center, and the strength of opinion increases at either end. According to the results, expanding one of the rooms when needed (142, 44.1%), having more rooms when needed (124, 38.5%), and combining the rooms when the family gets smaller (113, 35.1%) were determined as mostly requested flexibility options respectively. On the other hand, altering the location of rooms without demolition and renovation (96, 29.8%) was the least preferred choice. The most negatively evaluated flexibility option is using the room multi-purposely without making any modification required (116, 36%), (Table 3).

Table 3 Preferred housing flexibility options towards changes

Which of the following features would you like to have in your house?	*Much prefers*	*Prefers*	*Undecided*	*Not prefers*	*Never prefers*	*Total*
Using the room multi-purposely in different times without any modification	34 (10.6%)	52 (16.1%)	66 (20.5%)	*116 (36%)*	54 (16.8%)	322 (100%)
Ability to expand one of the rooms when needed	*142 (44.1%)*	137 (42.5%)	22 (6.8%)	16 (5%)	5 (1.6%)	322 (100%)
Altering the location of rooms without demolition and renovation	92 (28,6%)	*96 (29.8%)*	59 (18.3%)	55 (17.1%)	20 (6.2%)	322 (100%)
Combining the rooms when the family gets smaller	76 (23.6%)	*113 (35.1%)*	69 (21.4%)	50 (15.5%)	14 (4.3%)	322 (100%)
Having more rooms when needed	*124 (38.5%)*	122 (37.9%)	49 (15.2%)	19 (5.9%)	8 (2.5%)	322 (100%)

Cronbach alfa (α) factor is 0.668 (0.60 < α<1.00)

The answers contributed to understanding the users' preferences regarding converting or multi-functional space use in housing flexibility. It has been observed that the answers such as "much prefers" and "prefers" are positive choices mostly collected that belong to convertible flexible solutions such as upsizing-downsizing, altering location, and integration-separation of the rooms. The negative choices such as "not prefers" and "never prefers" are mostly collected in the answers towards multi-purpose use. In this respect, results revealed that the respondents' demands for flexibility are in favor of convertible solutions.

4.1.2. Findings on Sustainability of Goals and Values

Towards to understand the impact of flexible housing on the sustainability of the goals and values of the respondents, their desire to have flexible housing was evaluated first. Thereafter to identify their priorities regarding sustainability, the reasons to have a flexible house were asked, and appropriate options were marked by making multiple choices. According to the frequency results of the answers, the majority of the respondents (248, 77%) stated that they wanted to have a flexible house, while the second largest group in which the answers were collected was “doesn't know” (50, 15.5%). While only 19 respondents (5.9%) have negative attitudes, five respondents (1.6%) reported that they already have. Responses definitely indicate that there is an explicit demand for flexible designed houses (Table 4).

Table 4 Attitudes respecting to have a flexibly designed house

Would you like to have a flexible designed house?	*Frequency (n)*	*Percentages (%)*
Like to have a flexible designed house	*248*	*77%*
Doesn’t like to have a flexible designed house	19	5.9%
Already have a flexible designed house	5	1.6%
Doesn’t know whether to have or not	50	15.5%
Total	322	100%

The suitability of the housing within the scope of functional purpose, the long-term livability of the housing within the scope of future goals, its adaptability for lifestyle in terms of social-cultural sustainability, and whether it is more economical to live in flexible housing in terms of economic sustainability were questioned. According to the answers obtained by multiple choices, it was seen that the functional purposes of the users were considered as the highest priority feature (224 preferences), followed by social-cultural sustainability (129 preferences) and future goals (129 preferences). On the other hand, economic sustainability (79 preferences) remained in the lowest rank among the purposes questioned in the evaluation (Table 5).

Table 5 Distribution of the reasons for those who want to own a flexible house

I want to own a flexible house, because…	*Frequency (n)*
A flexible house is more useful	*224*
I can live for many years in a flexible house	129
A flexible house better suits my lifestyle	129
Living in a flexible house costs less	79

Respondents who do not want to own a flexible house think that flexible housing is not suitable for their lifestyle (7 preferences), flexibility is not a priority demand for housing use (6 preferences), flexible design of the housing is unimportant (6 preferences), and its use is costly (4 preferences). Respondents' foremost reason for rejecting flexible housing was that it was not suitable for their lifestyle, while functional sustainability took second place. In this case, the priority of those who prefer the flexible design was functional sustainability. While the primary reason for those who did not prefer that they thought it was not suitable for their lifestyle. However, the respondents who would not prefer flexible housing (13 preferences) have not encountered or experienced this situation before. Although this answer was excluded from the goals and values of the users, it should be considered as an important sign for flexible housing designs to become widespread in everyone's interests (Table 6).

Table 6 Distribution of the reasons for those who do not want to own a flexible house

I do not want to own a flexible house, because…	*Frequency (n)*
Flexible housing does not suit my lifestyle	*7*
Being flexible is not my primary demand for housing.	6
Flexible designing of the house is unimportant for me	6
Thought that it is more expensive than the house with the same features and size	5
Living in flexible housing costs more	4
Not to prefer since there is no flexible housing example	13

4.1.3. Findings on Opportunities

It has been tried to determine how the innovation brought by the flexible design in terms of change and sustainability can be achieved within the opportunities. In this context, first of all, it was tried to determine the possibilities of the participants to make changes in their residences and the relationship of this situation with the occupancy period of the house. Therefore, respondents who moved from their houses in the last 10 years were asked about the reasons for moving. The reasons for moving of 212 people (66.2%) who moved in the last 10 years at least one time are listed (Table 7), and it was found that the leading reason for the moving was found as leaving from the city lived in (71%, 33.5%). This was followed by functional inadequacy (47, 22.2%), owning a house (39, 18.4%), and economic reasons (19, 8.9%). The effect of the change in the number of households on moving from house remained at the lowest value with 1 person (0.5%), (Table 8).

Table 7 Number of moves in the last 10 years

How many times did you move in the last 10 years?	*Frequency (n)*	*Percentages (%)*
1time	72	%22.4
2 times	64	%19.9
3 times	47	%14.6
4 or more times	29	%9
Never moved	*110*	*%34.2*
Total	322	%100

Table 8 Reasons for moving from the house

What is your reason for moving?	*Frequency (n)*	*Percentages (%)*
Left from the city lived in	*71*	*%33.5*
Functional inadequacy of house	47	%22.2
Owning a house	39	%18.4
Economic reasons	19	%8.9
Adding a new member to the family	1	%0.5
Others	35	%16.5
Total	212	%100

47 respondents, moved from their houses due to functional inadequacy, were asked why they thought the house was inadequate. The answers were, in order of preferences, “there were few rooms” (19 preferences), “rooms were small” (15 preferences), “there was not enough storage space” (12 preferences), “it was not suitable for a lifestyle” (4 preferences), (Table 9).

Table 9 Inadequacies of the formerly settled house

What were the inadequacies of your former house that caused you to move?	*Frequency (n)*
There were few rooms	*19*
Rooms were small	15
Was not have enough storage space	12
Was not suitable for my lifestyle	4
Others	13

It was aimed to determine whether having the opportunity to make changes in the house is a factor affecting the mobility of the housing, and thus how it affects the long-term use of the housing. For this purpose, the answers of the respondents who could make modifications in the house and those who could not be compared. According to the data, it was determined that 153 respondents (47.5%) made modifications in the house but 169 respondents (52.5%) could not make any modifications.

The majority of the 153 respondents who made the modifications are homeowners (141, 92.2%), and the least of them are tenants (12, 7.8%). Also, it has been identified that the majority of the participants have never moved in the last 10 years (72, 47.1%), living in a flat (130, 85%) which has 3+1 rooms (82, 53.6%) and 100-150 m2 size (66, 43.2%). However, the 169 respondents who could not make changes, the majority of them were tenants (88, 52.1%), living in a flat (143, 84.6%), moved at least once or more in the last 10 years (131, 77.5%), living in houses with 3+1 rooms (86, 50.9%) and 100-150 m2 (67, 39.7%) were determined. Considering the reasons for moving of 131 respondents who have moved at least once, in the last 10 years, in the group of 169 people, the most common reasons to move are changing city to live (52, 39.7%), the previous house's inadequacies in fulfillment the needs (27, 20.6%) and economic reasons (15, 11.5%). It was observed that it was not suitable for lifestyle (3, 1.11%) and the difference in the number of households (1 person, 0.8%) remained at the lowest values. 27 respondents declared that they moved due to inadequacies of the house, and 10 (37%) out of them stated the number of rooms

was few, 9 (33.3%) out of them stated the rooms were small, and 4 (29.7%) of them stated the storage space was not enough.

These findings show that even though the size of the housing and the number of rooms are the same, the ownership of the housing affects the desired changes in the housing, and this situation is a determiner in the decision to move from the housing. It is also thought that the most important reason for moving is that the housing cannot meet the needs, and this problem is caused by the few numbers of rooms and the insufficient size of the rooms. In this respect, it is thought that the tenants' reasons for the moving are that the houses are not designed and built in a flexible and convertible way and that the modifications to be made in this regard should be permanent and costly renovations. Therefore, enhancing the flexibility capabilities of the housing appears as an effective method that can reduce housing mobility.

169 respondents who did not make any changes in their houses were asked whether they would like to make changes if they had the opportunity, 114 (67.5%) answered positively and 55 (32.5%) answered negatively. Then, 114 respondents who answered positively were asked about the changes they wanted to make and they were asked to answer seven different multiple-choice options so that they could mark more than once. The most preferred option was to change the size of the room (69 times). Then, combining the rooms (37 times), converting the balcony into a room (33 times), integrating the balcony into the room (32 times), separating the rooms (18 times) were preferred. Therefore, changing the number of rooms and the size of spaces via combining were identified as mostly demanded modifications. These results indicate prominently that residents need a convertible housing space (Table 10).

Table 10 The modifications thought to be realized in the housing where possible

Would you like to make modifications to your house, if it is possible?	*Frequency (n), (%)*		
No	55 (%32.5)	*Which changes do you want to make?*	*Frequency (n)*
Yes	*114 (%67.5)*	*Changing the size of the space*	*69*
		Combining the rooms	37
		Transforming the balcony into a room	33
		Integrating the balcony with a room	32
		Separating the rooms	18
		Others	8
Total	169		

When the willingness of the respondents to have housing that can be converted with technological opportunities and used flexibly with sliding or moving elements are evaluated, 259 respondents (88.4%) signified that they requested and expressed their positive opinion, while 63 (19.6%) are negative. To understand the factors affecting the decision of the subjects within the scope of possibilities, their opinions about the cost of flexible housing were asked. 53 (21.3%) out of the 248 respondents, who stated that they want to have flexible housing (Table 4.), think that flexible housing can be more affordable than housings designed with the same size and number of rooms.

It has also been tried to question how the respondents' moving demands and the fact that the housing becomes suitable for life in all aspects can affect the desire to moving. In this context, it was determined that the highest percentage of the 322 respondents (229, 71.1%) was considering moving out of the house they live in. On the other hand, 121 (52.8%) of these 229 respondents stated that they do not want to move if they can make the changes they want (Table 11). This finding shows that if the housing can be adapted to the user's requests and the demanded changes can be made, the desire to move can be largely eliminated.

Table 11 Respondents' attitudes about moving regarding the flexibility opportunities

Would you like to move from your current house to another house?		*Frequency (n), (%)*
Yes 229 (%71.1)	*I will definitely move*	108 (%33.5)
	If I can make the demanded changes, I won't be moved	*121 (%37.6)*
No 93 (%28.9)	*I am very satisfied with my house and will not move*	93 (%28.9)
	Total	322 (%100)

5. Conclusion

The main aim of the study is to understand the demands of the users regarding the flexible use of the house and to determine the expected flexible using opportunities in the house. The study also aims to figure out the internal dynamics of the process of housing flexibility. The previous studies in the field tried to develop, explain and exemplify the purpose, components, methods, and approaches of flexible design. This study particularly attempted to identify the effective factors in housing flexibility and to define the relationships between these factors. For this purpose, the conceptual model developed within the scope of the study shows how the factors involved in flexibility are effective in the flexible housing design process. According to the model, even though the users request flexible use in the house, this depends on the effect of the user's goals and values on the sustainability and realization of the existing opportunities. So the relationship between the effective factors for achieving a flexible design in the housing has been tried to be conveyed through the model. A case study was conducted to understand the effectiveness of the relationships suggested in the model and to see the corresponding user preferences of these relationships. Due to the COVID-19 conditions, the survey was carried out online with a limited subject group. This circumstance should be indicated as the limitation of the study. It should also be stated that using different survey techniques and widening the subject group would contribute to the study in terms of data diversity.

The results of the study, enabled us to understand the expectations of users regarding housing flexibility in terms of demands for change, goals, and values of sustainability and opportunities. Users stated that they want to have a house with a flexible designed although they have neither knowledge nor experience about housing flexibility. The most demanded factors referring to change have been determined as versatile of the house according to needs and adaptation to changes in the life cycle. The most demanded factors referring to housing flexibility have been determined as adaptability and convertibility of the house according to changes in needs and the life cycle of the users. It has also been revealed that the multi-purpose use of the spaces is the least preferred. In this case, the primary request of the users for change is that the spaces are convertible. Another finding that supports this result is that the users demand flexibility ensured through technological opportunities.

From the point of view of the sustainability of the goals and values, functional sustainability is the most desirable for those who prefer flexible design. Those who do not prefer flexible design think that it is not suitable for their lifestyle. This finding shows that functional sustainability allowing long-term use of housing and compliance with lifestyle appear as two important factors in the sustainability of goals and values in flexible design.

The achieved results concerning the opportunities are also quite remarkable. The most important result obtained at this point is that the opportunity of making changes in the user's house can eliminate the reason for moving from the house. It is thought that flexibly designed houses ensure the possibility of long-term living in it, in that way housing sustainability can be provided, and unearned income from the housing and economic losses that occurred by housing mobility can be avoided. It is seen that these results are in accord with the studies in the field. Similarly,

Schneider and Till (2005, sf:164) state that houses built for flexible use can be used for a longer period, and users who cannot make changes they want have no choice but to move. It should be taken into account that ensuring the long-term use of the house will support people to live in their own environment which eventually allows for flexible designs to support social sustainability. In addition, studies in the field show that the number of rooms for the users is an important factor in residential use (Schneider ve Till, 2005). In this study, it was determined that the users found the flexibility opportunities to increase the number of rooms important.

With the help of its results, the study points out that users clearly demand flexible housing that is suitable for their lifestyle, provides long-term use, supported by technological facilities that allow the spaces to be enlarged and narrowed or divided and combined. This result also clearly refers to the dynamics between components of housing flexibility. Therefore, the relationship between the user's demands for change for flexible use, their expectations regarding the sustainability of their goals and values, and the possibilities that can ensure the realization of them have been determined. The results of the study are thought to contribute to the field by revealing how the components of housing flexibility affect housing design and the relationship between these components and the user demands.

The major contribution of this study to the research area is indicating that, in terms of housing flexibility, adapting to functional changes alone is not sufficient, so ensuring the sustainability of the users' goals and values should be taken into consideration in applications. In this way, the user will live in a sustainable and harmonious manner not only with his/her house but also with his/her social-cultural and physical environment. All in all, this study strengthens the idea that flexible housing design can be effective if user's demands, the sustainability of goals, and values are taken into account and if these factors were implemented within the scope of opportunities in housing flexibility.

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Ethics Committee Approval

This study was approved by Ethics Committee of Çukurova University (113/21 meeting and decision number).

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Resume

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Three key issues of urban renewal: Approaches for Turkey

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Abstract

In many countries, urban policies and urban planning increasingly favor urban renewal more than new urban development. However, the urban renewal processes are challenging because of 'land assembly', 'recovery of urban infrastructure', and 'social sustainability. The success of the urban renewal processes is closely related to these three key issues because they can affect directly social, economic, and political costs and time periods. The aim of the article analyzes approaches and their outcomes for three keys issues faced in urban renewal processes in the Turkish case. Such an analysis offers insight into policies that can help to overcome three key issues faced in urban renewal and to promote sustainable urban renewal.

Keywords: urban renewal, land assembly, recover of urban infrastructure, social sustainability, Turkey.

1. Introduction

In most countries, urban policies and urban planning focus more on urban renewal than on the development of new areas. There are various reasons for this situation. The first of these reasons is that deterioration, collapse or lose of parts of the city over time (Zheng et al., 2014; Wang et al., 2014; Chan and Lee, 2008) and the need for the regeneration and development of these areas has arisen (Ho et al., 2012; Adams and Hasting, 2001). In the future, this need can be expected to increase even more. Because there has been a shift from a provider role of the state to a facilitator role of the state. As a result of such a shift, a tendency from determining a planning functions according to need and government finance to identifying functions financed by the market and defined by demand has occurred (Korthals Altes, 2014, p.78) With such a change, urban areas have become more open to the influence of market dynamics. As a matter of fact, in most urban areas, housing or office surpluses can be encountered (Heath, 2001). Since this surplus production in urban areas will turn into idle production over time, functional changes regarding the use of these areas are inevitable (Spaans et al., 2011). On the other hand, considering the size of the surplus production, it is clear that this transformation will not be easily achieved.

Second, most countries have adopted the urban sprawl prevention policy. Urban sprawl, destruction of open space and natural resources, increase in road and infrastructure costs, growth in vehicle traffic, etc. causes problems (Korthals Altes, 2007). Therefore, policy-makers try to control urban sprawl with brownfield development policies that encourage compact development. (Burchell and Mukherji, 2003). For example, in the Urban Task Force report published in the UK in 1999, it is predicted that 55% of the houses produced in the UK between 1996-2021 will be placed on recycled land (Adams et al. 2001). That is, policy in the United Kingdom, policy favours

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development on brownfield rather than greenfields, in town rather out of town. Current planning thinking, driven by new imperatives of climate change, reducing carbon emissions and protecting habitat, is focussed more on higher housing densities, less car dependency, and compact cities (Home, 2009, p.106). Again, in 2008, a strategy for the development of urban areas instead of new urban development areas was determined in the European Urban Charter II. On the other hand, this trend changes in the opposite direction under pandemic conditions (Hamidi and Zandiatashbar, 2021). However, in this case, it is inevitable that the pressure for transformation on the outer periphery of the city will increase.

Third, in countries where neoliberal economic policies are adopted, the content of the intervention in urban areas has also changed with the restructuring of the state (Korthals Altes, 2014) along the lines of neoliberal principles. The tendency to rely on the private sector and public-private partnerships has increased, as states move away from the 'provider role' and take on the 'facilitator role' (Codecasa and Ponzini, 2011). This directly affects the forms of intervention in urban areas. Generally, the private sector tends towards demolishing and rebuilding (urban renewal), which is the most profitable form of intervention for itself, within different forms of intervention (repair, maintenance, restoration, protection etc.). (Gunay et al., 2015; Ho et al., 2012). In the urban renewal process, the private sector mostly prefers areas that will not cause problems for itself and maximize its profits.

The fourth is the incentive policy of the states to make urban areas attractive for investors. Mostly, states have started to follow various incentive policies to make urban areas attractive for both private and public-private sectors, depending on their changing roles. For example, encouraging land assembly (Turk and Demircioğlu, 2013), providing tax advantages (Adair et.al.2003), increasing development rights (Tarakçı and Turk, 2021a) etc. These incentives mean that the costs of the private sector decrease in urban renewal processes. Thus, urban areas have turned into attractive investment areas for the real estate sector. On the other hand, the increasing trend in land values after urban renewal projects caused an increase in exchange value in urban areas, and this has been an important factor for investors to turn to urban areas.

Despite the incentives for urban renewal in urban areas, key issues such as 'land assembly', 'cost recovery of urban infrastructure' and 'social sustainability' make urban renewal a challenge when compared to the development of new areas. Because these key issues often lead to prolongation of urban renewal processes (Home, 2007) and social, financial and even political costs. Therefore, approaches and results on key issues such as 'land assembly', 'cost recovery of urban infrastructure' and 'social sustainability' are critical in urban renewal practices. In this study, while 'land assembly' refers to the process of combining land to bring it to a suitable size for an urban renewal project, 'cost recovery of urban infrastructure' refers to the contribution of developer (or landowner) to the cost of urban infrastructure in urban renewal areas. Also, 'social sustainability is defined based on social capital, social infrastructure, social justice, and equity, and governance in urban renewal areas.

The aim of this article is to systematically analyse the different approaches that emerged for these three key issues in urban renewal practices and the results of this approach, in the case of Turkey.

There are some features that make the Turkish example a good laboratory in the examination of this subject. The first of these is the intense use and discussion of urban renewal in Turkey since the early 2000s. There has been a serious urban renewal practice in the last 20 years. In particular, the most intense area of discussion in terms of urban renewal practices is Istanbul, due to its sensitive geography because of its natural features like having catchment areas, being exposed to

earthquake threat, etc. (Türkün, 2014). Second, in urban renewal processes; different approaches have been experienced in sense of these three key issues. However, these approaches and their results have not been adequately evaluated in a systematic way. Third, urban renewal areas in Turkey mostly cover informal settlement areas. These areas show quite complex features due to their different tenure structures (Kuyucu and Ünsal, 2010). This makes solving three key problems in urban renewal projects more challenging. The findings to be obtained with the article can shed light on policies that can help different countries to overcome these three key issues that are commonly encountered in urban renewal processes.

In the second part of the article following the introduction, international approaches, trends and results regarding three key issues of urban renewal are examined. In the third part of the article, general characteristics of urban renewal practices in Turkey are given. In the fourth chapter, the approaches followed in Turkey for three key issues and their results are given. The fifth part of the article is devoted to general evaluation and conclusion.

2. Three Key Issues of Urban Renewal

As one of three key issues in urban renewal, land assembly is both complex and costly. Today, public and private land developers in many countries commonly describe the process of land assembly as conflict-ridden and the associated problems as intractable (Heller and Hills, 2008; Hong and Needham, 2007; Home, 2007). Mostly, fragmented and clumsy landownership structures prevent successful and efficient urban renewal projects. In a common manner, two fundamental tools are intensively being used as land assembly methods of urban renewal in various countries. The first one is renewal via either expropriation or compulsory purchase methods, and the second is ways of renewal depending on the purchasing of the real estate by developers or the public (Turk and Korthals Altes, 2010). Expropriation is a way effectively overcoming 'ownership constraints' (Adams et al., 2001), especially in urban renewal projects. Although the powers to expropriate land exist in most nations of world (Alterman, 2010), there are differences in the legal conditions and practical constraints among countries (Alterman, 2007). These differences can appear in using of expropriation for urban renewal. For example, the interpretation of 'public interest' can differentiate according to the legal conditions of the countries. In some countries, the narrowing range of 'public interest' for which land may be taken are accepted. For example in Israel, there are greater restrictions than in the past on the range of 'public interest' for which property may be expropriated and especially on the reuse of the land once the original use is no longer necessary (Alterman, 2007). In other countries where the broadening range of 'public interest' are basic, compulsory acquisition may be used to achieve efficiency in the production of good and services, both public and private; balancing economic, social and cultural benefits, and ensuring environmental balance and guiding development and redevelopment of land to more desirable purposes (Larbi et al. 2004). For example, at the beginning of 20th century in the Netherlands, the public interest was defined in broad way. 'The public interest' served not only by the compulsory purchase of blighted areas, but also by the development of new housing areas to accommodate social housing. That is, the justification of compulsory purchase in blighted areas depended on the development of the new housing areas to accommodate social housing (Korthals Altes, 2014, p.79).

On the other hand, the interpretation of 'public interest' in the using of expropriation in urban renewal projects has been affected by the neoliberal ideas focussing on 'state-mediated market rule' (Fox-Rogers and Murphy, 2015; Peck and Tickell, 2002). For example, in the Kelo case, the US Supreme Court on 23 June 2005 upheld the government's use of expropriation to assemble land in a redevelopment area and transfer it to another private party as part of a larger private economic development project (Carpenter and Ross, 2009; Jacobs and Bassett, 2011). With the 'Kelo 'case,

the ruling grants governments a carte blanche for the compulsory transfer of private property from ordinary citizens to politically powerful real estate entrepreneurs (Lehavi and Licht, 2007, p. 14). Following the ruling, a majority of states enacted legislation to limit the power of expropriation for economic development and to put other restrictions on assembling land for major redevelopment projects. Also, this ruling reveals that the conditions under which expropriation is allowed tend to be based on jurisdiction-specific particularities (Van Stalen and Korthals Altes, 2016). Expropriation is no longer considered as useful an instrument in the past assembling land because of reasons like the emergence of new public needs, blurring in distinction between public and private (Alterman, 2007).

Beyond the legal constraints, there are practical constraints in using of expropriation for urban renewal. First is related to the outcomes of expropriation. Expropriation has result in adverse socio-economic consequences including landlessness, loss of livelihood heightened tension in state and community relationship (Larbi et al. 2004). In USA, urban renewal areas that used expropriation reveals are disproportionately populated by those who are poor, minority and less educated (Carpenter and Ross, 2009). Second is that local governments have to pay compensation for properties in expropriation. Generally, the compensation value based on market value of the property under the original land use decision. In some countries, the compensation can include collateral costs caused by expropriation process like migration costs, reduced revenue and detriment from abolished leasing contracts (Šumrada et al. 2013, p.19) Therefore, local governments cannot meet from the budgets financially. Third is that expropriation procedures tend to be long duration. This will mean that in many cases, expropriations will be more expensive and time-consuming, as they will imply longer consultation proceedings and their success will depend on issues that have nothing to do with property rights (Azuela and Herrara Martin, 2009, p. 358).

