

# HOUSING ARCHITECTURE AND DESIGN

From the Past to the Future



**Editors**

**Assoc.Prof. Dr. Deniz Demirarslan  
Asst.Prof. Dr. Selma Kayhan Tunali**

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# **HOUSING ARCHITECTURE AND DESIGN**

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## **EDITORS**

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# PREFACE

The history of the house and its immediate surroundings, where people live and meet their basic needs, predates the history of cities. Housing is a physical space unit representing the socio-cultural structure of a society in the most obvious manner. Its primary purpose is to shelter and protect people from physical effects. Factors such as the rapid change in socio-cultural life in tandem with technological and economic advances, the differentiation of living environments, and the transformation and diversification of consumer characteristics have contributed to a rise in the number of dwellings available. As a result, the houses and their close surroundings provide a wide range of experiences. Since architecture is a shelter-making practice, and housing is man's first shelter, architecture is often associated with dwellings and housing development.

Since different societies and cultures take different approaches to “housing,” the resulting “housing styles” vary. The economy, technology, and laws all play a role in this diversity. Any design relevant to housing and housing design has taken on a new understanding in the twenty-first century, based on changing life needs and construction technologies. Understanding the evolution of structures relating to the house and its environment can help inform future designs.

Because of the multi-dimensional definition of housing, many scientists from various fields have approached housing from multiple angles and used various approaches. Housing research encompasses various topics that intersect in social, technological, political, and demographic contexts.

The authors and chapters who contributed to the book from various fields are as follows: Özgür Algan- “Architectural and Cultural Features of Georgian Villages in Kocaeli: The Case of Gölcük”; Mehtap Özbayraktar& Sonay Ayyıldız- “Revealing the Relationship Between the Traditional House Design and Its Social Structure Using Space Syntax Method: The Case of Izmit Houses”; Gözde Altıparmakoğlu Sakarya& Kemal Sakarya- “Reading the Interaction Between the Formation of The Traditional Housing and The Social Structure Through Different Cultures”; Dilara Sönmez& Selma Kayhan Tunalı - “An Investigation About the Doors of Odunpazari Houses in Traditional Housing Architecture”; Merve

Alicı Aka- “The Analysis of The Interior Space of Traditional Japanese House in The Context of Visual Perception”; Selma Kayhan Tunalı& Deniz Demirarslan- “Windows: The Eyes of the Residence”; Elif Fatma Salihoglu& Deniz Demirarslan- “The Development of Hittite Housing Architecture from Hattians Up to The Late Hittite Period”; Deniz Demirarslan& Elif Fatma Salihoglu- “Housing, Life and Furniture in Phrygian Civilization”; Selma Kayhan Tunalı& Sinem Güneş- “Following the Design: A Read on Charles Rennie Mackintosh’s Art Nouveau”; Saadet Aytıs- “Respect for the ‘Old’, Chance for the ‘New’ General Overview of Interior and Furniture Design in The Context of Art Movements”; Deniz Demirarslan& Oğuz Demirarslan- “Reading the Architecture Of Le Corbusier In His Own Houses”; Elif Altın- “Development of Architectural Structures in A Water Environment and Floating Houses”; Serpil Özker- “Director’s Space from Past to The Present: “Nuri Bilge Ceylan, Lütfi Ömer Akad”; Özge Ürtekin- “Evaluation of Urban Silhouets On the Art of Painting: The Case of Istanbul”; Emine Begüm Savçın- “Housing and Neighborhoods in The Turkish Art”; Elif Özdoğlar& Çağrı Yalçın – “The Role of Women on Art and Architecture About The Process Of The Westernization In Ottoman Cultural Context”; Elif Özdoğlar& Çağrı Yalçın- “Comparative Analysis Of The Flintstones And The Jetsons In The Context Of Fictional Space”; Şeyma Gündoğdu& Deniz Demirarslan- “Indoor Plants: Their Use and Importance”; Belma Alik& Ahmed Elsaey- “A Study on Planning Methods for Sustainable Waterfront: The Case of Atakoy (Istanbul)”; Tuğba Düzenli& Serap Yılmaz- “Capturing “Genius Loci” In Seating Furniture”; Fatma Kürüm Varolğüneş- “Re-Evaluation Of Solutions For Public Health And Life Quality In The Design Processes With The Covid-19 Pandemic”.

These chapters in the book are unique scientific studies that contribute to the literature on housing and its immediate surroundings, ranging from the history of civilization to interior architecture and furniture, from traditional houses to painting, cinema to landscape architecture, from urban planning to architectural history. In addition, scholars and experts will benefit from this book’s coverage of current trends in architecture, interior architecture, urbanism, landscape architecture, and other design disciplines. In this regard, we hope that the book we edited will be useful to valuable readers, writers, and the publishing house.

**May 2021**

**Assoc.Prof. Dr. Deniz Demirarslan**

**Asst.Prof. Dr. Selma Kayhan Tunali**

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# REFEREES

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# CHAPTER I

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## ARCHITECTURAL AND CULTURAL FEATURES OF GEORGIAN VILLAGES IN KOCAELI: THE CASE OF GÖLCÜK

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### 1. Introduction

**A**natolia has hosted many important civilizations throughout history; due to its location, it has led to the emergence of a structure that accommodates nations with different cultures and lifestyles. Today, Anatolian lands have a multicultural structure that comprises people of various ethnic backgrounds. Culture is the cornerstone of the human society, which we describe as “the complexity of all material and spiritual that people who are members of society experience and teach through living.” (Güvenç, 2015:12).

As a result of the wars in the 19th century, Georgian, Circassian, Bulgarian, Bosnian, Croatian, Serbian, and non-Albanian Turkish origins moved to Turkey as part of the Balkans to the Caucasus. Following the migration, cultural items from the region from which they came were carried with them, together with the immigrants.

Most of the ethnic groups (such as Bulgarians, Bosnians) are mixed with the local population. For this reason, settlements that contain individuals of ethnic groups are rarely encountered. Georgians who migrated to Anatolia from the Caucasus as a result of the 1877-1878 Ottoman-Russian War are also one of the ethnic non-Turkish communities. Georgian immigrants to Anatolia came from the same region (the same community or village), and they generally did not like where they were settling, so they built new settlements in areas like

that region that were close to where they came from. Georgian immigrants maintained their language, everyday life habits (food, vegetables and fruits they cultivate, etc.) in the settlements where they have developed their distinctive rituals and customs, acting together during and after the migration and forming the villages settled in.

The unique traditions and customs of Georgian communities continue to be maintained today. Although the characteristics of Georgian immigrants' ethnic origins have been assimilated over time, the traces of the pre-immigration culture continue to exist in all areas. As we see the reflection of the culture in many areas, we see the reflections in the architectural field. Today, when examining a settlement or building, it has become a necessity to consider culture and material products of this culture instead of only interpreting the physical environment data. Everything which affects people also affects their homes, and some of the effects from the past can still be felt today. It is believed that the sense of the shapes in the building, which cannot be clarified by current circumstances, will be retained even by those who use it, often without their knowledge (Gür,2000:47).

Formal examinations and classifications of dwellings should be evaluated from both physical and cultural perspectives, as well as depending on the analysis of values such as economy, technology and climate. First of all, the character and identity of a culture must be understood. Thus, a housing form that can meet both cultural and physical needs can be created. Another point to be taken into consideration in housing designs is to take into account the characteristics specific to the culture of the region where the house is designed, which affects the formation of the house. The house reflects the effects of the culture of the individual with its construction technique, material selection, created spaces and spatial elements.

Physical properties such as geographical location, climate, and local materials all have an effect on house design. Construction techniques, application methods, material choices and facade formation differ under the influence of the physical characteristics of the region. In addition to the physical characteristics, the social structure and culture of the community living in that region also affect the formation of architectural products. The unification of the physical environment, as well as the social framework and culture of the people who live in the region, has provided for the emergence of numerous architectural products in different parts of Anatolia.

On the other hand, residential buildings in rural settlements are one of the most important elements that create the unique identity of the region with their landscape and architectural features. However, authentic housing examples in rural settlements, which lack modern housing equipment, are either incomplete or inadequate to meet today's requirements. For this reason, houses are usually abandoned or demolished and reinforced concrete structures are built instead. In residences that continue to be used, the dwelling is gradually losing its original form with additions, repairs and structural elements that have been left out of use. With the uniform structuring, the buildings that contain local qualities are decreasing, and the structures that have the characteristics of cultural heritage are disappearing.

## **2. The Formation of Gürcü Culture in Kocaeli Gölcük District**

Anatolia has hosted important civilizations throughout history, and has hosted nations with different cultures and lifestyles. Many cultures ruled Anatolia before Christ, including the Hattians, Urartians, Babylonians, Lydians, Persians, and others. Anatolia became the birthplace of the Turks as a result of Mongol raids and an intensive Turkish immigration, and with the dominance of the Turkish principalities, Seljuks, and the Ottoman Empire. Other ethnic groups in Anatolia under Turkish domination (Armenians, Assyrians, Kurds, Zazas, Arabs, Laz, Greeks, and others) continued to live in the same geography and a structure of ethnic diversity was formed.

Migration is a phenomenon frequently encountered in historical sources, especially in Turkish history. Throughout history, various Turkish groups have tended to look for new places due to the increasing population or their desire to live in areas where fertile lands are suitable for living. However, the mass return waves from the lost Ottoman lands to Anatolia, which started at the end of the 18th century and continued throughout the 19th century, have a special importance in the history of Turkish migration (Kocacık, 1980: 137).

Because of the Crimean War in 1856 and the Ottoman-Russian War in 1877-1878, the 19th century was the most active period for immigration to Ottoman lands. Non-Turkish Muslim communities were forced to migrate to other Ottoman lands that they considered peaceful (Karpat, 2010:61). During the period after the Crimean War of 1856 and the Ottoman-Russian War of 1877-1878, large-scale

migrations were experienced from the Crimea and the Caucasus to the Ottoman lands. In this process, the Ottoman Empire ensured that the majority of immigrants who came until the end of the 1860s were settled (Saydam, 1997:81). The fact that immigration movements were more intense, as well as the control of population distribution and the adaptation of immigrants to Ottoman society by making them productive, emphasized the importance of a more systemic implementation. Immigrants were generally settled in villages or rural regions until 1877. Due to the increasing crowdedness of immigration after 1893, immigrants began to settle in undeveloped land in cities and towns (Paşaoğlu,2013: 352).

As the intense immigration movements that developed in this process caused an unpredictable increase in the population in Anatolia, new villages were established besides the immigrants settled in the cities, and immigrant households were scattered in the existing villages in order to benefit from the assistance and support of the village people. Until this period, when the lands belonging to the state and used as pasture by the local people were used as agricultural land by the immigrants, the agricultural areas, which were quite narrow, were expanded, the population coming with migration was directed to agriculture and their survival over the land caused a great increase in agricultural production (Tunçdilek, 1967:72). At the same time, incoming migrants have been granted the right to choose their accommodation, albeit partially.

It is known that foreign migration has an effect on the population increase of Kocaeli. The flow of Muslim immigrants from the lands lost in the 19th century towards Anatolia also affected Kocaeli. In the same period, Dagestan, Crimea, Nogay, Kazan and Circassian refugees were settled in Kocaeli (Ulugün, 2015:1670). After the Balkan Wars, many immigrants were settled in Kocaeli region. Especially after the Treaty of Lausanne, it has been observed that the exchange period caused a large population movement in the Kocaeli region.

Georgian migration is the most intense of them. The ethnic characteristics of the population of the studied Georgian settlements are gradually assimilated, and cultural assimilation affects not only the individuals but also the structures they build. Traditional housing examples that contain local and cultural characteristics are gradually decreasing, and instead of them, there is a group of uniform and modern buildings. The villages where immigrants from Batumi and Artvin settled or settled during the Ottoman-Russian War of 1877-1878 and afterwards, as well as these settlements and rural dwellings that contain original building elements from the time, were investigated in this research.

## 2.1 *Georgians in the Historical Process*

Georgian is a word that originates from the Greek language, and it means “from Georgia.” Georgios (Greek) and Georgius (Latin) are terms that refer to people that live on that land (Denizci, 2010:16). When the Greeks sailed to the Black Sea to establish new colonies; they encountered Georgian tribes who were advanced in land works in the Eastern Black Sea and named this region “Georgia”. This term was later given the names Gruzia in Russian, Georgien in German, Georgian in Arabic, and Georgia in English (İberieli, 2014:25).

Arab domination that started in the seventh century in Georgia constitutes the beginning of Islamization. Tbilisi became one of the important Islamic Cultural cities under Umayyad, Abbasi, Seljuk and Mongolian rule and Georgians accepted Islam in small groups. Adjara region met Islam later than other regions. Until 1770, the general of Ajara people were Christians. Islamization movements in the Adjara region gained momentum in the early seventeenth century, after it was included in the Ottoman Empire and especially after the 1820s. As a result of these, Adjara region in Georgia has become fully Islamized and has become a region where Muslim Georgians live densely (Beyaz Özbey, 2018:81). Even after the 1877-1878 Ottoman-Russian War, the Ottoman Empire, when he left Ajara to Russia, about 6000 Georgian Muslims, took refuge in Turkey (Sanikidze & Walker, 2004:16). With the permanent entry of the Ottoman State into the Southwestern part of Georgia (since 1578), Turkish-Georgian relations started in a political and historical context. With the acceptance of Islam by the people living here, their way of life started to differ from the Christian Georgians they lived with. Trying to fulfill the requirements of Islam, Muslim Georgians gradually moved away from the Christian Georgian community. The pressure of the Russian and other states in the later periods caused the immigration of the Muslim Georgians living in this region to various parts of the Black Sea and Anatolia. Georgians in Turkey in the historical process, while continuing to maintain their ethnic identity in front of the Turkish language and have adopted the Islamic tradition (Beyaz Özbey, 2018:67).

As a result, Russia’s attitude to protect the rights of the Slavic peoples in the Balkans caused millions of Muslims to be subjected to looting, rape, exile and migration in this process (Paşaoğlu, 2013:340). After the 1877-1878 Ottoman-Russian War, the Georgian people, who were forced to migrate to

various regions of Anatolia, were put into a serious assimilation in the places they went. For example, speaking their native language (Georgian), giving their children Georgian names, and using Georgian surnames have all been forbidden (İbereli, 2014:350).



**Map 1:** Map of the Ottoman-Russian War of 1877-1878 (URL-5).



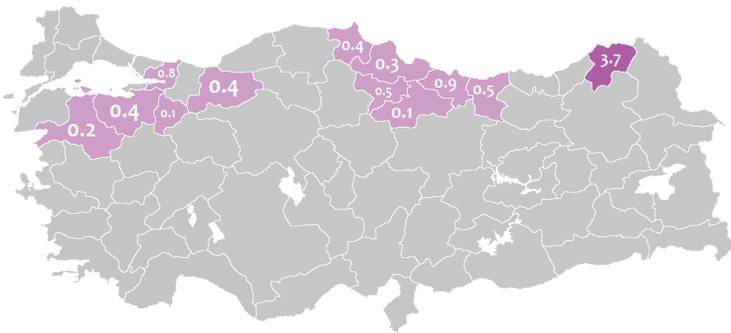
**Map 2:** Physical Map of Georgia. (URL-6).

Georgia shows that the majority of Georgians living in Turkey outside. The majority of these Georgians emigrated from the Soviet-Turkish boundary demarcation after the Turkey side in the Artvin area and the remainder of the Ottoman-Russian War (1877-1878), after the Adjara.

**Table-1:** Georgian provinces where they settled in Turkey (Çiloğlu,1993: 98-106)

Province	Town	Village
Amasya	Merkez	Akyazı , Beldağı, Çatalçam, Yuva, Çivi
	Taşova	Altınlı (Teneke), Çermük, Tatlıpınar (Darmaderesi)
Artvin	Merkez	Merkez, Ortaköy, Zeytinlik
	Borçka	Ambarlı (Dampali), Aralık, Karşıköy (Heba), Muratlı (Maradid), Kaynarca (Deviskel), Balcı (Bagen) Camili / Macahel Uğurköy(Akriya), Efeler(Eprat), Camili(Hertvis), Kayalar(Kvabistavi), Maralköy(Mindiyet), Düzenli(Zedvake)
	Şavşat	Çağlayan (Hevsrul), Çukur (Çihor), Demirci (Daba), Dereçi (Dasamop)Dutlu (Sürevan), Erikli (Ağara), Maden (Bazgiret), Mısırlı (İvet), Oba (Ube), Tepebaşı (Ziyos), Yağlı (Zakiyet),
	Yusufeli	Bıçakçılar (Heveg-i Livane), Yüksekoba(Kobak)
Balıkesir	Merkez	Armutalan, Yenikavak
	Gönen	Balcıdede, Çınarınar,Çiftlikalan, Ekşidere Koçbayır,Pehlivanhoca, Suçıktı
	Manyas	Cumhuriye, Doğançı
	Susurluk	Günaydın
Bolu	Akçakoca	Merkez
Bursa	Merkez	Gürsu
	Gemlik	Hamidiye , Haydariye ,Fevziye, Şükriye
	İnegöl	Gazelli , Çaylıca, Fevziye, Gülbahçe, Hasanpaşa, Hayriye, Muratbey, Sulhiye, Tüfekçikonak , Pazaralan, Elmaçayır, Saadet, Hamidiye, Hocaköy, Mesruriye, Bahçekaya, Mezit, Sulhiye, Çiftlik , Muratbey, Fındıklı , Hamamlı, İlmiye, Kestanealanı
	İznik	Kırkhamam, Kırıntı , Hacıosman, Kutluca (Çamlıboğaz), Sarısu, Elmalı , Sığırhasan , Üzekdere, Candarlı (Uzunçayır), Orhaniye
	Mustafakemalpaşa	Karapınar
Çanakkale	Ezine	Geyikli

Düzce	Merkez	Asar Aksu , Aydınpınar, Gürcüçiftlik , Muncurlu, Yeşilçam, Musababa , Doğanlı, Yeşilçam, Uğurlu (Meze)
	Akçakoca	Melenağzı , Kabalak
	Gölyaka	Hamamüstü, Cevizli, Aksu , Gölormanı Hacıyakup
	Kaynaşlı	Fındıklı Aksu, Şimşir, Üçyol, Şıpır
	Çilimli	Mahırağa, Hızardere
Giresun	Dereli	Akkaya, İçmesu
	Bulancak	Tepeören, Yeniköy, Damudere, Yeşiltepe, Hacet, Karaağaç, Tokmaden
İstanbul	Beykoz	Merkez
	Şile	Teke, Yeşilvadi
Kars	Ardahan	Hasköy
Kocaeli	İzmit	Çubuklu Bâlâ
	Başiskele	Bahçecik: Havuzlubahçe , Kılıçaslan
	Gölcük	Ayvazpınar, Alimezar, Çayırdağı, Ferhadiye, Hasaneyn, Hamidiye, İhsaniye, İcadiye, İrşadiye, Lütfiye, Mamuriye, Nimetiye ,Nüzhetiye (Döşeme), Siretiye, Sakarbiçki, Ümmiye
	Kartepe	Eşme Ahmediye, Şirinsulhiye,Nusretiye, Büyük Derbent, Balaban
	Kandıra	Beylerbeyi
	Karamürsel	Merkez



**Map 3:** Distribution of Georgians by City According to the 1965 General Population Census (URL-4).

### 3. Georgic Settlements in Gölcük

The physical environment, which includes the climate, vegetation, topography and local material resources of the individual and the society in which he lives, contains important data that enable the formation of the unique architecture of each region. The use of local materials in the construction of rural architectural products leads to the emergence of settlements that are compatible with the physical environment.

In the context of the geographical conditions, topography, climate and local material possibilities, which are the physical factors in the formation of Georgian settlements in Gölcük and its surrounding, it has been a district that received migration from abroad throughout history due to its geographical location. Major centers in the western part of Turkey is located on linking roads. Gölcük, which is affected by the climatic characteristics of the Marmara region, provides the life in rural areas, the construction of architectural products and the diversification of the building materials used with its climatic diversity.



**Map 4:** The Map of Gölcük District.

Despite the widespread use of local materials such as stone, mudbrick, and brick, there are reinforced concrete and prefabricated building neighborhoods in rural settlements that are struggling to adapt to today's conditions, and their numbers are steadily growing.

In this context, the villages in Gölcük district, which are Georgian settlements, were settled or settled collectively during and after the Ottoman-Russian War of 1877-1878. These villages are examined in order below.

**3.1. İhsaniye:** In Tatarköy neighborhood, old and new buildings exist together. Modern reinforced concrete structures are built instead of old structures. Most of the houses with original features are not used and are about to be demolished. The plan schemes of the houses are of the type with interior hall. There are outdoor elements such as gardens and bakeries in the courtyards of the residences located in large parcels. During the field studies, a warehouse item was encountered in residential courtyards, and it was observed that these items were mostly not used and remained idle. Houses are usually two-story, with the lower floor serving as the roof (barn) and the upper floor serving as a living room (hanay). Animal husbandry is still practised today, although the roofs under the original structures that are no longer in use are still in use, and the upper floors that were built as living spaces are no longer in use.

**3.2. Hamidiye:** Most of the houses built after 1893 immigration and still in use have been repaired and changed according to the needs. In general, places with six rooftop living spaces turn into cellars and then back into living spaces as livestock declines. The built-in ghusl (bathing area) and cupboard, which are present in each room, are mostly closed. Each house has its own rearranged plan scheme. However, these buildings, which were constructed after the 1877-1878 Ottoman-Russian war, had garden-street ties, land settlement, and used construction materials, among other things. They have a lot of similarities. The wooden warehouse building in the garden is not accessible in this neighbourhood. The section of the house that was used as a workshop (warehouse) is linked to the sofa in the living room.

**3.3. Siretiye:** It has been discovered that the neighborhood's settlers were Georgian immigrants who emigrated from Batumi after the Ottoman-Russian War of 1877-1878. The village is located in a mountainous area like other Georgian settlements. There are some corn fields on the road. Residents of the settlement prefer reinforced concrete or prefabricated houses after the 1999 earthquake. The number of households living in the village is very low. Although every house has its own oven, it is not used. There are families living in these houses that were not destroyed in the earthquake. The plan schemes of the houses are designed in accordance with the plan type with outer sofa. In these houses, the downstairs roof is used as the upper floor living space.

**3.4. Ayazpınar:** It is said that the area where the village is established is covered with forests. There are 45 houses and they all speak Georgian among themselves.

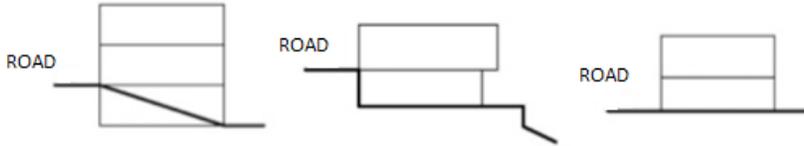
The young population of the neighbourhood emigrates to the city in particular. Ayazpınar, one of the Gölcük hillside settlements, coexists with old and new structures. Most of the original residences are not used and are about to be demolished. The residences have plan types with inner halls and outer halls. There are outdoor elements such as gardens and bakeries in the courtyards of the residences located in large parcels. Warehouses and wells were also encountered in residential courtyards in our field studies, and it was observed that these items were mostly unused and remained idle. Houses; they appear as two-story houses with the downstairs roof (barn) and the upper floor (hanay) used as a living room due to the disparity in height. Today, livestock farming is still practised, but the roofs (barns) built underneath the house have become storage areas for the users' needs.

**3.5. İrşadiye:** The neighborhood was founded by Georgian immigrants who migrated from Batumi during the 1877/1878 Ottoman-Russian War. It is one of the hillside villages of Gölcük. The population has decreased significantly due to migration to the city. The Georgian population has been replaced by the Laz people from Rize and Ordu. There is a lot of new construction in the neighborhood. Most of the old buildings are in ruins. The residences are of the plan type with interior halls. There are outdoor elements such as garden, oven and warehouse in the courtyards of the residences. Houses; they are most often used as part of a structure known as a hanay, in which the disparity in height is often used, with the lower floor serving as a roof (barn) and the upper floor serving as a living room. And as the population increases over the summer and holidays, the number of people living there is still low. Animal husbandry is carried out in the neighborhood.

**3.6. İcadiye:** Population is decreasing with migration from village to city. Migrations are generally Istanbul, and the neighborhood that is retired and receiving retrospective migration preserves the ethnic integrity. Old and new settlements are seen together in the neighborhood. The plan schemes of the houses are of the type with interior hall. There are mostly outside features in the remaining original residential courtyards, such as a garden, an oven, and a warehouse. In the original buildings, the elevation difference was mostly used, and it was observed that the lower floor was used as a roof (barn) and the upper floor was used as a living space.

**3.7. Nüzhetiye:** The main livelihoods of the local people are agriculture and animal husbandry. The neighbourhood has a high rate of new housing

construction. Most of the original structures are used, but they have undergone changes in the plan schemes in line with the needs of the users. The plan schemes of the houses are of the type with interior hall. There are mostly outside features in the remaining original residential courtyards, such as a garden, an oven, and a warehouse. It was observed that most of the original buildings were designed as downstairs as a roof (barn) and the upper floor as a living space.



**Figure 1:** Housing settlement scheme. Three different types of settlements have been observed, using either height differences on sloping ground or building placement on flat land.

#### 4. General Features of Gürcü Settlement Residences in Gölcük

The residences whose architectural features have been examined in Gölcük villages are structures with courtyards located in large parcels. Houses usually have their own furnaces, wells or warehouses in the courtyard or garden. Generally, there are house types called hanay, where the lower floor is used as a barn and the upper floor as a living space. However, single-storey and three-storey house types with basement floors were also found.



**Example 1:** The use of brick materials between wooden carcasses (Gölcük Municipality Archive). (URL-2).



**Example 2:** Use of brick material between wooden carcasses. (Gölcük Municipality Archive). (URL-2).

Stone is used as a carrier in the ground floors and wooden material in the upper floors. It is common to use brick or mud brick material as filling material between the wooden carcass. Most of the interiors are plastered and painted. In the Georgian settlements in Gölcük, the room is considered as the main unit as in the traditional Turkish house (Eldem, 1954:13). The rooms are arranged in such a way that almost all needs can be met without any difference in function. Almost every room has a stove, wardrobe and ghusl. The stove parts inside the rooms rise as a chimney on the roof, allowing the axis of the rooms to be read. Entrance to the residences is provided by a single-wing or two-wing door. As in traditional Turkish houses, the entrance door to the studied Georgian residences opens to the residence's sofa. In two-storey houses, as in the traditional Turkish house, the hall is reached by a ladder from an intermediate space on the ground floor.

The sofa is used as a living space as well as a circulation area. Although the position of the hall between the rooms varies, each room is connected to the sofa. In some houses, a bench was placed in the hall and was used as a kitchen. By adjusting to today's conditions, the warehouse part of the building has been converted into a kitchen in the buildings.

In most of the rooms, the stove and the bathhouse are next to each other. The cabinet/cupboard, which the users call "musendera", is located on the stone wall where the stove and bath house are located. It was found that a niche was created in the upper side corner of the oven, which they call the "pouch", where the pots and everyday items (such as prayer beads, lighter) can be placed in the wall during the construction phase. In most of the houses that are still in use

today, we can only read the traces of these closed pouches and stoves. Over time, they have lost their functionality by remaining behind the plastered and painted walls. Georgian houses have similar features with the houses that we can describe as village houses and that we can find in other rural settlements.

#### *4.1 Spaces That Make Up Residences*

**4.1.1 Courtyard (Ğobe):** In Georgian settlements, it is possible to see courtyards used by a single house as well as courtyards shared by several houses. Houses of nuclear families belonging to the same extended family are currently practiced in common use courtyards. These courtyards are separated from the street by a door and sometimes form dead ends between them and other neighboring buildings. The parcel where the house is located is often enclosed by high walls, creating courtyards to offer privacy to the house.

**4.1.2. Garden:** The Georgian residences all have a garden, though a small one. The garden, which also contains fruit trees, is used to grow a variety of vegetables for the house. It was observed that apple, fig, quince, walnut, pomegranate, pear, hazelnut and date trees were grown in the gardens. There are vines on the facades of the houses, and it has been learned that the hazelnut tree in the gardens of some houses was brought to the migration time and continued to be grown. In the gardens, in addition to vegetables such as tomatoes, eggplants and cucumbers, the kale plant, which is considered to be unique to Georgians, is grown. It has been found out that the fruit tree called date palm is a type of tree unique to Georgian settlements. The gardens are sometimes seen at the entrance of the courtyard and sometimes adjacent to the side or rear facades of the house.



**Example 3:** Warehouse, oven and garden located in the courtyard. (Gölcük Municipality Archive). (URL-2)

The areas with forest and scrub on the back fronts are called “vineyards”. Local people call the front part of the house “vehani” and the back part “sakluğan”.

**4.1.3. Warehouse:** There is usually a warehouse (with taste) in the courtyard or garden in the houses examined. These buildings, which are used as storage areas for foods like wheat, flour, and pulses, are similar to the ‘serender’ structures found in the Black Sea’s middle and eastern regions. However, there are some differences in practice. The storage areas called warehouse are made by partially emptying the bottom on the stone elements and rising about 60-90 cm from the ground. This elevation prevents both the moisture of the stored products and the access of the rodents. In addition, this area is used as a shelter for animals. The warehouse is made by interlocking wooden materials without using nails. There are warehouses that are said to be built using materials from Artvin. The interior sections of the warehouses in the garden or in the courtyard constitute the storage area where dry foods are stored. These compartments, with interlocking wooden elements, are removed as the food in the compartments decreases and provides easier access to the stored provisions.



**Example 4:** Serender and Cumba samples (Gölcük Municipality Archive). (URL-2).

**4.1.4. Bakery:** It appears as an outdoor element present in almost all villages. There are bakeries in the courtyards of the residence that belong only to the users of the residence, as well as village bakeries, which are open to everyone, located on a corner of the street. These furnaces are similar in both form and material. The ovens are located on the walls, which are filled with brick or stone material from the ground, approximately 70-80 cm high. As a result, heat loss is minimised. The furnace (hearth) element is plastered with soil or adobe mortar by giving the shape of a dome on the filled ground. Corn breads called “çadi”, which is a part of the food culture of Georgians, are cooked in these ovens.



**Example 5:** Examples of ovens in gardens. (Gölcük Municipality Archive). (URL-2)

**4.1.5. Well (Kuvi) / Çeşme (Gube) / Yalak (Alazani):** Most of the houses have their own well in their gardens. Transport in the original state of the houses provides the needs of the users with water. Apart from the wells used by the neighborhood, the wells in the courtyards of the houses have facilitated access to water. It is about 60 cm tall. There are stone construction wells in diameter. Most of the wells have lost their importance and are left out of use as the water now reaches the houses in today's conditions. Settlements are established in areas with wetlands. It is possible to come across fountains open to public use in most streets of the neighborhoods. Most of the street fountains are also considered together with troughs (alazanis) where animals can also drink water.



**Example 6:** Example of a well that meets the water needs of animals. (Gölcük Municipality Archive) (URL-2).

## 4.2 Interiors

**4.2.1. Sofa:** The sofa is the main spatial element that determines the plan typology in Georgian houses, as in the traditional Turkish houses. Two types of plan schemes can be mentioned according to the position of the sofa in the houses examined. One of these plan schemes is the plan type, where the rooms are located on a single facade and the sofa behind the rooms and the outer sofa. The plan type with outer sofa is mostly seen in the Icadiye district. The other plan scheme is the plan type with interior sofa. In this plan scheme, the floor is mostly divided into two and the hall is surrounded by rooms facing each other. The Sofa appears as a central place where the doors of the rooms on the floor where it is located in the plan setting are opened. The sofa is designed to be a place where family members meet, live, and sit, exactly as it is in traditional Turkish houses. The hall on the upper floors is reached by wooden stairs. By keeping the stairwell as narrow as possible, the integrity of the hall is not compromised. Apart from being a circulation area or a place that provides entrance to the house from the street, the sofa appears as a common place where family members come together and guests are hosted. Sofas are represented in the plan diagram as rectangular areas that are about the same width as the room widths. The item that we can define as the *iwan*, which is sometimes added to the hall, enables the common use space to expand with the usage area of the hall. The areas that we can define as an *iwan*, which are the continuation of the hall, are sometimes located between two rooms and sometimes at the entrance of the house. The separation of this space with wooden posts ensures that the visual connection with the sofa is not interrupted and thus the space can be perceived as an extension of the hall.

**4.2.2. Rooms:** In Georgian houses in Gölcük villages, the room is designed to be multifunctional and each room is a single household. The design of the rooms as households is influenced by the fact that they were built while an extended family was living together. When family members' children marry, a room and a separate house are attached to the house for the new nuclear family to move in, raising the number of rooms in the homes, according to household members. Entrance to the rooms is provided from the hall. The rooms usually connect with the exterior through one or two windows. Almost all of the rooms have a wall built with a stone wall of 75-90 cm in width. There is a *musendera* on this stone wall, a hearth in the middle and a *gusulhane* (hamam) located next to it. In some

of the houses, there are cedars, arranged as a fixed element of the room and used for sitting / sleeping needs. The rooms are square or almost rectangular in shape. In terms of size and use type, there were no significant differences between rooms in the same home. Common usage and hospitality are often practiced in halls and iwans attached to halls, rather than in houses.

**4.2.3. Kitchen:** In most of the residences examined, the kitchen keeps up with today's conditions and appears as a separate room in the nature of a room. This section, which was later collected for the needs of its users, is located in the original plan schemes, usually in the ground floor room, one corner of which is arranged as a kitchen niche. A typical example of usage is dividing the rooms in the house or converting the storage space into the kitchen. Another example of use is the buildings in which the hall has functioned as a kitchen with the bench placed later on the sofa of the house.

**4.2.4. Toilet:** In the field study, it was learned from the local people that the original latrine structure is located outside the house and is in the form of a wooden hut. However, the original toilet structure that has survived until today has not been found. In the Sofular quarter, there is a latrine structure made of brick by replacing the original wooden latrine, which is located in the garden of only one residence. Some of the spaces in the residence have become usable with the repairs and functional changes they have gone through over time. When water reaches the house, the toilet system appears as an additional structure within or adjacent to the house. In only one of the houses examined, it was observed that a corner in the roof (barn) was used both as a place on the upper floor of the house and as a toilet downstairs.

**4.2.5. Barn (Dam) and Haystack:** The barn (roof) and haystack in the studied Georgian houses are generally joined together with the house (sometimes located at the lower elevation and sometimes adjacent to the housing structure) as spaces with compacted soil and one or two small windows. Although the filling material between the wooden carcass is generally rough-cut stone, it is also seen that brick is used as filling material on some facades. Wooden posts both provided the division of the interior space and were used as a carrier element. In addition, barn (roof) and haystack structures were found in the courtyard independent of the residence. Most of the Georgian houses are structures that are planned as living spaces with six roofs. The local people, who used to deal mostly with

animal husbandry, can both benefit from the heat of the animals and take care of their animals without being affected by the weather conditions with the roof located at the bottom. The barn (roof) is designed to be suitable for the care of both bovine and ovine animals inside. There are mangers, which are about 40-50 cm wide, called “baga” by the local people inside the roof. Nowadays, the barn (roof) has been transformed into a storage area and sometimes a living space. In the houses inhabited, in order to prevent the smell in the barn and the insects coming from the barn, concrete was poured on the floor of the upper floors and disconnected from the barn. In places where the lower floor continues to be used as a roof, the upper floor (living area) is mostly abandoned.

**4.2.6. Warehouse/Cellar:** The warehouse appears as a single structure adjacent to the residence or in the courtyard, and in cases where it is not located outside the residence, this area is seen within the living area. These spaces, designed like a room in the house, are used as food storage areas. In the plan scheme, it forms a rectangular area of approximately 200 - 250 cm width and 350 - 400 cm dimensions. In the houses that are still in use today, this area is transformed into a kitchen. The entrance is usually provided by a door from the hall. However, there are also examples providing access from both the hall and the room adjacent to the courtyard. Compartments are made with interlocking wooden elements in this storage unit called “likeli” in the house, and the woods that pass into these compartments are eliminated as the stored supplies decrease and consumers are provided with a more convenient way to access the food.

### *4.3 Structural elements*

The building elements that make up Georgian houses can be examined in two parts as external (such as windows, doors, roofs) and internal (such as height, and stairs).

**4.3.1. Cumba:** The cumba in the house can be examined in four groups. These are the floor where the upper floor is carried by wooden beams and the upper floor entrance facade should go out as a whole, a single exit from the upper floor where a single room or hall protrudes out, a corner where a single exit is located at the corner of the facade, and examples where both floors and single exits are together. Mostly, houses with storey buildings were found. Floors are usually in the form of straight out. The protrusion of the bay windows on the floor varies between 20-60 cm. Examples with a single cantilever were formed by

the enlargement of a room or hall overflowing. The cantilever is generally in the middle of the façade, but a façade with a corner ledge also is discovered (Algan, 2016:1774). Some of the examples with a single cantilever are located above the entrance and differentiate the facade on the street side. In the field study, there is also an example of both a floor and a single cantilever dwelling. The beams and buttresses carrying the cantilever were made using wooden material. It was observed that the overhangs were not covered and beams were visible.

**4.3.2. Doors:** The entry to the studied Georgian houses is not from the street frontage, but rather across the street and into the yard. The doors that provide entrance to the house from the courtyard can be grouped as single-wing and two-wing. They were made by Georgian craftsmen. Their width is 80- 90cm. The single-wing wooden entrance doors are about 200 cm tall. The two-winged entrance doors have a width of 145-160 cm and a height of 200-210 cm. The doors of the houses examined are generally wooden. The doors were made by bringing together wooden parts, whose vertical thickness can vary between 15 and 30 cm. It has been observed that simple geometric motifs such as a diamond pattern were used on some door wings. These simple door samples, made by the wood masters of the period, have survived to the present day.



**Example 7:** Wooden door samples. (Gölcük Municipality Archive). (URL-2)

**4.3.3. Windows:** The window sizes of the houses examined vary even in a single house. In some houses, it is seen that some of the windows of the houses

are enlarged, closed or opened later in line with the needs of the users. However, the traces of the original places of the closed windows can be read from the house facades. Window widths vary from 50 to 90 cm. The upper floor windows in the original examples were made in the ratio of 1/2. The working principle is generally vertical sliding. The windows are vertical sliding (guillotine) with two floors, and the upper part of the wooden joinery is fixed. In some houses, the windows were replaced as well as the residential windows were renewed with PVC joinery due to the maintenance difficulty of wood and insufficient insulation problems.



**Example 8:** Window samples (Gölcük Municipality Archive) (URL-2).

**4.3.4. Balconies:** There are very few examples with balconies in the houses examined. The balcony feature, which we see in plan styles with interior halls, is linked to the sofa and opens to the outside through a door from the kitchen, or the room we call the iwan. The balcony overlooks the garden or courtyard. The balcony, which spilled over the walls, was supported by wooden beams that were usually 90 - 120 cm in length. Wooden or iron railings, thought to have been changed later, was used on the balcony.

**4.3.5. Roofs:** Roofs are arranged as breaking with a slope of approximately 25-30%. The roof construction was created with wooden boards. The roof cover is Turkish style tile. Roofs are an important building element that prevents residences from being affected by weather conditions. The majority of roofs in the Georgian houses examined are seated. In some houses, the roofs are not covered with wooden cladding. Roof loads are transferred to the top floor ceiling beams by struts. Thus, load transfer to the walls is provided.

**4.3.6. Stairs:** The connection between floors in the studied Georgian houses is mostly provided by stairs with a single arm and a small landing. You can reach the hall on the upper floor by these stairs, the construction of which is made of wooden material. By keeping the stairwell as narrow as possible, the integrity of the hall is not compromised.

**4.3.7. Ceiling Coatings:** The ceilings are mostly flat-coated. In the old original houses, there are wooden decorated ceilings in which a wooden core is placed in the middle of the ceiling, but as a result of the repairs and changes of the idle dwellings, only a few examples of these examples remain.



**Example 9:** Indoor ceiling applications (Gölcük Municipality Archive). (URL-2)

**4.3.8. Flooring:** The floor coverings of the interiors are mostly compressed soil on the lower floors and wooden coverings on the upper floors.

**4.3.9. Doors:** The doors connecting the spaces in the residence are simple and unpretentious. Doors are usually wooden and single winged. All doors have thresholds. There is a door handle system with wooden sliding or iron latches on the door wings. The width of the doors varies between approximately 75-90 cm.

**4.3.10 Cedar:** In some of the rooms, there are elevations of 20-30 cm height that serve the needs of the user such as sitting and lying. The local people call these elevations “seki”. Seki are made of soil or wood, depending on their location.

**4.3.11. Wall Niches:** It is possible to find niches in different sizes and characters on the room or sofa walls of the houses. Cabinet niches located next to the stove are larger than niches where everyday items or ornaments are placed, and are mostly covered with cabinet doors. Generally, there are “pouches” on the side of the hearth where only the rim of the pot buried in the wall appears as a round hole. These pouches, which serve as a small niche, are the places where the users put their daily items such as matches and prayer beads. Lamps and candle holders, known as “peyke” in the area, are installed as a shallow niche or protrusion on the wall to hold kerosene or oil lamps.

**4.3.12. Cupboard/Wardrobe (Musendera):** The cupboards called “musendera” by the local people are mostly built as a large niche in the stone wall in the rooms of the house. It has depths ranging from 40 to 60 cm. Next to the cupboards, there are mostly a hearth and a gusulhane.

**4.3.13. Gusulhane (Hamam):** The gusulhane/ ghuslhouses, also known as baths in the region, are also found in the rooms of the house as a cell embedded in a stone wall next to the hearth. The waste water accumulated here is thrown out in pipes called “porengi”.

**4.3.14. Hearths:** The use of stoves is encountered in most of the rooms in the houses examined. The furnace element in the part where the stone wall is located was built to heat the rooms that have household characteristics. The hearth is located in the middle of the wall where it is located. There are generally cupboards and ghusl rooms next to the hearth. In most of the houses used, the original stoves are closed and the rooms are heated with stoves called “maşinga”.

## 5. Evaluation and Conclusion

Housing is characterised as a framework that meets a person’s physical, social, formal, and economic needs. Mankind has to constantly adapt to the physical and cultural environment in which they live. While planning and constructing the environment in which people live, they have to consider many factors. It forms the environment in which it resides, as well as the history and customs of the community to which it belongs, by taking into account the climate of the geography in which it lives. Their architectural practises, like their behaviour, are traditional. Building content, like climate, is one of the factors that influences

the architecture that results, and both are influenced by the environment (Gür,2000:129).

People move to areas where they can use the skills, lifestyles, and cultures they have learned up to that point. Traditional architectural examples contain regional and local differences. Settlements are formed by building institutions in accordance with the social context of the community and the physical world in which they exist.

Physical environment; it covers the climate, vegetation, topography and local material possibilities of the individual and the society in which he lives. The physical environment contains important data that enable the unique architecture of each region to be formed. Human beings have to be in harmony with the physical environment as well as considering human needs while building. Social structure includes the life style, traditions and customs, religious beliefs, living spaces, livelihoods and economy of the individual and the society he / she lives in. The social structure of the society also shapes the architectural products created.

The person arranges his or her living quarters, physical records, and user needs in accordance with the decisions he or she makes based on the structure of acceptance (custom) and previous existence (tradition). For this reason, it is possible that spaces designed for the same action will appear in different forms (spatial arrangements) in different cultures, since the solutions applied to meet the perceived needs of different cultural environments will be different (Kızıl, 1978:110).

Georgian immigrants who came to Anatolia with the immigration movements starting from the 1877-1878 Ottoman-Russian War, determined their settlements by looking at the climate similar to their place of origin, topography, accessibility of natural resources and accessibility of materials to settle permanently. Georgian refugees, who mostly preferred mountainous regions, established villages in these areas according to their own traditions. The immigrants living in these settlements they established display characteristics similar to the Black Sea and Caucasian cultures in terms of language, clothing, materials they use, tools and equipment and products they grow.

The construction dates of the Georgian houses, which are located in the countryside of Gölcük, which contain traditional Turkish house features and have survived until today, date back to the post-Ottoman-Russian War of 1877-1878. However, in Kocaeli, which is located in the earthquake zone, damages

were created in general of the settlements, and most of the houses were able to survive thanks to the repairs and changes of the buildings that were destroyed or damaged over time.

The fact that the districts examined were settlements established by immigrants with the same ethnic and religious basis, who call themselves as the immigrants of the year of 93, and today, predominantly Georgians, have drawn the boundaries of our fieldwork.

The places where Georgian immigrants, who founded the settlements established after the 1877-1878 Ottoman-Russian War, came from are given below in the light of the information obtained from the interviews and written sources:

Nüzhetiye Village (Flooring), İhsaniye Village, Lütfiye Village, Siretiye Village, Hamidiye Village, İcadiye Village, İrşadiye Village, Mamuriye Village, Çayırdağı Village, Ferhadiye Village, Ayvazpınar Village, Hasaneyn Village, Alimezar Village, Sakarbiçki Village, Nimetiye Village, Ümmiye Village (Ganitekin, 2005:25).

In general, the settlements established by Georgian immigrants migrating from Batumi and Artvin are different from each other in terms of the size and shape of the parcels where Georgian houses are located. The ground floors of the residences are shaped depending on the characteristics of the land they are settled in. It is seen that the plan typologies in the houses are not evaluated according to the ground floor, which includes the service spaces, but the floor above the ground floor in two-storey houses according to the space organization. The ground floor is used as a living space in a small number of single-storey buildings, while service spaces are a different structure that is articulated to the house or located in the courtyard.

Halls are an element that allows the other areas of the building to be situated in such a way that they have direct interaction with the kitchen, courtyard, and street in all of the buildings. The lost area in the anteroom has been reduced and the available spaces have been expanded by using the hall as a living area and the shallow stairway landings as far as possible.

Two types of plan typologies have been observed in Georgian houses, which were examined in the grouping based on the location of the sofa in traditional Turkish houses and the sofa-room relationship. While most of the plan schemes with outer halls are seen, in some neighborhoods plan schemes with inner halls are predominant.

The materials used in the building of Georgian houses in Gölcük and its surrounding areas were chosen for their suitability to the environment, topography, and ease of access. They are the fundamental components of stone, soil, sand, and wood systems. Stone and wood are widely used as carriers in architecture.

In most of the houses, the ground floor has been seen as masonry and the upper floor as a wooden carcass system. The floors of the residences are wooden or stone covered. The barn floors are covered with compacted soil.

Stone material is used on the basis of the buildings. One of the basements and ground floor walls was made of stone material, and the hearth, wardrobe and ghusl were embedded in the wall.

The thickness of the stone walls in the houses examined varies between 50 and 70 cm. These stone walls were built by laying rough-cut stones between wooden beams and using mud or lime as joint filling material.

Georgian houses are similar to those in rural settlements in the same region in terms of location arrangement and façade features on the parcel. Indoor and outdoor elements specific to the Caucasus and the Eastern Black Sea region are also found in settlements established by Georgian immigrants. The granary structures unique to the Eastern Black Sea region appear as warehouses in the studied settlements. Although there are differences in the usage purposes and construction techniques of the serenders, the building typologies are the same. Warehouses are used both inside the house and as an outdoor element. This situation is present in the Georgian settlements of Gölcük, as in the Eastern Black Sea region.