In some countries, using of expropriation in urban renewal can serve as a big stick to force private parties to comply. For this, the governments may have chosen not to use expropriation, they prefer to reach compromises. In the Netherlands, for example, self- realisation principle can help to negotiate a deal. If land owners are willing and able to implement the plan themselves and they present to the local authorities with serious plan, the land cannot be acquired compulsorily (Korthals Altes, 2014).

On the other hand, expropriation is viewed as a solution for prevention of holdout problem. The method of purchasing real estate in inner city areas by developers or public authority is completely carried out within the framework of private law principles and market mechanisms. In use of purchasing, assembly of properties by market parties may however encounter a hold-out problem, caused by the phenomenon that acquiring the last plot of land necessary for development has a higher value to the buyer than earlier acquired plots, all of which raise the costs of redevelopment (Miceli and Sirmans, 2007; Turk and Korthals Altes, 2010; Turk and Demircioglu, 2013). The situation can result in delays or can require the rearrangement of the project by removing the parcels causing problems (Adams et al., 2001). In Israel, the use of expropriation for holdout problem would encounter the same lengthy and costly procedure as encountered in expropriation generally (Alterman, 2007, p.74).

One other of key factors is the recovery of urban infrastructure costs. Urban infrastructure for urban renewal areas can be defined as essential services that residents cannot do without. The provision of urban infrastructure in urban renewal areas includes the improvement of the accessibility of the area by connecting it to transport networks, the improvement of the quality of public space (Verhage, 2005, p. 219), the improvement of 'hard' infrastructure such as electricity, gas and water supply, sewage disposal, and telecommunications, and improvement of 'soft'

infrastructure such as community centres, schools, recreation facilities and green space (Graham, 2000; Ennis, 2003). While the provision of urban infrastructure in urban renewal areas directly affects the well-being of residents, it triggers an upward spiral of revaluation and regeneration in those areas (Verhage, 2005). This creates attractiveness for business and residents. However, the costs of servicing land are mostly higher for urban renewal areas than they are for new urban developments. Mostly, it becomes difficult to meet these costs with potential profits in urban renewal areas (Van der Krabben and Needham, 2008). This situation requires the financial support of the state. However, it no longer seems easy to provide the financial support from the state for urban infrastructure. After the 1980s, with the adoption of a neo-liberal context, the policy in delivery of urban infrastructure and the role of state within this policy changed (Ingram and Hong, 2012). As a general tendency, governments decreased their financial backing of infrastructure work, motivated by political thinking on 'value for money', and risk transfer away from the public sector, budget constraints, and needs for capital improvements (Torrance, 2008, p. 2). In cities, trends towards liberalisation and privatisation in urban infrastructure delivery have recently accelerated and the responsibility to the state, the ownership of and responsibility for urban infrastructure have changed. This has resulted in the 'splintering' of integrated urban networks (Graham and Marvin, 2000). There has been a general shift away from standardised and territorially integrated infrastructures to ones that are more fragmented and spatially differentiated (Moss, 2008, p. 438). Mostly, the provision of urban infrastructure has been shown to be dependent on the ability of planning authorities to negotiate the delivery of infrastructure with the delivery providers (Ennis, 2003) to secure sufficient financing for necessary infrastructure projects (Webber and Marshall, 2007).

Another key factors in urban renewal projects is the provision of 'social sustainability'. A 'social dimension' to urban renewal has been mostly neglected or the strength and positioning of this changed depending on the perspective adopted (Colantonio and Dixon, 2011). Various problems can appear in urban renewal projects that can affect the social sustainability. First is the gentrification and displacement of local residents and activities (Lees et al., 2015). The second is the exacerbation of social exclusion of particular groups within local communities (Steen, 2004; Murie and Musterd, 2004). The third is the ignoring of resident's participation. Mostly, urban renewal practices tend to be basically profit oriented and consider housing a commodity for the open market. Such projects are mostly exploited ad a means of profit making by developers rather than as an opportunity to improve a community through dynamics and resident's participation (Ha, 2001; Parés et al., 2014). The fourth one is the disregarding of social capital within local communities (Parés et al., 2014). Social capital takes time to develop and is inherently non-transferable (Ha, 2004). The fifth one is the problem related to the provision of social housing in urban renewal areas. Traditional urban renewal processes relied on the financial support of central or local governments for recovering costs related to social housing. However, the support of the state has a declining tendency (Turk and Korthals Altes, 2013). Most projects tend to be in the form of expensive, profit generating residences based on owner-occupation for middle and upper income groups or for commercial use (Shin, 2009). This means that the provision of social housing remains insufficient in urban renewal projects. The sixth one is the condition of residents who are in a vulnerable position such as tenants or informal users (Korthals Altes, 2016). Urban renewal may result in the dislocation of these groups.

3. Main Features of Turkish Urban Renewal Practices

Urban renewal practices until 2012

In Turkey, after the earthquakes in 1999, the low quality of the existing residence stock in the cities, the ageing urban structure and the zones where important geotechnical risks are available

have become much more important, and urban renewal came to the fore as an option to mitigate the risk posed by earthquakes in these areas. The highest land prices in inner city areas and an increase in the unearned income in these areas have led to making urban renewal more attractive (Özden, 2016). With the 'housing oriented construction' policy adopted by the government (Balaban, 2012), a construction boom occurred by increasing investment pressure on inner city areas, and these areas became important investment areas for the real estate sector (Karaman, 2013; Şen and Türkmen, 2014) by beginning an era when the exchange value of inner city areas increased (Dinçer, 2011; Türkün and Öktem, 2014). During this term, the state's role in creating and operating the market was restructured (Şen and Türkmen, 2014, p. 184).

Until Law No. 6306 came into force in 2012, an important urban renewal experience had emerged, particularly in Istanbul. This experience has some features. The first of them is the fact that urban renewal project areas are mostly located in inner city areas and squatter housing areas close to the centre (Türkün, 2014). Mostly, these areas are subjected to a complicated ownership structure. There are de jure ownerships, de facto use rights and occupiers who have no de jure ownership in urban renewal areas (Kuyucu and Unsal, 2010). The second feature is that main actors are TOKI (Housing Development Administration), local authorities (Eraydın and Taşan-Kok, 2013; Kuyucu, 2018), large-scale companies in the urban renewal practice (Tarakcı and Turk, 2021). In urban renewal projects, mostly local, the central government enter into public-private sector joint ventures with large-scale companies. In this partnership, the main role of the public is to facilitate land assembly and to evacuate the land and making it ready for the urban renewal project. Therefore, urban renewal projects are initiated by the public sector. In this partnership, capital is supplied by the large-scale companies (Ozkan and Turk, 2015). A third feature is mostly the adoption of an 'in situ transformation' approach, meaning that landowners remain on the land after the urban renewal project is completed (Unsal and Turk, 2014). In these projects, landowners were given housing units from urban renewal areas in exchange for their own places. However, it is mostly these landowners who sold the units they bought from urban renewal projects and moved to other areas in the city. Urban renewal projects are only focused on physical and demographic upgrading rather than improving the living conditions of existing inhabitants, this can result in a process of property transfer and displacement (Kuyucu and Unsal, 2010; Dinçer, 2011; Türkün, 2014; Özkan and Turk, 2015). The fourth feature is that most urban renewal projects target producing market housing for sale focused on profit driven and income generating for high-income groups (Tarakcı and Turk, 2021a, b forthcoming).

After 2012 Urban renewal practices

After Law No. 6306 came into force in 2012, both single building scale and area scale urban renewal has started to be implemented. While the law encourages renewal at the single building scale with the concept of risky building, it also encourages renewal at the area scale with the concept of risky area (Gür and Turk, 2014). However, renewal on a single building scale has gained a significant momentum and its effects on urban development, planning and the housing market have increased. Istanbul has been the place where renewal on a single building scale was experienced intensively (Kısar Koramaz et al. 2018). There are important differences between the renewal dynamics at the area scale and the renewal dynamics at the single parcel scale both in terms of actors and results. In a risky structure, the process starts with the application of the owner, but the process in the risky area must be determined by the Ministry. This differentiation affects the process in terms of speed (Tarakçı and Turk, 2021a). In the single building scale renewal, risky buildings are demolished and statically more durable structures are built in their place, but there is no regulation regarding the surrounding or urban planning (Tarakçı and Turk, 2021a, Kısar Koramaz et al.,2018). For example, if there is a problem of insufficient green space and parking in the area

where the risky building is located, the single building renewal does not produce any solution to these problems and does not make any contribution to urban planning.

According to Law No. 6306, the work process of renewal starts with identifying the area as a risky area, continuing with the land development process, and ending with the completion of construction and the start of everyday life in the area. The developer and the Ministry of the Environment and Urbanization (central government) are the main actors in the process. Although TOKI became the main actor of transformation with the law no. 5162 enacted in 2004, the Ministry of Environment and Urbanization has wide powers in this regard since 2012. With the inclusion of TOKI in the Ministry of Environment and Urbanization within the scope of the Decree Law No. 703 in 2018, the powers of the Ministry were further strengthened. Even though the public initiated the process in the first place, the number of individual applications for risky buildings has been increasing in many parts of the cities after 2015, and the public is withdrawing step by step from transformation applications. The Ministry is the primary decision maker, and the developer bears all costs. The landowner is involved in the process of signing an agreement with the developer and is not included until the new building is given to him/her (Tarakçı and Turk, 2021a). According to Law No. 6306, the criteria for identifying risky areas have not been determined in concrete terms, but are left to the discretion of the administration. Article 5 of the Law No. 6306 sets outs some criteria in this regard. For example, "Technical report stating that the area has the risk of causing loss of life and property due to ground structure or construction on it" is sought for risky area determination. However, criteria such as “Places where public order or security is disrupted in such a way stopping or interrupting the ordinary course of life, … Damage to infrastructure or superstructure, …” contain uncertainty and arbitrariness. It can be said that criteria have not been determined clearly.

Thus, while determining the boundaries of urban renewal areas, purely scientific data are not used (Kuyucu, 2018; Turk and Ozcivan, 2017; Tarakcı and Turk, 2015; Güzey, 2016). According to Law No. 6306, in order to be a risky area, there should be a problem either in the ground structure or in the case of construction on it. However, the soil structure is not risky, and many areas are declared as risky areas without the individual buildings being analyzed. For this reason, lawsuits are filed by the rights holders or non-governmental organizations for the cancellation of the risky area decision in many places where the risky area is declared (Tarakcı and Turk, 2015).

4. Approaches for Turkey and their outcomes

4.1. Land Assembly

‘Land assembly’ refers to the process of combining the land to bring it to a suitable size for the urban renewal project. Land assembly contains changes in landownership through acquisition of the necessary parcels of land to make property development and infrastructure provisions possible (Louw, 2008) The existence of a number of small parcels, fragmented ownership structure problems and illegal uses in urban areas make the use of purchase difficult for a developer (or land owners) and public authorities in urban renewal (Turk and Korthals Altes, 2010). The urban areas make the use of purchase difficult for a developer (or a land owner) in Turkey, and constraints in land supply for large size plots make hold out problems more severe in urban areas. So, developers (or land owners) often face delays or increase costs in the project. An active public role might not be preferred in land assembly due to the changes in public opinions as well as increasing costs. From the perspective of the Ministry, the Ministry does not directly use its expropriation authority in terms of increasing costs. Instead, the Ministry uses its expropriation authority to persuade landowners who do not have an agreement to agree. In terms of local governments, there are two

reasons why local governments prefer not to use expropriation for land assembly in urban areas. First is that the local governments have inadequate funds to begin expropriation. Most municipalities do not have sufficient financial sources for providing serviced urban plots. Second is that expropriation can cause delay, because if the compensation is low or the process is faulty, the landowners can take legal action. In case the landowners take legal action, it can result in both elongation of the process and an increase in cost.

However, after 2005 with Law Nos. 5393 and 5366, in renewal areas during the land assembly, the municipality has the right to make agreements with the landowners, and if there is no agreement it has expropriation authority. Here, the logic in the laws is the use of expropriation as a threat (a stick) more than a direct tool. However, this type of using has some problems. One of them is to be determined the compensation payment. The payment is quite low. The resettlement costs are not included in the compensation of the expropriation and mostly, the tenants are not taken into consideration. Another problem is to be used the expropriation for private development without the production of social housing (Turk and Korthals, 2010). When Law No. 6306 came into force in 2012, the government started an expediment for resettlement in order to clear the residential areas that are at risk of causing loss of life and property from unsafe and unhealthy structures and to reconstruct them in a disaster-sensitive manner (URL-1). The rapid production of new housing areas against disasters was considered public interest. At this point, it was not taken into consideration whether the houses produced were social housing or not. In this case, it is seen that the public interest is handled very broadly in urban renewal.

Law No. 6306 facilitates this land assembly. Land assembly depends directly on the landowner's request and behavior. The landowners behave with this approach by maximizing their continuous earnings, having many options to decide on a developer. Therefore, it is not possible to finalize negotiations in a short time. The developers were faced with the problem of hold-outs. Under these circumstances, the Ministry stepped in by implementing the "two-thirds (2/3) majority rule" to ensure land assembly under Law No. 6306 by using public power (Ocakçı et al., 2017). In areas not covered by Law No. 6306, the land assembly is realized with the request and consent of all right holders. However, in an urban renewal area, a 2/3 majority of landowners can decide on which developer to make agreements with. However, the fact that the Ministry stepped in to help accomplish land assembly for urban renewal purposes strengthens the hand of the developers who have undertaken the projects for these plots, while weakening that of the landowners. Landowners who could not be previously convinced are forced to make a deal with the developers. Demolition starts when these agreements are completed.

There are some objections related to the necessity of a majority of two-thirds of the shareholders participating in the shared property proposed by law (Özsunay, 2015). Such interventions aim at accelerating the process. However, the problematic issue here is that the shareholders not agreeing with the majority are forced to sell their shares to the other shareholders. They may have to sell not only to other shareholders, but also to the public. The law gives this task to the public if other stakeholders do not take it. Another issue is whether the public is strong enough to buy every real estate that other stakeholders have not bought or not, and what will happen to these properties if the public does not buy them. On the other hand, this situation is contrary to the provisions of the constitution and Turkish Civil Law. For the one-third (1/3) of shareholders that are forced to sell under the law are not granted the right to purchase the two-thirds of the shareholders' share. The Turkish Civil Law, however, regulates how a partnership among shareholders may be dissolved. Here, all shareholders and third persons are entitled to participate in the sale. Such an approach is considered a new approach in the Turkish legal system (Kürşat, 2013).

As in many other countries, the property right is protected by the constitution in Turkey. For this reason, intervention in ownership and violating the right to property must involve severe conditions. In spite of this fact, the shares of the minority not joining the two-thirds majority are subject to intervention without any obligation and court decision, and the shareholders in question are forced to sell their shares. By this aspect the law constitutes a violation of the constitution by being in the nature of a disproportionate intervention in the right of property (Kürşat, 2013, p. 46). In cases where a minimum majority of two-thirds is not reached between the landowners of a land on which a building was demolished, private properties are immediately expropriated by the Ministry. Such expropriations are considered as 'expropriation for housing' under Law No. 6306. According to decisions of the Constitutional Court (02.27.2014, E: 2012/87 K: 2014/41), there is public interest on the expropriation of properties as part of the rearrangement of the housing status of settlements under the risk of disaster.

Turkey has had a long tradition of using land readjustment (LR) and currently, implemented both in built-up and new development areas. The method is now frequently used in new development areas of the city. In Turkey, the distribution in the LR process is only provided in the form of land, not on the value base. However, in recent years, there were some examples that LR was implemented in urban renewal areas. One of these examples is the Ayazma Urban Renewal Project (Turk, 2014). In this project, LR is used to assembly land. After LR, in the urban renewal area, the average parcel size has increased from 6,830.09m2 to 9,187.1m2. The average number of landowners per parcel has also increased from 4.9 to 7.9 (Turk, 2014). The result of the project demonstrates that LR is used for land assembly. Although the land assembly is provided, the number of landowners per parcel has increased. In this condition, after LR the serviced urban plots produced remain in a joint ownership structure. Construction works on the urban plots with joint ownership structure or sale of these plots are only possible with the participation of all owners (Turk, 2014). For this reason, it is evident that LR later requested will not occur in a short time. However, it is possible that the difficulty can be overcome with densification. For example, the owners can take housing units in return for their own shares of large parcels for mass housing. In this project, development rights in the urban renewal area are defined quite flexibly, allowing for production of a large number of residences. In this case the owners of properties divided into shares can get residence units in return for their shares (Turk and Demircioglu, 2013).

Another method for land assembly in Turkey is using market-led measures for land assembly. This type of land assembly is implemented through Plan Notes. Plan notes are prepared based on local spatial plans. In terms of legal processes, plan notes give information in detail and clarify unexplained issues above plans. Over time the scope has expanded. Plan notes define variations such as mixed and optional land-use functions, or development with a preliminary project. Additionally, they include regulations concerning urban infrastructure or land assembly (Turk, 2018). For example, in Fikirtepe urban renewal project, plan notes were used to provide land assembly. According to the plan notes, the floor area ratio (FAR) is calculated over the gross parcel area. The roads remaining within the block sites, which are closed, are not included in the floor area ratio. In parcels that are assembled to form a block site, the floor area ratio is 4.00 with a 100% increase. 25% of a block site is set aside for social and technical infrastructure areas. With the plan, the development rights in the area have been doubled and the urban renewal projects in the area have been made attractive for the private sector and property owners. In response to these increases, a 25% deduction was made from the land owners' lands (Tarakçı and Turk, 2021a; Tarakçı and Turk, 2021 forthcoming; Turk et al., 2020).

4.2. Recovery of urban infrastructure costs

Recovery of urban infrastructure costs refers to the contribution of developer (or landowner) to the cost of urban infrastructure. In urban renewal areas, landowners generally participate in (on-site) costs, while off-site costs do not. However, the methods for covering urban infrastructure costs in urban renewal projects may also differ. According to Law No. 5366, which entered into force in 2005, land owners in urban renewal areas can prepare business projects related to social infrastructure and facilities, common areas, conditions of use and utilization of social facilities and services, and methods of participation in costs. The law takes into account the costs for the project area. However, the main roads and main infrastructure that the area benefits from are not taken into account.

Again, in the law numbered 5998, which entered into force in 2010, infrastructure and recreation expenses are counted as project common expenses. Construction permit and occupancy permit cannot be issued before the project common cost is paid. Here, too, only infrastructure and recreation expenditures for the project area are taken into account.

In the Law No. 6306, no detailed explanation was given regarding the payment of infrastructure costs. This situation is mostly resolved with plan notes. For example; In Fikirtepe Urban Renewal Project, plan notes were used. On the one hand, land contribution is foreseen for social and technical infrastructure areas. The plan notes state that in the areas designated as residential, trade and trade-residential areas, a public service area shall be marked off of up to 25% of the total net parcel area. However, there was uncertainty concerning the location and nature of social and technical infrastructure areas once the plan note was applied. These areas were subsequently determined by negotiations between the developer and the Ministry during the construction permit process (Tarakçı ve Turk, 2021a). On the other hand, apart from the land contribution, it is foreseen to receive the "Infrastructure Participation Fee" with the plan notes. The Plan Notes states that all road and infrastructure costs would be paid by the landowners or the developer to the Istanbul Metropolitan Municipality. It was determined that the infrastructure participation fee would be paid by the developer. Again in the plan note, it is stated that this Infrastructure Participation Fee must be paid at the construction permit stage. Determination of Infrastructure Participation Fee by the plan notes creates uncertainty about whether this fee can be used in other urban renewal areas, or not. Other uncertainty is also related to where the collected fee is used directly (Tarakçı ve Turk, 2021 b, forthcoming).

4.3. Social sustainability

According to Murphy (2012), social sustainability is based on a four-principle division of social sustainability, namely: equity, participation, social cohesion, and public awareness. Cuthill (2010) defines that social capital, social infrastructure, social justice and equity, and governance are the key concepts of social sustainability.

In renewal areas, landowners are given new housing units on the project area in exchange for their own places. In cases where the property of the landowner does not meet the price of the new flat or where the landowner demands a larger residence unit, the difference is provided through the long-term debiting of the landowner. Involvement of landowners in the process targets facilitating land assembly rather than protection of social capital or ensuring social cohesion or social mixing (Turk and Korthals Altes, 2013). Regulations in the legal structure define how landowners will benefit from the opportunities offered by the projects and do not allow any interventions that cause the project to stop or change (Şen and Türkmen, 2014, p. 170).

In urban renewal, there must be a process that allows the participation of all residents. For this, first of all, the first condition is that the residents of a place are offered options that they can evaluate so that they can decide on the accommodation and working conditions by participating in the urban renewal process. The second condition is that the actors are equipped to negotiate these options and have the power to bear the economic obligations. Third, they must have full knowledge of the process and the ability to organize in order to influence the urban renewal process (Gümüşbağ, 2009, p. 35). However, there is no process that allows the participation of all residents in the urban renewal projects. Participation in urban renewal goes through property ownership (Ozcivan, 2016). In this case, while the participation of the land owners in the urban renewal is ensured, this does not apply to those who have a certificate of occupancy (tapu tahsis documents) and the 'occupiers'. In other words, land owners, owners of the occupancy certificates and occupiers take part in urban renewal depending on the degree of ownership in the settlement process (Ozcivan, 2016). Generally, those with a certificate of occupancy (tapu tahsis documents) are given demolition payment for the squatter housing on their parcels. Mostly, affordable housing units with long-term payment outside the project area are provided in exchange for demolition payment and certificate of occupancy. While those with a certificate of occupancy have sometimes been moved to remote areas in the peripheries of cities, sometimes they have been sent to areas closer to the project areas. For instance in Istanbul, under the Sulukule Urban Renewal Project, inhabitants were moved to Taşoluk that is located 40 km away (Islam and Enlil, 2010) while under the Ayazma Urban Renewal Project those with a certificate of occupancy were sent to the Bezirganbahçe Mass Housing Area that is closer The main problem for those sent to remote areas is that commuting to work in city centres or the possibility of finding new jobs is eliminated (Türkün, 2014). The basic problem for those moved to closer areas is the difficulty in paying the instalments for the houses. In other words, they are unable to meet the cost of living in their new environments (Türkün, 2014). On the other hand, tenants are the most aggrieved among those groups (Karaman, 2013; Kuyucu, 2013). In such areas, landowners living outside the urban renewal area support urban renewal projects and participate in them because of expecting an increase in the value of their properties following urban renewal. In this case, tenants living in the area have no option other than leaving the area. Although in some cases tenants are also offered affordable housing units subject to long-term repayment, they face severe payment problems (Islam and Enlil, 2010, p. 319).

Urban renewal causes gentrification. Important rise in prices occurs in urban renewal areas, which gives rise to a high rent gap. The development rights of the new local spatial plan have the greatest impact on land values. The higher the development rights in the plan, the higher the value increase in the area. Besides, the expectation that projects will target high-income groups post-renewal also affects the value of the land (Tarakçı and Turk, 2021a). For example, an average m2 value of 800-900 USD was paid during expropriation in the Tarlabaşı urban renewal area. However, the m2 sale value of the buildings that resulted from the project was 7,500 USD (Türkün and Sarıoğlu, 2014). For this reason, only high-income groups are able to enter the area following urban renewal while it is not possible for those with a certificate of occupancy, tenants and occupants living in the area prior to the project, to return to the area following urban renewal. On the other hand, most of the landowners remaining in the area following urban renewal have failed to sustain their lives there due to increasing costs. Landowners prefer to sell their properties, taking advantage of the rent gap in order to purchase housing units in locations which are better suited to their conditions (Güzey, 2016). Most urban renewal projects target producing market housing for sale focused on profit driven and income generating for high-income groups. In other words, urban renewal projects only ensure the physical development of the area while in many instances ignoring economic and social development. Such a tendency prevents all income groups from living in the area (Türkün, 2014). For example, tenants who have lived in the urban renewal area for many years

are not likely to return to the area after the project. Most of the time, it is predicted that a new social group will live in the area after the project. Such an approach shows that social capital is not taken into account.

5. General Evaluation and Conclusion

At the both international and national contexts, the urban renewal processes are challenging because of 'land assembly', 'recovery of urban infrastructure' and 'social sustainability'. The success of the urban renewal processes is closely related to these three key issues because they can affect directly social, economic and political costs and time period. In this article, the different approaches that emerged for these three key issues in urban renewal practices and the results of this approach, in the case of Turkey are analysed.