About the fact that Georgian immigrants' ethnic origins remained hidden behind Turkish and Islamic customs and the culture of the region to which they moved, their culture and language were largely maintained. This is mirrored in their immediate surroundings and the structures in which they reside.

With the growth in the nuclear family demographic, the buildings got new renovations, and some areas of the buildings were reshaped to accommodate more branches of the growing family. These changes caused the buildings to lose their originality. In addition to this situation, the population of Georgian settlements gradually began to include different ethnic identities, and this situation caused the ethnic characteristics of Georgians to gradually assimilate and cultural hybridization. Cultural interactions affect not only individuals but also the structures they build.

As a result, all of the places it has developed to satisfy human needs and to live, as well as the structures that make up these areas, are inspired by and include remnants of their respective cultures. With the gradual increase of uniform constructions built using modern construction techniques in rural settlements, the structures that contain local qualities are decreasing, and the structures that have cultural heritage characteristics are disappearing. For this reason, these settlements, which are located in the countryside of Gölcük and contain the original building elements of their period, should be registered and brought into tourism.

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## CHAPTER II

# REVEALING THE RELATIONSHIP BETWEEN THE TRADITIONAL HOUSE DESIGN AND ITS SOCIAL STRUCTURE USING SPACE SYNTAX METHOD: THE CASE OF IZMIT HOUSES

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### 1. Introduction

Scholars from a variety of disciplines define the social meaning of the house in many ways: Homes are not just physical artifacts but are also cultural products. According to Rapoport (Rapoport 1969a, 1969b, 1985) the design of the house is influenced by cultural values and choices; Mazumdar states that houses reflect rules, norms, and social relationships (Mazumdar & Mazumdar, 1994), while according to Lawrence and Low, they are replete with symbolic meanings (Lawrence, 1985; Low, 1988). According to Kennedy (1999, pp.9-11) a house is not only a special part of a physical environment, it is also the product of a certain society. The house, as a social unit, reflects a society's cultural and ideological characteristics, and also regenerates the needs

and values of the central system. According to Bourdieu (1990, p.282) the house is a microcosmos, being related to the rest of the universe and the world within the world and regulated together with the same oppositions and homologies in the order of all the universe. According to Bellal (2004) traditional houses include the social and symbolic information assumed by its users.

Hillier & Hanson (1984) argue that the culture is hidden inside the order of the space, and they have revealed the space syntax method examining the society-space relation. From this point, this study aims to examine and put forward the apparent correlation between the system of social relationships and a spatial pattern, and the relationships between the structuring of space within traditional houses in the center of Kocaeli-Izmit using the “space syntax” method. In addition, the study has two significant aims. These aims coincide with the studies conducted with the use of the space syntax method on the houses (Hillier, Hanson, & Graham, p.366; Orhun, Hillier, & Hanson, 1995, p. 476; Orhun, 1997, 2010; Dursun, 2002; Dursun & Sağlamer, 2003; Bellal, 2004, p.112; Çil, 2007; Sanlı, 2009, pp. 59-60). Firstly, could the spatial morphology of traditional houses of Izmit city centre be revealed with the method of space syntax? Are there certain tendencies (genotypes) in the models? Secondly, could the connotations and hidden themes of the morphological rules in the houses of Izmit be explained? What is the contribution of the space syntax method to this study?

In order to understand the status of traditional Izmit houses within the context of traditional Turkish houses, this chapter focuses on the technical terms of the Turkish house; the historical context, the planning resources, and the roots of Turkish houses.

## **2. Historical Context of Turkish Houses**

The traditional Turkish house and its historical context have been studied by many researchers. Aksoy (1963) has put forth the idea that forms of the Anatolian Turkish house have been affected from the Hittite and Greek house traditions. Esin (1976) catches the attention to the continuation of the old Chinese mansion tradition in the Middle Asian ighur soils and the transfer of this to the Middle Age Turkish architecture and Turkish house design (as cited in Kuban, 1995, p.39). According to Kazmaoğlu & Tanyeli (1978) “the traditional Anatolian House” is the product of the unity defined as “Anatolian – Turkish” (Arel, 1982, p.32). Arel (1982) has defined the traditional house architecture of Turkey as

the “Ottoman house”. She has based her approach on the viewpoint of Rapoport (1972) and from this point, she has argued that some properties in the spatial organization of the Ottoman house stem from the cultural structure forming this house type (as cited in Arel,1982, p. 78). Eldem (1984, p.19) stated that the formation of the Ottoman house was based on Turkish house and added that Ottoman-Turkish house has been formed by again Turkish art and Turkish life culture.

According to Kuban (1995, pp.18-20) the basic elements and proportion of the Turkish house typology are in a geographical area extending to the Balkans from the east of Middle Anatolia, between the mountain chains surrounding the Anatolian plateau and the Middle Anatolia steppe. The typological development of the Turkish house could be started from the sixteenth century and referred to as the house with hayat. According to Günay (1998, pp.16-18) the houses with authentic room order, plan scheme, multi-storeys, roof type and construction system inherited from the Ottoman Empire and whose samples coming to our age dated back to the seventeenth century are called the Turkish house. Cerasi (1999, pp.155-173) looks at the Hellenistic Olinthe, Dacya houses, Hungarian settlements, Macedonian and Anatolian Black Sea countryside houses to understand characteristics of the Ottoman house.

### ***2.1 The Studies Conducted on the Spatial Organization and Typology of the Turkish House***

Aksoy (1963) has argued that the “introversion” which is the spatial organization principle of the Anatolian-Turkish house is dependent on the ethnical-cultural tradition. From this point, Arel (1982, p.25, pp.34-54) focused on (1) Mezzanine level principle, (2) Mansion/ Divanhane/ Başoda tradition, (3) Openness/Closeness – Inside/Outside contrariness, and 4. Central sofa properties while examining the regional house architecture samples of Turkey. Eldem (1984, 16, 17-20, 28, 43-44) has specified that the climate, geological structure and cover of the ground and the society and manufacturing conditions in the region are effective in the formation of different house types. He has defined the floors (base floor, mezzanine level) that are efficient in the plan formation of the Turkish house and planning elements such as rooms, sofas, crossings, and staircases. He has classified the Turkish house plan types into four and sequenced the development stages as: without sofa, with open sofa, with inner, and with central sofa. According to Kuban (1995, p.21) the

“Turkish house” or “house with hayat” has cultural meanings and it is the only house typology revealing in the definable geographical and cultural field. In Cerasi’s opinion (1999), the Ottoman house consists of three parts: (1) The entrance floor consisting of stone, (2) The seating units all of which are upstairs, (3) The places uniting the rooms: sofa or hayat. Asatekin (2005, pp. 391-395) has classified all of the studies conducted on the Turkish house and separated the studies into three categories: (1) Classification of traditional house units according to the plan type of “Piano nobile” (first floor of the main building unit), (1a) Classification according to the sofa, (1b) Classification of traditional house unit according to the rooms, (2) Classification according to the construction techniques and materials, (3) Classification according to regional characteristics.

### **3. Methodology of the Study: Space Syntax**

The space syntax being the analytical tool of the study is the method and theory examining the society-space relation. Its basic discourse is that the building forms are shaped by the social norms of the society. Namely, the culture was hidden inside the spatial order (Hillier & Hanson, 1984, pp. 89-190; Hillier, Hanson, & Graham, 1987, pp.363-385). It was the first theory that both examines the transmission or arrangement of social ideas in a spatial pattern and transforms them into measurements and symbols that illustrate those spatial structures by using geometric representations of a certain space system (Hillier & Hanson, 1984; Hillier, & Vaughan, 2007). The space syntax method started with the studies on the “discovery of social, economical and cultural information after the spatial analysis”. Although the analytical operation of the method was basic, subjective and repeatable, it was criticized in terms of the use of binary coding in the study and production of numerical scales, the fact that the social dimension of the society cannot be revealed by taking the settlement and two-dimensional floor plans into consideration, the form of the building is not just dependent on the use and meaning of space, the interpretation process of the numerical results to be complex, subjective and contrastive (Leach, 1978; Lawrence, 1990; Rapoport, 1969a; Osman, & Suliman, 1994, pp.189-198). Some researchers have specifically stated that the numerical data attained as a result of this method should be supported with physical, social and cultural data (Dursun,

2002; Dursun & Sağlamer, 2003; Sanlı, Dursun, &, Sağlamer, 2007) and these data clarify not only the social and cultural factors in the spaces, but how the spaces give opportunity and prevent encounterings between people (Orhun, 2010). In many studies in which the space syntax method has been used, the physical, social and cultural information supporting the method and belonging to the houses and settlement whose analysis has been conducted are also included (Bellal, 2004; Brown & Bellal, 2001; Dursun & Sağlamer, 2003; Orhun, 2010; Kharazmi Nezhad & Hajizadeh Bastani, 2012; Çil, 2007; Şimşek, 2013; Korkmaz, 2011; Orhun, Hillier, & Hanson, 1995). These data have been interpreted together with the data attained from the space syntax method, and genotypes have been attained belonging to the analysed houses.

In the studies in which the traditional Turkish house has been analysed with the use of the space syntax method (Cooking-Integrating C Type, living-integrating L Type: Orhun, 1997, 2010; sofa centred and courtyard centred houses: Orhun, Hillier, & Hanson, 1995, Orhun, 1997; deep-core type, shallow-core type: Orhun, 1997; Çil, 2007; extroverted houses and introverted houses; Orhun, Hillier, & Hanson, 1995, Dursun, 2002; Dursun & Sağlamer, 2003; Çil, 2007), the development of new genotypes in addition to the typologies attained from the studies conducted on the “Turkish house” or supporting of the data attained from the typological analyses with the syntactic data (Ünlü, 1999) has given rise to the selection of the method in this study. By taking the aforementioned studies as examples, the architectural characteristics of the Izmit centre traditional house, socio-cultural usages of the houses, the daily life in the houses has especially been explained for the purpose of making a contribution to the interpretation and supporting the method. We should point out some of the tools, concepts and measurements used in the space syntax method in order to fully comprehend the method.

### ***3.1 Analytical Tools of the Space Syntax Method: Justified Graph /J-Graph***

Hillier et al. have suggested a tool called the “justified gamma map” to show the difference between two spatial patterns (Hillier, 1993). The justified gamma map is a graph in which the spaces are expressed with the rings, and the permeabilities are expressed with strips. In this graph, all spaces having the same depth are sequenced on the same horizontal plane (Hillier,

Hanson, & Graham, 1987, p.384). The “JASS” programme was used to create J-graphs.

### ***3.2 Concepts of the Space Syntax Method: Depth, Genotype, Choices/ SLR- Rings***

The “depth” concept is one of the most important ideas in space syntax. The depth among a group of spaces is explained through how much that space is segregated or integrated from other spaces and therefore how much the relation between them is easy and natural. If it is possible to pass from one space to another, this space is in the “1” depth of the other one. If another space is required to pass from one space to another, that space is in the “2” depth (Hillier, Hanson, & Graham, 1987, pp.364-365). The depth concept also reveals characteristics of spaces in a system such as “secluded and private” (most segregated spaces) and “shallow and pivotal” (most integrated spaces) (Hanson, 1998, p.30) (The mean depth of the research is presented in Table 3).

According to Hillier & Hanson (1984, p.44, p. 150) a genotype is basically informative in terms of the biological context. A genotype reveals the individual entity named as the description centre. Syntactic positions in the complex and general definitions in the whole of complex show the existence of this genotype. Genotypes are results of relations between house owners and house owners-visitors.

“Choice” indicates that there are alternative routes to go from one space to another (Hillier, Hanson, & Graham, 1987, p.364). The SLR (Space link ratio) is obtained from the division of 1+ the number of links by the number of spaces. If this value is closer to “1,” it means that there is no alternative way in tree-like configurations etc. If the value is above “1,” it indicates that there is a ringiness degree (Bellal 2004, p.115). The meaning of the “tree” here is that there are links less than the number of cells and that there is no ring in the graph (Hillier, 2007). While rings show the alternative way to reach private spaces (Hillier & Hanson, 1984; Hanson, 1998, p.78), movements of visitors are under control in tree-like arrangements (Foster, 1989, p. 49) (The SLRs of the research are presented in Table 3.)

### ***3.3 Measurements of the Space Syntax Method: Integration Value/ RRA, Base Difference Factor/ BDF***

The integration value of space indicates the relative depth of that space compared to all the other spaces in the obtained graph (Hillier, Hanson,

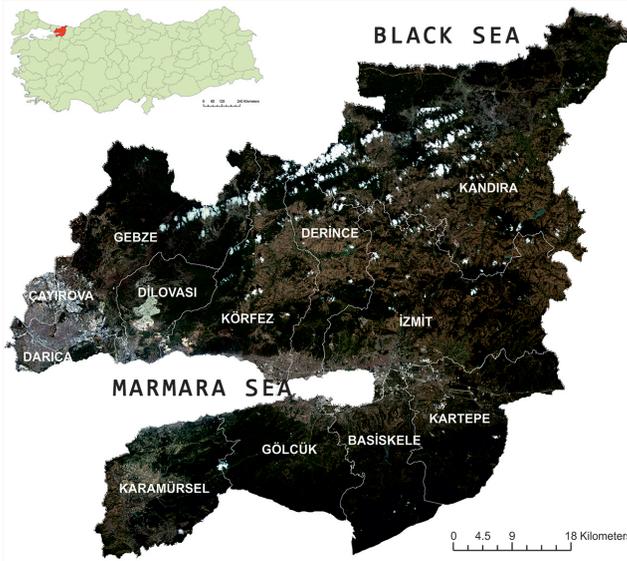
& Graham, 1987, p. 364). A low integration value shows that the space is integrated with the system and a high integration value shows that the space is in the tendency of leaving the system (Hillier & Hanson, 1984; Osman, & Suliman, 1994, p.191).

Hillier, Hanson, & Graham (1987, p.365) refer to the consistency in spatial patterning as the “inequality genotype”. In general terms, this means that “culture is built within a spatial layout.” By means of calculating this, the entropy-based measurement, called the “difference factor”, is conducted (Hillier, Hanson, & Graham, 1987). BDF is used to measure the strength of the spatial genotype, to exactly find the places of the meaningful house functions in the house samples and to understand which activities are becoming different and which are staying the same (Orhun, Hillier, & Hanson, 1995; Brawn, & Bellal, 2001). When BDFs are closer to 1, the value indicates the system’s homogeneity (the integration values within the system are very similar), and when they are closer to “0”,(the integration values within the system are very different), the homogeneity decreases (Hanson, 1998, pp. 30-31; Bellal, 2004, p.120).

#### **4. Research Area and Scope**

The authors believed that a study of this nature would benefit from data collected from multiple sources. The primary data for this paper came from naturalistic fieldwork in Izmit, and include a visual survey, participant observation, a structured interview with local residents and local elders, as well as photo-documentation<sup>1</sup>. A total of 18 house samples were included in the study and were analyzed using their previous plans before they were renovated. The house projects were collected from freelance architecture offices, and from the archives of both the Kocaeli Metropolitan and Saraybahçe Municipalities. In light of the obtained data, the house plans were reviewed, and redrawn in the same representative style in accordance with the original plans. In addition, the information regarding the Izmit houses was collected from resources in Kocaeli- Izmit (newspapers, article, books, and journals).

<sup>1</sup> All photographs whose source has not been given belong to the writers of the study



**Figure 1:** Location of Izmit on the Map of Kocaeli (Map archive of the Architecture and Design Faculty in Kocaeli University, 2021)

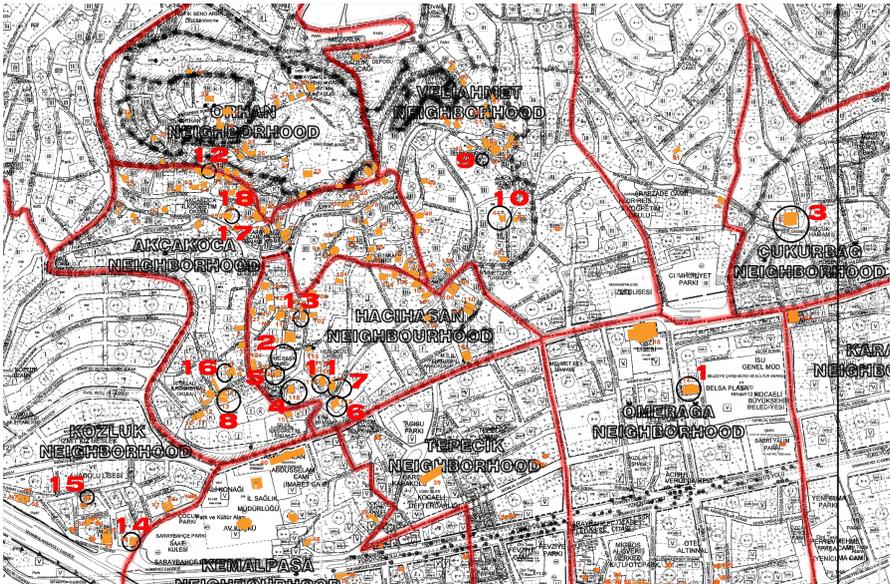
The research area is within the boundaries of the region, which has been the city centre since Izmit was first established (Figure 1) (ancient Nicomedia) in the third century BC, and where ancient (Archaic and Classical, Hellenistic, Roman, Byzantine and Turkish civilizations) urban stratification occurred. One of Izmit’s notable characteristics is its sloping structure. Due to this structure, parcels consist of irregular forms. Streets are generally narrow and steep and bordered with either houses or garden walls. Most of the buildings in this area belong to the Ottoman period, which is the closest period to our time compared to other historical civilizations.

This study has been conducted on 18 traditional houses built between the eighteenth and twentieth centuries belonging to the Ottoman period and located in six neighborhoods (Akçakoca, Hacıhasan, Kozluk, Ömerağa, Çukurbağ, Veli Ahmet) (Figure 2) within the borders of Izmit Saraybahçe<sup>2</sup>. The number of registered traditional house remaining from the Ottoman period in the abovementioned neighborhoods is 147. A study of typology has been conducted on 40 registered houses which could protect their authentic character, whose architectural survey drawings and restoration projects could be accomplished and which were taking place in the same area beforehand (Erdoğan, Özbayraktar,

<sup>2</sup> In accordance with the gazette article dated March 22, 2008, on establishing a district, the name of the Saraybahçe Municipality was replaced by the “Izmit” Municipality. In addition, “Kuruçeşme, Bekirpaşa, Alikahya, and Akmeşe” Municipalities were connected to this district (Erdoğan, Özbayraktar, & Ayyıldız, 2011).

& Ayyıldız, 2011, p. 39). As a result of the study, the general architectural characteristics of Izmit's traditional houses have been determined. The first study conducted on the Izmit house was conducted by Eldem (1984) on homes built in the eighteenth century. He states that Izmit was rich in terms of old houses until approximately 1964. There were the ones among them having great mansions with a central sofa and the ones with classical Istanbul style ornamental facades with no impact of ruralness. In her thesis of a syntactic analysis on Turkish houses, Orhun (1997, pp. 91-106), used two Izmit houses on which Eldem (1984) mentioned the vernacular effect of Istanbul. According to this, both İzmit houses were integrated with living spaces, separated from cooking, and receiving spaces, and are the deep-core type.

Eighteen registered traditional houses selected in this study have been modified very little in terms of the space planning and facade properties within the scope of the study conducted previously (Erdoğan, Özbayraktar, & Ayyıldız, 2011) and in this way, they are the houses by which the traces of the traditional Izmit house could be followed more comfortably. Another criterion during the selection is the availability of most of the selected houses to the users and giving the names of the mentioned houses when the Izmit traditional house is referred to during the interviews.



**Figure 2:** The Houses Analysed in the Study Regarding The Izmit Urban Development Plan and Their Locations: 1. Soydan's mansion 2. Sırrı Paşa mansion 3. Portakal Hafız mansion 4. Green mansion 5. Pink mansion 6. Köşker's house 7. Ufuk Şensoy's house 8. Inventory 13 9. Saatçi Ali Efendi's house 10. Fatma Güzin Bayraktar's house 11. Aslıhan Kurt's house 12. Ramazan Sürücü's house 13. Şener Gözaydın's house 14. Inventory 48 15. Semahat Aracı's house 16. Uncle Kemal's house 17. Yavuz Ulugün's house 3 18. Yavuz Ulugün's house 2

## 5. Findings: Analysis of Architectural Features of Selected Houses

In the context of the research, 18 registered houses were examined, and these examinations revealed general physical features of the houses. The acquired physical features and outcomes were tabulated (Table 1).

**Table 1:** The Houses' Architectural Features

Number of floors	Three floors (11 houses) Four floors (4 houses) Two floors (3 houses).
Number of entrances	Two entrances, one from the garden and the other from the street Main entrances: To the south, landscape direction
The spaces on the main entrance	Sofa- tiled sofa: The main living space that enables connection between all spaces The main staircase associated with the sofa Pabuçluk : The place in the sofa where shoes are taken off , stone-ground
The spaces on the ground floor	Mostly sofa, multifunctional (sitting, sleeping, dining, hosting guests) rooms, kitchen and hela (traditional toilet); rarely halls, bathroom, storing-oriented spaces (cellar, storage, woodhouse, coal cellar), balcony, yard, cistern and spaces that are associated with animals (stable, hayloft)
The spaces on the first floor	In all houses (18houses); Mostly sofa, rooms opening onto sofa (generally bedrooms, most of which include “yükçük içi gusülhane” (traditional bathroom), balcony and hela Seldom başoda, bathroom, kitchen, store and halls
The spaces on the second floor	In houses that have the second floor (5 houses): Mostly sofa, rooms opening to sofa and hela; seldom, main room, bathroom, cellar, store room, halls and yükçük içi gusülhane
The spaces on the basement floor	In houses that have the basement floor (9 houses): Mostly sofa, rooms opening to sofa, kitchen, bathroom, storage and cistern (for storing water), seldom halls, cellar and hela Cistern: One of the spaces of the basement floor or the only space of this floor. It is entered through a lid. This lid is sometimes located in kitchen, sometimes in pabuçluk and in this work, sometimes on the area called “the space above cistern”
The spaces on cihannüma (summer kiosk at the top)	In houses that have cihannüma (summer kiosk at the top) (4 houses); Usually a balcony, reached through cihannüma
The spaces on the attic floor	In houses that have an attic floor (one house); sofa, rooms opening onto sofa and store rooms
The largest space	Sofa (13 houses) The length of the longest sofa: 14.2 m
Room dimensions	The room with the shortest side: 1.85m. The room with the longest side: 7.64m.
Floor height	The lowest floor height: 1.59m in basement floors The highest floor height: 4.2m.
Spaces and components in rooms and their intended purposes	Most of them have “yükçük” (built-in wardrobe) Some have “yükçük içi gusülhane (traditional bathroom)”
Spaces and components in the başoda and their intended purposes	They seldom include seki (raised platform), yükçük (closet), sedir (raised seating) yükçük içi gusülhane For hosting guests
Spaces and components in kitchen and their intended purposes	They generally include a stone oven, randomly cellar and yükçük Generally, on the garden floor, most houses have separate entrances.
Bathing spaces	Bathrooms opening onto sofa and gusülhanes that are located in yükçük (closet)

### 5.1 *Findings on Socio-Cultural Usage of Spaces in Houses Obtained by Face-to-Face Interview*

In light of the interviews conducted with the traditional house users, and the people of Izmit<sup>3</sup>, the literature research and space analyses performed on the houses, the social usage of traditional houses in the centre of Izmit was explored. The space usage in houses does not differ by gender and all spaces are open to the entire household.

However, this usage can differ in houses of wealthy families (the Soydan's Mansion). In these houses, there is a separated space, called the mabeyn, which is allocated for official guests, and which is separate from the other parts of the house.

Depending on the degree of affinity with the guest, they are allowed to enter the different parts of the house. Temporary guests-neighbors are welcomed in the semi-private sofa spaces on the ground floor and/or living room in the winter and in the garden in the summer.

Official guests are welcomed in the bařoda located on the first or second floor, which is the largest, most organized, and scenic room in the house. If there is no bařoda, they are welcomed in another room or sofa specifically designated for guests. These spaces are generally on the ground floor. Boarding guests-relatives are welcomed in the bařoda or another room on the first floor. Yüklük içi gusülhanes in these rooms can be used for boarding guests as well. Social activities such as wedding, engagement, circumcision ceremonies are performed in the sofa, tiled sofa, bařoda or a room designated for guests in winter. In summer, the garden can also be used for these activities.

The spaces where family members gather are the sofa, tiled sofa, a daily room used by the family, the kitchen, the cihannüma, balcony and/or garden. The spaces that are used only for personal use differ in some large houses, and are generally the bathroom, hela, and yüklük içi gusülhanes.

<sup>3</sup> Face-to-face interviews were made for this study by the authors between 2009-2010 (1. Interviews with owners of the traditional houses in central Izmit: Owner of Soydan Mansion, February 2009; owner of Portakal Hafız Mansion, 02.02.2009; owner of Inventory 13, 31.02.2009; owner of house 16, 31.12.2009; owner of Köşker House, 29.01.2010; former owner of Sırrı Paşa Mansion, 31.03.2011, 2. Interviews with old izmit local residents on "Life in Traditional Houses) (Erdoğan, Özbayraktar & Ayyıldız, 2011).

## 5.2 *Applying of Space Syntax Method On İzmit City Centre Traditional Houses*

As stated in the general objective of the study, the integration value (RRA), base difference factor (BDF), and the choice/space-link ratio (SLR) values of each traditional house were calculated in the syntactic analysis conducted to “reveal the apparent correlation between the system of social relationships and the spatial pattern and the relationships between structuring of space within traditional houses in the centre of Kocaeli-Izmit.” These values enable us to compare spaces within the spatial configuration (Bellal, 2004, p.120). This study involved three steps:

The First Step (drawing of “Justified graphs): “The house plans, which were redrawn with the same representative language, were used for the justified graphs (Table 2). In the house plans, each space was numbered according to their function, and used in the analysis as presented below. For each building, two justified graphs were drawn, one with the exterior space and one without exterior space: “X”= Street; “+” = Entrance Garden; “1”= Side garden 1a= Entrance Landing; 1b= Yard; 2= Pabuçluk; 3= Sofa; “3a”= Sekilik (Raised platform); “3b”= Köşk (Kiosk) ; 4= Tiled Sofa; 5= Stairs; 5a= Stairs Landing; 6= Hall; 7=Kitchen; 8= Room; 9= Başoda (Main room); 10= Cihannüma (Summer kiosk at the top); 11a= Bathroom; 11b = Yüklük İçü Gusülhane (Traditional Bathroom); 12= Hela (Traditional Toilet); 13= Balcony; 14= Dining Room; 15 = Storeroom; 16= Mabeyn Room; 17 = Servants Room; 18 = Service Room; 19= Radio Room; 20 = Showcase Room; 21= New Room; 22= Serinlik (Cooling Space); 23a = Storage; 23b= Cellar; 23c = Woodhouse; 23d = Coal-cellar; 24 a= Cistern; 24 b= Space over the Cistern; 25a = Stable; 25b=Hayloft; 26= Laundry Room

The Second Step: The results obtained from the justified graphs are presented in Table 3 without listing the functions of the spaces.

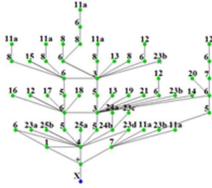
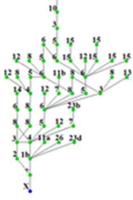
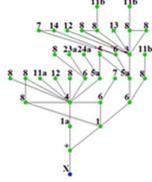
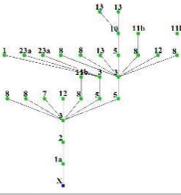
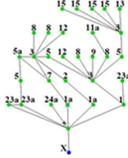
The Third Step: The results obtained from the justified graphs are presented in Table 4 in order to exhibit a combination of their different functions with their integration values. The following points were considered while conducting the analyses:

- Of the selected houses, 11 houses (1, 2, 3, 5, 6, 10, 13, 15, 16, 17, 18) opened out to the street through the garden. Four houses (4, 11, 12, 14) had a direct entrance onto the street. Three houses (7, 8, 9) opened onto the street, both directly and through the garden. For the houses, the “garden entrance, side garden, entrance landing and yard balconies” are important in space

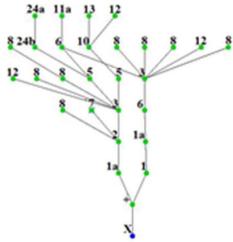
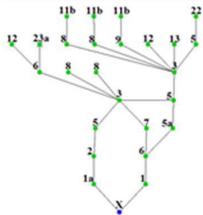
structure. For this reason, each space was given a number and is located in the justified graphs.

- The analyses were conducted for all the floors of the houses.
- The stairs were also given a space number as a circulation element and are located in the justified graphs.
- In all the houses, the root space was considered as the “street” in graphs with exterior space. In graphs without exterior space, the closest space to the entrance, the “pabuçluk”, was considered as the root space. In the houses without this space, the “tiled sofa” or “sofa” in the entrance was considered to be the root space.

**Table 2:** Selected Houses and Their Justified Graphs

<b>Soydan Mension (House1)</b>	
 <p>(Turgay, 2007, p. 249)</p>	
<b>Sırrı Paşa Mension (House2)</b>	
 <p>(Yavuz Ulugün's Archive)</p>	
<b>Portakal Hafız Mension (House 3)</b>	
	
<b>Green Mension (House 4)</b>	
	
<b>Pink Mension (House 5)</b>	
	

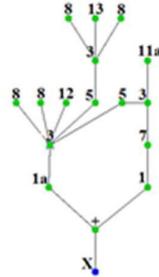
**Table 2:** Selected Houses and Their Justified Graphs (Continue)

<b><i>Köşker's House (House 6)</i></b>	
	
(Yavuz Ulugün's Archive), Photo İ. Sağroğlu	
<b>Ufuk Şensoy's House (House 7)</b>	
	
<b>Inventory 13 (House 8)</b>	
	

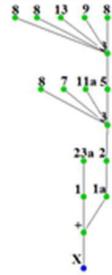


**Table 2.** Selected Houses and Their Justified Graphs (Continue)

**Semahat Aracı House (House 15)**



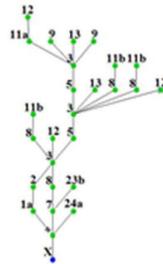
**Uncle Kemal's House (House 16)**



**Yavuz Ulugün House 3 (House 17)**



(Yavuz Ulugün's Archive)



**Yavuz Ulugün House 2 (House 18)**

It was demolished



In this chapter, the data obtained from the “justified graphs” of all the houses investigated in this study (Table 3, Table 4) are evaluated. Table 3 consists of the “Basic syntactic data” both with and without the exterior space of the selected houses.

**Table 3:** Basic Syntactic Data

House Number	Number Of cells	Space - Link ratio	Mean Dept	Integration with exterior			BDF	Integration Without exterior			BD F
				Mean	Min	Max		Mean	Min	Max	
1	58	1.10	5.26	1.05	0.52	1.82	0.72	1.09	0.58	1.87	0.75
2	50	1.10	6.24	1.27	0.71	2.24	0.75	1.26	0.71	1.99	0.80
3	35	1.06	4.53	1.08	0.67	1.53	0.87	1.26	0.75	1.81	0.85
4	29	1.00	5.21	1.17	0.62	1.69	0.82	1.12	0.58	1.68	0.80
5	31	1.16	3.83	1.02	0.54	1.39	0.84	1.30	0.72	2.27	0.75
6	29	1.03	4.96	1.20	0.67	1.69	0.84	1.21	0.64	1.84	0.80
7	26	1.08	4.76	1.11	0.58	1.60	0.81	1.10	0.56	1.56	0.81
8	23	1.09	3.55	1.19	0.58	1.94	0.74	1.28	0.60	2.31	0.68
9	24	1.13	4.61	1.30	0.70	1.97	0.80	1.27	0.65	2.49	0.67
10	25	1.08	4.79	1.19	0.60	1.68	0.81	1.23	0.59	1.95	0.75
11	25	1.00	5.13	1.27	0.63	1.79	0.81	1.16	0.57	1.82	0.76
12	24	1.00	4.09	1.37	0.95	2.68	0.77	1.47	0.81	2.60	0.74
13	16	1.00	4.07	1.12	0.53	1.75	0.75	1.26	0.57	1.72	0.79
14	30	1.03	6.31	1.73	1.03	2.23	0.85	1.75	1.09	2.69	0.84
15	17	1.06	3.94	1.21	0.58	1.64	0.81	1.37	0.64	1.91	0.79
16	17	1.00	4.75	1.49	0.82	2.49	0.77	1.16	0.60	1.68	0.81
17	27	1.04	5.85	1.40	0.80	2.02	0.84	1.52	0.82	2.54	0.76
18	14	1.00	4.38	1.36	0.67	2.11	0.77	1.47	0.82	2.27	0.81
Mean	28	1.05	4.79	1.25	0.68	1.90	0.80	1.29	0.68	2.06	0.78

The space-link ratios of the six cases (for house numbers: 4, 11, 12, 13, 16, 18) show that there is no ringiness in these houses (they have one value-tree-like form). There are no alternative ways to be used by the householders and the guests (neighbors, relatives, official guests) in these houses, and this situation shows that the movements of the users inside the house are under control. In other cases, the space-link ratio over one shows the presence of ringiness (for house numbers: 1, 2, 3, 5, 6, 7, 8, 9, 10, 14, 15 and 17). As has been expressed before (Bellal, 2004; Sanlı, 2009), these rings are the alternative ways of the householders and the guests (neighbors, relatives, official guests). Four cases (for house numbers: 6, 14, 15, 17) have only one ring. These houses branch out and get deeper and do not present alternative ways for the user. Four cases (for house numbers: 1, 2, 3, 5) have the highest number of rings. These rings are in the main functional spaces; namely, the entrance garden, front garden, side garden, tiled sofa, sofa, stairs and hall. Convex spaces diversify from 14 to 58 (Table 3).

The total “mean depth” value of the cases is “4.79.” This value shows the mean depth from the root to the other spaces (Bellal, 2004, p. 125). Out

of all the cases, the one that has the highest depth value is house number 14 with a “6.31” mean depth. This is followed by house number 2 (“6.24” mean depth) and house number 17 (“5.85” mean depth). Out of all the cases, the shallowest case is house number 8, with a “3.55” mean depth. This is followed by house number 5 (“3.83” mean depth) and house number 15 (“3.94” mean depth) (Table 3).

The houses in which the mean integration value arises in their analysis without exterior space (House 1,3, 5, 6, 8, 10, 12, 13, 14, 15, 17, 18) are the ones in which the inner-outer integrity is strong and in which the connectiveness of the exterior spaces in the whole of the house is emphasized (extroverted houses). Houses are mostly extroverted houses among chosen samples (12 houses). Most integrated spaces are nearly always the same in both analyses with and without exterior space: sofa, stairs, and tiled sofa. Most segregated spaces are different in analysis with exterior space: bathroom, yüklük içi gusülhane, hela, balcony, storeroom, room, storage.

Again, when the exterior spaces are not taken into consideration, the houses in which the mean integration decreases (houses 2, 4, 7, 9, 11, 16) are the ones having introversive configuration (introverted houses, ; Orhun, Hillier, & Hanson, 1995, Dursun, 2002; Dursun & Sağlamer, 2003; Çil, 2007 ). When exterior spaces are considered in introverted houses in Izmit centre traditional houses example, “street, entrance garden and side garden” have integration values above average. The most segregated spaces are exterior spaces such as “street, balcony” and bathroom and storage places in exterior spaces. When the exterior spaces are not taken into consideration, the most segregated spaces are diversified: cihannüma, storage spaces, bathroom, hall and sofa.

The samples’ spatial structures reveal the following features:

It can be seen that the most easily accessible spaces from the street are the exterior spaces such as the entrance garden and the side garden. These spaces in traditional houses of Izmit’s city centre are used for hosting temporary guests (neighbors) in summer, social activities (wedding, engagement, and circumcision), family gatherings and children’s play (Table 2).

The spaces with the lowest mean integration are the sofa, tiled sofa , stairs, and stair-landing. The analyses show that these spaces are integrated within the house. However, the sofa, where the temporary and official guests are welcomed, social activities are performed, and where family members gather, is the most integrated space in the houses (14 cases:1, 4, 5, 6, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18) (Table 4).

There is no unity in the most segregated spaces in the analyzed cases. However, the “street” (seven cases: 4, 7, 10, 11, 13, 17, 18), and the balcony (five cases: 2, 4, 5, 6, 15) are the most segregated spaces (Table 4).

Table 3 shows that except for house number 3 (0.87), which has the weak base difference factor (BDF) from the cases analysed, the remaining houses present a strong difference factor.

**Table 4:** Order of Integration of the Main Functions with Exterior

House Number	Order of integration
1	<i>Sofa</i> < Hall < Stairs < Stairs = Side Garden < Stairs < <i>Sofa</i> = <i>Tiled Sofa</i> < Hall < Stairs < Hall = Hall < New Room = Cellar = Dining Room = Radio room = Balcony < <i>Mabeyn</i> Room = <i>Hela</i> = Servant Room = Room < Stairs < Entrance Garden < Coal – cellar < Hall < Space over the Cistern = Kitchen = Hall = Room < - Hall = Room = Cellar = Balcony = Storage = Hayloft = Stable < Showcase Room < Cellar < Room = Room < Store Room = <i>Hela</i> < Kitchen < Street = Room < Room < Hall = Cistern = Woodhouse < <i>Hela</i> = Bathroom < Bathroom = Bathroom < Bathroom = Bathroom < Hall < <i>Hela</i> < Bathroom 0.52/ 0.64 /0.65 /0.68 / 0.73/ 0.74/ 0.75/ 0.76 / 0.83 /0.84/ 0.93/ 0.96 / 0.97/ 0.98/ 0.99/1.01/ 1.03/ 1.04/ 1.09/ 1.10/ 1.12 / 1.15 / 1.25 / 1.27/ 1.30/ 1.31/1.39 /1.44/ 1.53 / 1.59 /1.82
2	Hall < Stairs < Stairs < <i>Tiled Sofa</i> < Room < Hall < <i>Sofa</i> < Hall < Kitchen < <i>Hela</i> < <i>Sofa</i> < Room = Room < Yard < Stairs < Room < Kitchen < <i>Hela</i> = Stairs < Room < <i>Tiled Sofa</i> = Hall < Store Room = Store Room < Store Room = Store Room = <i>Hela</i> < Room = Balcony < <i>Hela</i> = Room < <i>Pabuçluk</i> < <i>Yüklük İçi Gusülhane</i> < Room < Entrance Room < Stairs < Hall < Bathroom = Laundry Room = Coal- Cellar < Cellar < Room = <i>Hela</i> < Store Room = Store Room < Street = <i>Sofa</i> = Dining Room < <i>Cihannüma</i> < Balcony 0.71 / 0.80 / 0.84 /0.86 / 0.87 /0.96 /0.98 / 0.99 / 1.00/ 1.01/ 1.05 /1.09 /1.10 /1.12 / 1.14 /1.15 / 1.17 / 1.22/1.24 /1.26 / 1.27 /1.28 / 1.29 / 1.30/ 1.31 / 1.32 / 1.33 / 1.36 / 1.38 / 1.40/ 1.46 / 1.54 / 1.56 / 1.64 / 1.93 /2.24
3	Stairs Landing < Hall < Side Garden = <i>Tiled Sofa</i> = Stairs Landing = Stairs < Hall < Room < <i>Sofa</i> < Entrance Garden < Hall < Entrance Landing < Room < Hall < Room < Room = Bathroom = <i>Hela</i> = Room = Cistern < Kitchen = Room = Room < Room = Room < <i>Hela</i> = Balcony < Street < Kitchen < Dining room < Room = Storage < <i>Yüklük İçi Gusülhane</i> < <i>Yüklük İçi Gusülhane</i> = <i>Yüklük İçi Gusülhane</i> 0.67/ 0.72/ 0.73/ 0.82/ 0.83 /0.85 /0.94 /0.98 /1.00 /1.03 /1.04 /1.06 /1.09 /1.17 /1.18 /1.21 /1.29 /1.32 / 1.40/ 1.41/1.53
4	<i>Sofa</i> < Stairs < <i>Sofa</i> < Stairs < <i>Pabuçluk</i> < Room = Stairs < Room = Room = Kitchen = <i>Hela</i> < Room < Room < Room = Room = Balcony = <i>Hela</i> < <i>Sofa</i> < Entrance Landing = <i>Cihannüma</i> < <i>Yüklük İçi Gusülhane</i> < <i>Yüklük İçi Gusülhane</i> = <i>Yüklük İçi Gusülhane</i> < Side Garden = Storage = Storage < Street = Balcony = Balcony 0.62 /0.63 /0.67/0.89/0.95 / 0.98/ 1.00/ 1.03/ 1.06/ 1.19/1.31/ 1.36/ 1.42/ 1.58/1.69
5	<i>Sofa</i> < Side Garden < stairs < Entrance Garden < <i>Sofa</i> < Stairs < Room < <i>Hela</i> = Room = Baş Oda < Kitchen = Entrance Landing < Entrance Landing < <i>Pabuçluk</i> < Storage = Stairs Landing < <i>Sofa</i> < Storage < Storage < Street = Cistern < Room = Room = <i>Hela</i> < Stairs < Bathroom < Store Room = Store Room = Store Room = Store Room = Balcony 0.54 /0.66 / 0.69/ 0.72/ 0.75/ 0.76/ 0.89 / 0.92 / 0.93 / 0.95/ 0.96/ 0.98 / 1.01/ 1.04 / 1.06 /1.10 / 1.13 / 1.17 / 1.27 /1.39
6	<i>Sofa</i> < Stairs < Hall < <i>Pabuçluk</i> < <i>Sofa</i> < Stairs < Room < <i>Hela</i> = Room < Space over the Cistern < Entrance Landing < Hall < Entrance Garden Bathroom < Room = Kitchen < Side Garden = Room = <i>Hela</i> = Room = Room = Room = <i>Cihannüma</i> < Entrance Landing < Room < Cistern < Street < Balcony = <i>Hela</i> 0.67/ 0.72/ 0.82 / 0.86 / 0.92/ 0.98/ 1.03/ 1.06 /1.08/1.10 /1.16 /1.21 / 1.25 / 1.31/ 1.35/ 1.42 / 1.46 / 1.59 / 1.69
7	Stairs < <i>Sofa</i> < <i>Sofa</i> < Stairs Landing < Kitchen < Stairs < Hall < Hall < Room = Room = Baş Oda = Stairs < Room = Room < <i>Hela</i> = Balcony < <i>Pabuçluk</i> < Side Garden < <i>Hela</i> = Storage < <i>Yüklük İçi Gusülhane</i> = <i>Yüklük İçi Gusülhane</i> = <i>Yüklük İçi Gusülhane</i> = <i>Serinlik</i> < Entrance Landing < Street 0.58 / 0.63/ 0.65 / 0.85/ 0.92 / 0.94/ 0.97 / 0.99 / 1.02 / 1.04 / 1.05 / 1.24 / 1.29 / 1.38 / 1.43 / 1.53 / 1.60

**Table 4:** Order of Integration of the Main Functions with Exterior (Continue).

House Number	Order of Integration
8	<i>Sofa</i> < Stairs < Stairs < <i>Pabuçluk</i> < Hall < Kitchen < Room = Room = Storage < Entrance Landing = <i>Sofa</i> < Street < Entrance Garden < Woodhouse < Room < Cistern = <i>Hela</i> < Hall = Room = Room = Bathroom < Room 0.58 / 0.74 / 0.81 / 0.87 / 0.91 / 0.93 / 1.01 / 1.08 / 1.16 / 1.24 / 1.26 / 1.34 / 1.36 / 1.51 / 1.94
9	<i>Sofa</i> < Stairs < Stairs < <i>Pabuçluk</i> < <i>Sofa</i> < Dining Room < Kitchen = Room < Balcony = Room = <i>Hela</i> < Stairs < Entrance Landing < Room = Room = <i>Baş Oda</i> = <i>Hela</i> = <i>Sekilik</i> = <i>Köşk</i> < Storage < Street < Entrance Landing < Side Garden < Bathroom 0.70 / 0.81 / 0.85 / 0.97 / 1.04 / 1.08 / 1.10 / 1.12 / 1.26 / 1.29 / 1.47 / 1.55 / 1.60 / 1.87 / 1.89 / 1.97
10	<i>Sofa</i> < Stairs < Stairs < <i>Pabuçluk</i> < Hall < <i>Hela</i> = <i>Baş Oda</i> = Balcony = Room = Room < <i>Sofa</i> < Entrance Landing < <i>Sofa</i> < Entrance Garden < Bathroom = Room < Entrance Landing < Side Garden = <i>Hela</i> = <i>Baş Oda</i> = Balcony = Room = Room < Kitchen < Street 0.60 / 0.78 / 0.80 / 0.85 / 0.94 / 1.01 / 1.03 / 1.09 / 1.16 / 1.27 / 1.36 / 1.41 / 1.45 / 1.57 / 1.68
11	<i>Sofa</i> < Stairs < Stairs < <i>Sofa</i> < Tiled <i>Sofa</i> < Room = <i>Baş Oda</i> < Room = Room = Room < <i>Baş Oda</i> = Room < Side Garden = Room = Room = Room < Entrance Landing < Storage < <i>Yüklük İçi Gusülhane</i> = <i>Yüklük İçi Gusülhane</i> < <i>Yüklük İçi Gusülhane</i> = <i>Yüklük İçi Gusülhane</i> < <i>Hela</i> = Kitchen < Street 0.63 / 0.76 / 0.80 / 0.92 / 1.00 / 1.01 / 1.05 / 1.30 / 1.34 / 1.38 / 1.41 / 1.43 / 1.72 / 1.76 / 1.79
12	Tiled <i>Sofa</i> < <i>Sofa</i> < Stairs < Dining Room < <i>Sofa</i> < Hall < Street = Storage = Hall < Room < Kitchen = Hall < <i>Hela</i> = Room = Room = Balcony = Room < <i>Hela</i> < Side Garden < Cellar = Bathroom < Entrance Landing < Storage = Storage 0.95 / 1.02 / 1.06 / 1.18 / 1.22 / 1.33 / 1.37 / 1.45 / 1.60 / 1.64 / 1.76 / 1.91 / 2.03 / 2.26 / 2.68
13	<i>Sofa</i> < Stairs < <i>Sofa</i> < Room = Room < <i>Hela</i> = Balcony = <i>Baş Oda</i> = Balcony < Entrance Garden < <i>Hela</i> = Kitchen = Room < <i>Yüklük İçi Gusülhane</i> = <i>Yüklük İçi Gusülhane</i> < Street 0.53 / 0.61 / 0.76 / 0.99 / 1.06 / 1.21 / 1.29 / 1.52 / 1.75
14	<i>Sofa</i> < Stairs < Stairs Landing = Stairs < Stairs < Stairs Landing < <i>Pabuçluk</i> < Kitchen = Room < Room < <i>Sofa</i> < Bathroom = Stairs < Entrance Landing = <i>Hela</i> < Stairs = Hall < Room Room = Room = Balcony = Room < Street < <i>Cihannüma</i> = Room = Room < Cellar < Room = Side Garden = Room 1.03 / 1.09 / 1.17 / 1.31 / 1.33 / 1.36 / 1.40 / 1.42 / 1.47 / 1.55 / 1.72 / 1.80 / 1.85 / 2.10 / 2.15 / 2.18 / 2.53
15	<i>Sofa</i> < Stairs < Entrance Landing = Stairs < Entrance Garden = Room = Room = <i>Hela</i> = <i>Sofa</i> < <i>Sofa</i> < Side Garden = Kitchen < Street = Bathroom < Room = Balcony = Room 0.58 / 0.82 / 0.85 / 1.09 / 1.13 / 1.37 / 1.61 / 1.64
16	<i>Sofa</i> < Stairs < <i>Pabuçluk</i> < <i>Sofa</i> < Entrance Garden < Room = Kitchen = Bathroom < Entrance Garden < Room = Room = Balcony = <i>Baş Oda</i> = Room < Side Garden < Street < Storage 0.82 / 0.92 / 0.99 / 1.09 / 1.23 / 1.33 / 1.54 / 1.61 / 1.99 / 2.05 / 2.49
17	<i>Sofa</i> < Stairs < <i>Sofa</i> < Stairs < Room < <i>Pabuçluk</i> < Room = Room < <i>Hela</i> = Balcony < Room < <i>Sofa</i> < <i>Hela</i> < Kitchen < Entrance Landing < <i>Yüklük İçi Gusülhane</i> = <i>Yüklük İçi Gusülhane</i> < Entrance Garden = Bathroom < <i>Yüklük İçi Gusülhane</i> < <i>Baş Oda</i> = Balcony = <i>Baş Oda</i> < Cellar < Street = Cistern = <i>Hela</i> 0.80 / 0.82 / 0.87 / 1.01 / 1.11 / 1.14 / 1.17 / 1.20 / 1.23 / 1.25 / 1.27 / 1.35 / 1.38 / 1.57 / 1.62 / 1.64 / 1.65 / 1.75 / 2.02
18	<i>Sofa</i> < Stairs < <i>Sofa</i> < Entrance Landing < Room < Kitchen = <i>Hela</i> < Room < Entrance Garden = Balcony = <i>Baş Oda</i> < <i>Yüklük İçi Gusülhane</i> < <i>Yüklük İçi Gusülhane</i> < Street 0.67 / 0.77 / 0.96 / 1.06 / 1.15 / 1.25 / 1.44 / 1.54 / 1.73 / 2.02 / 2.11