In Turkey, different approaches related to the land assembly, cost recovery of urban infrastructure, and social sustainability have been experienced. In land assembly, in Turkey, the traditional methods (purchasing or expropriation) might not be preferred due to the changes in public opinions as well as increasing costs by neither central government nor local governments. The public institutions trust on the developer or landowners on land assembly. With Law no. 6306, the central government seem to facilitate this land assembly in the favour of developers with "two-thirds (2/3) majority rule". However, the law constitutes a violation of the constitution by being in the nature of a disproportionate intervention in the right of property. In this case, it is inevitable for one-third (1/3) of shareholders that are forced to sell to go the litigation process. On the other hand, land readjustment and plan notes can be used for land assembly instead of expropriation. The use of these vehicles is mostly shaped on the tendency to increase the density. This situation is also not sustainable. Again, although there is legal flexibility in the use of plan notes in urban renewal, it also reveals uncertainty in the process. This in turn increases the social and financial costs of land assembly.

On the other hand, in the urban renewal laws that came into force since 2004, the contribution of the developers or land owners into urban infrastructure costs in urban renewal areas is given very limited or not at all. In practice, the contribution into urban infrastructure costs has been resolved with plan notes. However, since no legal base is defined, it creates uncertainty in terms of other urban renewal areas. At the same time, it also creates uncertainty about how this collected fee will be used. Also, this uncertainty directly affects the determination of urban infrastructure, site selection and construction. Both land assembly and cost recovery of urban infrastructure requires both legal and institutional certainties for all sides. However, the legal power of the plan notes is weak when compared to other methods (Turk, 2018).

In renewal projects, the protection of social capital or ensuring social cohesion or social mixing is neither defined in legal instruments, nor is there any practice about it. Besides, there is no process that allows the participation of all residents in the urban renewal projects. Participation in urban renewal projects is shaped as depending on property ownership. While the participation of the land owners in the urban renewal is ensured, this does not apply to those who have a certificate of occupancy (tapu tahsis documents) and the 'occupiers'. Tenants have not been taken into consideration. Most urban renewal projects target producing market housing for sale focused on profit driven and income generating for high-income groups. Therefore, urban renewal projects cause gentrification because of a high rent gap. While high land values let high-income groups to enter the area following urban renewal, such a tendency prevents all income groups from living in the area. This situation means not to protect social capital. Besides, disregarding social

sustainability and focusing only on physical renewal means moving problems away rather than solving them. It is clear that urban renewal cannot be done in spite of people.

The findings of the article demonstrate the critical significance of the approaches related to the land assembly, cost recovery of urban infrastructure, and social sustainability in urban renewal processes. The solution of these three key issues is only possible with a holistic perspective. It is clear that urban renewal projects cannot be successful unless a holistic and strong policy is developed for these three key factors.

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Resume

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An evaluation of Iran architecture during first Pahlavi Era: A transition from tradition to modernity

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Abstract

How to move from tradition to modernity and how to combine or control them in a society has a direct relationship with the culture and the culture, as the main tool of architecture, needs a transition. This transition was started to be appeared in Iran during first Pahlavi era, while the government was planning to develop this process. This research is a qualitative-descriptive one and it has a deductive style and the significance and aim of this research is to study the tradition and modernity in architecture and to see how the contemporary architecture of Iran tried to transit from tradition to modernity during first Pahlavi Era. In this paper, first we will have a quick review on Iran during first Pahlavi era and its contemporary social and political history and tradition and modernity in its architecture and then by studying the architecture of two famous foreign architects, Nikolai Markov and Andre Godard who were invited to the country by the government for reformation and modernization of architecture of the country, their modern architectural styles facing with traditional and national needs of the country and their solutions will be studied.

Keywords: tradition, modernity, contemporary architecture of Iran, First Pahlavi

1. Introduction

Tradition is a changeless and constant factor which has s historical continuity and it is related to the religious believe of a nation. It is a serious of creeds, believes, opinions and repeatable act which can be created by time and can be supported as the social and national values. Plurality, conservatism, variation, resistance, keeping the current positions, superstition, originality, destiny and religion are some main components and factors of tradition (Suzankar, 2015).

In the other hand, the descriptions that have been presented for modernity are varietal and even in some cases opposite of each other. It has been believed that modernity is the victory of human thought and defeat of traditional believes. According to this, modernity is a collection of cultural, political, economic, social and philosophic complexes. Many theorists believe that modernity is the way of Today`s life (Ahmadi, 2001). Modernity is the era which its main character is the ceaseless conversion (Nozari, 2001). In fact, the foundation of modernity is on the mutation of human`s look on himself and the world around (Ashoori, 2000).

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The modernity is a dipole theory and puts the modern society against the traditional society and without presenting any comprehensive description, it knows the West society as a modern one and introduce the third world countries as the traditional ones. According to this theory, in the third world countries there are some barriers that prevent the development. Some of these barriers are old superstitions and population increasing. Thus, this theory is searching for the internal reasons for justification of lag in a society (Behnam, 2007).

In this paper, before coming to the tradition and modernity in contemporary architecture of Iran, first we will have quick review of First Pahlavi era and its contemporary history and architecture and then we will come to the tradition and modernity process and the plans of government toward modernization

2. The First Pahlavi Era: Modernity, National Identity, Globalization and Identity Crisis

Iran, as country which has seen different histories, kingdoms and events, faced with modern from Safavid period and it became more serious during Qajar. But during Qajar period the lonely things was a blindly emulation. With no scientific background on the modernity, Iranian just started to copy what they were seeing from European and West countries. After Qajar kingdom, the Pahlavi Kingdom started to do the reformation and modernization of society and architecture of New Iran. Iran pre-modern architecture during first Pahlavi era was a multi-factor architecture, a combination of traditions, believes, climes, meanings and senses. In one hand the society was interested in the modern revolutions which were happening in West, in one hand the government wanted to develop the nationalism waves and tendencies in the country and on the other hand the people could not leave their traditions. But in this era the reformation and modernization of the country started and the government started to invite the foreign architects and also the Iranian architects who were graduated from European countries and had the experience of modernity. Even though still in this era the doubt and challenges between modern, national and traditional architecture still were going on, but at least the government in this era, by inviting foreign architects and also the Iranian architects who were graduated from European countries, could have a big effect on the architecture of the country.

2.1. Reza Shah Pahlavi: The Reformation and Modernization of Iran

The First King of Pahlavi Era, Reza Khan, was born in 1878 in North of Iran. He could get a political power by a military coup in 1920 and be the King of new Kingdom in 1925 (Purshalji, 2005). The first Pahlavi`s era contains two especial periods. The first one (1920-33) which faced with the Kingdoms changes from Qajar to Pahlavi. The main attribute of this period was the attendance of modern and West-Educated ones like Abdolhosein Teymoortash and Nasroldole Firooz in government whom the king could start the modernization programs with them in the country. This period also contains long-time economic programs such as rail way, new education system of the country, the appearance and clothing changes and opposition with religious traditions. The Second era (1933-41) was called “The One-Person Regime” and the main attribute of this era was omitting the modern persons of pervious period who had gotten power in the next period. In this period also the projects which were planned were being done. In fact we should accept the year 1925 as the beginning of modernization in Iran “The New Iran” (Hedayat,2000).

This modernism has two bases: The first one denying the traditions and Iranian values which were laggard now and the second one the tendency to develop in urban development (Katuzian, 2006). From the ideological aspects, Reza shah and his governmental system, tried to use Pre-Islam thoughts and actuate the national feelings of people and reduce the effects of religion in society. Choosing the family name “Pahlavi” which was the language of country before Islam, Changing the name of country from “Persia” to “Iran” were some of his works which he tried to do to reach his goals (Seddigh, 2002).

Reza shah`s reformations and modernization plans contains three main groups: The economic, the official and the social. The most important action during the first Pahlavi kingdom was the construction of rail way. He was believed that the rail way was one of the most important factors of modernity of a country. Some of his other important action toward modernity was the education systems changes, dispatching the Iranian students to Europe, The foundation of university of Tehran and Iran museum and etc. Reza shah, after lots of works toward the modernization of the country, because of some political reason abdicated in 1941 and his son Mohammad Reza became the second king of Pahlavi kingdom (Izadi, 2003).

2.2. Time, Needs and the Governmental National Identity in First Pahlavi Era

Hegel believes that all historical events happen for two times. The first time happens in a tragedy case and the second time in a comic case and any attempt for repeating the history would come to the second case (Ashoori, 2005). The time always goes on and a society always wins and be successful which can understand the needs of its people and know the current time and place of that society. A great architecture always goes on with its time and in fact the time creates and changes the cultures, traditions, treatments and functional patterns. So, architecture, depends on a society and the time that its being created, can be different and from the identity view the time is the most important thing which is out of human`s control and if we want to search for the meaning of identity in today`s life, we should do it for the time of today. Because the human of today has its own knowledge about the past and today. The first Pahlavi era which was an introduction to modernity, started a new season of thought in Iranian identity. Because up to that time people were used to an especial kind of political and social relationship and this phenomenon caused some questions about the meaning of identity.

After modernity came to Iran, its architecture faced with a bilateral way. In one hand it was interested in West modern architecture and in the other hand it was losing its traditional and past architecture and because of that, the identity crisis and national identity was started to be discussed. In the other hand, the government was trying to resurrect the ancient architecture and culture of Iran and without paying attention to this point that the repetition of a history can`t create or change the identity of a society. The government was trying to exaggerate the past of Iran. Because by repeating a history its meaning can`t change and just the appearance can be changed and it is not enough for creating an identity and in our today world which the originality is depended to change and mutation, this kind of identity creation is rejected (Ghotbi, 2008).

2.3. The Effects of Globalization on National Identity: Identity Crisis

Identity is an assortment of characters which can identify the equality and difference aspects between some factors and when we talk about identity, the types of it should be mentioned too. For example, about human, we can talk about his social or cultural identity and about building, we can talk about its functional, aesthetical or structural identity, but totally everything should have its own comprehensive identity. Even though the experiences and background of a spectator is very important but the comprehensive identity of a building should be possible for everyone to be recognized.

Globalization is a production of international relationships and tries to decrease the importance of internal identities and without paying attention to time and place, tries to connect the people of the world. In fact, it is a production of modernity (Faramarz, 2012). Because of economic, social, political and technologies transformations, cultures always are being changed and the globalization process always contains cultural mutations (Nazemolboka, 2012). Globalization has been described both as a process and a meaning which contains the West background and presents all countries as one (Pooladi, 2008). It is a new and complicated phenomenon and because of its multi-functional aspects, its main quiddity has not been cleared completely and it is hard to present a unique description for it, but generally it can be described as a production of time and place process which

causes the people enter to a unit society (Golmohammadi, 2007). In fact globalization is the intensification of a social relationship all over the world which causes the societies, despite long distances, have effects on each other (Maleki, 2003) and these effects can contains political, social, cultural and event architectural (Waters, 2000). It develops the modernity functional attributes among the societies which were effected by its minor attributes before (Tamilson, 2008). So it is a part of modernity and by the time that a society tries to accept the modernity it should accept its parts too. But in a country such as Iran with an old civilization and traditions, it was hard to share its attributes or accepts the globalization rules and in the other hand the new kingdom was trying to insert the national identity of Pre-Islam in the country and this causes Iran and Iranian architecture faced with three ways: The Islamic architecture, The Pre-Islamic architecture and the Modern architecture of West and this caused the society and the architecture of the country faced with an identity crisis.

Even though Iran had gotten its own distinct identity in architecture during the past centuries, but because of the cultural confusion, Iranian architecture had an identification crisis by facing modernity during the first Pahlavi era (Motallebi, 2011). In another hand, identity has the same age of history and it was created by the time that human felt that he should know who he was. It is a factor that describes distinction, existence, entity and all the things which causes a recognition of a person, culture or society and talks about it (Hojjati, 2005). Identity is always being created by time and history. So, all new sciences, thoughts, experiences and technologies which human learns today, will be a part of his identity in future (Farasatkhah, 2000).

The contemporary society of Iran, after coming out of its traditional shell in this era, encountered with three different cultural layers: religious, national and modern civilization of West and in fact the tendency to use these three factors be side each other caused the basis of identity crisis in the country. About Iranian past architecture, its traditional process was held up to Qajar period. The significance of identity was not discussed seriously because there was no doubt about it and normally it happened when it has been questioned and comes to crisis level. After this era and by coming the West modernization to the country the meaning and identity of Iranian past architecture started to be questioned (Ahmadi, 2004). By inviting foreign architects and also Iranian ones who were educated in West architecture schools to the country during the First Pahlavi, as the government was interested in the West modern architecture, this case appeared more. The buildings which were designed in this era, even though had an Iranian and national appearance but identity crisis between the past identity which was started to be discussed and the new modern identity which was trying to bring to the country by this foreign architect, started to be seen (Sarami, 2000).

3. The Magisterial Architecture of First Pahlavi: Suspension and Transition from Tradition to Modernity

In the first Pahlavi era, the government tried to create a Quasi-Modernity in the society which was more in a magisterial format and contains four main factors: Laism, The classic nationalism, modernization and the obsessive of national paltriness. They were also some other factors such as military and industrial development which had effects on the architecture of this era. The military caserns and police officers, were the most important factors for king to show his power to people, became the main symbols of the cities as the mosques were during the Islamic eras. Before analysing the architecture of first Pahlavi era, we will have a quick view on three different prevalent styles of this architecture and then we will talk more about them (Table 1).

Table 1 The First Pahlavi prevalent architectural styles (Source: Authors)

The First Pahlavi Prevalent Architectural Styles	
Style	***Attributes***
The Continuation of Late Qajar Architecture	*The imitation of West architecture with no speculative background- Little changes in materials and the construction techniques.*
The Early Modern Architecture	*This kind of architecture was brought to the country by the foreign architects which were invited to the country by the government and also the Iranian architects who studied aboard. Trying to pay more attention to the theories of the modernity.*
The European Neo-Classic with Persian Motives (National Style)	*Encouragement of the people to support their national factors by the government and use Iranian Pre-Islam motives and symbols and also have combination with the European neo-classic architecture*

Even though these styles seems to have differences but in all of these three styles the main aim was trying to be close to the culture and architecture of West but still Iranian liked to stay both Iranian and looks like European. Also about architecture they could not stay loyal tenet of modern architecture of fourth CIAM and after that "Tradition or Modernity" became the main challenge of Iranian architecture (Banimasud, 2012). Vartan Hovanessian, one of the famous architects of Pahlavi period in two of his papers "The Problems of Iranian Architecture" and "Iranian Architecture: New and National Style" tried to mentioned this problem and keep modern architecture and Iranian architecture beside each other smartly. He believes that modernity is a fact and a natural phenomenon and should be accepted by societies but it can`t be the same in all of the societies and depends on social and climatic attributes of each country can be different. He believed that we should not have bigotry to the past and traditions and should see also the present and future and it shouldn`t be intemperate (Hovvansian, 2000).

The Most important point of Pahlavi architecture was inviting foreign architects and also Iranian architect who were educated from Europe and West and the effects that they had on the architecture of Iran. Most of modern architecture bases tried to be done in architecture of Iran during this era. For example, using new materials such as concrete, steel and glass which were some of modern material started to be use more beside traditional architecture. Using new modern construction systems and also central thermal system of the building was being more and general theme of the life, culture and also architecture from interior mood was changing to exterior (Marefat, 2000).

Because of new functional relationship caused by new architectural academic methods, the importance of plan in architectural design was increased in this era. The long corridors started to be located in two or more sides of a building, especially in huge governmental and educational buildings. The linear method of functional relationship were solved. The locative importance of stairs both in entrance of buildings with its wide attributes and in the middle of building with its two sided and curved form was increased. The new forms of windows in residential buildings and high and continual ones in huge governmental buildings and a new description of privacy in architecture were seen. The balcony was at the external side toward the outside of building against the traditional case which were called "Ivan" and were toward the inside courtyard of the building. The high entrance of buildings were with high columns to show the majesty of ancient architecture of Iran and the modern and expressionist style of Europe. The permanence of traditional systems of construction and the Iranian ancient lithograph and ornamentation and also the West classic ornamentation in architecture also were also used beside these modern systems and the construction of street looked like the style of European 19th century style and the street architecture method was created and the urban symbols changes from cultural-traditional style to bulky governmental styles in this era.

But as it mention the main and most important action of first Pahlavi government was inviting and using foreign architects and also Iranian architects who were graduated from European countries. The ones who had the experience of West and modernity. They mission in a country and atmosphere which wanted to keep its tradition and nationality in one hand and learning and using the modernity bases in the other hand was so hard but their effects on Iran modern architecture and its creation process is clear. In this paper, two of these foreign architects who had a big effect on modern architecture of Iran during first Pahlavi era, Nikolai Markov and Andre Godard, and the transition from tradition to modernity in their architecture will be studied.

3.1. Nikolai Markov: The Transition from Traditional Architecture to Modern Architecture

Nikolai Markov (1882-1957) was born in 1882 in Tbilisi, Georgia. He was graduated from the Academy of Fine Arts in St. Petersburg in 1910. He came to Iran in 1917 and after working in army, in 1921 he started his architecture career again and established his first architecture office in Istanbul Street in Tehran. By designing and making around twenty buildings during first Pahlavi era, he made himself one of the most important foreign architects of first modern period in Iran.

Nikolai Markov Architectural Style; In the first years of the entrance of modernity to Iran, there was a big challenge between modern style followers and ancient-national style followers. The first group believed that the architecture should be simple, unadorned and unaffected and should refuse the ornamentation and historical references, but the second group completely follows the historical and ancient styles and ornamentation. In such a bilateral case, the “Art Deco” was a lonely style which was a moderate and medial one which contains both old and new and it was why Markov chose this style in his architectural design methods. Also maybe as he was coming from a country farer than the central and main modern countries such as Italy, France, Germany and America, so he decided to enter this style of architecture cautiously. In the other hand, in a developing country which was faced with dichotomy, the “Art Deco” style could be the best choice. This kind of architecture lets the modernity elements be by historical ones and caused a free selection style for creating a coordinated architecture with different cultures. With his modern thought, Nikolai was interested in Iranian traditional methods and using native material and also elements of national and ancient Iranian architecture. In most buildings designed by Markov, the most important thing is using available technologies and materials such as brick, tiles, porter walls and etc (Figure 1).

Figure 1 Modern thought and available traditional technologies and materials, Alborz High School by Nikolai Markov, Tehran

As it mentioned, even though in his period using new technologies were being used more, but in his style he tried to have mixture of new and traditional architectural technologies and using each for the other. For example he would try to use Iranian traditional arch by new modern technology

and traditional experiences or using iron, light deck or metal which were the elements of modern architecture (Figure 2). Nikolai Markov was one of the numerable architects who could use and coordinate harmonic and eurhythmic combination of traditional Safavi architecture with ancient and modern design needs. His interest in Iran and Iranian architecture and also his tendency to Art Deco architecture and their coordinating with international processes caused growing and developing his style of architecture in Iran (Figure 3).

Figure 2 Using modern and tradition experiences beside each other

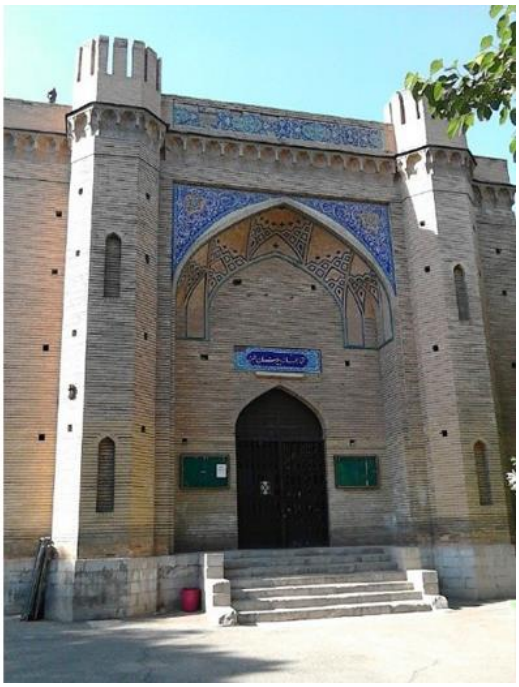

Figure 3 Islamic and Safavid architecture and West modern architecture

In one of his famous projects, “Alborz High School”, he had tried to use European Neo-Classic architecture which was one of the most important styles of modern architecture beside Islamic traditional architecture of Iran [SAFAMANESH]. This building has an Islamic and Traditional appearance but in fact it has a modern functional usage. All the systems of the building are described and the horizontal and vertical connections also central part of the building are clear and these are all the things that a modern building needs it (Figure 4). The columns of the buildings are in European style but the capitals are completely Iranian (Figure 5).

Figure 4 Islamic and traditional appearance and modern functions

Figure 5 Alborz High School, The West Neo-Classic Architecture and Iranian Traditional Architecture

By using Islamic and Safavi architecture traits, he could design some buildings with independent characters. Markov designed lots of other buildings such as Anooshirvan Dadgar High School, Amjadieh Sport Complex, Varamin Sugar Factory, Tehran Central and etc. His most buildings contains educational and governmental buildings. The main difference is that the weight of Iranian traditional architecture in his educational buildings were more and the weight of European classic themes were more in his public and official buildings. "The Singer Building", for example, is one of his official buildings which had used the European historical elements in the design of this building and can be in the category of international Art Deco style and can be used in any part of the world (Saffarmanesh, 2011). Dignity, elegance, poise, serenity, repetition and geometry are some important attributes of Markov`s architecture (Figure 6). In his other project, Anooshirvan Dadgar High School, he had tried to use Iranian ancient symbols and in this project the weight of nationality is more. But like his other project he had managed the combination of tradition and modernity beside each other (Figure 7).

Figure 6 The Singer building by Nikolai Markov

Figure 7 Anooshirvan Dadgar High School by Nikolai Markov, The modern architecture and Iranian ancient architecture

Totally, as he started to work in a time that the country had a big challenge with modernity, nationalism and tradition architecture and a big doubt to choose, Nikolai Markov`s architecture could have a big effect on the architecture of that period of time and satisfied all three aspects. He came to Iran with a modern thought and his major was to develop national architecture and also people were accepting traditional more. So he had to have a fine combination of these three and depends on what kind of project he was doing the amount of each aspect was changing (Table 2).

Table 2 Nikolai Markov`s architecture style

Style	***Example/Premier Aspect***	***Illustration***
Modern Architecture (Neo-Classic)+ Traditional Islamic Architecture	***Alborz High School/ Traditional Islamic Architecture***	
Modern Architecture + Iranian National Pre-Islam Architecture	***Anooshirvan Dadgar High School / Iranian National Pre-Islam Architecture***	

Modern Architecture (Palladio Style) + Iranian Architecture	***Singer Building/ Modern Architecture***	

3.2. Andre Godard and his Traditional-Modern Point of View in Iranian Architecture

Andre Godard, French archeologist and architect, was born in Chaumont in 1881. A graduate of the École des Beaux-Arts of Paris, he studied Middle Eastern archaeology, particularly that of Iran, and later became known for designing the National Museum of Iran, where he was appointed inaugural director in 1936. He was also instrumental in the design of Tehran University campus. He made his first trip to the Middle East in 1910 with Henri Violle. Together, they began to excavate the ancient ruins of Samarra, located in modern-day Iraq. The ruins were fully excavated a few years later by German-born archaeologist Ernst Herzfeld. Godard returned to his architectural studies in 1912, focusing on Islamic architecture of Egypt. After World War I, Godard married Yeda Reuilly. The Delegation of French Archaeology in Afghanistan was subsequently founded in 1922, so Godard and his new wife accompanied the organization to not-yet-excavated regions. They consequently studied Bâmiyân, which was later permitted to be exhibited at the central Buddhist shrine of the Guimet Museum, in 1925.

In 1928, Godard was granted the directorship of Iranian Archeological Services, by the authority of First Pahlavi King. The IAS was intended to mark the end of French monopoly over excavation in Iran. As such, Godard focused on the politics of conservation, and held the title of Director from 1928-1953, then again from 1956-1960. The Pahlavi king also appointed him as the director of the National Museum of Iran (Muze-ye Irân-e Bāstān). During his tenure, Godard was responsible for the restoration of major historic monuments of Iran, such as the Friday Mosque, the Shah Mosque, and Mosque of Sheikh Lutfallah of Isfahan among others. Using his directorships, he organized mass excavations, such as the bronzes of Lorestan, Persepolis and Isfahan. Godard believed that art and architecture are the main bases of any culture and they reflect the human spirit and the main thing in the spirit of art and architecture is the spirit of that society. He believed that architecture is not just a traditional combination of brick and stone and in his idea, architecture is production of thoughts (Musavi Gilani, 2009).

One of reasons that Godard was chosen by government to design the most important buildings of the country was his high level education and experience in the architecture of East and as the government main program was to keep the traditional identity beside the process of the West modernity, he was the best candidate to reach the government aims in the field of architecture. Godard designed lots of monumental and cultural buildings which in most of the showing modernity beside the traditional and national elements of Iranian architecture can be seen. To seek these elements and this mixture in his architecture one of his famous project “Iranshahr School” in Yazd will be studied.

3.3. Andre Godard and The Iranshahr School in Yazd, Iran

The Iranshahr School, designed by Andre Godard and Maxim Siro, in 1935 in Yazd, is one of the best examples of Godard`s work which he has tried to show his knowledge in Iranian traditional architecture and to create a balance between tradition and modernity in Iranian architecture (Figure 8).