## 6. Conclusion and Discussion

The results of the analysis attained from this study are important in terms of the fact that it reveals the spatial morphology of Izmit traditional houses and the social norms in them by means of a numerical model (space syntax) in addition to the difficulty of revealing the physical properties of the traditional house of

Izmit city centre (Erdoğan, Özbayraktar, & Ayyıldız, 2011). The first findings of the study support the study previously conducted. A study of typology has been conducted on 40 registered houses which were able to protect their authentic character, whose surveying and restoration projects could be attained, and which took place in the same area previously (Erdoğan, Özbayraktar, & Ayyıldız, 2011, p.39). As a result of the study, “The general architectural characteristics of Izmit traditional houses have been determined. According to this, Izmit central traditional houses are the ones on both the street and side borders in terms of settlement, having entrances both from the street and the garden, generally consisting of basement +ground floor+1st floor, in which wood-stone and plaster have been used together, with hipped roof and narrow eaves , having an inner sofa in the shape of an “I”, angle brace, in which single floor cantilever and balcony front elements have been densely used, with two sections vertical sash, with double wings and a wooden main entrance door”. As a result of the analysis conducted in this study, the properties possible to be a genotype for the Izmit traditional house have been determined:

In the traditional houses of Izmit city centre, the sofa’s function is to connect all the spaces to each other. The syntactic analysis for the selected houses showed that 78% of the houses (14 houses) are sofa-centred. The hall (one sample), landing (one sample), stairs (one sample), and the tiled sofa (one sample) are the centres of the four other samples (Table 4). This case overlaps with the idea of Orhun (1997) that two houses from Izmit are the examples of living-integrated house and deep-core type house emphasizing on the sofa.

Moreover, in the analyses of extroverted houses (12 houses) as having powerful inside-outside integrity and introverted houses (6 houses) were determined.

Most of the analyzed houses have a ringed structure in the justified graphs with exterior space (12 houses) that present alternative ways to the householders and the guests. Other houses (6 houses) are in tree-like structures in which the movements of the users are under control (Hillier, 2007; Bellal, 2004; Sanlı, 2009).

The rings both pass from the exterior spaces (entrance garden, side garden) and the internal spaces (stairs and hall, sofa, and tiled sofa). Crossing the ring from exterior spaces coincides with the results of the interviews revealing the fact that temporary guests have been welcomed in summer, the family individuals have come together, and social activities have been performed (circumcision,

wedding, engagement). Justified graphs with exterior space of the houses (Table 2) have shown that the spaces that are easiest to reach (most shallow) have been the exterior spaces (entrance garden, side garden). The garden is an important space in the daily life of Izmit houses. It provides the relationship of women with external world. It is a place in which the guests are welcomed and daily work (handwork, preparing meals, washing) are performed and the children play games when not at school. This case is explained as inside-outside relation within the Ottoman home by Arel (1982, p.49). Against the outside, which is represented by a courtyard or a garden, the sofa is inside. However, opposition of inside/outside turns into summer house/winter house opposition as in the case of Izmit houses; the garden may turn into the “inside” in summer. Günay’s (1998, p.29) opinion that in the settlement order of the Turkish city, the garden walls are high in order to protect and preserve home life supports the idea that the garden is in “interior” space.

Here, it is necessary to turn back to the question, “Could the social connotations and the hidden themes of the morphological rules in the Izmit house be explained? What is the contribution of the space syntax method to this study?” As mentioned in the social usage of the spaces for the Izmit houses, the sofa is a space where guests are welcomed in winter, social activities such as weddings, engagements, circumcision, and other ceremonies are conducted, family members gather in daily life, and where all the spaces are interconnected. Once again, this unifying feature of the sofa in Izmit houses has been proved by this syntactic analysis. In addition, the facts that the majority of the examined houses (67% -12 houses) are in a branched and ringed structure giving the opportunity of alternative movements to the householders and the guests, the importance of the exterior spaces (entrance garden, side garden) in the daily life of the family and the social activities are performed have been revealed by means of the “justified graph” and “syntactic” data of the method.

As has been explained at the beginning of the study, many studies have been conducted “trying to reveal the cultural, economic and social information and reveal the social norms regulating the social relationships between the people” in the floor plan with the numerical data attained with the use of the space syntax method. In some studies (Leach, 1978; Lawrence, 1990; Rapoport, 1969; Osman, & Suliman, 1994, pp.189-198), it has been stated that these cannot be revealed only by looking at the numerical results; these data should only be supported with physical, social and cultural data (Dursun& Sağlamer,

2003; Sanlı, Dursun, &, Sağlamer, 2007). The mathematical expressions and graph methods such as space syntax are only the tools to explain the social norms shaping the space (Dursun and Sağlamer, 2003). The data of traditional houses of Izmit city centre attained with the space syntax method support the above criticisms. As is mentioned above, in the previous detailed typology study carried out on traditional houses of Izmit city centre (Erdoğan, Özbayraktar, & Ayyıldız, 2011), only physical characteristics of these traditional houses could be determined. However, connotations and hidden themes of the morphological rules in the house were missing. Data obtained through the space syntax method, architectural characteristics obtained through a typology study and data obtained through interviews completed the socio-cultural use of the space; and have enabled an explanation of the Izmit house as a whole. Thanks to space syntax, in addition to the information above, extroverted, and introverted characteristics of the Izmit house, the deep-core type of Izmit house which is living-integrated, drawing different spaces, and emphasizing the sofa could be defined. Moreover, the importance of the garden and its being included in the interior space in the relationship of inside-outside, and the ring and tree-like structure of Izmit houses could be determined. This study is important for determining the location of the Izmit houses within the traditional Turkish house. With the study, the experts and architects working on İzmit house will understand the house of İzmit not only in terms of typology but also in terms of the relationship between everyday life, culture, and space.

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## CHAPTER III

# READING THE INTERACTION BETWEEN THE FORMATION OF THE TRADITIONAL HOUSING AND THE SOCIAL STRUCTURE THROUGH DIFFERENT CULTURES

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### 1. Introduction: The Concept of Traditional Housing and Social Life

Culture, which is a set of values that are important in expressing the lifestyle and socio-cultural structure of a society, is important in the formation of traditional structures. Among the building types, the housing space, which is shaped to meet the shelter need, one of the most basic needs of the human, is also a mirror that reflects the family structure, social, economic, and cultural positions of the society according to Gür (Öymen Gür, 1995). Based on this, traditional housing can be defined as the socio-cultural structure of a society that is embodied as a physical space. However, traditional housings are significant in terms of being indigenous to the territory and the region. The houses, which are shaped by the easily accessible materials in their region, the

combining techniques specific to the region, and the climatic factors of the region, acquire typological characteristics as a result of this traditionalization.

The form of housing in traditional architecture reflects the world view, lifestyle, values, and social rules of culture on the one hand, and it marks out the notion of privacy of the culture, the limits of the individual's private life, and controls the interaction with other people on the other. In line with these principles, there are four main factors that shape traditional housing:

1. *Environmental factors*: climate, topography, natural texture, human texture, the materials nearby, etc.
2. *Cultural factors*: World view, cultural values and norms, religion, language, family, relatives, and social relations, lifestyle, norms related to environment/space-housing use, basic function and meaning of housing
3. *Social factors*: Family size, the socioeconomic status and social domain of the family, world view and social attitudes of the family, family structure/roles in the family, the lifestyle of the family, the self-perception, expectations, and hopes of the family, and the housing experiences of the family
4. *Individual factors*: The benefit relationship of the individual with the housing, the emotional relationship of the individual with the housing, the individual's interpretation of cultural norms and education of the individual, the life intensity, housing experience, and self-perception of the individual (Altıparmakoğlu Sakarya, Gürani, 2019, p.94; Şengül, 2005, p.165).

The subject of this study is examining the interaction of especially cultural and social factors from these four factors that are determinative in the forming of traditional houses with the organization of space. Atak states that the recent studies on housings have revealed that social meaning and cultural values are mostly reflected by the space organizations of housings, and therefore different cultures express themselves with different space models (Atak, 2009, p. 161).

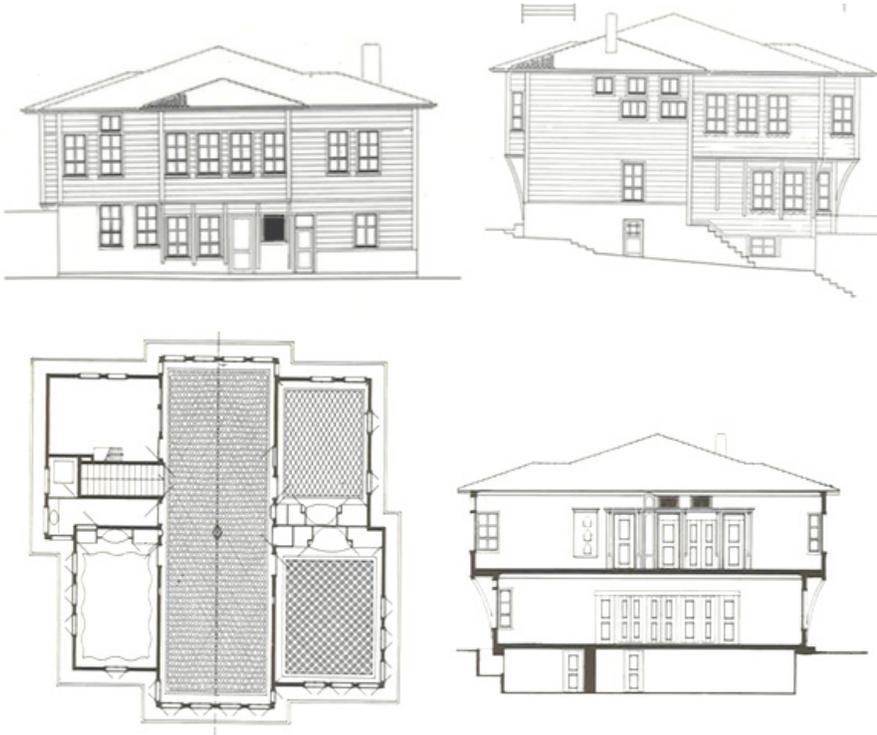
Within the scope of the study, traditional housing typologies of three different cultures were determined to examine the relationship of different cultures with housing and its reflection on the organization of interior space. These are traditional Turkish houses, traditional Japanese houses, and traditional Thai houses. These three cultures, which contain many differences such as lifestyle, religion, family structure, and sometimes common values, are distinguished with their unique traditional housing spaces on a global scale.

The study uses the space syntax analysis method, which is based on the thesis that space organization and social structure are a whole, in order to analyze the traditional housing type of three different cultures and the social structure relationship behind it. The space syntax analysis method is an effective analysis method that is used to examine the space in the context of introversion-extroversion, and to understand the privacy and control of the space in a social sense, and the relationships of the users of the space with each other and with visitors.

### *1.1 Traditional Turkish House and Lifestyle*

One of the most important factors determining the life styles of Turks is their world view. This world view has been shaped by the adoption of the religion of Islam with the transition from nomadic life to settled life. The housings of the Turkish community living in the form of crowded families have also begun to take shape in line with this need. Each room is intended for a nuclear family to maintain life; It has been arranged in a multi-functional to do activities such as lying, resting, eating and living. In addition to this, the understanding of cleanliness also stands out as one of the important elements for the Islamic religion. In order to protect the privacy of the nuclear family and to fulfill the religious requirements in the most appropriate way, the presence of a bathing area hidden in the closet in each room is one of the important elements in the forming of the houses.

Sedad Hakkı Eldem defines the Turkish House as follows: “The Turkish house is a type of house that was formed with its own characteristics, settled in, developed and held for 500 years within the boundaries occupied by the old Ottoman state, namely Rumelia and Anatolian Regions according to the old statement” (Eldem, 1968). D. Kuban states that the Turkish House “is known and defined as a type of housing that shows the shape and plan features in accordance with the living culture and customs of the traditional Turkish family and has responded to the needs of Turkish people for centuries” (Kuban, 1976). Based on these definitions, it is possible to define the traditional Turkish house as a housing structure that has been shaped to respond to the needs of cultural values, beliefs, and Turkish family structure in accordance with its geography. The plans, sections, and views of a traditional Turkish house are provided in Figure 1, and the perspective of a traditional Turkish house is provided in Figure 2.



**Figure 1:** Plan and sections of traditional Turkish house (Eldem, 1984, p.260)



**Figure 2:** Perspective of traditional Turkish house (URL 1)

Cengiz Bektaş (2001) mentions ten different principles that form the traditional Turkish house:

1. *Compliance with Life, Nature, and Environmental Conditions:* The Turkish house fits in nature without fighting it, and stays in the bloodstream of nature. It respects the environment (both nature and the neighbors, society)...

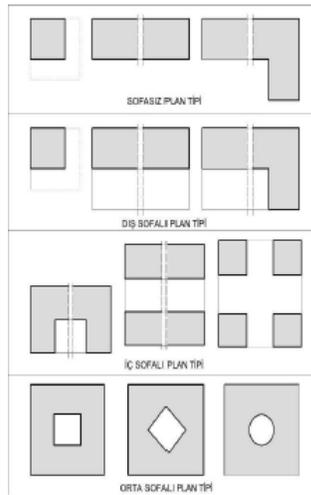
2. *Realism, Rationalism:* These houses observe the parallelism of possibilities and requests. They are not built just to say “Wow, look at that!”... There is no unnecessary juggling in the construction or production. No tool is used for another, everything is itself.
3. *Solution from the Inside Out:* The design starts from the inside out. First, the function is analyzed. This does not mean that the exterior is ignored... The beauty of the exterior comes from the beauty, truth, sincerity of the interior... from the reflection of the interior on the exterior...
4. *Harmony of the Interior and the Exterior:* The interior is read from the exterior...
5. *Frugality:* Common uses are well determined... Nothing is wasted just to show off, the life is not wasted to earn the necessary money. There are no parts that are kept locked out of use. Not even drops of water and rain are wasted. Even the smoke is used for warmth before leaving the chimney.
6. *Principle of Convenience:* Its construction methods are based on the principle of convenience. It is aimed to obtain the most with the least. Not even a nail is used unnecessarily.
7. *Measurements come from the Human Body:* The wood is one finger thick, one hand span wide, or two strokes long. The window is three hand span wide, five hand span high, or so.
8. *Climate Suitability:* Houses face the sunrise. The dominant wind is considered.
9. *Materials that are the closest are chosen:* By choosing the materials from the surrounding environment, it becomes easier to adapt to the environment.
10. *Flexibility:* As the family grows, the house can grow unit by unit. When the family gets smaller, the house can also be divided. Some changes can be made in houses from generation to generation.

These principles do not conflict at all with the principles of the “Modern Architecture Movement”, which has affected the entire Western architecture since the beginning of the twentieth century; moreover, they give more humane results (Bektaş, 2001: 52).

The traditional Turkish house also varies according to the types of plans. One of the main determinants of this variety is the anteroom section, which is one of the characteristic features of the Turkish House. Sedat Hakkı Eldem states that there are 4 main formations in the traditional Turkish house based on the position of the anteroom. These are the plan type without anteroom, the plan

type with outer anteroom, the plan type with inner anteroom, and the plan type with anteroom in the middle (Figure 3) (Eldem, 1968).

Forming traditional Turk house with elements as high blank walls, small and limited amount windows on the ground floor, decomposition each rooms of house as harem & selamlıque has been occurred at the result of generating self-enclosed life style needed in privacy facts in Islam. Like these elements have been divided “house” from external life and come to the fore privacy internal life (Altıparmakoğlu, 2016, p.31).



**Figure 3:** Plan types of Turkish houses (Aksoy and Asar, 2018)

### 1.2 *Traditional Japanese House and Lifestyle*

Japan, one of the most crowded countries of the world, is a Far East country which is located in Far Asia, managed by monarchy. The effect of other Far East Cultures, in particular China, play rather important role at shaping Japan culture. According to Güvenç, everything which can be human-formed and learned by human is culture for Japans (Güvenç, 1972). It is possible to count as primary elements, such as traditions, philosophy, and faith system, which constitute the culture according to this definition. Particularly, religious and philosophy are so important elements which affect the life style in Japan culture. The most significant and effective ones of the religious in Japan are Shintoism, Buddhism and Confucianism. Whereas Shintoism is local, Japan-oriented religious, Buddhism and Confucianism are transferred from China. Shintoism is the most widespread of them. The concepts such as attention to

nature, simplicity, plainness, settled for, spiritual rest have been brought light for shaping Japan world-view and life style. According to Japan culture, “The human must adapt to the nature instead of change and harmonize to himself” (Taut, 1949) (Altıparmakoglu, 2016, p.34).

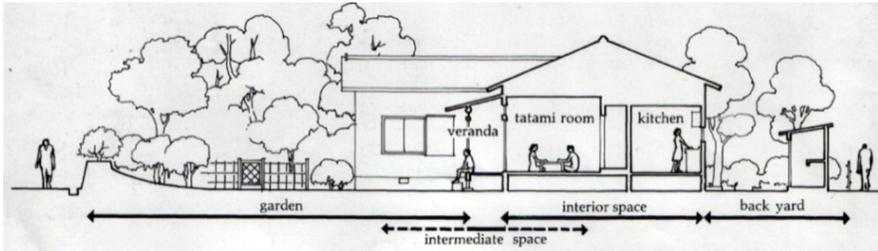
The most important factors affecting the lifestyle of the Japanese are the geographical conditions of the country together with their worldview. Although belief systems and traditions are the cornerstones of Japanese culture, living in a limited geography is an important factor in creating a minimal lifestyle for the Japanese. Being able to be content with the least of everything has caused the housing spaces to be formed primarily within the framework of this understanding, as well as showing its effect in all areas of their lives. Similar to the Turkish house, the multi-functional organization of the spaces in a way that allows more than one action to take place is a result of this understanding.

The data determining the space formation in Japanese housing architecture are divided into two: natural and socio-cultural data. While natural data consists of geographical and geological features, climate, building materials, and natural resources; socio-cultural data consist of factors such as lifestyle, traditions, and religion. The most specific climatic features reflected in traditional housing architecture are raised floors, pillar legs, exposed structures and not using metal materials (Murdoch, 1991).

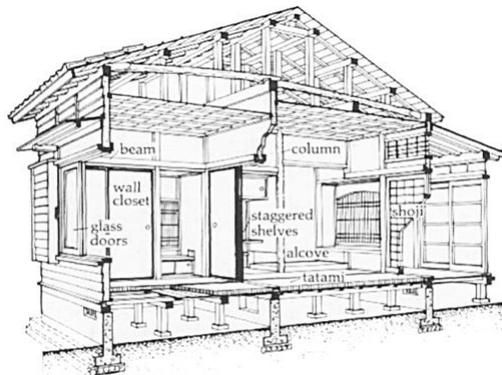
The most significant socio-cultural data affecting traditional Japanese housing architecture is religion. Since the Shinto religion is based on worshipping natural events, the Japanese care about nature while forming their architectural spaces with the influence of this religion. The traditional housing spaces are inserted into nature, and nature into the house. Buddhism, which came to Japan from China, has also affected art and architecture. Influenced by these religions, the lifestyle of the Japanese people does not have feelings of freedom and independence. Therefore, Japanese traditional folk housing architecture has never been introverted and closed (Ayverdi, 1972).

A rational plan is observed in the traditional and contemporary Japanese housing architecture, and moving plan notions such as outbuildings and bay windows are not observed. The use of space in the traditional Japanese home has emerged from habits that have been formed over a long period. Acts such as eating, cooking, sleeping, business, hosting guests, meetings, holidays, weddings, and funerals are observed in the traditional housing architecture, and these actions are carried out with a minimal space notion. The living space in traditional Japanese

housing is the main place in the daily life of the family; and it is also used for cooking and eating, sometimes for sleeping. The room, on the other hand, has many functions as in traditional Turkish housing. The rooms have solutions for storage needs with fixed cabinets that meet many needs. Sliding doors between the rooms can be opened when necessary, thus allowing combined rooms and flexible space formation (Demirarslan, 2005, p. 732). However, in some parts of the living spaces, there are special sections for worshipping due to their religious beliefs. Figure 4 and Figure 5 contain the plans and sections of the traditional Japanese house.



**Figure 4:** Plan and section of traditional Japanese house (Yagi, 1986, p.18)



**Figure 5.** Section of a Japanese house (Yagi, 1986, p.6)

### 1.3 Traditional Thai House and Lifestyle

Various styles of Thai domestic architecture, with their diverse forms and design methods, are situated between two fundamental realms: traditional and non-traditional approaches. The former kind is houses built in conventional styles or primarily based on traditional Thai architecture. Their characteristics are expressed through their indigenous concepts, functions, forms and physical appearance. Their designs reflect the local context as well as Thai social factors (Ramasoot, 2008, p.79).

The terms entail all regional Thai houses with the specified historicity, although they may differ in particular details according to diverse regional styles. The basic Thai house is built of wood or bamboo, usually raised on a platform and entered by an outdoor staircase or a ladder at a terrace. It is covered with gable roof and wide eaves. The outdoor terrace and a semi-open veranda are significant components, connecting separated rooms (Figure 6 and 7). The basic single-family house is the fundamental framework for larger houses, as well as for any expansion. Other variations of the basic house, which are often also regarded as Thai house components, because of related features, include riverside raft houses, residences for monks, shop houses, rice-field shacks and open pavilions (Ramasoot, 2008,p.80).

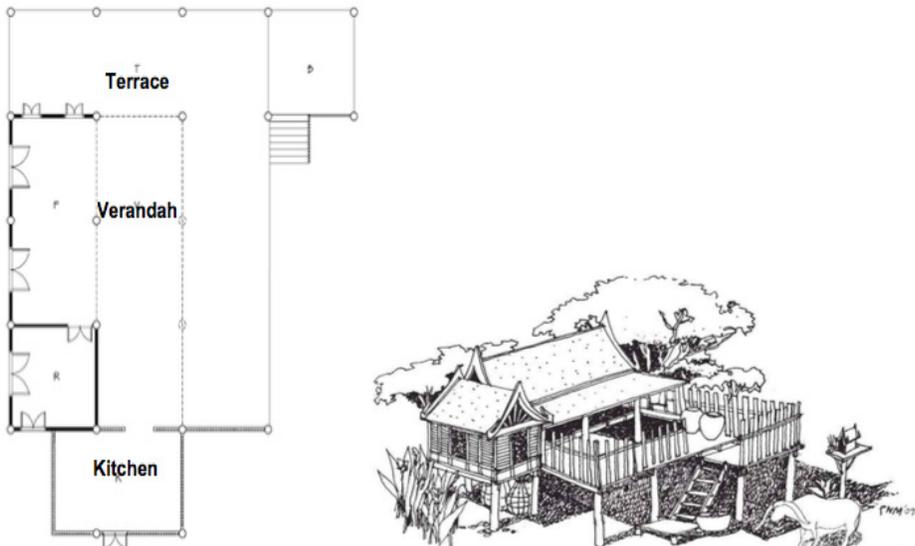
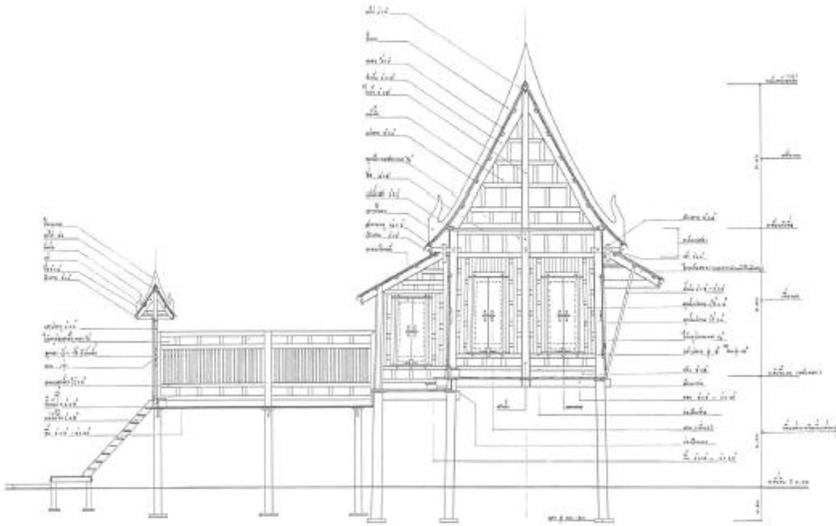


Figure 6: Plan and perspective of traditional Thai house (Ramasoot, 2008, p.80).



**Figure 7:** Cross-section of traditional Thai house (Panitchpakdi, 2016, p.239)

Key features of the traditional Thai house include the living area being raised on stilts (Silapacharanan, 2013, p.31), a high ceiling, lengthy eaves, and ample porch/veranda area (Malakul, 1986, p.22). The house is multi-purpose and has sparse furniture. The principal construction material is wood assembled into modules. Each module is fully constructed before assembled with the other components (Pirom, 1995). Components of the house can be dis- and re-assembled at another location (Pirom, 2002).

The traditional Thai house has five main components: (1) Foundation and house posts; (2) Structure for supporting the main floor and roof; (3) Roof structure; (4) floor and (5) Walls, doors, windows, and stairs. It is noteworthy that all of these components are made out of wood (Kosate, 25-50, referenced in Tongsarote & Paninth, 2012) (Panitchpakdi, 2016, p.239).

Thai architectural identity of Thai house revealed two characteristics; (1) Tangible identity corresponds to the location, weather, discoverable natural resource which occurrences included risen Thai house with delicate gable which made by wood as the main material and pillars which incline to each other. The body of the house can do disassembly. (2) Intangible identity appeared from the sense of living, using and touching. The building of Thai house related to religion and belief of auspicious occasion. The value of architectural identity of Thai house can be identified to (1) the benefit of usage the house, the aesthetic value, the value of mental engagement of resident, the value of merit for the

resident. (2) Values of the society included the value of Buddhism, the value of family engagement and the harmoniousness in the community. (3) Value to the Nation: Thai house is the heritage of Thai wisdom and the country's sustainable development (Panitchpakdi, 2016, p.238).

The most important factor that shapes the traditional Thai house is the climatic conditions of its region. Houses are built at a certain height to protect them from floods and the dangers brought by the floods, especially in regions with high rainfall. However, when the weather conditions allow, the spaces under this raised floor are included in the living spaces of the family and used for various purposes such as working, eating, and sitting. Climate conditions have also been a determinant in the construction materials used in the houses. The use of easy-to-reach natural materials, especially wood, is another characteristic of Thai houses.

## 2. Space Syntax Analysis

The development of the first theories about the space syntax analysis method started in the Bartlett School, University College of London by a group led by Bill Hillier and Julianne Hanson in the 1970s. The first detailed explanation of the theories developed was provided in the book titled "The Social Logic of Space" written by Hillier and Hanson in 1984.

This method, which is based on human movements, the network of social relations, and space theory, provides data about buildings, cities, and their space organization. The starting point is the idea that the social structure forming the space can be derived from the physical fiction of the space (Hillier, 1996, p. 69).

The Space Syntax method tries to explain the relationship between the physical structure of the environment built by humans and social structure or events, the location and depth of the common spaces-joining points, the relationship with neighboring spaces, and the boundaries created by the construct (Hillier & Hanson, 1984).

The analysis of the studies conducted using the space syntax analysis method in terms of the housing space reveals that the data such as the transition relations of the spaces within the houses with each other and the organization of the space give an idea about the matters such as the lifestyle, social relations and the perception of privacy in that space. In this respect, space syntax analysis is used in this study in order to compare the social structure of traditional housing types of different cultures. In this context, two types of analysis are performed

in the study using Agraph and Depthmap software. These are the permeability analysis based on space syntax theory suggested by Hillier and Hanson, and visible area analysis argued by Benedikt. First, the justified permeability graphics of the traditional housing types discussed in the study were created using the Agraph software to examine the permeability structures of the spaces. On the graphics, the software provided measurements such as control value (CV), total depth value (TD), mean depth value (MD), relative asymmetry (RA), and integration value (i). VGA (Visibility Graph Analysis) maps specific to the connectivity parameter were created for each house via the Depthmap software.

### **3. Permeability and Visible Area Analysis of Traditional Housing Types**

#### ***3.1 Permeability Analysis***

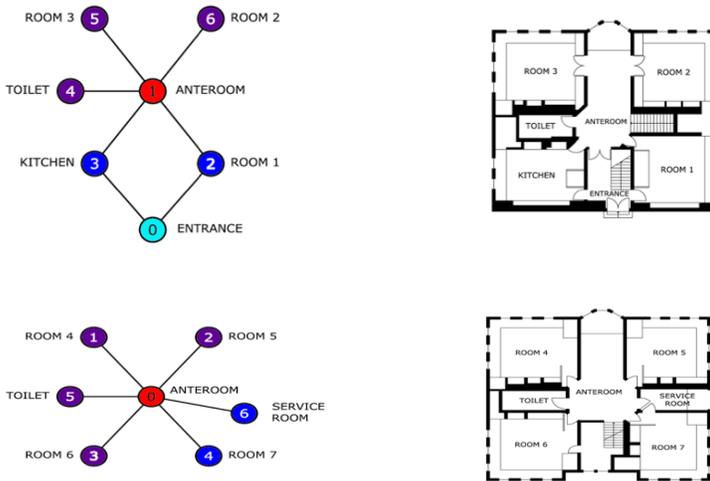
Permeability analysis consists of measurement values showing the accessibility and transition features based on the relations between spaces and allows the calculation of parameters such as total depth (TD<sub>n</sub>), mean depth (MD<sub>n</sub>), relative asymmetry (RA), integration (i), and control (CV) values within the boundaries of the spaces.

The control value of a space in the system shows the effectiveness of that unit on the system. In this parameter, which calculates the control of the access of one space to its immediate neighbors, measurement is made by considering the number of alternative connections of each neighboring space. The higher the control value, the stronger the controllability of that space over other spaces.

- Total depth value refers to the total number of steps in the accessibility of one space to all other spaces in the system.
- The mean depth value is the value obtained by summing the depths of all points on the transition graph according to the root, i.e. the entrance, and dividing this number by the number of spaces.
- Relative asymmetry value is the numerical expression of the depth value.
- Integration value refers to the state of being integrated or segregated within the system, similar to relative asymmetry. Integrated space is the space that is the most connected with other spaces in the system. Accordingly, while the movement potential is expected to be high in the integrated space, the segregated space is thought to contain the least movement.

### 3.1.1 Permeability Analysis of the Traditional Turkish House

The traditional Turkish house has a multi-story structure, unlike the other types of houses included in the study. However, the analysis evaluates the ground floor and the upper floor, where life, use, and daily activities are concentrated. That being said, a housing type with an anteroom in the middle, which is one of the most advanced plan solutions among various plan typologies, has been chosen. Figure 8 contains the plans of a traditional Turkish house determined accordingly and justified permeability graphs prepared in Agraph software, in which spatial relations are indicated.



**Figure 8:** Plans and justified permeability graphs of traditional Turkish house

While each ring represents spaces in the transition graphic prepared by the Agraph software, the lines represent the connections between spaces. The meanings of the colors on the graphics are determined by the software based on the integrated or segregated status of the spaces. According to the software, red color indicates the most integrated space, and navy blue/purple color indicates the most segregated (shallow) space. The order of colors according to the integration value of the spaces is as follows:

Red < orange < yellow < green < blue < navy blue/purple. According to this order, the segregation increases from warm to cold colors.

The total depth, mean depth, relative asymmetry, integration, and control values of the ground floor and upper floors of the traditional Turkish house calculated using the software are provided in Table 1 and Table 2.

**Table 1:** Permeability Analysis of Ground Floor of Traditional Turkish House

	<b>TDn</b>	<b>MDn</b>	<b>RA</b>	<b>i</b>	<b>CV</b>
<b>0 entrance</b>	11	1,83	0,33	3,00	0,16
<b>1 anteroom</b>	6	1,00	0,00	0,00	6,00
<b>2 room 1</b>	11	1,83	0,33	3,00	0,16
<b>3 kitchen</b>	11	1,83	0,33	3,00	0,16
<b>4 toilet</b>	11	1,83	0,33	3,00	0,16
<b>5 room 3</b>	11	1,83	0,33	3,00	0,16
<b>6 room 2</b>	11	1,83	0,33	3,00	0,16
Min	6,00	1,00	0,00	0,00	0,16
<b>Mean</b>	<b>10,28</b>	<b>1,71</b>	<b>0,28</b>	<b>2,57</b>	<b>1,00</b>
Max	11,00	1,83	0,33	3,00	6,00

The table shows that all sections on the ground floor except the anteroom are the spaces with the lowest control value. The space with the highest control value is the anteroom. In this case, while the anteroom has the strongest controllability with a numerical value of 6.00, all other spaces on this floor have poor controllability with a numerical value of 0.16. The data contained in the table shows that all the spaces except the anteroom are of the same quality, and the total depth, mean depth, relative asymmetry, and integration values are higher than the anteroom.

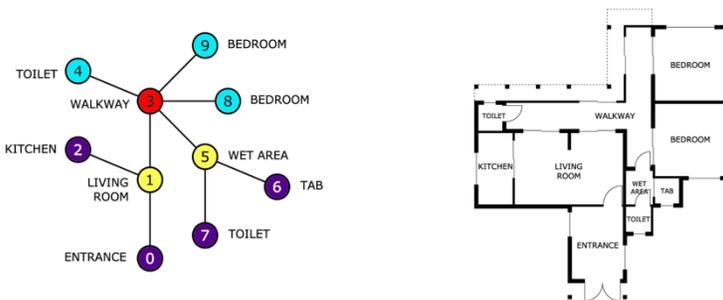
**Table 2:** Permeability analysis of upper floor of traditional Turkish house

	<b>TDn</b>	<b>MDn</b>	<b>RA</b>	<b>i</b>	<b>CV</b>
<b>0 anteroom</b>	6	1,00	0,00	0,00	5,00
<b>1 room 4</b>	11	1,83	0,33	3,00	0,16
<b>2 room 5</b>	11	1,83	0,33	3,00	0,16
<b>3 room 6</b>	11	1,83	0,33	3,00	0,16
<b>4 room 7</b>	10	1,66	0,26	3,75	0,66
<b>5 toilet</b>	11	1,83	0,33	3,00	0,16
<b>6 service room</b>	10	1,66	0,26	3,75	0,66
Min	6,00	1,00	0,00	0,00	0,16
<b>Mean</b>	<b>10,00</b>	<b>1,66</b>	<b>0,26</b>	<b>2,78</b>	<b>1,00</b>
Max	11,00	1,83	0,33	3,75	5,00

According to the data in Table 2, on the upper floor, the anteroom has the highest control value with a numerical value of 5.00, and room 4, room 5, room 6 and toilet spaces have the lowest control value with a numerical value of 0.16. In terms of total depth, mean depth, relative asymmetry, and integration values, rooms with the highest values are rooms 4, 5, 6, and the toilet, followed by room 7 and the service room and again the anteroom got the lowest values.

### 3.1.2 Permeability Analysis of the Traditional Japanese House

A single-storey traditional Japanese housing plan with a typological character has been selected for the study. Figure 9 contains the plan and transition graphic of this housing.



**Figure 9:** Plan and justified permeability graph of traditional Japanese house

Table 3 contains the permeability analysis values of the traditional Japanese house.

**Table 3:** Permeability analysis of traditional Japanese house

		<b>TDn</b>	<b>MDn</b>	<b>RA</b>	<b>i</b>	<b>CV</b>
<b>0</b>	<b>entrance</b>	25	2,77	0,44	2,25	0,33
<b>1</b>	<b>living room</b>	17	1,88	0,22	4,50	2,20
<b>2</b>	<b>kitchen</b>	25	2,77	0,44	2,25	0,33
<b>3</b>	<b>walkway</b>	13	1,44	0,11	9,00	3,66
<b>4</b>	<b>toilet</b>	21	2,33	0,33	3,00	0,20
<b>5</b>	<b>5</b>	17	1,88	0,22	4,50	2,20
<b>6</b>	<b>tab</b>	25	2,77	0,44	2,25	0,33
<b>7</b>	<b>toilet</b>	25	2,77	0,44	2,25	0,33
<b>8</b>	<b>bedroom</b>	21	2,33	0,33	3,00	0,20
<b>9</b>	<b>bedroom</b>	21	2,33	0,33	3,00	0,20
	<b>Min</b>	13,00	1,44	0,11	2,25	0,20
	<b>Mean</b>	<b>21,00</b>	<b>2,33</b>	<b>0,33</b>	<b>3,60</b>	<b>1,00</b>
	<b>Max</b>	25,00	2,77	0,44	9,00	3,66

According to the table, the space with the highest control value is the semi-open passage named walkway with a numerical value of 3.66, while the toilet had the lowest control value with a numerical value of 0.20. In terms of the other parameters, the entrance, kitchen, and wet areas except for number 4 have the highest values, while the walkway has the lowest value. Wet area number 5 and living room have moderate values.

### 3.1.3 Permeability Analysis of the Traditional Thai House

Traditional Thai houses have different formations based on the climatic conditions of their region. A traditional housing plan type located in the center of Thailand was selected for this study. This selected plan and the transition graph are included in Figure 10.



**Figure 10:** Plan and justified permeability graph of traditional Thai house

Table 4 contains the results of the permeability analysis.

**Table 4:** Permeability analysis of traditional Thai house

	<b>TDn</b>	<b>MDn</b>	<b>RA</b>	<b>i</b>	<b>CV</b>
<b>0 entrance</b>	13	2,60	0,80	1,25	0,50
<b>1 terrace</b>	9	1,80	0,40	2,50	1,33
<b>2 verandah</b>	7	1,40	0,20	5,00	2,00
<b>3 living room</b>	9	1,80	0,40	2,50	1,33
<b>4 private room</b>	13	2,60	0,80	1,25	0,50
<b>5 kitchen</b>	11	2,20	0,60	1,66	0,33
Min	7,00	1,40	0,20	1,25	0,33
<b>Mean</b>	<b>10,33</b>	<b>2,06</b>	<b>0,53</b>	<b>2,36</b>	<b>1,00</b>
Max	13,00	2,60	0,80	5,00	2,00

The table shows that the spaces with the highest control value are the entrance and private room with a numerical value of 13, while the space that is the weakest in terms of controllability is the patio with a numerical value of 7. As in the other traditional housings, the patio space in this plan gets the lowest value in other parameters, while the entrance and private room are the spaces with the highest values. It is observed that the kitchen space has moderate values in terms of all parameters. However, the terrace and living room are the spaces with the lowest values in all parameters except the control value.

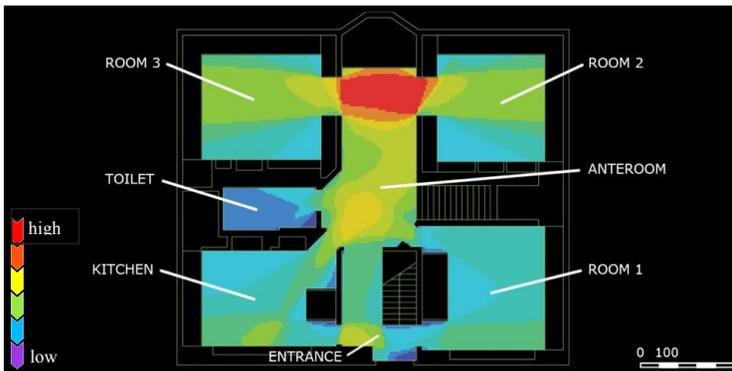
### 3.2 Visible Area Analysis

Visible area analyses were performed using Depthmap software in the study. Within this context, measurements of the connectivity parameter focusing on the relations between the spaces were made.

The connectivity value is the measurement of the number of neighboring spaces directly connected with the space. This local criterion is the most basic information about the comprehension of space. The readability and connectivity of the space are not only about the relation of joining and edge points that form the functional structure. They are related to the quality of the space that forms the joining, its location, and use. The most important point of the concept of connectivity is the reflection of the space form based on the visual perception created in the mind of the individual using the space (Köken, 2018, p. 33; Ünlü & Edgü, 2007).

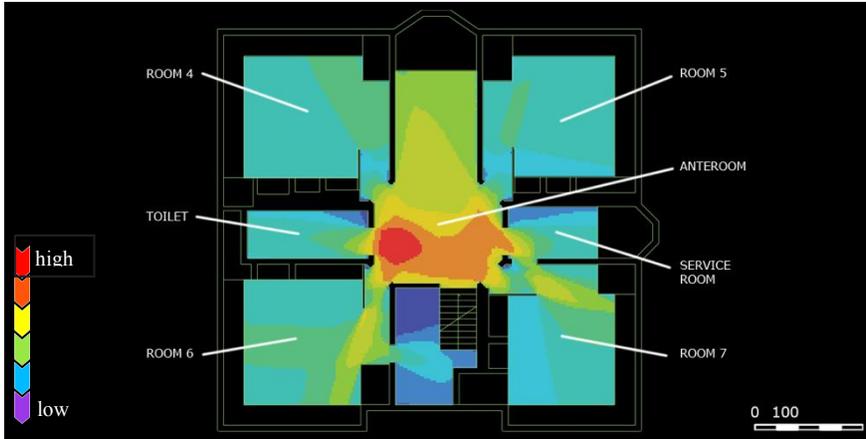
#### 3.2.1 Visible Area Analysis of the Traditional Turkish House

The graphics created based on the connectivity value of the floor plans of the traditional Turkish house within the scope of visible area analysis are provided in Figures 11 and 12.



**Figure 11:** Ground floor -connectivity graph of traditional Turkish house

The graph in Figure 11 suggests that the space with the highest connectivity value is the area between room 2 and room 3 of the anteroom space. The toilet is the space with the lowest connectivity value.

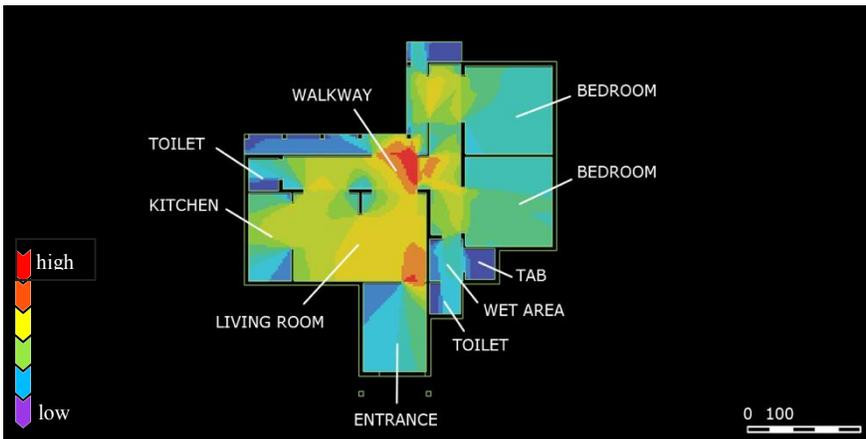


**Figure 12:** Upper floor -connectivity graph of traditional Turkish house

The graph in the Figure 12, suggests that the space with the highest connectivity value is the anteroom space on the upper floor, while the service room has the lowest values.

### 3.2.2 Visible Area Analysis of the Traditional Japanese House

Figure 13 contains the graphic of the visible area analysis carried out on the connectivity parameter of the traditional Japanese house.

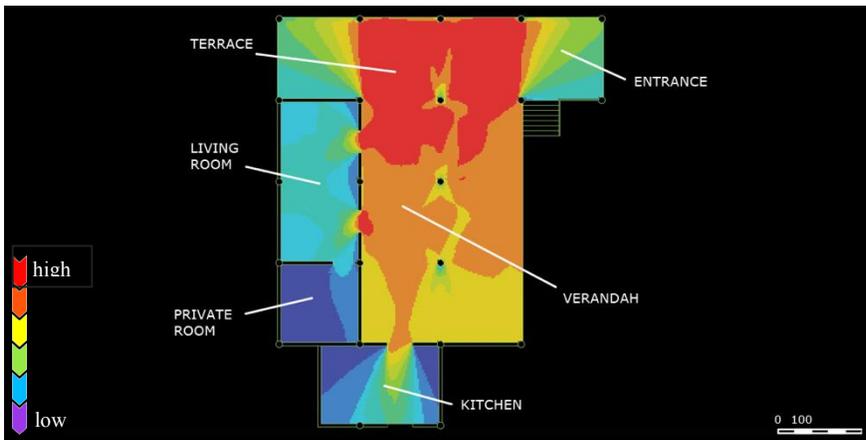


**Figure 13:** Connectivity graph of traditional Japanese house

The graphic shows that the spaces with the highest connectivity value are the transition space from the entrance to the living space and the transition space called the walkway. The spaces with wet areas have the lowest connectivity values.