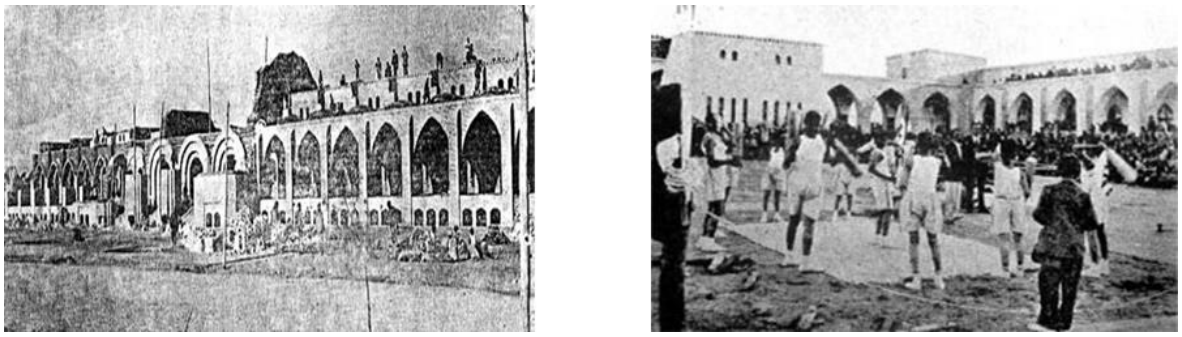

Figure 8 The Iranshahr School by Andre Godard and Maxim Siro

This school was designed in two stores. The ground floor was the main floor and the main spaces were designed there and the underground floor which was designed for laboratories. The main materials in this school are brick and stones and the space organization of the building is traditional. Using Iranian arch in the main elevation of the building and also portico and porch, lead the building toward Iranian traditional sustainable architecture factors. Repetition and harmony are some other architectural traits of this building (Figure 9). One of the other architectural traits that can be seen in this project is transparency that has been created by its balcony and also the building`s simple, extended and symmetric façade (Figure 10).

Figure 9 Traditional Factors in the Architectural

Figure 10 The Façade of the Main Building of Iranshahr School Design of Iranshahr School

According to the mentioned points, the main traits of Andre Godard`s architecture in encountering with tradition and modernity and its reflection on the architectural design of Iranshahr school can be concluded as follows (Table 3).

Table 3 Andre Godard`s Characteristics of Traditional and Modern Architectural Tendencies in Iranshahr School

Andre Godard`s Traditional-Modern Architectural Points of View	*Characteristics of Traditional and Modern Architectural Tendencies of Iranshahr School*	
	Characteristics of Traditional Architectural Tendencies	***Characteristics of Modern Architectural Tendencies***

Equality in Traditional and Modern Characteristics in Architecture	*The Utilization of Iranian Traditional Arch, Portico and Porch*	*Simple, Extended and Symmetric Façade*
Showing the Spirit of Human and Society in Architecture	*Harmony, Rhythm, Traditional Sustainability Factors*	*Transparency, The Relationship between Outside and Inside of the Building*
A Mixture Combination of Materials and Colors	*Stone, Brick, Brown, Yellow*	*Stone, Brick, Glass, Brown, Yellow*
Space Specialization and Organization	*The Main Functional Space on the Ground Floor*	*The Laboratories on the Underground Floor*

4. Conclusion

Modernity is transient, fleeting and contingent because it is about the present states of affaires. Nothing maintains its quality and status throughout time; states of affaires are constantly changing. Therefore, something is modern only in relation to its situation in time and space. It seems to be a dichotomy between modernity, as the changing, and tradition, as continuity. But it is clear that together they constitute social practices, since these are –pretty much always –changing, but yet, they do so within a continual context.

In this paper, first we reviewed the main descriptions of tradition and modernity which were presented by related theorists. Then, we focused on the combination of tradition and modernity in the architecture of some Islamic countries in East and some Western countries in Europe. Next, we had a review on first Pahlavi era, the modernity process which was started from Qajar era and was being organized in this era, the national identity which the government was trying to develop and the globalization which the society faces and its effects which caused identity crisis. Then we talked about the reformation and modernization that Reza shah started to do in the country and the magisterial architecture of this era and the foreign architects` effects on this architecture which were invited by the government to the country. Then by studying the architecture of two famous foreign architects, Nikolai Markov and Andre Godard, it was concluded that these architects, by the modern experience that they had and also by a correct management and organization in their architectural designs could satisfy and manage all three needed aspects of the architecture, modernity, nationalism and tradition, which were needed in this era and could have a great effect on the architecture of Iran to transit from tradition to modernity.

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Resume

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Resilience in interior architecture education: Distance universal design learning in the COVID-19 pandemic

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Abstract

The COVID-19 pandemic has significantly affected all levels of education all over the World. In Turkey, on March 16, 2020, the decision of distance education was taken in higher education sharply. This necessity had caused urgent adaptation to the distance education process, which resulted in changing the courses' curriculums in parallel with the emergence of new teaching and learning strategies especially in applied programs such as interior architecture. This process has tested the 'resilience' of the education system explicitly. Resilience means an ability of a community, system, or individual to 'adapt' and 'transform' in the case of varied facts causing any disruptive situation in the existing system. The pandemic has taught the education community about 'adaptation' and 'transformation' through implementing diverse learning tools and responses to complex circumstances, especially in applied courses. With the end of the pandemic, the instructors experiencing the face-to-face education environment anew will sustain it with the lessons from the pandemic undoubtedly. This study aims to discuss the concept of 'resilience' with its basic dimensions, 'adaptation' and 'transformation', in interior architecture education by focusing on the experiences, limitations, and potentials experienced in the distance education process. It specifically dwells on teaching and learning experiences of Universal Design (UD) course conducted in the Department of Interior Architecture and Environmental Design, Atılım University, Ankara in the 2020 Spring term when the first and urgent adaptation to distance education had been experienced. The evaluation process is supported with the obtained qualitative data, with results suggesting that all students gained useful insights by experiencing multiple dialogue environments in various ways of learning into how they can incorporate inclusivity into future designs. This study displays that it is crucial that the distance UD learning process open to interactive dialogue among students, experts, instructors, and users to design inclusive spaces welcoming all people without discrimination. It argues that there have been potential improvements about adaptation and transformations of educational approaches within the pandemic, but in interior architecture education as applied design education, the importance and necessity of experiential learning in bodily and collective communication has been deeply proven.

Keywords: COVID-19, distance education, resilience, universal design Learning, interior architecture.

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1. Introduction

Resilience is an important concept to define the quality of life in the twenty-first century (Trogal, Bauman, Lawrence & Petrescu, 2019). It has been contextualized within the scholarship of different disciplines to respond to diverse community needs. In architecture discipline, resilience is defined as a key concept to enhance the empowerment of the community for readiness, response, and adjust to any risks or changes by making a transformative contribution to the development of the built environment and community (Trogal, Bauman, Lawrence & Petrescu, 2019). Social justice, social and climate impact on architecture, urban crises and risk reduction, disaster-resilient architectural design, and performance-based architectural design are some spheres addressed in this sense. Resilience has also been highlighted in the field of learning in terms of the significance of adaptation and self-organisation within an educational system (Folke et al., 2010). Addressing the collective effects of architectural design and education towards resilience, Campos (2020, p.1) highlights that "architecture, properly planned, is a vital ally of resilience, by adding an "educational" value that enriches well-being and motivates learning". The COVID-19 Pandemic process which we have been living in has revealed the importance of resilience in architectural education.

In addressing resilience in interior architecture education, this study specifically focuses on Universal Design (UD) learning. Universal Design is a design concept that addresses designing products, buildings, interiors, exteriors, and all parts of built environments equitably used by all people to the greatest extent possible (Ostroff, 2011). Since its philosophy is based on the 'social justice' context (Ostroff, 2011) that is one of the global concerns in architecture within the same manner of 'resilience' (Trogal, Bauman, Lawrence & Petrescu, 2019), the UD learning process also deserves much attention.

While addressing current complex global concerns, specifically humanitarian design in architecture education, Brogden (2020) describes that it needs to incorporate transdisciplinary and collaborative design methods within the 'process-inherent' paradigm instead of 'product-oriented' one. Herein, the importance of social and physical dialogue between people (instructors, students, etc.) and spaces for the success of education becomes even more evident during the Pandemic (Cengizkan, 2021).

On March 16, 2020, at the middle of the education term, with the decision on the transition of face-to-face to distance education in all higher education institutes in Turkey, education was suspended for two weeks in Atılım University, Ankara. Meanwhile, the necessary infrastructure works were carried out and the preparations for the distance education system were completed. In this sense, the theoretical and applied course content prepared within the framework of face-to-face education was reconsidered within the structure of the distance education model and reconstructed with new content.

By addressing 'resilience' in education, this study aims to evaluate the constructive impact of the worldwide shutdown on UD learning in the Spring Semester of the 2020-2021 Academic Year in the Department of Interior Architecture and Environmental Design in Atılım University. It dwells on designing and implementing various ways of face-to-face and remote teaching and learning based on sustaining an efficient learning process in each circumstance. The method of the study is based on qualitative research. The students' written studies, visual presentations, discussions in each course, their written and verbal reflections on a seminar, and the general learning process are all sources to be analysed contently. Additionally, at the end of the semester, the students presented their final studies with the evaluation of the process in an online panel discussion in responding to the question: "Which way(s) you benefit from to learn and embody the Universal Design knowledge?" Based on these issues, the study concludes with the critical evaluation of the Universal Design learning process in highlighting resilient learning environments in the sphere of interior architecture education. This study claims that the experienced benefits and challenges of

this process will shed light on the future of interior architecture education within a post-pandemic world, which would contribute to the development of resilient education.

2. Resilience in Interior Architecture Education

The term 'resilience' has its roots in the Latin verb 'resilire' which means 'to jump back' or 'to recoil'.[1] Resilience is a concept that is used for varied phenomena causing any disruptive situation in the existing system (Campos, 2020, p. 1). It is described as the ability of societies and systems to withstand and adapt to changes or deteriorations (Campos, 2020, p. 1). Resilience is comprehensively defined by the United Nations International Strategy for Disaster Risk Reduction as follows:

> The ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management (UNDRR, 2021).

This definition displays that resilience is based on the level of tolerance of the existing system and community in terms of sustaining functions and experiences within hazardous changes or deteriorations. Walker et al. (2004) and Folke et al. (2010) categorizes resilience into three aspects: 'resilience', 'adaptability', and 'transformability' which are interrelated across various scales. While they define 'adaptability' as the capability to adjust reactions to any altering situation and in this manner, to allow for progress along with it, they express 'transformability' as "the capacity to cross thresholds into new development trajectories" (Folke et al., 2010). Herein, it is important for a resilient education that the community and system in higher education would adapt to and transform by the changes in unplanned and undesirable conditions (Waxman, Gray & Padron, 2003).

For John Dewey, education is a life-long process in which all dimensions of life involving human, natural, and built artifacts affect the learning process holistically. (Dewey, 1916, p. 19-20). His thought addresses the effective way of learning through a learning environment that is directly or indirectly perceived by all sensory, tactile, visual, and auditory senses. When we consider Dewey's (1916) approach on education together with the way the Folke et al. (2010) handles resilience, it can be noticed that the context of resilience is founded on the life-long interaction among person(s) and their environment in requiring experiences on 'adaptation' and 'transformation' as parts of the learning process.

Campos (2020, p. 3) expresses that the actual physical environment more specifically educational one has crucial importance to sustain the culture of education and increase learning in terms of advancing effect, community, learning, and environmental sustainability. This becomes even more important when it comes to architectural education. Gehl's (2011, p. 41) thoughts on "life between buildings" well express it in such a way that people confront good conditions and opportunities in environments by which they have a variety of collected experiences by adjusting and adapting to the environment and its spatial functions. Learning 'in' and 'from' spaces is a very crucial aspect but could not have been experienced during the Pandemic sufficiently. Herein, it is thought for this study that although the lessons have to be carried out in the virtual environment, the house can be thought of as a tool ready for detailed research- for the things that we think we know but have a lot of unknown.

The capability of architectural education to respond to changes in different ways is essential for a resilient educational system/environment (Campos, 2020, p. 9). In referring to Folke et al. (2010), the ways of responding to changes are central to 'adaptation' and 'transformation' to the

[1] Resilience. Retrieved on April 12, 2021 from https://www.merriam-webster.com/dictionary/resilience#h1.

experienced process. This implies the provision of a transformable educational environment either for a planned or abrupt learning process that will enable students to participate and communicate interactively in any condition. Experienced virtual educational environment that we are obliged in the pandemic can be described as a way of abrupt changing in need of new dialogue and collaborative learning environment. Transforming into distance education environments enhances the (re)development of communication as well as the need for it, which would be an advantage of this global calamity. This has caused the adoption of new learning tools and processes and the experience of various communication opportunities, which supports resiliency in interior architecture education.

The context of an inclusive spatial environment is also a critical theme in highlighting resilience in architecture as well as education. Equitable access in cities is so crucial that every member of communities would fully and equitably participate in social life to the greatest extent possible (Imrie & Hall, 2001). In defining resilience, Laboy and Fannon (2016) highlight the context of 'socio-ecological (adaptive) resilience' which points out the role of architecture in sustaining social and cultural adaptation of communities in the future. Especially nowadays, when health and well-being are vital goals in public life, the design of all parts of the urban environments, involving interiors, deserves considerable attention.

Resilience is a topic that we start to discuss with the events that happen outside of 'normal'. When we are faced with a situation outside the order, we are accustomed to, it comes to the fore how we can respond and tolerate the negativities experienced. In the modern social-based approach, disability is conceptualised as a 'normal' experience (WHO, 2001) and thereby ensuring accessibility for all in an equal manner should be a standard action in designing spaces. However, in the case of Turkey, we still cannot apply inclusive design principles in an appropriate way even in public spaces. Therefore, the integration of the Universal Design concept into the architecture curriculum is a must issue to create resilient interior or exterior spaces in cities.

Individual resilience against adversities has also been widely discussed in the field of education (Waxman, Gray & Padron, 2003). This is also valid for resilience in interior architecture education. It involves both instructors' and students' ability to cope with difficulties, resistance to adversity, adapting to abnormal situations, and maintaining wellbeing and motivation to learn/teach (Waxman, Gray & Padron, 2003). Herein, it should be noted that educational resilience is based on the social context as much as individual one (Rutter, 1993, p. 626). For learning from other sources or people in supporting each other advances interactive dialogue among whole educational community. In this sense, during the process of 'stay at home', social, spatial, psychological, and technical means of conducting online courses considerably affect the individual learning/teaching process.

Table 1 Important themes in resilient interior architecture education.

Adaptive acts	**Transformative acts**
Social and psychological preparation	Arranging a new learning/ communication environment
Meeting the technological equipment	Developing the course content according to the distance education system
Knowing the virtual learning environment tools	Applying appropriate learning methods
Having suitable spatial attributes	Performing appropriate learning practices
Creating new dialogue environments	
Adjusting to the new curriculum and learning tools	
Students	
Academicians	

Based on the above discussions and the lived experiences in the context of this study, Table 1 presents the important issues about resilient interior architecture education for the fact that the education community (for both educators and learners) can be 'adaptive' and 'transformative'

when facing complexity, uncertainty, vulnerability, and extremely rapid change during the COVID-19 Pandemic.

3. Universal Design in Interior Architecture Education

Universal Design (UD) is a concept advocating that all parts of the built environment should be equally accessible and safe to all users without making any discrimination due to their different (dis)abilities (Ostroff, 2011). Its well-known and appreciated seven principles are (1) Equitable use, (2) Flexibility in Use, (3) Simple and intuitive (4) Perceptible information, (5) Tolerance for error, (6) Low physical effort, (7) Size and space for approach and use (Ostroff, 2011). Through their implementations in spaces, it appreciates the 'full participation' and 'social inclusion' of all community members including people with diverse (dis)abilities in all spheres of public life (Heylighen, Van der Linden & Van Steenwinkel, 2017; Ostroff, 2011). UD philosophy needs to be integrated into varied design disciplines involving design education which are dwelled on a relationship between human and spatial environment in contributing a sustainable life (Ostroff, 2011, p.1.9). Among them, architecture has a crucial responsibility for creating an inclusive public life without causing any discriminatory situation due to drawbacks in the spatial environment. This is based on moral responsibility for sustaining human rights rather than a choice (Sungur Ergenoğlu, 2015, p. 1398; Yılmaz, 2018, p. 12). In the context of interior design, interior architects should have an inclusive design vision to make interior spaces inclusively usable for all so that users with diverse ages and (dis)abilities can access to spaces independently and equitably. This enhances the inclusivity of spaces along with physical access and social dialogue within spaces (Heylighen, Van der Linden & Van Steenwinkel, 2017).

Designing spaces with Universal Design philosophy is an obligation for human rights, which is dictated by national (e.g. Turkish Disability Law no 5378) and international legal documents (e.g. U.N. Convention on the Rights of Persons with Disabilities). However, the design decisions only dominated by laws, regulations, and standards are not sufficient to achieve an inclusive spatial environment. On the other hand, as Imrie (1996) suggests, many legal perspectives are vague and challenging to enforce. The design only under the pressure of specific legal necessities cannot address the big picture of spatial equity among societies (Imrie & Hall, 2001). To create real inclusive spaces, it is essential to internalize and embody the UD knowledge in whole phases of a design process from the beginning to the end of the design and during the implementation phase (Tutal, 2016).

Interior architects should have required knowledge about Universal Design philosophy but most importantly, they should know how they act through design decisions in its notion instead of only complying with the design codes specified by the legislative documents. Therefore, the interior architecture education curriculum needs to holistically integrate the UD knowledge acquisition process (Afacan, 2011; Helvacıoğlu & Kahraman, 2012). Designers' responsibility on socio-environmental issues is an important theme in the socio-ecological (adaptive) aspects of resilience (Laboy & Fannon, 2016). Developing knowledge, ways of thinking, and practices on the design of inclusive spaces work for building a sustainable future. For its success, learning strategies embedded into the design education curriculum deserve more attention.

3.1. Learning Strategies

There have been many studies in the literature that addressing teaching and learning approaches to increase the efficiency of the learning process in advancing the knowledge acquisition and awareness of the Universal Design concept in design education. The adopted approaches differ widely in terms of scale and impact: A degree programme, course section for a certificate programme, research project, interdisciplinary projects, student awards organisations (Ostroff, 2003). In interior architecture education, UD learning is generally limited to one or two elective courses in the curriculum (Helvacıoğlu & Kahraman, 2012, p. 101). UD learning should be

an inseparable part of the overall four-year curriculum content, especially in the design studios and lectures (Afacan, 2011). This can contribute to developing both a resilient education model and the creation of resilient spaces and life.

Various learning approaches guide the acquisition of Universal Design knowledge in an effective way in architectural education. The study of Altay and Demirkan (2014) indicates that 'empathy' is a useful learning tool by which interior architecture students develop their knowledge and awareness of inclusive design in terms of both individual and community aspects. However, "future work is required giving details on how exactly designers can engage in deep and meaningful exchanges or dialogues with people" (Strickfaden, Devlieger & Heylighen, 2009). Beyond being a one-sided understanding of spatial needs of absent users, the development of a thinking process contributing to the deepening of design knowledge by creating a mutual dialogue environment should be supported (Strickfaden, Devlieger & Heylighen, 2009). In this sense, Dong (2010) highlights the active participation of users in the design process to expand students' empathic perspectives to the extent possible. Ostroff (1997) significantly emphasizes users as 'experts' on the use of their spaces so their varied thoughts and experiences should be integrated into the whole design process. In essentially respecting user participation in the design process, action/participative research and co-designing in a collaborative design process also enhances an interactive dialogue between designers/researchers, stakeholders, and users (Cassim & Dong, 2007).

It is argued in this study that teaching Universal Design must involve multiple learning methods in a way that supports each other to prepare students for solving complex design problems more appropriately and sufficiently (Cassim & Dong, 2007). This approach would create resiliency in interior architecture design education with regards to responding to diverse learning styles of students and acquiring tested knowledge by experiencing diverse learning tools. The Universal Design course evaluated in this study was aimed to be implemented through addressing theoretical and practical ways of knowledge acquisition in a collaborative design approach. From this viewpoint, the research/design methods mentioned above are aimed to be fulfilled transversally according to the theme of final design projects. For instance, when empathy modelling is utilised as a learning tool, the participative research approach is also integrated into the learning process to develop knowledge acquisition by the crosscheck of research findings. However, the COVID-19 pandemic taught us in a very striking way that it is necessary to consider the effectiveness of learning process in the distance education process for achieving a resilient teaching/learning process.

4. The Method of the Study

This study presents the teaching and learning experiences of the Universal Design course conducted by the author in the 2019-2020 Spring Semester in the Department of Interior Architecture and Environmental Design at Atılım University, Ankara. It is aiming at the evaluation of the learning process of the Universal Design course when the global pandemic sharply mandated distance education at the middle of the semester. 17 interior architecture students (3^{rd}- and 4^{th}-year students) enrolled in the course and 16 (1 is NA) finished the course successfully. The evaluation process of this study was supported by the obtained qualitative data gained from the weekly open-ended discussions and questions. The visual and verbal presentations of the students' research/works and their thoughts about their adaptation and transformation in the learning process were assessed qualitatively. In each course, the comments on awareness, acknowledging, and shifting in decisions were noted and evaluated by the instructor/author. They were evaluated within an interpretive approach, with results suggesting that all students gained useful insights by crosscutting discussions in multiple ways of research into how they can incorporate inclusivity into future designs.

4.1. Hybrid Universal Design (UD) Learning Process

Universal Design (UD) course, focused on in this study, is an elective course with (1+2+0) 2 Credits, 4 ECTS Credits. The main objectives of the course are as follows:

- To provide students with information about interior and environmental design that respect individuals with different needs, including people with diverse disabilities, elders, and children.
- To support them to have detailed information about both social and physical dimensions of Universal Design philosophy by analysing samples of inclusive spaces.
- To enable students to experience participatory and experiential design tools, to reach a level which they can apply the best possible inclusive design solutions.

To accomplish embodying UD knowledge into the learning process efficiently, the schedule was formulated to incorporate theoretical and practical design dimensions in an interactive studio atmosphere. In accomplishing the course's objectives, students were expected to understand, analyse and comprehend a variety of complex spatial problems and phenomena that result in discrimination in spaces.

In the middle of the semester, when distance education had been mandatory, it was essential to adopt the course curriculum to the distance education process in responding to the objectives of the course. The forced switch to remote teaching/learning has generally encouraged and forced instructors to redesign their methods and practices of teaching/learning. In this process, creative ways to translate the face-to-face course curriculum into the distance education format were developed. Instructors tried to convert their resources to digital format and put them on the online learning management system of the university. It should be stated that there was a great burden on the instructors in the preparation process to get through it with less damage.

In the context of this study, to enhance the best learning experiences possible, it is essential to make a powerful connection between the learning objectives of the course and the ways of thinking and learning process for responding to the inclusiveness of spaces. If the students get acquainted with various ways of design thinking with the help of diverse learning tools, they might develop a deep-thinking process in experiencing 'multiple intelligences in the design process' (D'Souza, 2007). Emphasizing todays' and even future education approaches, 'Practices', 'Crosscutting Concepts', and 'Core Ideas' are three major interconnecting dimensions (Duschl, 2012). Valuing it, opening the door to diverse intellectual discussions through linking other disciplines had been appreciated during the learning process. Discussions on disability in the products of cinema, art, science, and literature (especially, letters of people with disabilities) in addition to architecture and city planning were involved in the learning process. Instead of explaining the existing knowledge as it was, it was aimed to question the concepts that emerged in the light of these discussions. By this, the students were expected to confront unknown and unrealised facts, concepts, and experiences in life as well as scientific knowledge. In appreciating these ideas, in the aspect of resilient education, flexibly changed ways of teaching were prioritized rather than the static disciplinary ways of it in forming a curriculum.

4.1.1. Curriculum before Pandemic

The course starts with theoretical discussions on the concept of Universal Design (UD) with its definition, historical development, and the context of the UD principles. It was carried out through the collaborative discussions guided by the instructor's presentations, assigned readings, and varied daily life experiences. Below topics in order were aimed to be discussed and understood in depth:

1. The relationship between disability and spatial design with its physical and social aspects;

2. The concept and principles of UD and their development;

3. Examining the relationship of UD philosophy with the concepts of social integration, equal participation, social justice, and sustainability;

4. National and international accessibility standards;

5. Design principles for persons with mobility, visual, and hearing impairments;

6. Inclusive and participatory design methods and approaches.

By addressing this theoretical framework, it was aimed for students to understand and comprehend the place of the concept of Universal Design in the big picture- sustainable design, social sustainability, and quality of life- beyond the point of view reduced to merely disability. Discussions on 'equality' and 'justice' in the city were carried out within the wider context, and the dimensions of spatial justice in terms of different times, scales, and users were discussed. It is thought that handling the UD in this framework will lead to the realization of inclusive designs with a more holistic view.

After addressing the above contexts in the face-to-face class environment, the students were expected to prepare a research report which would display the level of their understanding of the UD philosophy. With the start of urgent distance education, they presented their reports which were evaluated as a mid-term exam with the help of Moodle (the university's learning management system). After that, deficiencies were evaluated and addressed together in an online class.