### 3.2.3 Visible Area Analysis of the Traditional Thai House

Figure 14 contains the graphic of the visible area analysis carried out on the connectivity parameter of the traditional Thai house.

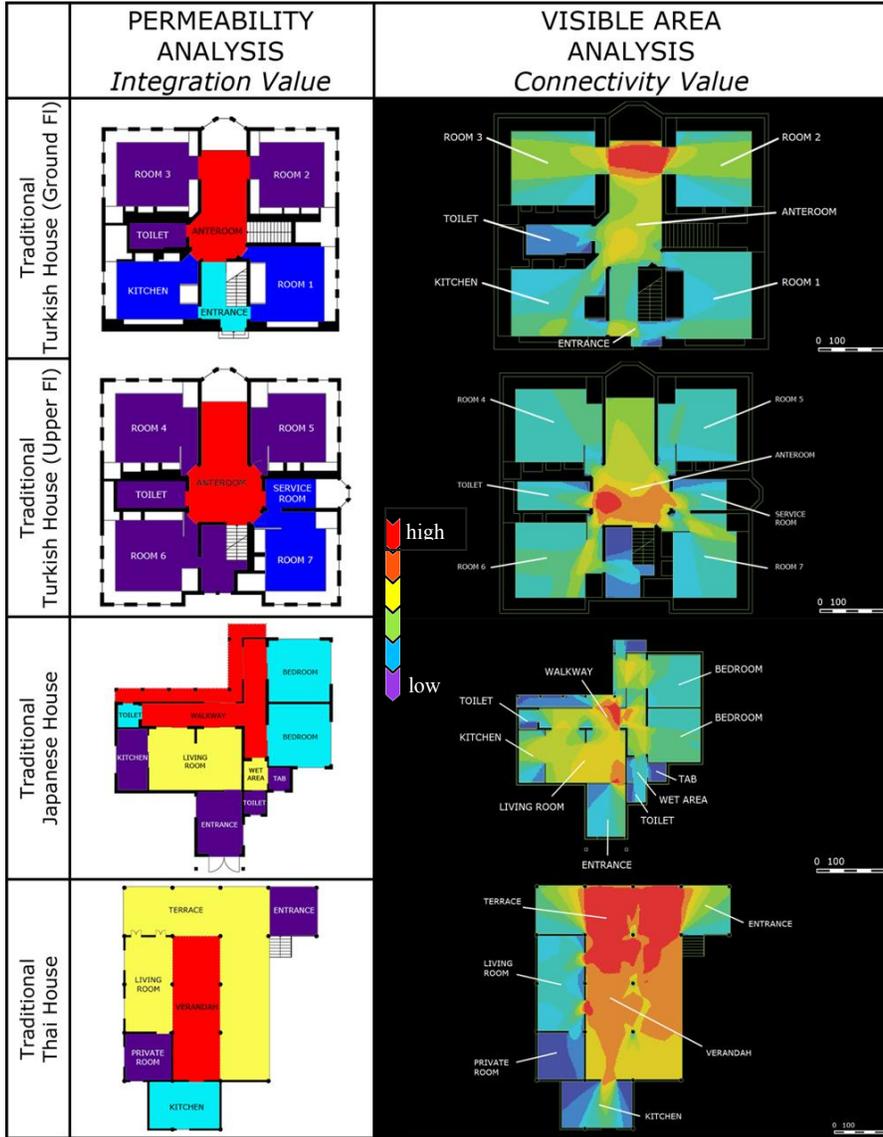


**Figure 14:** Connectivity graph of traditional Thai house

The graphic in the figure shows that the spaces with the highest connectivity value are the terrace and patio spaces and the entrance from the patio to the living space. Some parts of the private room and the kitchen are observed to be weak places in terms of connectivity value.

## 4. Findings and Conclusion

The analyses made within the scope of the study aimed to examine the cultural elements underlying the formation of housings, focusing on the traditional housing types of three different cultures. The permeability and visible area analyses of the traditional housing types of all three cultures are observed to largely overlap (Table 5).



**Table 5:** Permeability and visible area analysis of traditional houses

According to the results of the analysis, the anteroom space stands out as the most integrated space with the highest connectivity value in the traditional Turkish house. To this effect, it is safe to say that the anteroom space is the most basic element for the plan formation of the Turkish House. Because it is the anteroom that determines the plan types. It maintains its importance as the space that creates a difference among other traditional housings. Since that the anteroom is connected with all the rooms in the house, is the most central

location of life in the house, and is also a transition space, it stands out as the most accessible and therefore the most integrated space in analysis results. All the rooms on the ground floor and the upper floor are observed to have almost similar results. These spaces, which do not have a very high integration value, respond to more than one need and support a lifestyle in the Turkish House that is privacy-oriented and more introverted.

The analysis results of the traditional Japanese house show that the most integrated place is the walkway, which is also a transition space. This space, which has high connectivity since it has a transitional relation with almost all the spaces of the house, is also connected with the exterior space, which has a significant place in Japanese culture. It is observed that a relationship is established with a semi-open space in order to ensure the state of being intertwined with nature. The points having transitions from the entrance space to the living space and the living space itself, in general, have higher integration values compared to the other sections of the house according to both analysis results. This supports the idea that the space which is called the living space in the traditional Japanese house has a multi-functional use similar to the Turkish House and is the place where the family spends most of their time.

However in the traditional Thai house, unlike the other two types of housing, the most important factor that shapes the house is observed to be the climate conditions of the region rather than cultural values. Therefore, there is a more extroverted formation where most of the daily activities take place in open and semi-open spaces. The analysis results show that the highest values in terms of integration and connectivity are the terrace and patio spaces. The fact that the private room is the shallowest and therefore the weakest place in terms of access and integration supports the idea that this space is desired to be the place with more privacy.

The examination of the traditional housing types of all three cultures shows that the cultural values of the society and climatic conditions are important in forming the house. Having a more introverted lifestyle in which privacy is important with the influence of religious belief in the traditional Turkish house, the formation of the house has developed in accordance with this. Similarly, it can be said that the forming of the houses in the traditional Japanese house and the traditional Thai house is made consciously in accordance with those cultures. In this respect, it is possible to conclude that in traditional houses, the social life and the forming based on the space organization are directly related.

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# CHAPTER IV

## AN INVESTIGATION ABOUT THE DOORS OF ODUNPAZARI HOUSES IN TRADITIONAL HOUSING ARCHITECTURE

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### 1. Introduction

**a**s the first settlement of Eskişehir, the traditional Odunpazarı region and its houses have maintained their significance and position in traditional architectural style throughout history. Houses identified as conservation areas and protected are very important because they have a unique façade design. The emphasis on doors and windows is typical on the fronts.

This study aims to examine the doors of historical Eskişehir Odunpazarı houses in terms of cultural heritage preservation. 68 typical residential doors were investigated for this reason. Since the doors of the dwellings with shops on the ground floor have been closed with protected bars, the characteristics and styles of 38 of the 68 doors investigated may be determined due to the pandemic. The distinctive features of the examined doors were determined during on-site analysis, precise sketches were made, and photographs were taken.

Human beings have always felt the need for shelter to feel secure and protected. This condition progressed from cave to tent, and then from tent to

home (Yılmaz & Ulusoy, 2017). As Izgi and Aysel (2007) said in their work, Anatolia has been home to many civilizations. Thanks to their climatic conditions, various materials have been used as construction materials in buildings. House building is the most common form of structure. Roofs, ceilings, and rooms are used to accommodate the needs of people in the houses. Windows and doors are the movements specified to fill in the gaps.

Traditional houses are different depending on the geographical location. Climate, geology, and material are the primary reasons for their differentiation (Küçükerman, 1973). Aside from that, sociological consequences exist. Examples include the family, religious culture, culture, and economy (Günay, 1999) (Demirarslan, 2007). There are four different styles of traditional Turkish housing architecture plans: There is the plan without sofa, the inside sofa, the center sofa, and the outside sofa. According to the house's location, it is examined into seven regions. The Central Anatolia region, which contains Eskişehir, is included in this scope (Eldem). Summers in Central Anatolia are hot and dry, while winters are cool and snowy. As a result, the houses are shaped in a certain way.

Eskişehir, formerly known as Dorylaion, is a historic settlement that is considered a Phrygian city rich in underwater wealth and trade. This current name comes from the fact that it was an old settlement (URL-1, n.d.). The first residential settlement in Eskişehir is Odunpazar. While it was the city's center at the time of settlement, it has lost its distinction over time (Yılmaz & Ulusoy, 2017). Odunpazarı was declared an urban site in 1981 by GEEAYAK (High Council of Real Estate Antiquities and Monuments) and was taken under protection. The High Council of Immovable Cultural and Natural Heritage identified it as an urban protected area in 1986 (Atıcı , 2017). Due to the traditional urban texture, it contributes to Eskişehir tourism today (Yılmaz & Ulusoy, 2017) (Erşan & Demirarslan, 2020). In general, streets are designed to prioritize foot traffic. People have been able to socialize thanks to the settlements of households and the areas formed on the streets. Doors have served as a means of socialization in this situation. The street pattern in Odunpazarı is organic. The streets are dominated by low-rise traditional houses. Houses in Odunpazarı have developed a façade language as a result of combining local materials as vernacular architecture and detailed designing them (Atıcı , 2017). Although the houses are simple and complete, they have rich formal diversity (Yılmaz & Ulusoy, 2017).

These houses with colorfully painted facades are located around the Kurşunlu Complex (Figure- 2).

As previously said, Odunpazarı Houses are examples of traditional Turkish housing architecture that bear sociocultural traces from the period (Atıcı , 2017) (Yılmaz & Ulusoy, 2017). Restoration and improvement works have been carried out in the streets and houses to protect the Odunpazarı houses (Erşan & Demirarslan, 2020) (Figure-1).



**Figure 1:** Odunpazarı Houses: A House Under Restoration (Sönmez, 2021).



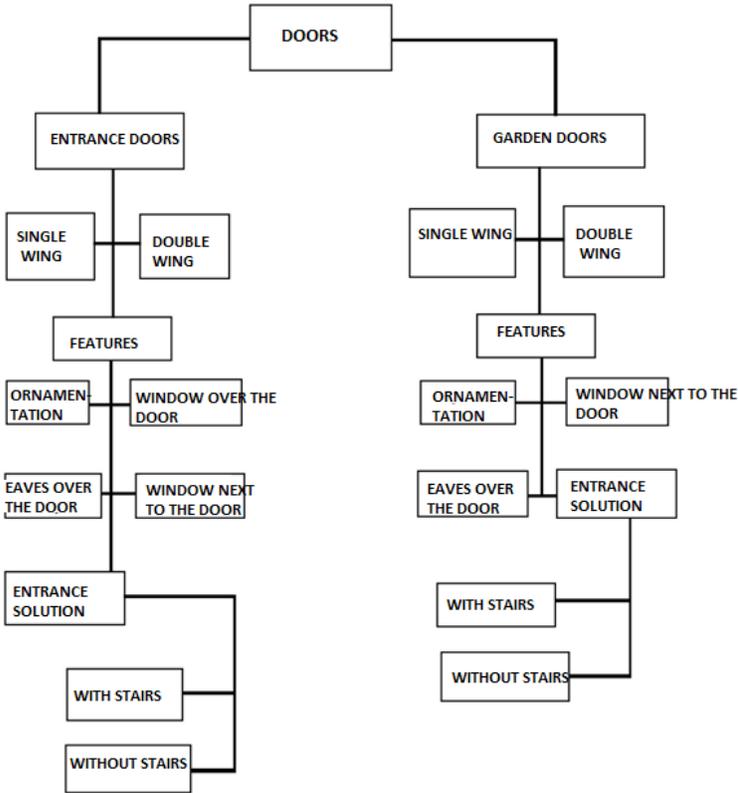
**Figure 2:** Odunpazarı Houses: On the Left That Has Not Been Restored, On the Right is A House with Completed Restoration (Sönmez, 2021).

The houses bear traces of the Ottoman Empire period and differ from today's houses with their tradition, as mentioned in Atıcı's work (2017). The upper floor living space of two-story dwellings has distinctive characteristics, such as overhangs on the second floor. The houses were built with thick timber and a combination of wood and adobe. It was possible to socialize because of the proximity of the houses.

Doors are a building element. They provide access control and privacy (Demirarslan, 2005). The major role of the doors made of different materials, according to Binan's study (1981) is to connect the interior volumes, access the interior volumes from the outside, and ensure that the volumes are closed against each other.

The harmony of wood and metal materials has been considered as the material selection for the doors of the traditional Turkish house, and the entrance door is emphasized on the facades (Atıcı , 2017). Doors can be customized with accessories such as bells, knobs, handles, keys, and locks. Elegant elements are chosen in terms of motif, shape, and decoration. The contact between the door and the person was examined by Demirarslan (2020) and explained as follows; *“Doors are recognized as a way for citizens and houses to express themselves. The door represents the transition from outside to inside. It is common practice in traditional cities and neighborhoods to sit in front of the door, socialize, and talk. The door is more than a physical feature; it symbolizes the respect that people have for the structure.”*

Odunpazarı houses usually have small, single-winged doors. The frames and panels on the door wings are made of wood. The doors were split into two categories in Atıcı's study (Atıcı , 2017): Entrance doors and garden doors. The garden and entrance doors are then divided into two groups as single and double wing types. Differentiation was made based on their characteristics, such as processing for entrance doors, eaves over doors, entrance solution, window over the door, and the window next to the door (Figure-3).



**Figure 3:** Doors and Their Features Scheme (Atıcı , 2017).

The houses with double wing garden doors were built for horse carriages, even though the doors are split into two types: entry and garden doors. Horse carriages were popular throughout the period (Figure-4), and owners of houses with these doors were thought to have a high income (Atıcı , 2017) (Atıcı, 2017).



**Figure 4:** A Horse Carriage Statue Representing the Horse Carriage of The Period in Odunpazarı Square (Sönmez, 2021).

There have been several studies done on door samples of traditional houses. The following are a few of these studies:

Odunpazarı houses were investigated over Şakirler Sokak in one sample. The street, which has 25 homes, was already investigated. There was a discussion of street texture, building plan schemes, and facade typologies. Housing morphologies have been graphed as a part of the research on protecting cultural heritage (Yılmaz & Ulusoy, 2017).

Another study focused on the Odunpazarı houses and looked at the definition of sustainability in this region. The Odunpazarı Houses restoration works have been assessed for their sustainability. Erşan & Demirarslan propose some recommendations (Erşan & Demirarslan, 2020).

In a research on the doors of traditional Afyonkarahisar houses, 45 doors were investigated over 22 houses and the characteristics and accessories of the doors were revealed. Suggestions were made to protect the doors (Yıldırım, 2006).

A photograph and drawing archive were produced from the doors of 72 houses found in a study on entrance gaps and doors of historical Bayındır houses. The doors were categorized according to their decorations and shapes in the study (Cansız, 2016).

It is possible to say that several studies are exploring traditional residential architecture and doors, backed up by literature studies. Although there are studies concerning Eskişehir Odunpazarı houses, there is none that specifically addresses the doors of these houses.

In terms of traditional Turkish house architecture and Odunpazarı house facade language, the doors of Odunpazarı houses play a significant role. The doors are documented in this study to maintain the architectural values we have and to protect our historical heritage. It aims to conserve traditional Turkish housing architecture, as well as wooden door design details and techniques.

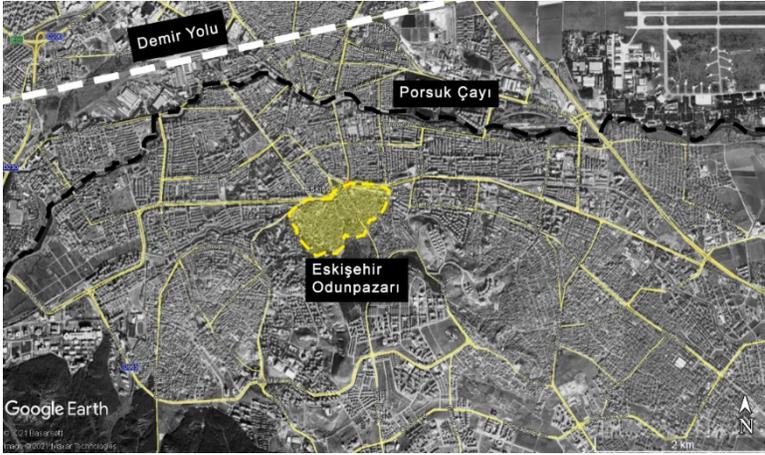
## 2. Research Method

During the research, observations were made and photographs were taken in Eskişehir's Odunpazarı district. The research on the Odunpazarı region and the doors was also previously studied. Three streets were chosen to decide the study's scope: Mücellit Street, Beyler Street, and Kurşunlu Cami Street. These streets' 68 residential doors were investigated. Since the doors of the houses with shops on the ground floor have locked with covered bars, the characteristics

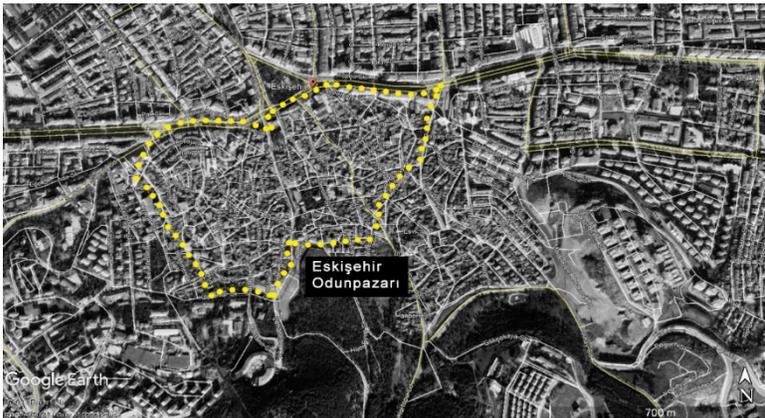
and styles of 38 of the 68 doors that were inspected could be determined due to the pandemic. The drawings were made through AutoCAD 2017, and the photographs and images were prepared to be added to the research on Adobe Photoshop CC 2019 program.

### 3. Findings

Eskişehir is a cultural city with Porsuk Brook, railway, museums, parks, and historical Odunpazarı houses. It has been registered as the “2013 Capital of Intangible Cultural Heritage” by UNESCO (Tören, Konak, & Demiral, 2012). In Map 1, the location of the Odunpazarı region in Eskişehir province is shown. In Map 2, the borders of Eskişehir Odunpazarı Region are given.

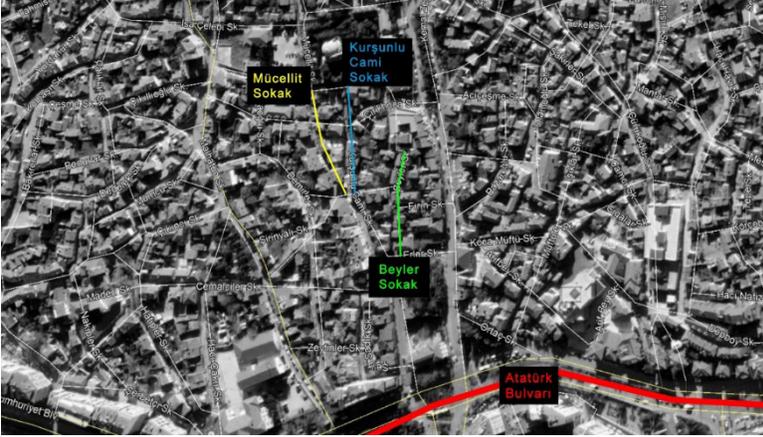


**Map 1:** Eskişehir ( Google Earth Pro, 2021).



**Map 2:** Eskişehir Odunpazarı Region Border ( Google Earth Pro, 2021).

The streets studied in the research are depicted on Map 3. These streets are Mücellit Lane, Kurşunlu Cami Street, and Beyler Street, as previously said. The research area was chosen because three parallel streets running side-by-side, leading to the Kurşunlu Complex. These roads lead to Atatürk Boulevard.



**Map 3:** Studied Streets (*Google Earth Pro, 2021*).

General analysis of the doors examined in the streets in Table-1. In Figure 5, the locations and models of all doors opening to the Mücellit street are analyzed. Besides, Mücellit Street Door general and detail analyzes are given in Table-2 and Table-3.

**Table 1:** General Analysis of the Doors Examined in the Streets

<b>Total number of doors</b>	<b>68</b>
Number of doors which model cannot be determined *	30
Number of Entry Doors	57
Number of Garden Doors	11
Number of single wing doors	57
Number of double wing doors	11
Number of doors with stairs solutions	6
The number of doors with windows over the door	10
Number of doors with eaves over the door	4
Number of doors opening from the left	17
Number of doors opening from the right	10

\* Because of the pandemic, the doors of the dwellings with shops on the ground floor were closed with protected bars, so these doors could not be determined.

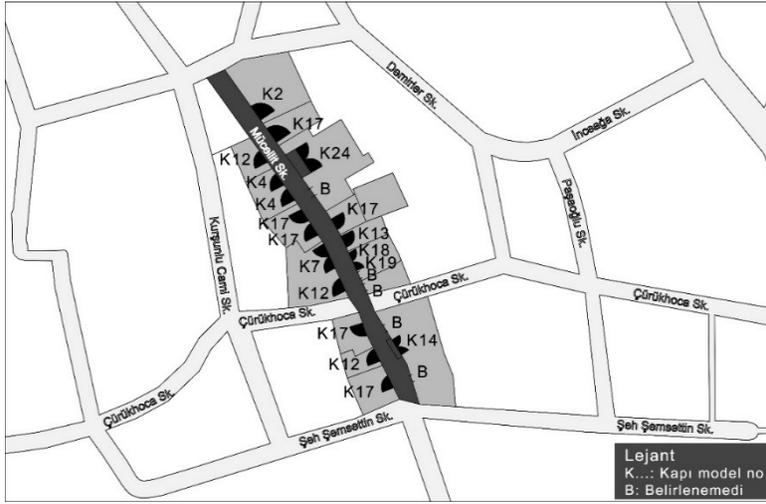


Figure 5: Mücellit Street House Doors Analyses.

Table 2: Mücellit Street Door Detail Analysis

Door Model No	Piece	Door Wing	Window Yes / No	Ornamentation Yes/ No	Lock Yes/ No	Accessory (Knob, Ring) Yes / No	Door Opening Direction Right left	Width	Length
K2	1	S	Y	N	Y	N	R	85	183
K4	2	S	N	N	Y	N	L	94	190
K7	1	D	N	N	N	N	-	290	290
K12	3	S	N	N	Y	N	L	86	192
K13	1	S	Y	N	Y	N	L	86	190
K14	1	D	Y	N	Y	N	-	122	224
K17	6	S	N	N	Y	Y	.*	88	196
K18	1	S	Y	N	Y	N	L	88	195
K19	1	S	Y	N	Y	N	R	70	194
K24	1	D	N	Y	Y	N	-	282	202

\* 3 of the 6 doors with model number K17 open to the left and 3 of them to the right.