4.1.2. Transformed Curriculum due to the Urgent Distance Education

The next phase resided the experiential learning process to provide students with the knowledge of the users' real-life desires and preferences in experiencing spaces by 'empathy', 'participatory observation', and 'close dialogue with users'. In this phase, the students firstly experienced in-depth behavioural analysis of their houses concerning the activities, preferences, and limitations of the family members. They were expected to address the relationships of the behavioural patterns of users- each member of their family- and their daily life activities in the house by using participatory observation and dialogue with their family members. This also involved the preferences of the users in highlighting spatial deficiencies and suggestions. Then, utilizing empathy modelling, they evaluated their houses' spatial attributes according to the needs of unfamiliar users, those with total visual loss and a wheelchair. As a result of their experiences, spatial analyses (within three scaled method- deterrent, moderate, and inclusive) and suggested (re)design solutions in UD approach were presented. In each week, the students were expected to share their experiences and thoughts with their analysis and observations. Secondly, they were expected to obtain experiences and thoughts of the person with a visual impairment within the home through an online lesson. The students tried to understand by asking their questions to her how the (possible) situations they discovered through the activity-participation relationship matched their findings.

Two main technical systems to enhance an effective distance learning environment had been used in this process: (1) the university's learning management system already in use, namely Moodle; (2) the software programme, Zoom, for enhancing the interactive virtual learning environment. All information exchange with students, homework delivery, discussions, question-answer process, exams were carried out smoothly through Moodle and Zoom collaboratively.

The course ended with a submission of a research report and its presentation in an online lesson, which was evaluated as the final exam. At the end of the lesson, open-ended questions founded on the question of "which task(s) have been instructive for you to internalize the Universal Design knowledge?" were asked to the students on their whole learning experiences during the semester. Is the empathetic evaluation of their own house enough to learn a universally designed house? and Describe their opinions and learning process involving interviewing with the blind users' experiences? were some following questions in this regard.

Table 2 Hybrid Universal Design Learning Process

	STAGES	STUDENT TASK(S)	LEARNING METHODS& RESOURCES	GAINED KNOWLEDGE
FACE-TO-FACE EDUCATION (Before Pandemic)	**STAGE 1**	-Reading articles (involving those of people with disabilities) -Watching and discussions on a film -Exploring news and social media posts on the experiences of people with disabilities -Interpretations on samples	-Moral reasoning -Interpretation -Critical evaluation -Crosscutting discussion	-Universal Design concept -Quality of life -Social equity, justice, sustainability -Inclusive design approach -Implementation of the design standards in an inclusive manner
DISTANCE EDUCATION (During Pandemic)	**STAGE 2**	Spatial analysis through the family members' house activities covering daily life routines	-Empirical reasoning -Empathy (known users) -Observation -Interviewing -Sketching	-Well-known users' experiences -Diverse body-space and activity-participation relationships in the house -Research methods -Visual and verbal presentation of the findings
	STAGE 3	Understanding the activity-participation pattern of a wheelchair user in covering all possible activities for each user living in the house	-Empirical reasoning -Empathy (unknown users) -Observation -Interviewing -Making comparisons -Sketching	-Imaginary users' experiences -Awareness of and knowing diverse spatial necessities and attributes for a wheelchair user -Research methods -Visual and verbal presentation of the findings
	STAGE 4	Understanding the activity-participation pattern of a blind user in covering all possible activities for each user living in the house	-Empirical reasoning -Empathy (unknown users) -Observation -Interviewing -Making comparisons -Sketching	-Imaginary users' experiences -Awareness of and knowing diverse spatial necessities and attributes for a blind user -Research methods -Visual and verbal presentation of the findings
	STAGE 5	-Exploring the blind woman's experiences in the house with activity-participation aspects	-Interviewing -Empirical reasoning -Making comparisons	- Awareness of and knowing the 'real' spatial needs for an inclusive environment -Recognising overlapping and conflicting design matters in comparing with the findings of their empathetic evaluations (3rd and 4th stage)
	STAGE 6	-Research on the good examples of inclusive houses -Evaluation of a selected inclusive house by applying UD Principles	-Case study -Critical evaluation -Testing spaces with UD Principles	-Exploration of the implementations of Universal Design principles in diverse samples
	STAGE 7	-Propose spatial solutions to make their houses universally designed	-Design thinking -Application of UD Principles -Application of technical standards	-Experiencing UD thinking and design process

5. Evaluation of the UD Learning Process in the context of Resiliency

In Stage 1, it was aimed that students be more active in each course's discussion as critical evaluators and independent learners searching for the inclusive design parameters (Table 2). This gave them having freedom of collective discussion on the Universal Design concept, but not limited to accessibility for people with disabilities. During theoretical discussions, the emerged contexts and ideas were so diverse that technical, physical, spatial, social, and even cultural dimensions were

addressed with various spatial dimensions causing (dis)abling spaces. Designing inclusive built environments needs such a wide-ranging and cross-cutting design thinking process (D'Souza, 2007).

As a task of Stage 2, after transitioning from face-to-face to distance education, the students made a comprehensive analysis of their own houses within the framework of the activity-participation analysis of their family members including themselves (Table 2). Daily life activities differ for each user living in the house, and the design problems and solutions also change. This task formed the basis for the awareness of the diversity in user needs as well as for the following assignments regarding the exploration of different user experiences.

In Stage 3 and 4 (Table 2), they investigated the extent to which a person with a wheelchair and visual impairment could (not) do each activity based on the activity-participation pattern of the house they studied in Stage 2 along with addressing suggested inclusive solutions to spatial deficiencies. Interpreting the axis of movement (circulation route) of a user with a wheelchair and total vision loss comparatively with their current activity route had made it possible to question the attitude and design principles required in the design of a barrier-free house. Students presented their research findings as a) Obstacle (Bad) b) Reasonable (Medium), and c) Inclusive (Good) in terms of activities, barriers for participation, and design solutions (Figure 1, 2).

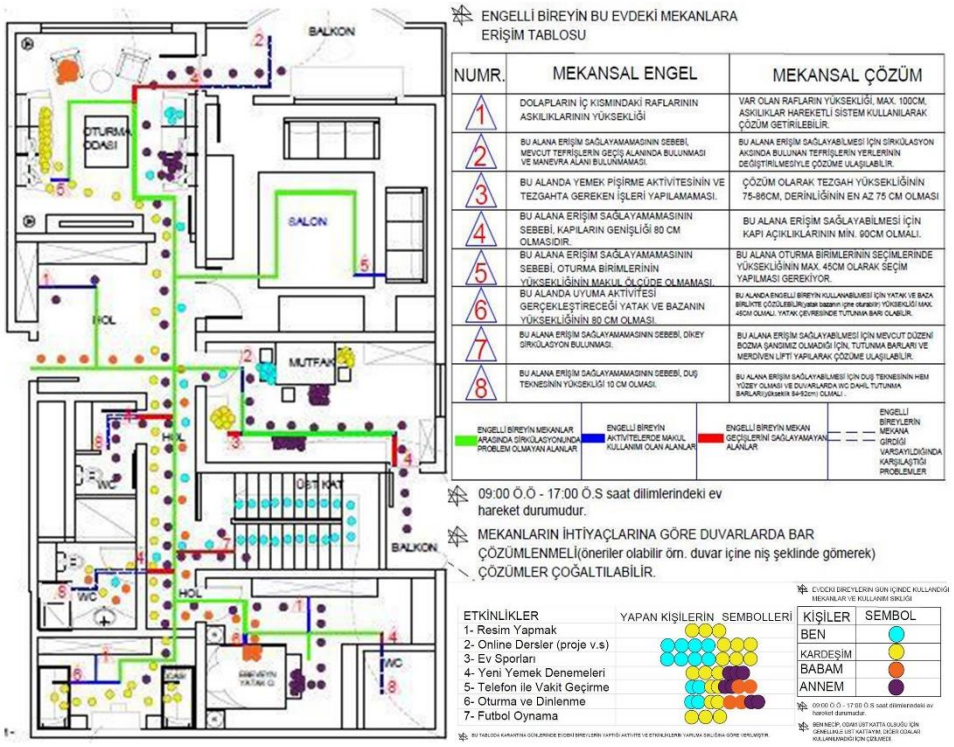

Figure 1 An example of the student's evaluation of his house for users with a wheelchair

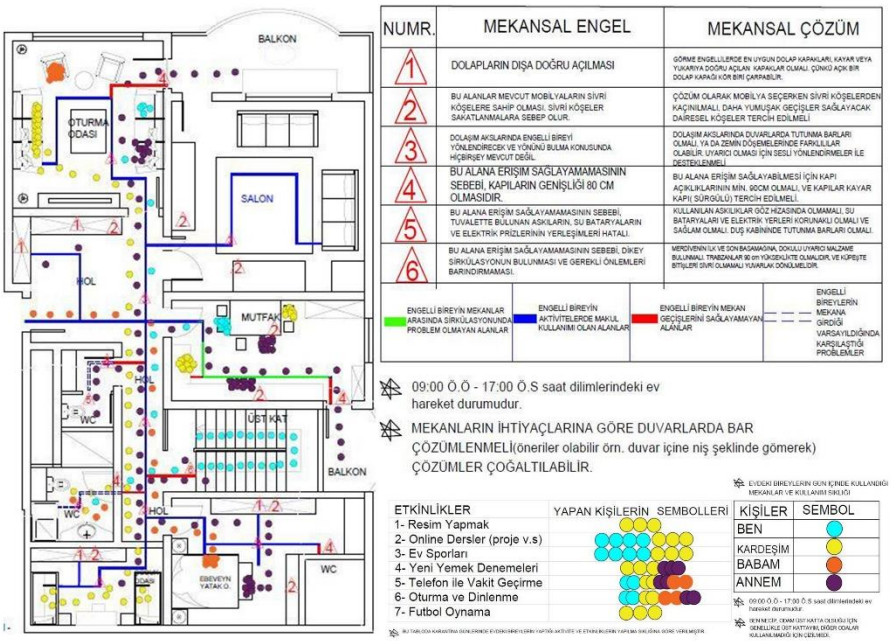

Figure 2 An example of the student's evaluation of his house for users with total vision loss

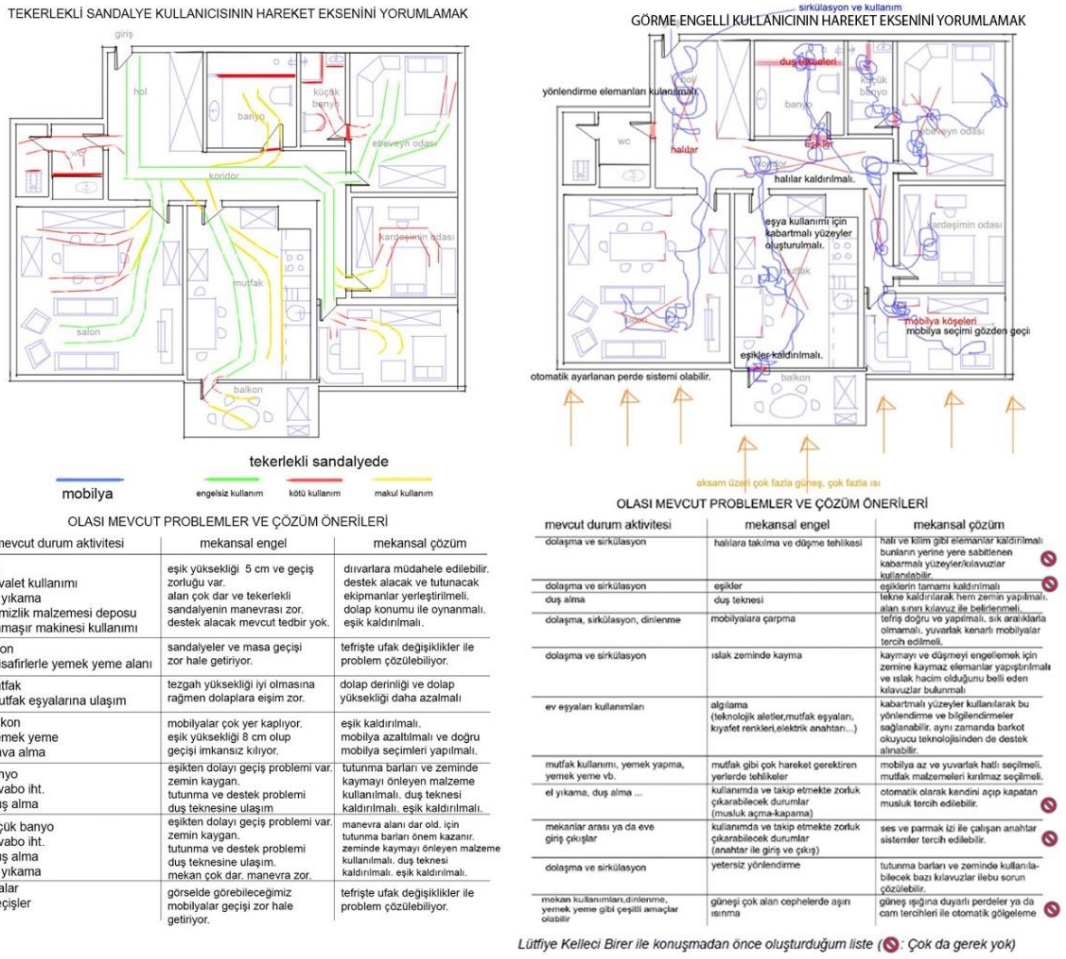

Figure 3 The students revised their analysis after meeting with the blind user

Then, in Stage 5, they met with a 51-year-old woman, blind since birth, in the online course. She lives with her husband and their 12-year-old son in their two-storey residence. During the online

meeting with her, the students were expected to take part in question-driven discussions and analyses based on the real user's experiences. This stage was striking for them. Dialogue with her made the students informed about evidence-based design principles affecting their design decisions (Figure 3). Herein, they saw how their analysis and problem-solving approaches overlapped or conflicted as displayed by their comments below:

> "*After listening to Birer, I noticed that there were differences in my approach… I observed that we could go astray while trying to think about every little detail and produce solutions… It is necessary to determine the order of priority and avoid unnecessary interventions while making interventions to a space… Conversations with the user before starting the design (as we did in our lesson) will strengthen the design... After that talk, I realized about previous works that we, as designers, either overestimate or ignore important things. However, as designers, we need to establish a good balance between the two of them."* (M.B.)
>
> "*The interview gave me perspectives on what the design is, how often it is used, and the identity of the user in a space. I realized again that the first design idea and the site to be examined are important in this regard. Most of what the user said was what I thought and stated in my analysis, I was very happy about this, but I questioned myself about one thing. I realized that there is a problem of over-thinking in a space for the disabled, which is reflected as exaggerated designs. This can complicate the life instead of making it easier*." (E.Ç.)
>
> "*Before listening to our guest, I thought that a blind person cannot live in a house with stairs. Our guest has minimized the danger by taking precautions in a house… She stated that as domestic users, they get used to the house, take the necessary precautions, and that they do not have any problems for themselves as long as the place of everything used is not changed. She stated that they had much more problems outside the home and that they were neglected.*" (C. Y.)
>
> "*No disabled person has problems in places where they are not strangers. This confirmed Mrs. Birer's statements. The important thing for us is to protect them from being a stranger and to organize the place in the simplest way to introduce and guide them easily.*" (G. V.)
>
> "*Before speaking to our guest… my research stated that many precautions should be taken, but after speaking (with her), I realized that we need to take enough and simpler measures rather than overprotective ones.*" (P. İ.)

It can be concluded from the students' viewpoints that comparing their own experiences with the real user experiences caused them to critically evaluate and develop their studies. Through this dialogue, they saw that empathetic evaluation of their own house was not enough to (re)design a universally designed house. They grasped the UD principles of equitable access, simple and intuitive use to a great degree. They learned that optimum satisfaction of important safety requirements for all of us can provide a fair and liveable environment for the blind persons. In this context, ensuring the diversity of the dialogue environment, especially with the users of spaces, had a crucial impact on the success of distance education, which constructed a resilient learning environment in responding to the targeted knowledge acquisitions of the course.

Lastly, in Stage 6 and 7, they explored an inclusive house that they wanted to examine and made a comparative evaluation with their findings and UD Principles. In conclusion, they proposed inclusive design solutions to make their houses equitably used for all (Figure 4).

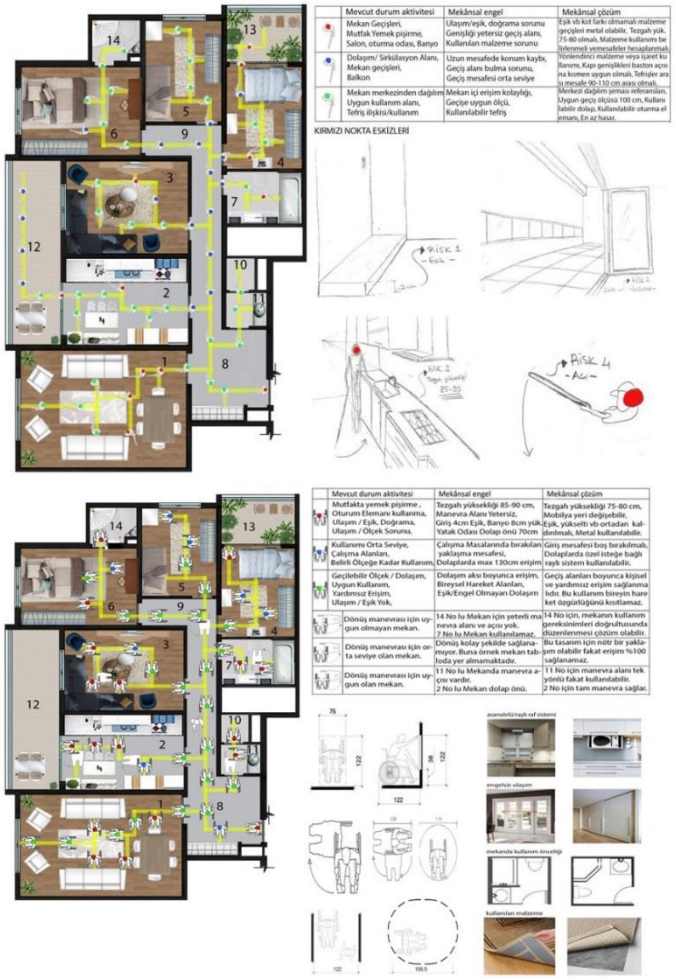

Figure 4 An example of the student's evaluation and inclusive design suggestions on her house

At the end of the course, all 16 students answered the question- "which task(s) have been instructive for you to internalize the Universal Design knowledge?". 15 out of 16 students, none of whom had communicated with a blind person until that time, stated that the lecture with the blind user was very impressive and informative about designing inclusive spaces. The other student indicated that he agreed with this idea and that it was also very beneficial for him to research exemplary inclusive houses.

For students, the most striking, effective, and permanent information emerged after meeting with the user with total visual loss. The students, who made some spatial suggestions after previous written, visual, and sensory experiences, seriously questioned their decisions when they met with her. This emphasis was that measures that are far from extremism and that are 'normal' for all, especially for security purposes, can adequately improve the house life for a blind individual. The students' statements widely display that they had vital knowledge of the design approach for universally designed built environments when they obtained the users' real-life experiences. It has been seen that the knowledge experienced with empathy is critically questioned and even this knowledge paves the way for propositions that lead to excess in design. Of course, meeting with a single user is not enough for designing an inclusive house. However, it is believed that they gained the knowledge and experiences of the inclusive design thinking process. In this sense, although a wheelchair user was not interviewed within the context of the lesson, it could shed light on hearing diverse user experiences, questioning their findings, and using an inclusive design approach to reach the best equitable spatial solution.

The UD learning in the hybrid education process allows the students to recognise the rational design thinking process which covers diverse evidence-based evaluation processes. Knowing how

to manage the inclusive design process will be the greatest help in how to reach the best inclusive solution to any design problem they encounter in their professional life. Universal design assessment has a very important issue, which significantly affects creation of the spatial environment within the framework of the UD philosophy (Preiser, 2010). Especially when we look at the current design and application practices in Turkey, there are serious deficiencies in the evaluation of spaces according to the UD approach. Either incomplete or excessive accessibility practices can inhibit the design of equitable and safe spaces for everyone (Dinç Uyaroğlu, 2015). For this reason, it is thought that learning comprehensive spatial analysis methods and processes within the scope of the Universal Design course will significantly support the creation of inclusive spatial environments. Focusing on the "research/design by experiencing" instead of "design by doing" in the distance education process has been a profitable process in sustaining resiliency in design education. This study argues that the experienced UD learning process would equip students to transfer their ideas to the analysis of other design problems and processes in different cases.

It is no longer possible for post-pandemic normalization to bring about the same situation as in the past. Many conveniences, easy access to various sources, remote access to the classes or meetings, etc. taught by the pandemic have already settled in our education life, but the subject of learning by "sensing and experiencing in reality" for problem-solving and decision-making process will always remain at the desired point. This study agrees with the fact that the processes and experiences discussed in distance architecture education cannot be as successful as learning by doing/sensing within a real educational community setting (Cengizkan, 2021). Nonetheless, focusing on the experienced adaptive and transformative acts responding to the challenges could develop the learning process to the greatest extent possible.

6. Conclusion

Experiencing a process in which the Universal Design philosophy is internalized and dominated from the beginning to the end of the design process and during the implementation phase, instead of only complying with the design standards required by the law, will provide the formation of real inclusive spaces. However, as proven by the lived spaces in Turkey, accessibility can be thought of as a design issue that can be easily handled without the dialectic approach by applying existing standard knowledge superficially. The fact that it is not included in the education curriculum or emphasized in the learning objectives of the courses, especially design studios, may exclude the sufficient discussion of the UD concept. This narrow point of view can cause UD principles to be evaluated in a shallow perspective and thereby, can reduce the design-for-all approach to a separate 'disabled' ramp.

The Universal Design (UD) course based on equitable access and democratic life in the built environment is needed to develop students' socio-environmental responsibility by acquainting them with learning tools for analysing and evaluating the social, economic, and environmental circumstances (trans)forming our spatial world. In this way, it supports to make them informed and took decisions even with incomplete data and under uncertainty and contradictions. Sharing this responsibility in all interior architecture curriculum can lead students/professionals socially, politically, economically, and ethically in a complex world. In parallel with the ethical stance in the content of the course, it should be resilient to respond flexibly to any situation experienced during the education process.

For the resilient interior architecture education, it is necessary to create a program that will answer the questions (a) how Universal Design knowledge is veritably embedded in the interior architecture education curriculum and integrated into the learning and design process and (b) which learning tools can increase the knowledge acquisition and awareness on various ways of design implementations. The development of intellectual, behavioural, and practical attitudes of interior architecture students, who will be responsible for the formation of inclusive spaces of the future, should be the focus of the curriculum to answer these questions. The knowledge

acquisitions of this thinking and design process are two of the primary issues in the dominance of the UD philosophy in design. In these aspects, this study aims to contribute to the formation of equitable spaces of the future by focusing on 'empathy', 'participatory observation', and 'close dialogue with users' in the UD learning.

Interior architecture education cannot be rootedly sustained without experientially interacting with the users, spaces, and environment. It is important for a resilient education that the curriculum has flexibility to involve required contents, learning models and processes opening up multiple dialogues among them so that the education and learning process could be conducted with the least loss in case of any difficulty. For the formation of more liveable, fair and sustainable environments, there is a great need for future studies on the UD learning tools, methods and processes in both face-to-face and distance architectural education. Adaptation to any transformative process can make the students prepared for deciding on critical issues responding to the quality of community life and protection of natural environment.

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Resume

Ilkay Dinç Uyaroğlu received BArch degree (2004) from Selçuk University, being awarded first-class honors. She earned her MArch (2008) and PhD (2015) degrees from the Department of Architecture, Middle East Technical University where she had extensive research and teaching experiences (2005–16). She has been conducting architectural design, basic design, interior design, and universal design courses since 2016. Her current research interests include architectural education, social sustainability, social inclusion, participatory design, and universal & inclusive design. Since 2020, she has been working as an Assistant Professor at Ostim Technical University Faculty of Architecture and Design.

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Village institutes as a design approach

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Ali Osman Asasoğlu**

Abstract

At a glance, architectural space or architectural product is the name given to the artificial shell of actions arising from human needs. These needs range from basic expectations, such as protection, shelter, and production which are necessary for human life, to expectations which require more complex intellectual infrastructure such as culture, belief, and lifestyle. In this study, possible intellectual, architectural approach and design method preferences in Village Institute buildings as architectural products are examined and their contributions to architectural project education are discussed through project work examples. Within the scope of the study, the understanding of education and architecture of the village institutes were examined and possible inferences and concepts which would form the basis of the design were tried to be determined with the help of publications in the literature focused on these subjects. Further, it is aimed to question the relationship of these concepts with those produced in the architectural project studio. The design study subject of the article was carried out in the 2018-2019 Fall Semester at the Department of Architecture at KTU. The first step in the process is turning the inferences and concepts obtained by the executives into a set of information which shall be, eventually, compared with the student project work. This set is retained by the executives for discussion in the article. The second step is the literature research of the students about the project topic and location. Each student reached some concepts from the field and Village Institutes where Trabzon/Beşikdüzü Village Institute was located in the past and advanced his/her design studies through these concepts. Within the scope of this article, the concept sets obtained by the executives and students were compared and discussions were made on overlaps and divergences by associating the aforementioned two steps, and a theoretical framework was formed which was graphically formed.

Keywords: context, design education, reading concepts, studio concepts, village institutes.

1. Introduction

The choice of the project topic in architectural education is a prerequisite for a creative process that the student and the advisor can internalize together. Therefore, when choosing a project topic according to the semester, the advisor should be as creative as the students in the project design process. For this reason, the choices made depending on the expectations of the semester are very important and it is even meaningful to make choices that are educational not only for the students but also for the advisors.

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In this context, the project topic chosen for the 6th and 7th Semesters at the KTU Architecture Department in the 2018-2019 Fall Semester should be concepts such as “Meaning”, “Context”, “Place”, “Functional Diversity”, “Environment” as of the “Program Learning Outcomes” required by the semesters and should also be a topic adequate enough to establish the relations among themselves. In addition, additional concepts or titles such as “Art”, “Craft”, “Design”, “Learning”, “Making”, “Production”, which could relate to the aforementioned concepts, and where the professions they would acquire formed intersections should have been included in the study subjects. All these concepts and titles led the advisors to choose the “Faculty of Fine Arts”, which is an educational structure, as the subject, and the former “Trabzon/Beşikdüzü Village Institute” as the place. Thus, while the subject responds to the "Education" subheading in terms of its nature, its physical and semantic boundaries are drawn with its current environment and ruins as the preferred “Place”.

The location of the subject is the area where one of the Village Institutes that has a very important place in the education history of our country was located and which is currently used as Anadolu Teacher High School in Trabzon/Beşikdüzü district. It is thought that the fact that a new education structure will be designed on site in one of the Village Institutes, which is one of the basic education stones of our country, will be an important data for the aforementioned student and executive to internalize the subject.

Facts such as “The education-teaching setup in the Village Institutes as an important factor in shaping this project”, “the use of space at the time of the institute, depending on this setup including some clues in terms of guiding the designer” and most importantly, “the village institute education-training spirit continuing its traces in the area to be studied” are one of the most important factors in choosing this topic.

While advisors were doing literature research, inferences and conceptual studies on the Village Institutes during the project process, the students were asked to do research on the intellectual structure of the Village Institutes, its establishment purpose, objectives, architecture, understanding of space and the chosen place Beşikdüzü and also, they were expected to reach concepts which would drive the design upon the aforementioned researches.

In this article, rather than conveying a project process or method, it has been aimed to analyze the overlap of the concepts determined about Village Institutes with the concepts in student studies through literature readings.

The method carried out in scope of the article can be explained in two stages. The first stage consists of transforming the theoretical knowledge obtained by the lecturers from the text readings into a conceptual construct, and the second stage consists of evaluating the projects in terms of the concepts generated by the students. This evaluation is not made to measure success in projects. The projects were evaluated in the form of classification of the concepts generated by the students.

From this point, it is aimed to understand the contribution of tools such as the education system, places and setups of Village Institutes to design education. This contribution should be considered in the context of the instruments in question. The unique aspect of the study is that the relationship of village institutes with design education as a tool has not been discussed before.

At this stage, it was necessary to examine the education system of the Village Institutes first and then the spatial configurations of the institutes.

2. Overview of Village Institutes and Education System

In this study in which he examined the Village Institutes in the development process, Saka (2010) said, “The phenomenon of village institutes is a social development project that started in rural areas and looks at the development problem wholesale, rather than a simple and plain primary

education campaign", whereas he summarized the point of view of the institutes on the education of the Republic of Turkey at that time and emphasized the concept of holistic education, (Saka, 2010, p.107).

As it is known, Village Institutes are a bright reflection of the Republic's view of education and were established by Law No. 3803 on April 17, 1940. The efforts of then President İsmet İnönü, Minister of National Education Hasan Ali Yücel and İsmail Hakkı Tonguç, who was appointed as the General Directorate of Primary Education, are very important in the establishment of Village Institutes, (Köy Enstitüleri Kanunu, 1940).

Considered a utopian of education Tonguç (Özsoy, 2008) explains the education principles of the Village Institutes under 7 clauses and expresses his opinions on education as following: "Tomorrow, tens of thousands of young people who will graduate from the Institutes by learning various professions and gaining these weapons will be dispatched to the most desolate villages, travelling to the most remote spots of the country… Through them, these values will be appropriated to the nation, and with the material they will prepare, a new nation will be born, alive and kicking, that we miss…" (Tonguç, 1943, p.147).

The steps taken in education with the Republic are actually the results of an enlightenment. Özdemir summarizes this matter: "The aims and educational expectations of the Turkish Enlightenment, whose roots go back to the middle of the 18th century in Turkey, and which experienced its most productive period with the establishment of the Republic, are basically no different from the goals and expectations of the Western Enlightenment", (Özdemir, 2008, p. 48). Özdemir also defines Turkish Enlightenment with the terms; reason, science, secularism, the importance of the individual, social progress, freedom of thought and press etc. (Özdemir, 2008). These statements somehow summarize the social attitude of Village Institutes.

Ülkü (2008), on the other hand, referring to Özmen, said, "İ. H. Tonguç, theorist and founder of Village Institutes was influenced by the opinions of western researchers such as G. Kerschensteiner, J. Dewey, H. Pestalozi., F. Frabel, F. Kirby as well as pedagogues such Satı Bey, İ. Mahir Efendi, Edhem Nejat and İsmail Hakkı Baltacıoğlu", (Ülkü, 2008), (Özmen, 2004). In this context, it can be said that the educational philosophy of Village Institutes has been shaped by the contributions of valuable thinkers and educators.

It is mentioned in various sources that the American educator John Dewey was invited to Turkey during the establishment of the institutes and was asked to prepare a report. In this report, Dewey pointed out on issues regarding village schools such as "the way of training teachers should be in line with the needs of farmers, which is the basis of village life, and schools should be built quickly in villages" [1] (Yıldız & Akandere, 2017).

Baykurt (1997) summarizes the "Principles which make Institutes 'The Institutes'" under 8 topics. These principles are "equality in opportunities and chances", "professional education", "codetermination of students", "devotion and altruism", "continuation of self-learning", "year-round education", "making everyone successful" and "coeducation". He replies the question "How to benefit from Village Institutes education today?" as following; "We have to apply the principles, understanding, methods and teaching techniques of Village Institutes in all our educational institutions from primary school to university… The closure of the institutes after ten years of practice was more than anything a great loss for our democracy, which has been stuck in a

[1] Cited from; Yıldız ve Akandere (2017);
John Dewey, Türkiye Maarifi Hakkında Rapor, T.C. Maarif Vekilliği Ana Programa Hazırlıklar, Seri.B, No.1, Devlet Basımevi, İstanbul, 1939, ss.19-22.
Mustafa Şahin, "John Dewey's Influence on Turkish Education System in the Early Republic Era", *European Journal of Education Studies*, V.3, I.6, Kosova, pp.622-632.

stalemate for 50 years", (Baykurt, 2021). Apart from the principles mentioned herein, it is possible to come across many principles, understandings and schools that define Village Institutes.

The education approach of Village Institutes adopts the principle of "learning by doing and experiencing". This concept is encountered in most of the studies related to the institutes, (Saka, 2010, p.107), (Batır, 2012).

This model, as known, is the most basic teaching of the Bauhaus School. One of the principles summarized by Walter Gropius in the school that gathers all branches of art under one roof is remarkable within the scope of this research. Gropius states that among these principles, the education system is "participatory" and emphasizes that educators and students "work and produce together", (Erzen, 2009).

Tonguç met the Bauhaus school while he was studying in Germany, and this is one of the important reasons why the education approach in Village Institutes shows such a similarity with the Bauhaus school, (Tonguç 1997), (Ülkü, 2008). In this sense, it would not be wrong to say that Bauhaus which reckons "holistic art" and the Village Institutes based on "co-production" meet on a common ground.

Köksal (2009) sees the Bauhaus as the model that the Republican intellectuals feel closest to among the modernist movements in Europe. She considers Bauhaus "a pedagogical thinking model in which the entire design process can be experienced and observed". And she states that this model offers a healthy modernity to the intellectuals of the Republic, who are trying to establish a new model for themselves, because it brings together creativity and technique, aesthetics and reason, revolutionism and constructivism. (Köksal, 2009).

These similarities in the Bauhaus notions and the educational approach in Village Institutes are not a coincidence. Because both systems of thought aim to reach the most progressive, constructive and educational solutions of their age. Just like in Village Institutes, Bauhaus proposes a "socialist mode of production". Beyazova explains this similarity as following; "It is possible to discover the common points of the Bauhaus model with the Village Institutes and to identify the needs of the new order. Just like in the Bauhaus model, the institutes aimed to harmonize with the modern world with sensitivities such as the unification of art and craft, the elimination of the artist's sacred distinction between the craftsman and the prevention of 'degeneration of products in the transition to industry', which should be emphasized. Another interaction relates to the way of teaching; rote learning has been abandoned, the behavior aiming to learn by doing, encourage instead of obligation, and make the person self-actual has been dominated", (Beyazova, 2012).

In Village Institutes, lessons were given in every field of art, and the lessons were formed from branches of art such as painting, music, theater, folk dances, handworks and handicrafts. Teachers trained in Village Institutes, where art education was highly valued, were asked to adopt the principles of "flexibility and independent education" in their education methods while conveying their art education. (Elpe, 2014).

Another important literature information in terms of education philosophy is Gezer's statement that İsmail Hakkı Tonguç's education philosophy for Village Institutes based on Pestalozzi is relies on 3 principles. These principles are classified as "creation", "production" and "consumption". Under these three concepts, there are detailed explanations that reveal the view of the Village Institutes towards education, (Gezer, 2006, p.86).

Stating that in the years when the institutes were founded, it was not even thought that the "system" theory could be applied to the field of social sciences yet, Başaran (2004) says that the organization of Village Institutes is surprisingly appropriate for this theory. He claims that the five elements (objective, environment, input, process and output) required to comply with the systems theory overlap with the institute setup, (Başaran, 2004).

The innovative approach of Village Institutes in the field of education may contain much more meanings/concepts/facts than summarized herein. However, within the scope and limits of this study, it has been deemed sufficient to express the intellectual concepts related to the philosophy of education with the terms mentioned here. Of course, there are other concepts that express the Village Institutes and the understanding of education; revolution, enlightenment, democracy etc. However, within the scope of the article, those who can be inputs to the architectural project were preferred. These concepts, which were determined by using the literature during the project work process to be used in the article can be summarized as "participation, learning by doing, learning by living, working together, producing together, holistic art, flexibility, independent education, system, devotion and altruism" (Table 1).

Table 1 Concepts Achieved from Education System Readings: Intellectual Concepts.

intellectual concepts	participation learning by doing learning by living self learning working together producing together holistic art flexibility independent education system devotion altruism

At this stage of the study, it is important to mention the architecture and space understanding of Village Institutes and to reach some concepts in this context, in order to compare them with the concepts in student projects.

3. Architecture of Village Institutes

In addition to its contemporary approach in education, the achievement of architectural projects of Village Institutes through competition shows that the architectural profession, which is not appreciated enough even today, is given the necessary value, and spatial arrangements appear as a product of the same progressive view. Summarizing the project and construction phases, Tonguç said, "The layout and building plans of Village Institutes are obtained through competitions between the architects of the country. According to these projects, roads, buildings, water, electricity and sewerage installations are carried out by the students in the form of course practices and trainings" and also emphasizes the effort of the students in the construction phase, (Tonguç, 1943, p.145).

Makal (2004), on the other hand, underlines the overlap between the education and architecture understanding of the period with the title "meeting on the same principle in the search for architecture and education". He states that as a result of the intersection of the reaction towards the domination of foreign architects and the search for an architecture specific to the conditions of the country (Second National Architecture Movement) and the search for an education suitable for the conditions of the country in the same year, an area where architects could reveal themselves emerged with Village Institutes. Thus, the institutes were also seen as an area where the architects who took part in the Second National Architecture Movement could present their thoughts and approaches, (Makal, 2014, p. 23).

The architectural project competition of Hasanoğlan Village Institute, which is one of the best-known examples regarding the announcement and conclusion of the competitions was published as following: "… The competition related to the preparation of preliminary projects of the buildings

to be built for the Village Institute, opened in Hasanoğlan village of the city of Ankara and the detail drawings to be prepared by the architect who will win the first place is ongoing in form of competition being open to all architects of the nation from May 23, 1941 to July 03, 1941…", (Arkitekt, 1941). Later, the winners of the project were announced to the public with the announcement: "The Hasanoğlan Village Institute project competition was concluded, the first place among the participating projects was the joint project of Master Architect Associate Professor Kemal Ahmet, Associate Professor Orhan Safa and Adnan Kuruyazıcı, and the second place was won by Professor Sedat Hakkı's project", (Arkitekt, 1941).

It is stated in various sources that, in general, the common basic units of each institute consist of: "dormitories, mess halls-kitchens, laundries-bathrooms, open-air wash taps, field toilets, infirmary, ovens, cooperatives, barns, corrals, studs, poultry houses, apiaries, fish houses, water tanks and pools, various warehouses, power plant, vineyards, fields, nurseries, groves, flower beds, various agricultural areas, administration rooms, teacher's houses, classrooms, libraries, laboratories, ateliers, music, theater and meeting halls, sports fields, practice areas, playgrounds" and similar spaces. (Türkoğlu, 2000, p. 202), (Çetin & Kıran, 2019).

It is known that one of the important concepts put forward in the architectural program of Village Institutes prepared by Tonguç is the concept of "cluster". A structure with training, accommodation and service spaces is envisaged for each cluster, (Çorakbaş, 2014).

According to Kirby (2019), "cluster" is basically an administrative unit and is seen as a phenomenon that affects the structuring of the institute. In some institutes, cluster units formed the architectural basis of the institute. Kirby says that the institute's making these buildings is a good mix of architectural science and pragmatic village architecture. (Kirby, 2019).

According to Baysal (2012), clusters are defined as "dividing a large population into work and education programs in groups" and while it combines daily life and education, it is foreseen that many small-scale buildings with the same function are planned instead of large and single buildings", (Baysal, 2012, p. 143).

The understanding of education in Village Institutes is based on the experience of establishing the space together. In an article describing the educational life of graduates from the institutes, Karakuş emphasizes the students' experience of establishing a space and also includes Ömer Faruk Diril's statement in this respect: "… We tied the trusses together in such a way that those who saw were astonished. We had completed the roof and laid the tiles by restraining it completely on opposite walls without placing any poles…. We had reached the goal. All students started to eat our meals together, and on weekends we held our meetings and conferences in our cafeteria…" building construction also means the construction of life. Karakuş summarizes this situation as follows; "Village Institutes also set an example for the social production of space, new structures that are shaped entirely by their own needs, designed by Hungarian master builders, built by students and transforming the practices in their daily lives, are spaces where they feel belonging to", (Karakuş, 2017). The concept of "belonging" mentioned herein draws attention as one of the most basic and vital concepts in the field of architecture.

Şimşek and Mercanlıoğlu, point out that Village Institutes, which also have a progressive understanding in the context of planning, are the product of a planned approach, and present an evaluation of 21 items in which these indicators are listed. (Şimşek & Mercanlıoğlu, 2018). In the study where the general principles related to the location were summarized as "Far from cities but close railways and other main transport routes and located in villages with large public domain convenient for reclamation", it is observed that some of these indicators step forward. Among them, those that concern the field of architecture can be quoted as; "campus model", "the fact that they shall not only be an education space but also living spaces", "being interaction environments covering all workers", "priority of culture and art activities", "collective production" and "being indigenous".

To give an example on the subject of site selection, Kocabaş cites the qualifications of Ortaklar that were influential in his selection for the institute, from the official letter of Hamdi Akman dated 1943 to İsmail Hakkı Tonguç: “The facts that the land, which is 3 km away from Ortaklar village, is close to the Söke railway, that the Naipli Stream flows in the middle of the land, that there is a hot spring on its edge, that the ruins of the ancient city of Mağnus (Magnesia) are located near the land, that it is suitable for all kinds of agriculture and the private parts of the land can be easily expropriated, stands out among options.” Considering the current location of the land, Kocabaş says that these qualities continue, and the fact that it is 21 km away from the Ancient City of Ephesus and Selçuk reinforces the importance of its location, (Kocabaş, 2014, p. 225).

Saying that “the activity of a community on a certain section of the space creates the space”, Lefebvre (2014, 67-68) almost talks about Village Institutes in the context of space-human duality. Confirming this, Karakuş (2017) states in a study they conducted with graduates of the institute that they perceive their school place as “a new home”, “establishment of a common identity”. Further, he explains that the students are aware of the fact that they start to change both the physical environment and life with their studies and that they remember this with all their vitality today, with the relationship of “space and memory”. He considers the concept of cluster which is mentioned I many sources the “establishment of a common identity”, (Karakuş, 2017).

It is possible to reach other sources, detailed drawings and photographs on the architecture of the Village Institutes. Within the scope of this article, it is thought that the concepts produced about the institute spaces are sufficient. These concepts can be summarized as "campus, cluster, living spaces, home, place, space and memory, interaction environment, culture and art, being indigenous, common identity".

Table 2 Concepts from Architectural Space Readings: Spatial Concepts.

spatial concepts	campus cluster living spaces home place space and memory interaction environment culture and art being indigenous common identity

If the intellectual and spatial readings that make up Table 1 and Table 2 are summarized in a conceptual setup within the scope of this article, it is thought that they can be arranged as shown in Table 3.

Table 3 Conceptual Framework from Village Institutes Reading

conceptual framework: intellectual and spatial	creation / production / consumption	belonging	intellectual concepts	participation learning by doing learning by living self learning working together producing together holistic art flexibility independent education system devotion altruism
			spatial concepts	campus cluster living spaces home place space and memory interaction environment culture and art being indigenous common identity

At this stage of the article, it was deemed necessary to give some spatial and historical information about the Trabzon-Beşikdüzü Village Institute which is the subject of the semester project.

4. Trabzon-Beşikdüzü Village Institute: Past and Present

The opening years of 21 Village Institutes are between 1937 and 1948. According to this information, Beşikdüzü Village Institute was established in 1940 in the Vakfikebir district of the province of Trabzon, (Akar, 2011, p. 21).

Gazalcı states the establishment date of the institute as July 08, 1940. The Beşikdüzü Village Institute has 645 graduates. It is known that Tonguç said to Arman, the director of the institute, "Your field is the Black Sea, you will use it" because the institute did not have enough land when it started education, (Gazalcı, 2021).

In his article, Makal mentions that the winner of the Beşikdüzü Village Institute competition is stated as Master Architect Ahsen Yapanar, (Makal, 2014, p. 23). However, in the article of Çorakbaş and Atalay describing the institute, Asım Mutlu is also mentioned as an architect in addition to Yapanar. It is also stated in the same article that none of the buildings constructed upon the architectural project competition of the Beşikdüzü Village Institute have survived, (Çorakbaş & Atalay, 2017).

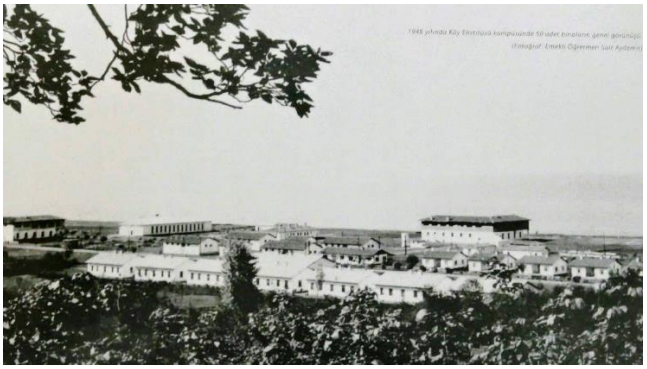


Photo 1 View of the Beşikdüzü Village Institute Campus in 1948, (URL 1).

Photo 2 Children Learning to Play Violin at the Beşikdüzü Village Institute, (URL 1).

Regarding the Beşikdüzü Village Institute, its architecture and spatial transformation in different periods, Çorakbaş and Atalay's article titled "Beşikdüzü Village Institute: Destruction of Spatial Memory" can be examined in detail. This process can be briefly summarize as following;

- The campus had a total of 4 periods and the constructions were built in the lower periods of the 1st period (1A, 1B and 1C), (Figure 1),
- The architectural project competition was announced in 1940,
- The first building was constructed according to the project in 1942,
- It settled in its own area borders in 1948,
- The buildings were used for purposes other than their functions in different periods,
- The institute campus was registered in 1999,
- With the recent demolitions, the last remaining structures from different periods of the institute were also demolished, (Çorakbaş & Atalay, 2017).

Figure 1 Map showing the Beşikdüzü Village Institute Buildings and Periods, (Çorakbaş & Atalay, 2017).

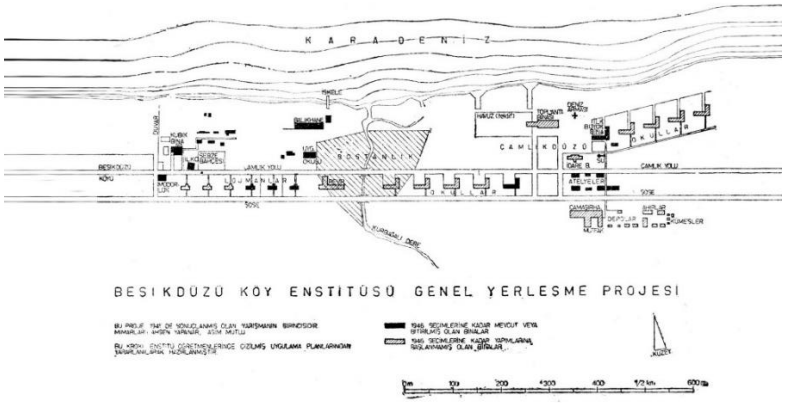


Figure 2 The Beşikdüzü Village Institute General Layout Project, (Çorakbaş & Atalay, 2017).

It is observed that the teacher lodgings, which are among the important buildings in the Village Institute, were built in the “serander” building typology specific to Trabzon and all of these buildings have been demolished today. It is also understood that later on, these structures were rebuilt with a different function in 2014 by the decision of the Trabzon Regional Conservation Board in 2000, but they did not adhere to their original form and could not convey the architectural value of the original structures. Çorakbaş and Atalay make suggestions for the future by saying that the spatial memory that carries the "spirit of the place" has disappeared, and they offer their ideas by saying that some projects can be developed to compensate for this loss, (Çorakbaş & Atalay, 2017).

Photo 3 A View of the Beşikdüzü Village Institute Lodgings, (Çorakbaş & Atalay, 2017).

Photo 4 The reconstruction of the Beşikdüzü Village Institute Lodgings in 2014, (From Beyza Atalay’s Archieve, 2016).

The Beşikdüzü Village Institute continues to serve as the Beşikdüzü Anatolian Teacher High School since the 1989-1990 academic year. The institution, which provides education with mostly new buildings, also has a place where the years of the institute are exhibited under the name of “The Village Institute with Photographs”.

After this brief introduction, the main idea of the project process and the article, which is carried out on the concepts obtained from the readings and the concepts produced by the students, is conveyed.

5. Studio Process and Conceptual Relations

It was previously stated in the 2018-2019 Fall Semester KTU Architecture Department 6th and 7th Semester that the Beşikdüzü Village Institute was chosen as the place in the project process and the Faculty of Fine Arts was chosen as the subject.[2] What is expected from the 6th and 7th Semester project in the Department of Architecture at KTU can be summarized as the acquisition of competence by students in the evaluation of the urban context, and the transfer of social and functional traces to architecture. The process can be carried out by group teachers in different ways. However, the common goal is to gain this competence to architect candidates.[3]

Within the scope of the article, it is not aimed to describe a project method or process. Because there are many studies produced on this subject. Within the scope of this article, the role of subject selection in guiding the designer and the importance of the “village institute” phenomenon in guiding the design was aimed to emphasize. For this reason, the institutes were read from different perspectives by the advisors, and it was questioned whether the concepts obtained were related to the concepts in the student projects. From this point of view, it can be concluded that the stronger this relationship, the more accurate the choice of subject.

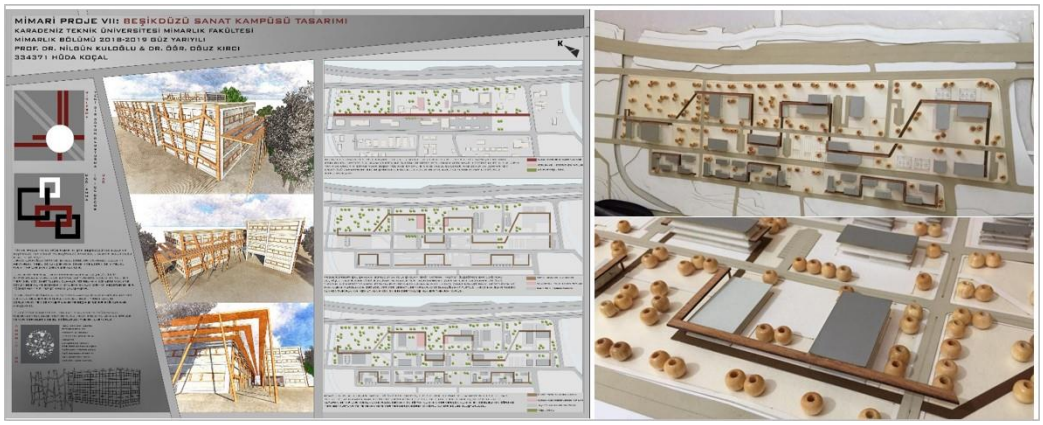
In this section, student projects are introduced in terms of their conceptual approaches. What is meant to be understood is the relationship between the concepts produced by the students during the research phase and the concepts determined by the advisors through the readings, depending on the "village institute" phenomenon.The map of the study area is shown in figure 3.

Figure 3 Study Area and Its Surroundings on Google Earth Image Prepared by the student: Fatma Zehra Yüter

Projects selected to determine the relationship between concept clusters and brief explanations are shown in Table 4-10.

[2] In this semester project, the subject of “Faculty of Fine Arts” was studied by a part of the class. Within the scope of the article, examples from the work of 2 groups are given. The projects exemplified herein were selected among the groups of Prof. Dr. Ali Asasoğlu & Research Assistant Barış İlban and Prof. Dr. Nilgun Kuloglu & Dr. Student Oğuz Kırcı who are also the authors of the article.
[3] For information, please refer to: KTU Faculty of Architecture, Department of Architecture Educational Outputs. http://www.katalog.ktu.edu.tr/DersBilgiPaketi/generalinfo.aspx?pid=263&lang=1

Table 4 Hüda Koçal, Faculty of Fine Arts Design. Concept/Concepts: Unity/Bond/Bonding



The reflection of the selected concepts in the study to the space is aimed to determine the relations between the masses to be provided with the semi-open cover element that covers the entire space.

Table 5 Elif Barbaros, Faculty of Fine Arts Design. Concept/Concepts: Trace/Belonging/Unity/Solidarity

The reflection of the concepts chosen in this project on the space is seen in the settlement decisions and the distribution of the space types within the land.

Table 6 Fatma Menteşe, Faculty of Fine Arts Design. Concept/Concepts: Memory Spaces/Spirit of Place (Genius Loci)

In the project, the reflection of the concepts to the space was sought in the memory of the place. The elements and spatial formations that the place reminds us are tried to be followed.

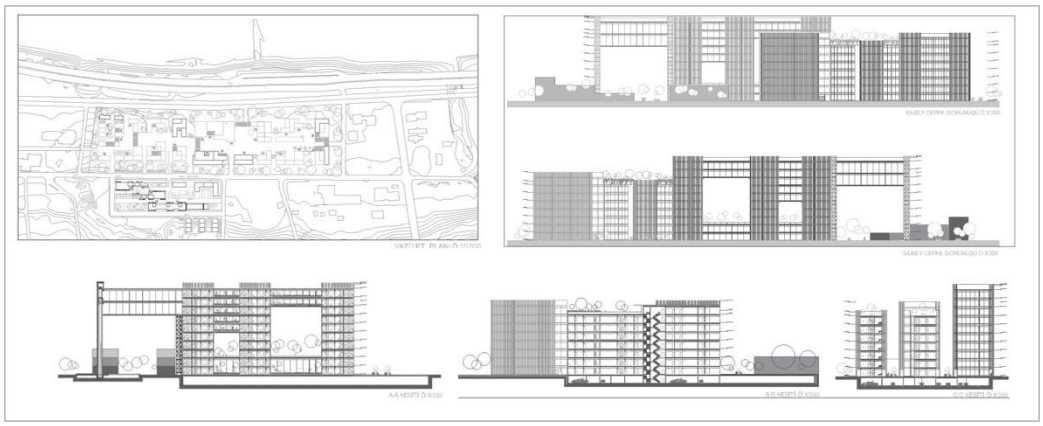
Table 7 Ramazan Özbek, Faculty of Fine Arts Design. Concept/Concepts: Association/Communication

In this study, it is aimed to ensure the reflection of the concepts to the space, mass relations and the location selection of the masses on the area.

Table 8 Elif Baykal, Faculty of Fine Arts Design. Concept/Concepts: Involving/Comprehending/Context

The contextual relationship established with the city is aimed to be in an inclusive and inclusive order. Context was seen as a phenomenon that should be conveyed to the future.

Table 9 Elif Zümrüt, Faculty of Fine Arts Design. Concept/Concepts: Union of the Contrasts/Emphasis



The project achieves its relationship with the context by making use of the third-dimension opposition. It was requested that the relationship with the context shall be terminated with emphasis and conceptual implications were evaluated in this sense.

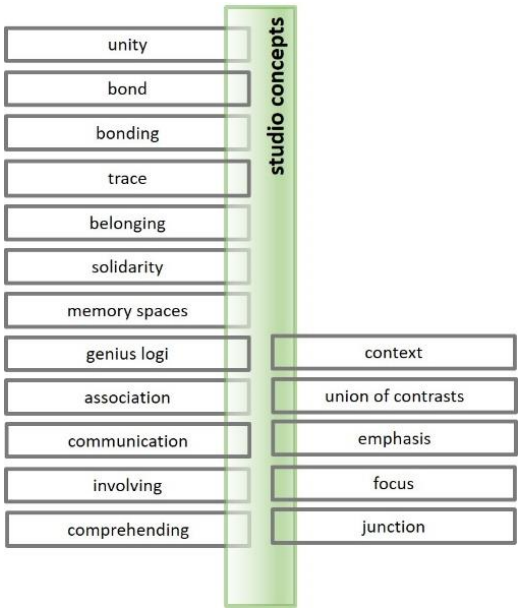
Table 10 Yasemin Çilek, Faculty of Fine Arts Design. Concept/Concepts: Focus/Context/Junction

The project attempted to add context through the creation of physical focus. The physical focus is assumed to be an end.

6. Findings And Discussions

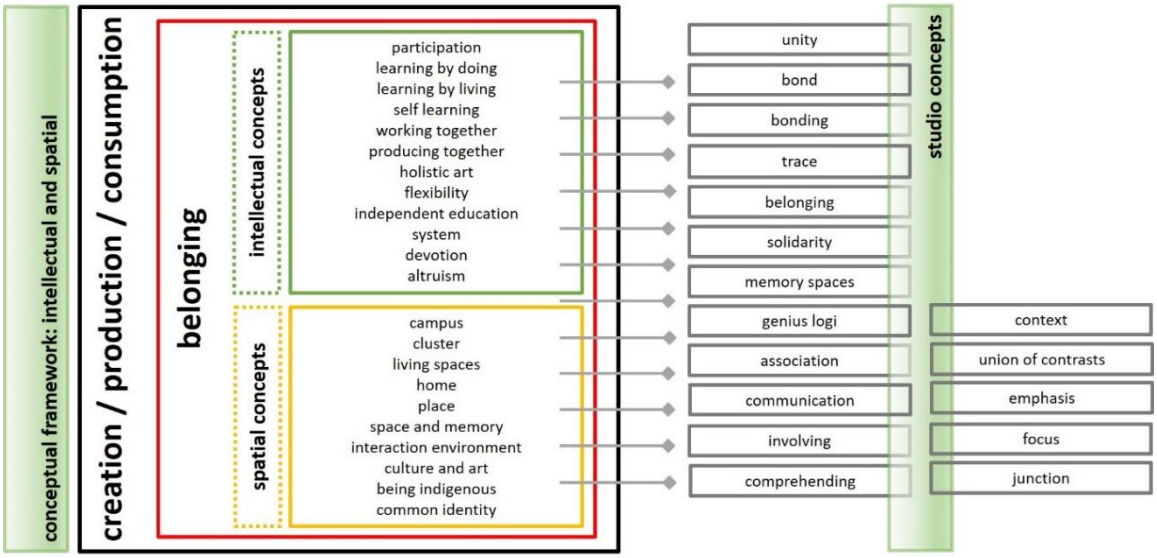
The concepts that can be the starting point for the projects in line with the information obtained by the students from the research phase are classified as shown in Table 11. These can be summarized as; “unification, bond, attachment, trace, belonging, unity, togetherness, places of memory, genius loci, togetherness, communication, inclusion, comprehension, context, unity of opposites, emphasis, focus and attachment”.

Table 11 Concepts Created by the Students in Scope of the Project



The relationships between the concepts “obtained from the literature readings” and “produced within the scope of the studio” can be summarized as a whole as shown in Table 12. The table shows the relationship between the concepts obtained from the readings and the studio concepts symbolically;

Table 12 The Relation of Intellectual and Spatial Concepts Obtained from Readings with Studio Concepts



By looking at the analysis table, it can be said that there are significant relationships between the concepts obtained from the readings and the others, although there is no one-to-one correspondence.

- The concept of “participation” derived from the readings; "unity", "togetherness", "solidarity", "communication"
- The concepts of “learning by doing, learning by living and self-learning”; “spirit of the place” and “communication”
- The concepts of “working together and producing together”; “connection”, “unity”, “togetherness”, “solidarity” and “communication”
- The concept of “holistic art”; “unity”, “solidarity”
- The concept of “system”; “emphasis” and “focus”
- The concepts of “devotion” and “altruism”
- The concept of “campus” “belonging”, “involving” and “comprehending”
- The concept of “cluster”; “unity”, “belonging” and “bonding”
- The concept of “living spaces”; “memory spaces”
- The concepts of “home and place; “bond”, “unity”, “belonging” and “junction”
- The concept of “space and memory”; “trace”, “memory spaces” and “spirit of place”
- The concept of “interaction environment”; “unity”, “togetherness”, “solidarity” and “communication”
- The concept of “being indigenous”; “belonging” and “context”
- The concept of “common identity”; “belonging”, “togetherness” “spirit of place” and “solidarity”, significantly overlap with the project concepts.

A reading concept may overlap with one or more project concepts. Or reading concepts may not have equivalents in project concepts. However, it is seen that; it is noteworthy that the concepts obtained from the readings overlap with the project concepts.

From another point of view, project achievements can also be evaluated through the context phenomenon. Venturi (2019) inference from the designer's point of view; is defined as; “the existing conditions surrounding a building site become part of the design problem”. “Current conditions” may not always refer to the time period being lived in. In this project process, the issue of “current conditions” can be considered as “intellectual and physical traces from the past”. In this sense, the projects produced based on the phenomenon of "village institutes" have been solved as a contextual problem that perhaps does not even have physical traces. “Context”, one of the most

important tools of architectural design, becomes a phenomenon that is reflected in the project process by itself.

In conclusion; In the light of these overlaps, regardless of the method of the project studio, it can be concluded that the students' readings and inferences about Village Institutes give them very important clues to start the project. It can be said that this kind of creative subject and location selection has a great contribution to the internalization of the process not only for the students but also for the faculty members and assistants running the studio. It is possible to say that the concepts obtained as a result of the readings overlap significantly with the concepts produced by the students, indicating the consistency in the selection of the subject and place and a creative process. Projects produced with these steps will also give the most appropriate response to the “context” phenomenon.

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Designing a subway station for your campus: Case of transit architecture elective at AGÜ

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Abstract

Transportation planning and design had been a major concern from the urban planning perspective. Various means of transportation have shaped our cities and landscapes for ages and by looking at transportation buildings from an architectural perspective one can see that existing studies focus on the building performance of the transportation buildings or the history of them. Consequently, transportation building design is an important concern that should be addressed from multiple perspectives. Starting from 2019-2020 Fall Semester, Abdullah Gül University Department of Architecture started a new elective course ARCD 110 Transit Architecture, focusing on this issue. While the main intention of the course is to develop a critical view on the existing prescriptive design methods related to the transportation buildings and their environment, students are expected challenge these discussions at their final projects. In order to develop a critical view on the existing design methods, a considerable part of the class focuses on the design guidelines and typologies of the buildings along with the history of the selected building types. In parallel, student presentations showing different examples throughout the world to inspect different design approaches as well as to start debates regarding various debates around design, global world, awards in architecture, and symbolism in architecture. Afterwards, the class turns into a discussion environment focusing on design issues not only related to transportation buildings but also to the rest of the design environment which they might encounter in the future. these discussions start from multimodal and micro mobile transportation possibilities followed by the personal space as a design parameter. These arguments are followed by sustainability from triple bottom line perspective and the possibilities of different technologies and their effect on the transportation related buildings. Meanwhile, they also experiment with simulation tools to test their design cases in different conditions. After the discussions and the debates students are tasked to design a subway station in front of their campus for a final project. After four semesters, this paper will present the aim of the course, the class structure, projects and the findings of the course with selected examples from the course students to its readers.

Keywords: transportation, station design, elective course, transit architecture, infrastructure

1. Introduction

Starting with the first railway between Liverpool and Manchester in 1830, architects have deal with different aspects such as the birth of urbanism, shift of population from counties to the cities,

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and a new building type; stations. Along with the first examples of the railway stations, we have started to build different transportation buildings for various vehicles from simple bus stops to huge airports and even airship hangars. These buildings create an exterior image and outstanding profile not only to its users but also to its by-passers acting as a different version of Lynch's (Lynch, 1960) landmarks. Even by looking at the seven wonders of the ancient world, the Great Lighthouse of Alexandria and the Colossus of Rhodes, are edifices that reflect the importance of transportation and connection to other cities in human history. Until the 19th century, cities were in more walkable extents due to fundamental logistic reasons (English, 2019). Cities along the sea, lakes, or rivers used them for transloading only, while moving inside the city was limited by the capacities of the local means of transportation (Vuchic, 2007). By the industrial revolution and the steam-powered railroad networks, one can see that both in inter-city and inner-city scales, connectivity transformed the landscape dramatically. For example, the shift of the population from rural areas to cities commuting for work in metropolises became a daily activity, and transportation-related buildings have turned into important "gates" that greet their users to the city and signs of political power trying to overshadow the function of the building. Currently, one can hardly imagine a settlement isolated from the world without any means of transportation. However, one of the thought-provoking notions in this context is the common misconception where the design of an underground transportation building as an infrastructure project is considered an "engineering design" in contrast to any superstructure transportation building design "an architectural design".

Due to their complex structures, transportation systems and buildings require planning, organization, and collaboration among different design and engineering disciplines. Moreover, due to their intensive scales and effects on urban frameworks, debates over transportation buildings finds bigger audiences than architectural communities. Even by looking at the second half of the 19th century, one can see that train stations, railroads, and bridges turned into and inspiration points for artists like Monet, Manet, Cezanne, and more. In addition, it is also possible to see that transportation also influenced new ideas and manifestations in the history of architecture, such as the Italian futurists inspired by speed and mechanization (Banham, 1960).

2. Aim of the Course

Consequently, beginning from the 2019 Autumn semester, ARCD 110 Transit Architecture had been an intriguing elective course at the department of architecture at Abdullah Gül University (AGÜ). The class focuses on the complex nature of transportation buildings where designers have to deal with all the mandatory safety, accessibility, and operational design considerations along with the various design issues related to the nature of the design. As a result, the objectives of the course are shaped around the notions such as;

- Understanding the basic terminology
- Developing awareness to the international and national standards, design guidelines, principles, legislation, and other related texts followed by an interpretation and discussion of these materials
- Understanding the design approaches to the transit architecture both from technical and theoretical aspects.
- Understanding the impacts of transit building design on an urban scale.
- Developing a critical framework to the existing design methodologies in transit design.

3. Class Structure

The whole structure of the class is based on a linear approach (Figure 1). First of all, the basics of the infrastructure and the world of infrastructure design are introduced to the students so that they can have a base for the upcoming weeks and studies. As the article written by Meyboom (2009) highlights the design of infrastructure has the potential to create a place and propose future

growth. Moreover, the article indicates that robust design approaches need to be developed to improve the existing architecture scale of the city. As a result, to explain the importance of connectivity, a history of transportation is presented, starting from the palaces of Assyrian kings to the Silk Road and subsequently to the current transportation networks. By doing so, one can understand the powerful notion of "being connected" and its crucial role in cities.

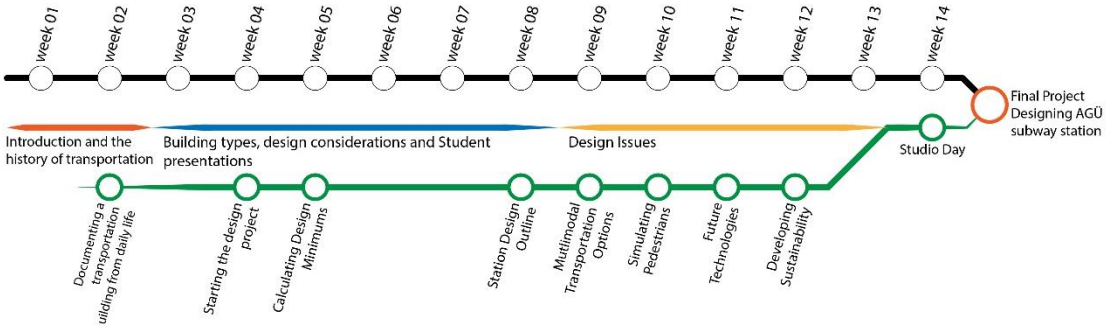

Figure 1 Class structure diagram showing the process of the whole semester (author)

3.1. Typologies and Technical Design

After setting the historical background and the basics of transportation, students are expected to document a transportation building from their daily lives and write down a building critique. The most common examples of this assignment are Kayseri tram stations and Kayseri intercity bus terminals in addition to some exciting buildings such as Bismil Diyarbakır-Turkey Bus Terminal, Syntagma Metro Station in Athens-Greece, and the Rapid Bus Transit stations of Dar es Salaam-Tanzania. The most common adjectives to define their perception about the buildings are circulations, form of the building, possible design decisions that they are not comfortable with, and most importantly, emotional spaces because it also represents a journey far from their homes. The main intention of this assignment is to provoke the students to realize that they are already aware of the problems of the current design approaches to the transit buildings. By doing so, the technical part of the class could also start with questions in mind. For a considerable series of weeks, students are introduced to different types of transportation buildings as in the order of train stations, metro stations, bus and rubber-wheeled vehicles, airports, and seaports. This order, aside from seaports, follows a historical progression. In order to shift the class from lecture series to a more participatory environment, every session starts with imagining the use of the building and the design of the building so that all can draw a map of the case studies. As an example, Figure 2 shows a pedestrian flow in a subway station case showing the movement scheme of pedestrians in a subway station.

This informative series start with the trains since the first examples of transportation where the vehicle was not powered/towed by livestock (1930ies to 1910s). Trains are followed by busses and personal cars (the 1910s to 1945s) where they developed new types of buildings in addition to the current design concerns such as walkable cities. Afterward, airports and their dynamics, along with their typologies, are inspected in the following week. Finally, different types of seaports among various cities and settings are inspected to understand the current nature of sea transportation. In addition to these technical aspects, every week also includes an associated design issue such as designing for accessibility, walkable cities, designing for vehicles and pedestrians. The main intention of these lectures and debates in this class focuses on the fact that transportation systems require intensive planning, organization, and collaboration among different design and engineering disciplines.

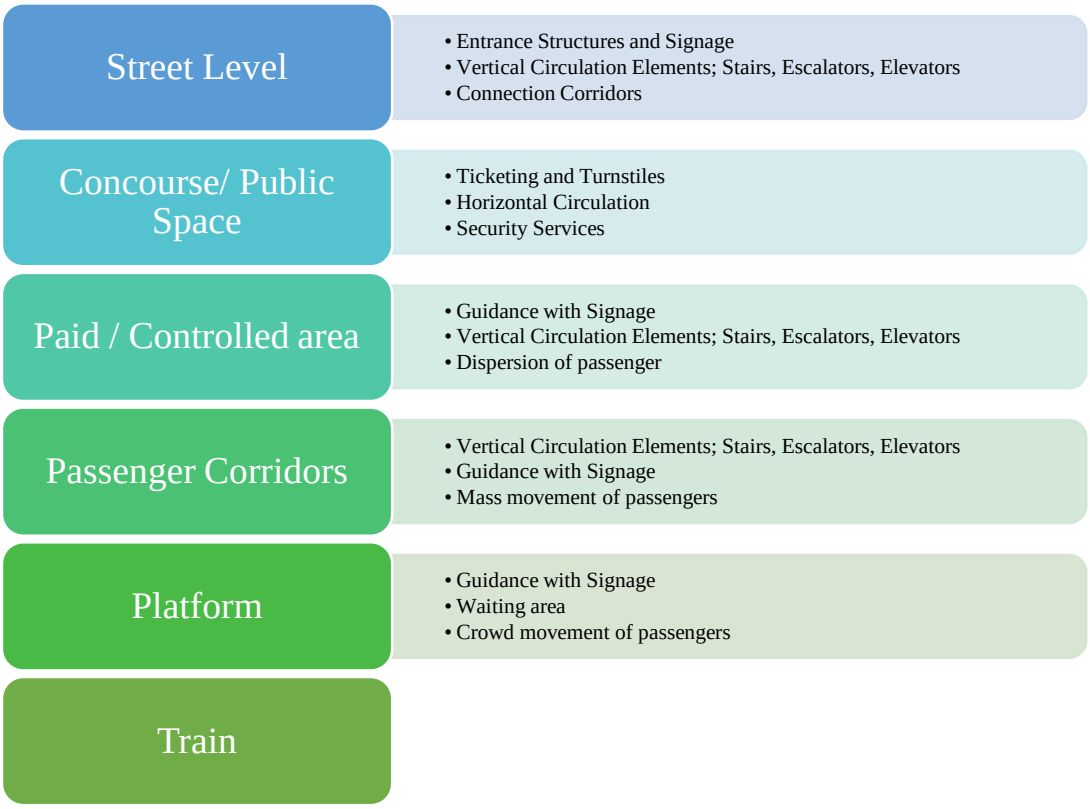

Figure 2 An example of a pedestrian flow in subway station case study showing the movement scheme of pedestrians in a subway station with stations zones stacked in order from the surface to the train along with the movement factors and assistants in the process (author)

One of the biggest challenges in the preparation period of this class defined the finals product and evaluation of the students. Instead of organizing a classical midterm and a final exam where students are expected to answer multiple questions in a limited time, a reproduction of the design process of a metro station is assigned as a final project of the class. Interestingly, Kayseri Ulaşım's future network studies helped us a lot in the process. As seen in Figure 3, one of their future extensions (green and red lines) is going to be located at Erkilet boulevard which divides AGÜ Sümer Campus into two (Kayseri Ulaşım, 2019). Consequently, this design challenge is located in front of the campus so that students can associate themselves with an urban context where they use it for the same purposes.

Figure 3 Satellite image showing AGÜ Sümer Campus location (orange rectangle) on Kayseri Ulaşım's future network map. (Author based on Kayseri Ulaşım's graphic)

Besides, according to the same information, a transition from underground to the ground level is expected to be in front of the campus area. Therefore, instead of limiting the students to an underground solution, students are allowed to pick any station types for their design approach, such as at-the-grade and elevated (K W Griffin, 2004) as long as they separate the railway from pedestrian access for safety concerns.

Combined with the assignments during the semester, students can practice multiple aspects of a subway station process. As for the first step, they are expected to make some calculations based on the Turkish Standards TS 12127: Design Criteria for Underground Station Facilities (TSE, 1997a), TS 12186: Design Criteria for Ground Station Facilities (TSE, 1997b), and LUL G371a:2012 Station Planning Standards and Guidelines (Transport for London, 2012). As the example can be seen in Figure 4, the question aims to start the design process where an architect receives a transportation load from a transportation planner and start to process this information to their design. In a real-time experience, architects are expected to calculate the number of entry & exit gates, the final number of gates, concourse area, number of tickets issuing windows and machines, staircase width, number of escalators, and total platform width depending on that load. In addition to calculating the same load with different calculation methods, they are expected to write a critique of the results and the documents. The comments of the students shaped around the difference between the personal space suggestions and the amount of detail between the standards and design guidelines.

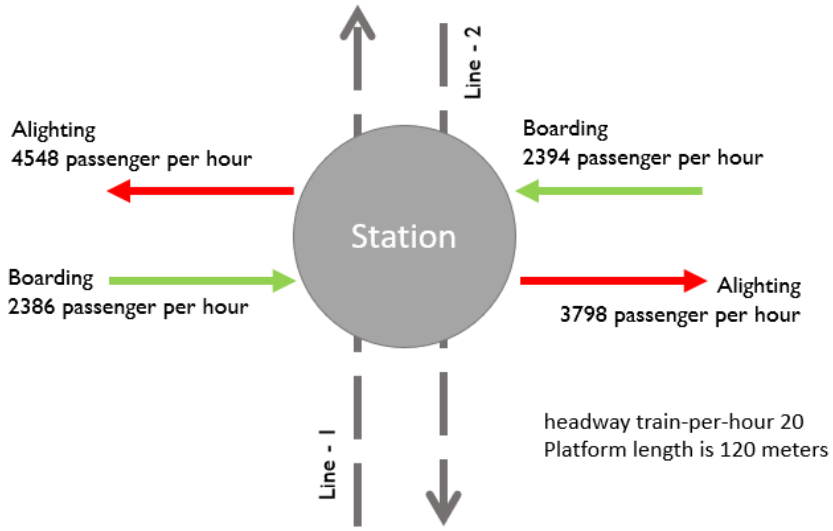

Figure 4 A typical passenger load question that starts the final project (author)

3.2. Design Issues in Transportation Buildings

As for the second part of the semester, various design concerns are debated in the class to develop a critical framework for the existing design methodologies. These debates include a wide range of views and issues from urban design, such as implementing multimodal transportation to the use of computer simulations as a design verification tool.

3.2.1 Multimodal Transportation

The first design issue that has been taken into consideration is the possibilities of multimodal transportations. According to Griffin (2004), the effective range of a subway station is could be 1 to 1.5 kilometers depending on the landscape. People can reach the station by different mediums of transportation such as; driving, cycling, and ridesharing in addition to walking. For bigger buildings, park and ride, kiss and ride, and bicycle amenities are also considered multimodal options

(Queensland Government, 2015; Lang, 2017). In addition to multimodal solutions, a different scale of mobility called micro-mobility creates transportation possibilities that include bike-sharing, carsharing, scooter sharing, and e-bike sharing (Lazarus et al., 2020; Moran, Laa and Emberger, 2020; Shaheen et al., 2020). By doing so, pedestrians have increased accessibility in dense urban settings in a fast and efficient way. It is equally important to keep in mind that recent studies show that with policies such as bike-sharing and options, %5.5 of the users sold or postponed a vehicle purchase, and 50% of the bike-sharing members reduced personal car usage (Shaheen et al., 2020). Especially during the pandemic, we see a shift from mass transportation systems to personal transportations methods (O'Sullivan, 2020). For example, the demand for bicycles have increased dramatically as an alternative transportation method (Landis-Hanley, 2020). In addition, demand for shared mobility solutions such as e-bike sharing, scooter rentals has also increased (Liu and Ren, 2020). As a result, multimodal transportation options and solutions are and will be an important part of transportation and the designers should be well aware of the situation. After looking at different design examples and debating these concerns, they are expected to develop a multimodal approach to their final project designs. Given that the station location is between the dormitories and the Sümer Campus area, the most common solutions for this approach are micro-mobility design approaches to increase the ease of access around the campus buildings.

3.2.2 Personal Space as a Design Parameter

Even at the early design stages of transportation buildings, personal space is one of the most significant design parameters for architects and fire safety designers. As mentioned above, with various design guidelines and standards, one can determine various parameters such as the width of platforms, corridors, number of escalators, and ticket machines. Subsequently, area per person is an important design parameter, yet we need to develop the dynamics and the inconsistencies of the definition.

According to Hall (1992), humans are territorial, and this behavior shapes their activities in groups. Moreover, he also mentions that people set distances among each other depending on their feelings to others. These distances are categorized into four groups; intimate distance, personal distance, social distance, and public distance. It is always too exciting to show the classroom dynamics and how they feel about each other while explaining these distances in a classroom environment. As a part of the education process, a single 1x1 square is drawn to the floor to test different design guidelines and standards (Figure 5). At first, while they were comfortable in overloaded scenarios with their familiar friends. However, after mixing up the populace, one can trace the body movements of keeping distance or creating some kind of protection (like crossed arms) in the crowd. As in the case of the subway stations, there different documents suggesting different areas per person. For example, while the Turkish standards suggest 0,50m2 per passenger (TSE, 1997a, 1997b), American Public Transportation Association (APTA) recommends 0.765 m2 per passenger (1981), and according to LUL - G371A same parameter is considered 0.96 m2 per passenger(2012). Followed by different case studies such as the Kowloon Walled City and Calhoun's rat experiment in the Rockville barn, the primary intention of the week is to develop an understanding of personal space. By doing so that they can understand that the technical guidelines and standards related to the transportation buildings help the designers to find the design minimums of a case rather than defining a working terminal or a station.

Figure 5 Personal space experiments where a 1x1 square is marked at the floor (1). Afterward, they start to test different loads such as the basic TS 12127 and TS 12186 load (2), crushing loads (3&4) followed by different case studies (5&6).

3.2.3 Sustainability

As the dictionary term of sustainability defines, one of the main goals of the profession should be meeting the needs of the present without compromising the ability of future generations to meet their needs(McCombs, 2015). In view of the fact that transportation buildings are designed with up to 50 years of future projections and used for 150 years if possible, creating a sustainable design in this building type becomes a vital design issue. However, developing an energy-efficient building could not be defined as sustainable due to the triple bottom line of sustainability. As a result, after a debate on creating sustainable transportation buildings from energy efficiency, economic and social aspects, students are expected to develop a design suggestion for their finals within the framework. The most common solutions for this design issued grouped around two interesting factors, daylight and restoring the station's location as a social node instead of being a transportation point.

Güneş highlights that the underground is associated with negative aspects such as misconduct, secrecy, the afterlife, and death (2007). Besides, one can see alternative solutions and suggestions to integrate daylight to overwhelm psychological, physiological, and energy efficiency problems (Carmody and Sterling, 1984, 1993; Sterling et al., 2012). However, despite the fact that two alternatives can be applied to provide daylight inside the station, skylights, and lightwells, none of the projects had suggested lightwells as a part of their design. This situation could also be related to the possibility of natural ventilation with the skylights in contrast to the skylights. On the other hand, various projects suggested multifunctional buildings where they have students' centers, shopping areas, libraries, and even an open-air marketplace for social and economic activities combined with their station design which should be taken into consideration.

3.2.4 Pedestrian Simulations

In addition to developing a critical view on the personal space, it is equally important to simulate a design case in a simulation so that one can test their buildings even at the early stages of the design. In view of the fact that simulation is the imitation of an existing situation or a process, a review of the pedestrian simulation types is presented so that a critical approach could be developed aside from experimenting with simulation software. The most known case is Fruin's Pedestrian Planning and Design(1971) and his level of service methodology, where he develops a

system based on the number of passengers crossing a meter section of the selected area with the speed-flow-density relationship mentioned by Gupta and Pundir (2015). Subsequently, different types of pedestrian simulation systems are mentioned, such as Cellular Automata, Benefit-Cost, Magnetic Force, Social Force, Tactical Routing, and Agent-Based models as a background for the students.

As a class practice with a brief introduction to a selected pedestrian simulation software, students try a tutorial case where they can learn the basics of the software. Afterward, they test the early stages of their final project design and make any revisions if necessary. One of the key findings of the process is that this simulation study became aware of a design validation tool and helps them understand the importance of pedestrian circulation in any building design. In the future we hope to establish a cooperation between software firms and AGÜ so that students can work with these simulation tools for longer time periods and even develop future researches both at the undergraduate and graduate levels.

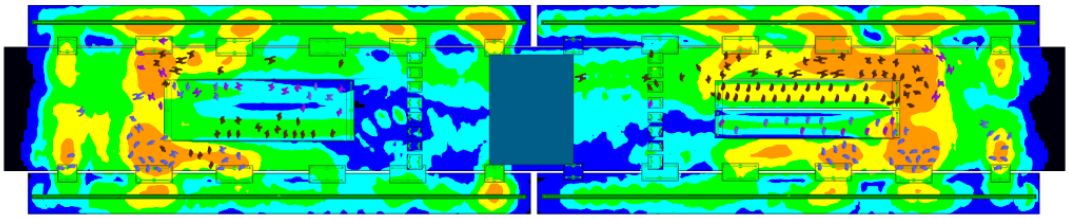

Figure 6 Simulation result of a station design where one can see the experienced density based on Fruin (1971)

3.2.5 Predicting the Future

Transportation buildings have changed dramatically in two centuries. While the first examples were simple and, in an attempt, to organize the much-needed functionality following examples have turned into monuments of prestige regardless of the vehicles they use. It is interesting to see how Negroponte (2000) anticipated the last twenty years on concepts such as the post-information age, place without space, and being asynchronous in addition to four powerful qualities; decentralizing, globalizing, harmonizing, and empowering. Primarily through our recent experience with the COVID-19 pandemic being digital has turned into an essential aspect of our life. In addition, with the recent developments in technologies, one can see that our means of transportation both on and from the earth will change in a short amount of time. New means of land transportation systems such as hyperloop (Street, 2019; Hawkins, 2020) show us that our fast, efficient, and economical means of transportation might change in the near future. Similarly, with the increased interest in space travel and interplanetary travel, we might even need to reconsider new types of transportation buildings for a design case. However, it is equally important to talk about these possible futures so that people can prepare new concepts for the existing design methods and approaches.

4. Course Outputs and Final Projects

The course outputs could be divided into two segments; findings from the student presentations and findings from the final design projects. The student presentation part is an interesting way to understand the perception of the students to the subject given the fact that the only limitation for their selection is that it should be a transportation building. On the other hand, by looking at the submitted final projects, it is fascinating to trace how different arguments and debates at the class helped them to improve their design capabilities both for this class and for their design studios

4.1. Student Presentations

Students were expected to pick an existing transit building for their presentations. In the process they were required to prepare and share information about the building, its history, design approach, and its design process. Presentations are organized on the corresponding week of the building type. In order to increase collaboration and organization among the students, these presentations were group projects in the pre-pandemic era. However, due to increased difficulties of connection and preparations during the pandemic, it turned into personal presentations. Though, with the increased number of presentations, the variety of the case studies have dramatically improved. In the process, 29 different projects have been presented worldwide, showing different design cases such as design competitions, international firms in different settings, and renovation and expansion of historic buildings as a part of heritage preservation. Interestingly, the two buildings, Yokohama Passenger Port and Jewel Changi Airport, are the two most popular buildings which have been presented almost every semester.

The intended structure of the presentations focused on three aspects; the Building's story, its significance, and the presenters' comments. While the first part focuses on the literature review of the building, the second part aims to express a comprehensive assessment of the building from different resources. Lastly, the most essential part is making comments about the building as an architecture student. This structure brought forth very interesting debates to the class. These debates include concepts such as superficial use of local motifs by international architects to adjust their designs for varying tastes, local design firms vs. international design firms, awards in architecture, and the power of symbolism in architecture. Thus, these debates helped them to progress their design approaches for their future studies and experiences.

4.2. Final Projects

As mentioned above, the final evaluation of the class is the design of a subway station in the given location instead of a written final exam. In order to increase awareness of the urban design concerns of transportation buildings, the site of the project on the line crossing the campus is on Erkilet boulevard. While the students were free to pick any type of station (at-the-grade, elevated or underground), they were also expected to develop their design based on the issues mentioned at the design issues weeks. Interestingly, a considerable part of the class, %76 percent, have decided to design an underground station in contrast to elevated and at-the-grade solutions. In addition, while the students from different departments have taken the class, they are encouraged to develop a design to the existing infrastructure or building design from their own field of education.

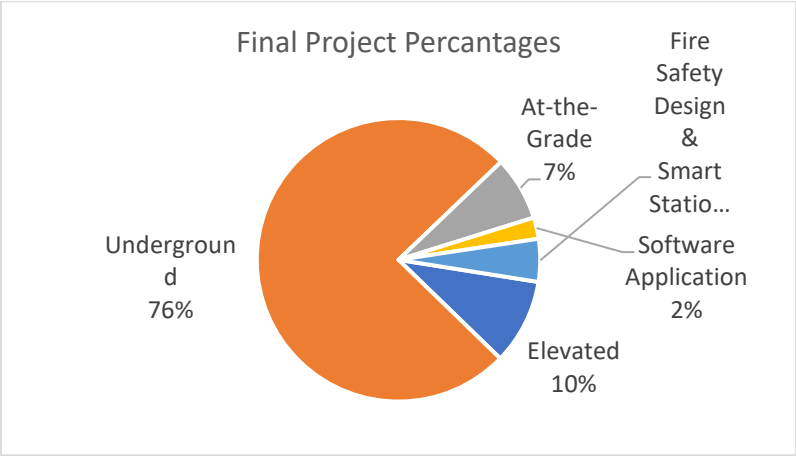

Figure 7 Percentiles of submitted projects and their typology (author)

Among the interesting design suggestions, one can see that they have also provided some valuable information for the future of the AGÜ Sümer campus area. A considerable part of the designs suggested moving Erkilet boulevard underground and the railway line to give back the area to the pedestrians with green spaces. This approach could be interpreted as an attempt to remove the barrier between the two parts of the campus and the surrounding neighborhoods. One example can be seen in Figure 8, yet one can also see alternatives of this design approach where the whole campus area is connected with similar design suggestions. In contrast, we can also see alternative underground design solutions suggesting reorganizing the whole traffic at different levels while providing pedestrian access at the ground level, as seen in Figure 9. The vital part of these designs shows us that at the daily activities of the campus, while Erkilet boulevard plays a crucial role as the transportation path, it also acts as a significant barrier dividing the campus.

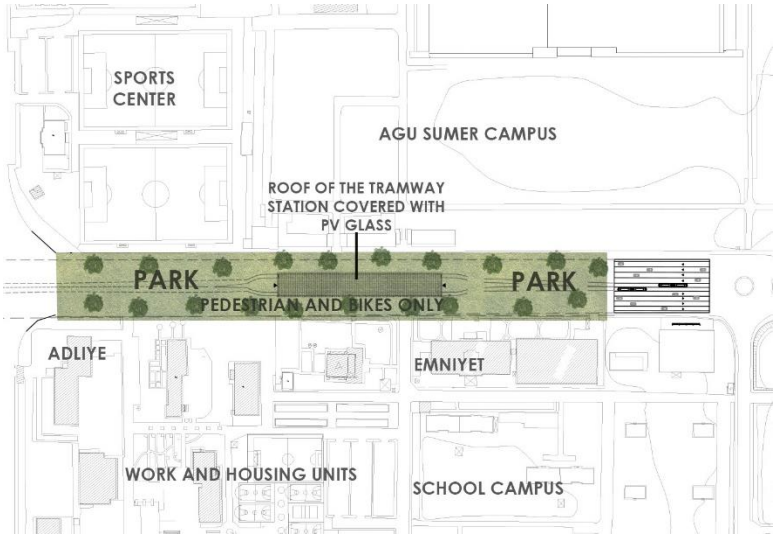

Figure 8 Site plan of a station design suggesting to move Erkilet Boulevard underground. (Berfin Nur Şahin)

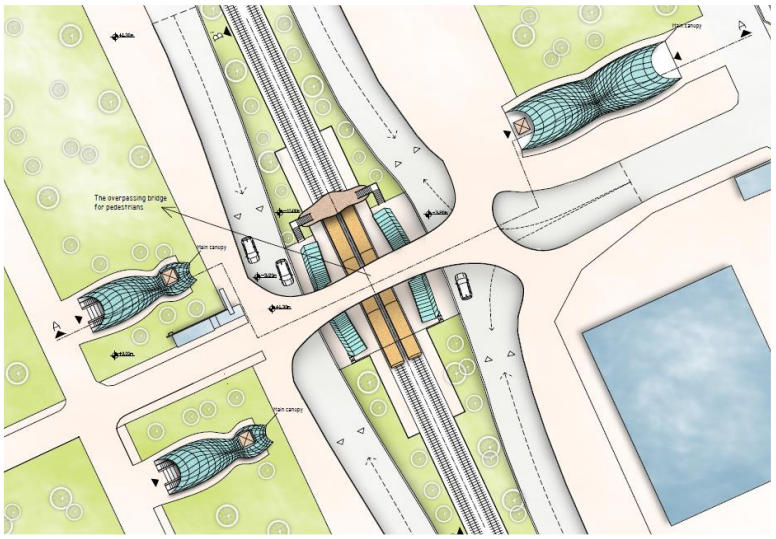

Figure 9 An alternative design solution where the designer suggested a multilayer solution; pedestrian on the ground, vehicle in the middle, and the railway system at the bottom. Yet, with a landscape design, it is also possible to provide daylight to every level of the station (Oruç Türk).

In addition, by adding functions such as student centers, educational facilities, stores, and exhibition halls, it is possible to see that students wanted to create an interface between the public

and the campus. These design concerns could be related to the existing design suggestions developed by Asiliskender and Yöney (2018) for the AGÜ campus. As seen in Figure 10, some of the designs suggested spaces such as new centers and experiences along with the station structure.

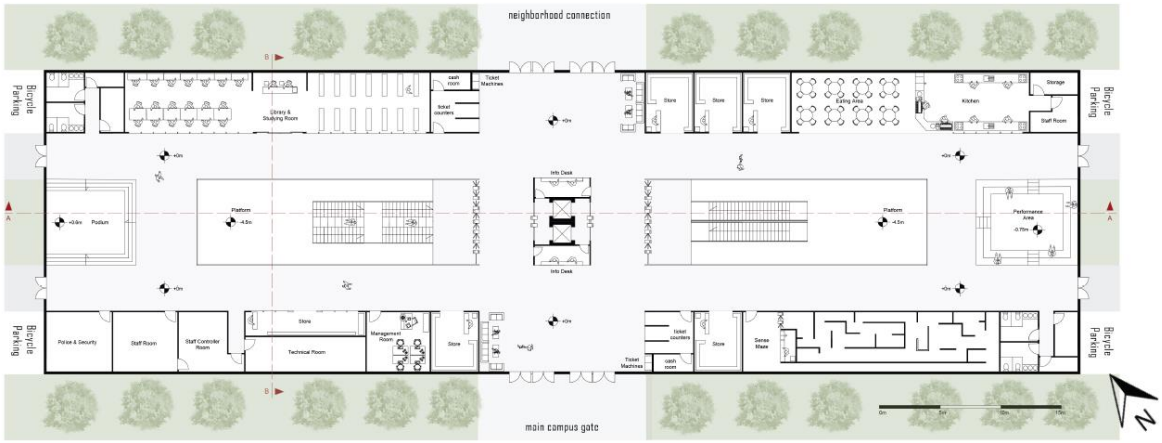

Figure 10 Design suggestion where the designer suggested a micro-mobility center research for the city with research areas and interactive surfaces (Görkem Kemal Genç)

On the other hand, when looked at the elevated and at-the-grade designs, form-finding procedures focus on two design concerns; providing accessibility over Erkilet boulevard and creating a platform as a viewpoint at the city. As seen in Figure 11, the main challenge of this approach is to deal with the massive columns supporting the station structure at the road level. Like the underground designs, there are additional functions providing services to the public and the campus area. Nevertheless, by being over the ground, they had the chance of being visible and exterior to other people aside from its services, and some of the designs have successfully achieved that intention.

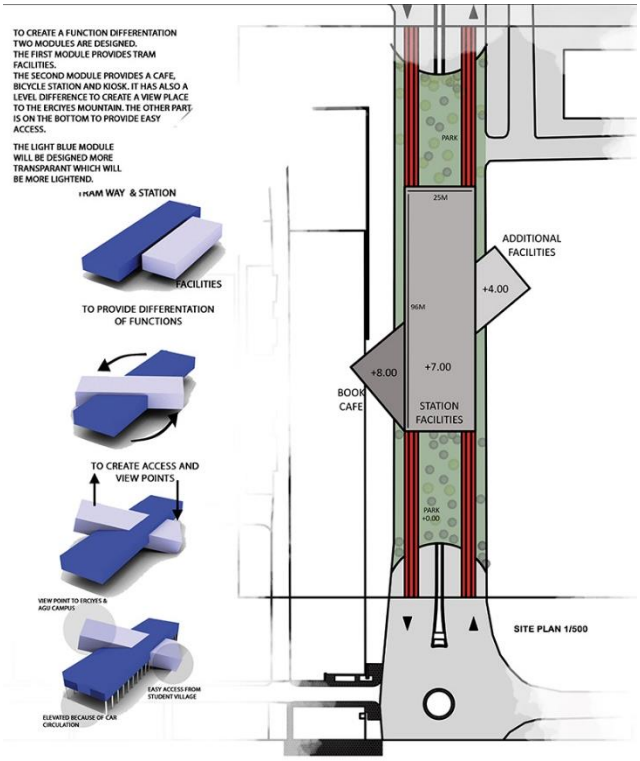

Figure 11 From finding process and the site plan of a design suggestion (Hilal Sevim)

A computer engineering student developed another noteworthy design approach as a final project. After enrolling in the class, it would be unfair to ask a computer engineering student to design a station. Therefore, with the consent of the rest of the class, the project took a dramatic turn, and a mobile phone application is designed for Kayseri Ulaşım within the framework of smart cities, internet-of-things, and mobility. The main intention of the application was to gather live statistics about the users' preferences and experiences to the operating firm while providing information about the existing situation of the transportation network. For example, users can find the nearest ticketing machines, access information about the traffic density, see the live situation of the station, access information about the network, and give feedback about their recent trips (Figure 12). This example stands as an important indicator that shows us that developing a critical view on the existing design methods not only will help the architecture-related disciplines but also will help other disciplines to question their own design approach to improve their design methodologies.

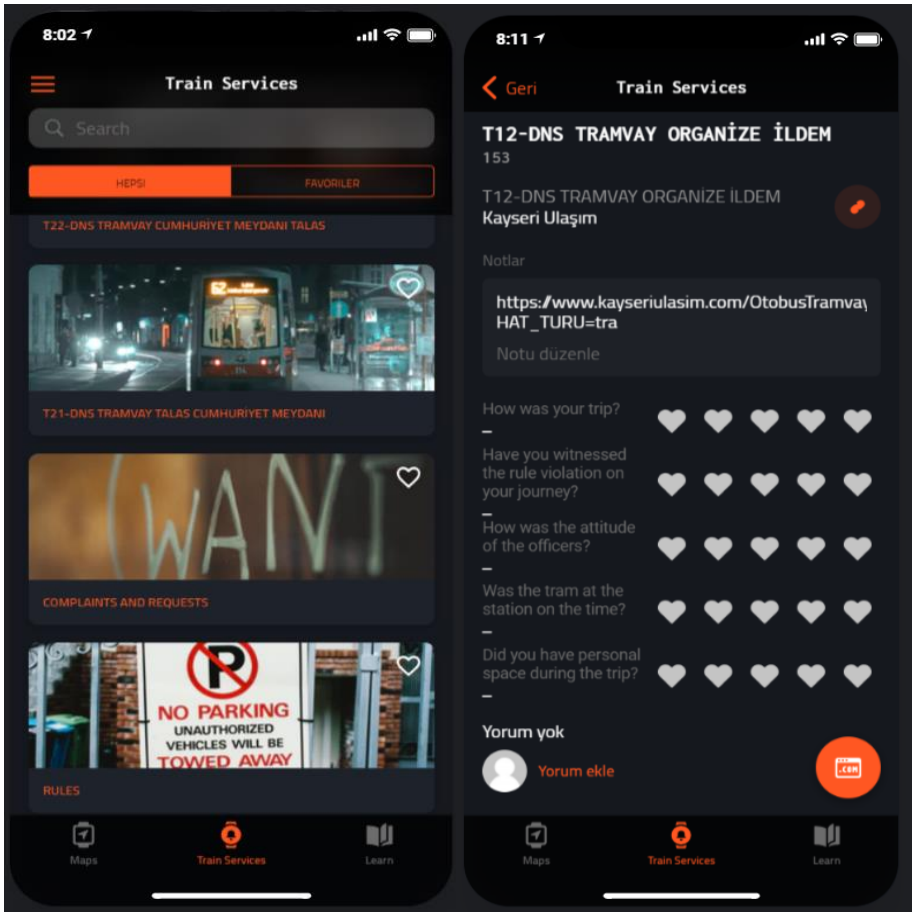

Figure 12 Screens of the application showing the travel query questions (Sedanur Aslan)

5. Conclusions

ARCD 110 Transit Architecture class has begun with a combination of both professional and academic questions developed after a long process started in 2013. From an architectural perspective, infrastructure and related buildings are considered dull and monotonous because of their repetitive nature. This repetitive nature could be related to various aspects such as monetary restrictions, project management concerns and, limited timeframes. However, it is important to keep in mind the vital relationship between instrumentality and function in infrastructural projects. Interestingly, while the train stations and airports are regarded as important and prestigious

showcases acting like landmarks and monumental gateways with commemorating names after leaders, artists, scientists, and writers. One can hardly trace any similar approach at inner-city transportation buildings because they are considered as recurring engineering buildings shaped by engineering concerns despite their crucial impacts on urban scales. This situation is mainly associated with the prescriptive methods suggested by design guidelines and standards in transportation buildings. Yet, one can see similar repetitive design solutions at hospitals, hospitality buildings, tall buildings, dormitories, and offices. However, with their urban potentials, transportation buildings highlight that questioning the existing design problems and acceptances became more important than ever before the pandemic because the existing problems and concerns were already identified and addressed before. As a result, while the first part of ARCD 110 highlights the multidisciplinary design concerns in various transportation buildings followed by the architectural design concerns that should take into consideration. In the process, they also experience the design process of a subway station in a familiar urban context so that they establish their urban analyses to understand the importance of such a design process. Besides, with the ongoing urbanization where most of the human population living in the cities and the global warming concerns, we need to study transportation buildings not only for their building performance analysis or fire safety design studies but also their impact on architectural design.

Therefore, in order to understand the current situation of the transportation buildings from an architectural point of view and develop an awareness for future studies ARCD 110 Transit Architecture stands as an important first step at the undergraduate level both inspiring new studies related to the topic both at the undergraduate and graduate educations. In the near future, we are expecting to share these findings with the Kayseri Transportation Department to establish future cooperation with the AGU Faculty of Architecture.

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Resume

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