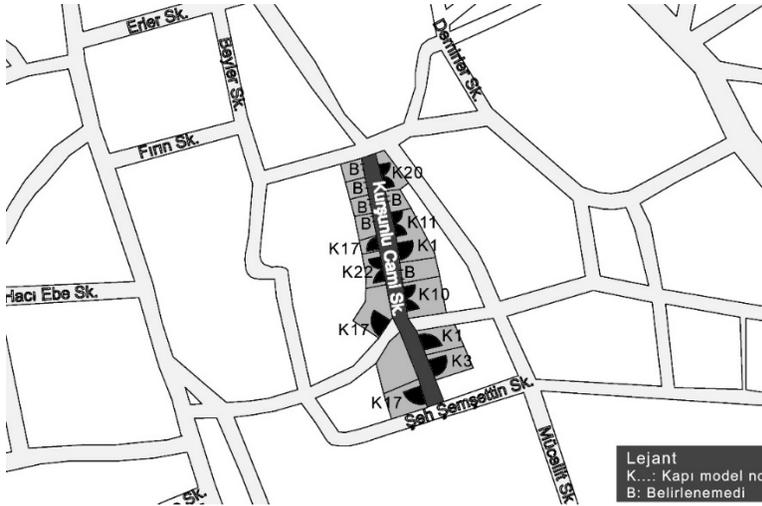
S:Single, D: Double, Y: Yes, N: No R: Right L:Left

Table 3: Mücellit Street Door General Analysis

<b>Total number of doors</b>	<b>23</b>
Number of doors which model cannot be determined *	5
Number of Entry Doors	20
Number of Garden Doors	3
Number of single wing doors	20
Number of double wing doors	3
Number of doors with stairs solutions	5
The number of doors with windows over the door	2

Number of doors with eaves over the door	1
Number of doors opening from the left	10
Number of doors opening from the right	5

\* Because of the pandemic, the doors of the dwellings with shops on the ground floor were closed with protected bars, so these doors could not be determined.



**Figure 6:** Kurşunlu Mosque Street House Doors Analysis

In Figure-6, the positions and models of all doors opening to the Kurşunlu street are analyzed. Besides, Kurşunlu Street Door general and detail analyzes are given in Table-4 and Table-5.

**Table 4:** Kurşunlu Mosque Street Door Detail Analysis

Door Model No	Piece	Door Wing	Window Yes / No	Ornamentation Yes/ No	Lock Yes/ No	Accessory (Knob, Ring) Yes / No	Door Opening Direction Right left	Width	Length
K1	2	S	N	N	Y	N	-*	80	158
K3	1	S	Y	N	Y	Y	L	92	198
K10	1	D	Y	Y	Y	N	-	130	230
K11	1	D	Y	Y	Y	N	-	100	171
K17	3	S	N	N	Y	Y	-**	88	196
K20	1	D	Y	N	Y	N	-	116	206
K22	1	D	Y	N	Y	N	-	130	178

\* One of the 2 doors with model number K1 opens to the left and the other to the right.

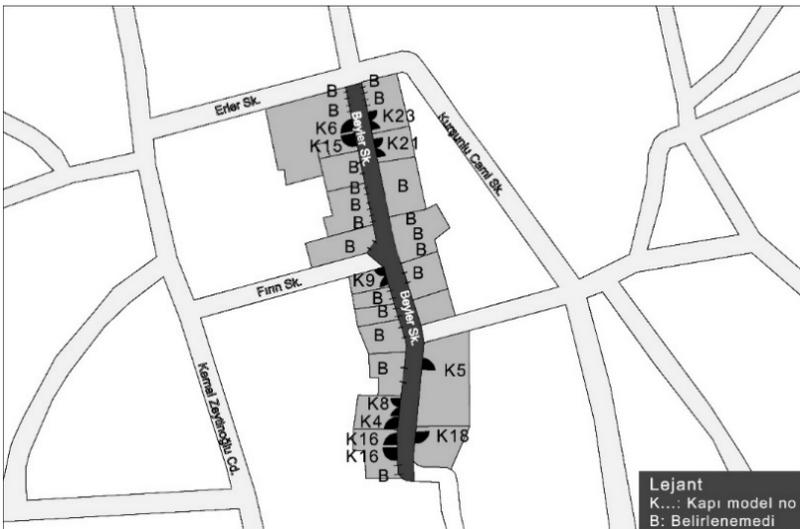
\*\* 2 of the 3 doors with model number K17 open to the right and the other to the left.

S:Single, D: Double, Y: Yes, N: No R: Right L:Left

**Table 5:** Kurşunlu Mosque Street Door General Analysis

<b>Total number of doors</b>	<b>16</b>
Number of doors which model cannot be determined *	6
Number of Entry Doors	13
Number of Garden Doors	3
Number of single wing doors	6
Number of double wing doors	4
Number of doors with stairs solutions	1
The number of doors with windows over the door	5
Number of doors with eaves over the door	1
Number of doors opening from the left	3
Number of doors opening from the right	3

\* Because of the pandemic, the doors of the dwellings with shops on the ground floor were closed with protected bars, so these doors could not be determined.

**Figure 7:** Beyler Street Street House Doors Analysis

The positions and models of all the doors opening to the Beyler street are analyzed in Figure-7. In addition, Beyler Street Door general and detail analyzes are given in Table-6 and Table-7.

**Table 6:** Beyler Street Door Detail Analysis

Door Model No	Piece	Door Wing	Window Yes / No	Ornamentation Yes/ No	Lock Yes/ No	Accessory (Knob, Ring) Yes / No	Door Opening Direction Right left	Width	Length
K4	1	S	N	N	Y	N	L	94	190
K5	1	S	N	N	Y	N	R	90	210
K6	1	S	Y	N	Y	N	L	94	190
K8	1	D	N	N	Y	N	-	138	205
K9	1	D	N	N	Y	N	-	82	185
K15	1	S	N	N	Y	N	-	94	190
K16	2	S	N	N	Y	N	-*	78	195
K18	1	S	Y	N	Y	N	L	88	196
K21	1	D	N	N	Y	N	-	130	178
K23	1	D	Y	N	Y	N	-	130	192

\* One of the 2 doors with model number K16 opens to the left and the other to the right.

S:Single, D: Double, Y: Yes, N: No R: Right L:Left

**Table 7:** Beyler Street Door General Analysis

<b>Total number of doors</b>	<b>30</b>
Number of doors which model cannot be determined *	19
Number of Entry Doors	24
Number of Garden Doors	6
Number of single wing doors	7
Number of double wing doors	4
Number of doors with stairs solutions	0
The number of doors with windows over the door	3
Number of doors with eaves over the door	2
Number of doors opening from the left	4
Number of doors opening from the right	2

\* Because of the pandemic, the doors of the dwellings with shops on the ground floor were closed with protected bars, so these doors could not be determined.

### 3.1 Door Models

Photographs and sketches of the analyzed door models are shown in a table in this section.

**Table 8: Door Models**

Door Model	Photo and Drawings	Door Model	Photo and Drawings
K1		K13	
K2		K14	
K3		K15	
K4		K16	
K5		K17	
K6		K18	
K7		K19	

<p>K8</p>		<p>K20</p>	
<p>K9</p>		<p>K21</p>	
<p>K10</p>		<p>K22</p>	
<p>K11</p>		<p>K23</p>	
<p>K12</p>		<p>K24</p>	

The features of the examined doors are briefly as follows:

The K1 door has a single wing. It has a double-sided door frame. On the base, miter joining was used. A single panel makes up the door wing. The panel has four vertical sections and is framed. Steel handles and locks were used, and

they are still in use today. When measured ergonomically, the door falls short of the normal door measurements. The door has a few erosions occasionally (Table-8).

The door with the number K2 has only one wing. On the base, miter joining was used. On the door wing, there is a single thick miter joining frame. Within the frame is an oval window. The window is surrounded by an oval frame, similar to the thick frame on the wing. Behind the windows, there is a wooden grille that blocks the view. It has a metal handle and lock mechanism that is inlaid. Although the upper half of the wing's frame is plain, the lower half has been divided into seven horizontal sections to form a panel. The door has a few holes in it and deterioration on the lower board (Table-8).

There is only one wing on the K3 door. In terms of form, it is identical to the K1 door. However, unlike K1, the K3 door has a skylight. It has a double-sided door frame. The door's wing has a double structure. The glass is kept in one of the frames. A panel made up of four vertical sections sits underneath the glass part. It has a bronze metal handle, knob, and lock mechanism inlaid into it. Natural stone is used for the threshold. The door has been painted to provide distinction to give it an old appearance (Table-8).

The K4 door is a three-paneled single-winged door. It has a door frame with four lines. In the frame, miter joining was used. The wing has three framed panels. One of the panels should be embossed in the form of a triangular prism in the center. It has a metal handle and key inlaid into it (Table-8).

The door with the number K5 has just one wing. It's a door with three panels on the vertical sides of the frame and a single panel on the upper head. There are panels in the center of the door wing, which is made in a framed structure. The wing, like K4, has three panels. Unlike K4, though, the middle panel is plain. It has a rusted metal lock mechanism and a golden handle. Aside from that, there's a hook and padlock device as well. The threshold is made up of wood. The door has a lot of wear on it (Table-8).

The door with the number K6 has only one wing. With the lintel's wooden lining, the upper head of the door frame is hidden. It has a single-line plain door frame. On the door wing, there is a skylight (window). There are four slats on the window frame. As with the K5, the door wing has three panels and a frame. The lock and handle are made of black metal. The marble threshold is cracked. The door frame has abrasions, and the bottom row of the sash has impact marks (Table-8).

The K7 door has four wings. This garage-sized door is believed to have been used for horse carriages during its day. The blue door frame is very thin and painted blue. Three hinges attach the wings to the frame. Vertical paneling is used to protect the wings. In the lower section of the wings, metal flashes can be observed. On the second wing of the door from the left, the lower spar seems to have been carved off. The reason for this is to make space for the paving stones that will serve as door supports, reducing the pressure on the door (Table-8).

The door with the K8 number is double-winged. It was built to be used as a garden entrance door. Above this door, there is an eave. Like the K6, it has three-panel wings. It has a slim metal handle, a bolt, and an additional padlock system. The door frame and wings show signs of wear and color variations. On the upper sections of the door, which are covered by the eaves, the wear and color variations are less noticeable (Table-8).

The door with the K9 number has two wings. The wings have three panels, just like the K8. The engraved sleeve, key, and nameplate are all gold-colored. There is no threshold. It is seen that the wear and color changes increase as you go down from the upper parts of the door (Table-8).

The door, numbered K10 has two wings. It is the mansion door. Unlike other doors, it has embroidery and motifs. There is a semi-circular skylight above the door. In the center of this skylight, there is a semi-circular wooden mass. The skylight symbolizes the sun. The frame of the skylight is integrated with the frame of the door. The wings are designed as three panels. The boards in the middle have a different shape than the others. There are metal handles of the door on it (Figure-8). The contact boards of other panels are triangular prism as in K5. In the middle of the wings, there is a column attached to the right-wing. There is an engraving on this column. On both sides of the door, there are windows and external façade lighting. It has a marble threshold (Table-8).



**Figure 8:** Handle and Decoration Detail of the Door no K10 (Sönmez, 2021)

The door with the K11 number has two wings. It has embroidery, motifs, and reliefs, unlike other doors, such as K10. Above the door, there is a skylight. The window is made up of four pieces that are stacked one on top of the other. As with K10, the door wings have three panels, with the middle panel having a similar design. Above the middle panels, there are bronze door handles. The panel was shaped like a triangular prism. At the top of the arch, some reliefs are consistent with the door's handles. This relief symbolizes the house's roof. The wooden door has a threshold next to it (Figure-9) (Table-8).



**Figure 9:** Handle Detail for the Door no K11 (Sönmez, 2021).

The door with the number K12 has just one wing. It resembles the K4 door. The lower panel is split in half in K12, resulting in two additional plates. And, as in the middle part, the panels are triangular prismatic. It has a threshold. Wearing can be seen near the door's kick plate (Table-8).

The door with the number K13 has only one wing. In terms of the wing, it is identical to K12. On the door panel, though, there is a 6-section skylight. Two locks and a brass handle are included. The door frame and wing have abrasions and color variations (Table-8).

The door numbered K14 has two wings. This house has a transformation from the mansion to the hotel. The door is the entrance door. It has a wooden threshold. One of the wings is full while the other is the half wing. There is glass on the upper part of both wings. There are framed panels in the middle and framed panels in the lower parts, two on the full wing and one on the half wing. There is a gold-colored door handle and key system (Table-8).

The door with the number K15 has only one wing. It's similar to the K6 door. The upper panel is divided in half in K15, resulting in two additional plates. The threshold is made of natural stone. It has a black lock and handles

system. As a finishing touch, a horseshoe is hung on the entrance. The door has abrasions, color variations, and holes (Table-8).

The door with the number K16 has only one wing. On the upper side, it has two vertical framed panels side by side, while on the lower side, it has a wing structure made up of 16 vertical panels in a frame. The panels in the upper section panels should be embossed in the form of a triangular prism. It has a metal lock and handles mechanism. The door also has metal numbers on it that show the door number. There is a threshold of the cast concrete. The threshold has a crack in it. The door has abrasions and peeling on occasion (Table-8).

The door numbered K17 has a single wing. The right part of the frame was integrated with the application of overlapping paneling. It has a marble threshold. It consists of 3 main panels. The upper panel consists of two vertical panels. There is a gold-colored mallet in the middle of the panel. The lower panel consists of two vertical panels. The middle parts of the frames are in the shape of a triangular prism. It has a metal-colored handle and lock system. The door has been painted to provide distinction and lend it an old appearance (Table-8).

The door with the number K18 has only one wing. In terms of wing design, it is identical to K17. Aside from that, the wing has a skylight (window). The rightmost window of the three-section window was used to move a pipeline. The threshold is made of oak. There are some color shifts and abrasions on the door (Table-8).

The door with the number K19 has only one wing. It also serves as a store entrance. To the left side, there is a window. Two organically shaped openings can be found on the upper part of the wing in terms of wing design. By adding a mirror on the left side of these windows, which were formerly used as curtains, the door was given a new purpose. The gap on the right side was filled in and the right side was closed. The 3-2-3 division of 8 panels vertically from right to left forms the lower portion of the wing. One of today's metal door lock systems is this one (Table-8).

The door numbered K20 has two wings. There is a 3-segment skylight (window) on the wings. One of the wings is full while the other is the half wing. The full wing part is similar to K17. It was formed by carrying the designs parallel to the half wing. It has a metal handle and lock system (Table-8).

The door with the number K21 is double-winged. T. The garden is the entrance door. A cornice frames the door. The door's wings are identical to those

of K17. The panels are not prismatic in any way. It's a flat surface. The door handle and lock mechanism are also golden in color. Color shifts and degradation can be seen in some sections (Table-8).

The door numbered K22 has two wings. The door frame was also designed with a panel. There are skylights with 3 sections on the door wings. The glass was selected as a model for privacy protection. The door is similar to the K21 wing model. However, K22's panels are triangular prism. There are two metal handles, one lock system, and padlock rings. There are erosions on the door (Table-8).

The door with the number K23 has two wings. In terms of design, the door is identical to the K21. On the wings, though, there is a 9-section skylight (window). This skylight is finished with a wooden grille for added protection. It has a marble threshold. But for small scratches on the door, it appears to be in good condition (Table-8).

The door with the number K24 has two wings. The multi-panel door wings were attached with three hinges to the slim-looking frame on the left and the fixed-wing portion of the door on the right. The left side serves as a double wing, while the right side is set. On the left side of the door, between the wings, there is a decorative column carved by hand. The lock handle mechanism was made of gold-colored alloy. But for minor scratches on the door, there is no damage (Table-8).

As a result of the investigations, it was discovered that the Odunpazar houses' outer doors are narrow and low, with a single or double wing. There are many types of double, single, starting from 1 panel to multi-panel doors. The models of the doors are arranged on the proliferation of panels, starting with 1 panel. 16.17% of the doors have single wing, 83.83% double wing and 14.70% skylight (window).

In the framework, the door wings and supports are made of wood, with panels in the center. Some of the door wings have windows that allow light to pass in. The construction and material properties of the door provide the majority of the door's aesthetic appearance. Another aspect that adds artistic value to the door wings is the prismatic forms formed in the panels of the door wings. Accessories such as holders, mallets, and rings are seen. Generally, there are wooden doors in dark and red tones. Although the doors both have thresholds, some of them even have eaves. The doors have been built with functionality in mind.

## 4. Conclusion and Suggestions

Doors, which are the moving elements of the spaces, have been used to establish the relationship between spaces throughout history. The main task of the doors made of various materials is to interlock with each other from the inner volumes, enter the inner volumes from the outside, and ensure that the volumes are closed against each other. However, the meaning of the door concept is not limited to this. In traditional cities and neighborhoods, it is common practice to sit in front of the door, socialize and chat. The door is not just a concrete element, it is the respect people give to the building.

The wooden doors of Odunpazarı houses show that traditional Turkish house wooden house door models and woodcraft are a value that should not be lost. The doors are designed as panels. As a result, Odunpazarı houses and doors are a value that should be protected. Wooden doors belonging to traditional Odunpazarı houses are mostly improved doors by the original. However, wood is a material that requires constant maintenance. It may be recommended to apply varnished protective polish regularly to protect against harmful UV rays from rain, snow, wind, and sun. This application also protects from insects and pests. After the pandemic, it may be suggested that researchers bring undetermined gates to the literature by performing door destruction analyzes together with other gates.

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## CHAPTER V

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# THE ANALYSIS OF THE INTERIOR SPACE OF TRADITIONAL JAPANESE HOUSE IN THE CONTEXT OF VISUAL PERCEPTION

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### 1. Introduction

Space exists through the perception of the user. The space is formed based on the person's cultural background and the meaning which the volume and forms create in human mind through sensation. Perception is an active process of selecting and interpreting the environmental stimuli through the senses and a mental process. Within this process, the objective world is transmitted to subjective consciousness through the senses. Sensory information received through abstract/concrete objects in the external world is defined as perception. This sensory information comes through our five sensory organs, the eyes, ears, nose, tongue, and skin, as well as the sense of feeling.

According to Roth (2019), the pleasure we take in architecture is created through our perception. This value is related to how the eyes and mind perceive and interpret visual data regarding architectural life. Perhaps the most basic concept is the mind having been programmed to seek meaning with all the information sent to it depending on intersensory communication. This is connected to the survival instinct, no doubt. The mind tries to fit the information transmitted to itself in a meaningful pattern. When the incoming data is senseless, the mind cannot recognize it. Even in case of facing completely random visual or

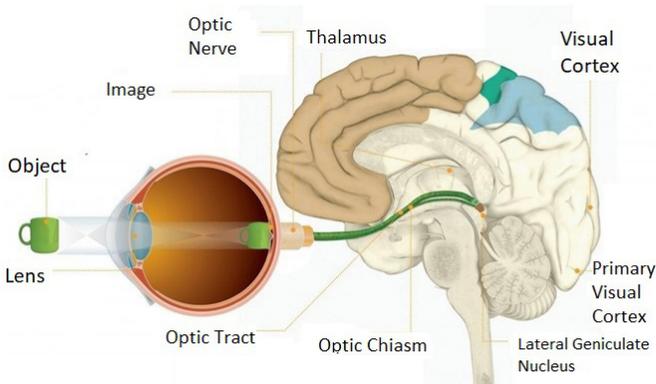
auditory phenomena, the mind adds a preliminary interpretation on the basis of the evaluation informatics it has previously stored. Therefore, what we perceive is based on what we know before.

In this section, due to its plainness, traditional Japanese house, on which the visual perception principles and elements can be clearly seen, was scrutinized in the context of visual perception.

## 2. Perception Process

Perception is a phenomenon that results from the combination of many factors (Image 1). Perception process occurs quickly in human beings. It is a long process that begins with focusing on any object or anything to be perceived via one or more environmental and internal stimuli, and that continues with the interpretation of those stimuli, and finally ends with giving a reaction to those stimuli (Dinçer, 2011).

**Image 1:** The Carriage of the Object's Visual Information Perceived by the Eyes to the Brain via the Visual Nerves and Conversion into Information



**Source:** (URL-1)

Arnheim explains the perception process as follows:

1. The stimulus coming from the organism's surrounding environment is perceived by the organism. In the narrowest sense, perception is having information about the presence of a stimulus through stimuli.
2. Anything perceived is transmitted to the brain. To be perceived by the brain means interpreting an object through the earlier experiences.
3. When anything perceived is harmonized and comprehended, it becomes cognition, that is, something which the organism knows and is acquainted with.

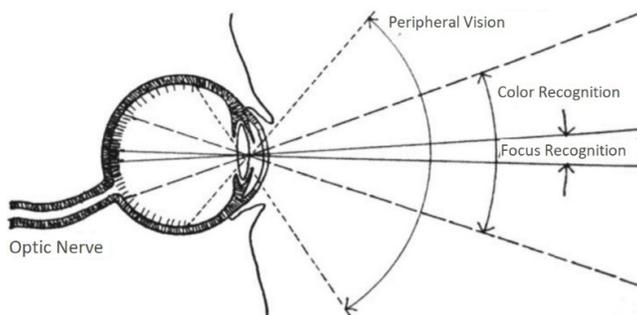
4. Any reaction given to the first stimulus means that it took place by referring back to a foreknown image (Dinçer, 2011).

The “visual cortex”, which is the sense of vision and the part of the brain involved in vision, has significant effects on the occurrence of the perceptual process. Examining the processes initiated with vision, such as perception, recognition, placement, fixity and attention, which affect our perception system in terms of visual perception, helps to interpret and comprehend the spaces and the designs performed within those spaces correctly (Dinçer, 2011).

The eye contains two systems. One creates the image, while the other transforms this image into electrical impulses. The system that forms the image works just like a camera. The function of the system is to focus the light reflected from objects so that the image of the object is formed on the retina, a thin membrane which covers the inside back of the eye. The system that forms image consists of the cornea, pupil and lens. Without these, we can see light, but we cannot distinguish the shapes. The cornea is the transparent front part of the eye. Once the light rays enter the eye through the cornea, the image begins to form. The lens completes the process of focusing light on the retina and changes shape to focus on objects at different distances (Dinçer, 2011).

According to Ching, focusing our attention on objects and our perception of details are limited to a very narrow cone of vision (Image 2). As we examine our visual field, our eyes constantly move, scan and focus on a specific region of an image or object to gather visual information. In order to make sense of the information what we see through our eyes, the brain interprets and combines the visual information we receive through our eyes and transforms it into visual models that we can recognize and understand (Dinçer, 2011).

**Image 2:** The Illustration of Vision Angles of the Eye



**Source:** (Dinçer, 2011)

Berger states that approximately eighty percent of the first impressions related to the external environment are formed through vision. Visual perception is basically a biological process, but psychological factors still have an effect on this process. The visual perception process begins when the individual starts the visual process by choosing from the image confusion around himself/herself based on his or her requirements and motives. Cognitive processes are important in terms of visual perception and formed by the individual's knowledge, experience, lifestyle, and culture (Güleç Solak, 2017).

The interior space perception, in its most basic definition, can be defined as the observer's perception of his/her location and the locations of his/her surroundings with respect to each other. Humans always interact with the space they are in. Physical factors within the space stimulate the individuals all the time. The space is tried to be grasped through its properties such as the form, colors, texture, and meaning of its surfaces, and also its borders (Aslan, Aslan, & Atik, 2015).

A number of design principles and elements are available for the use of design elements regarding visual art and design. These elements vary according to perception theories and design styles. However, in this study, six elements determined as design elements by Francis Ching (2011) and six principles of the Gestalt theory of perception are addressed.

### **3. Elements of Visual Perception**

The elements of visual perception are analyzed under six topics, which are axis, symmetry, hierarchy, datum, rhythm, and transformation.

#### **3.1 *Axis***

The axis is a line defined by two points in space, about which forms and spaces can be organized in a regular or irregular manner. Although imaginary and invisible, the axis is strong, dominant, and a regulatory tool.

Since an axis is a linear condition, it has qualities of length and direction, and induces movement and promotes views along its path. For its definition, an axis must be terminated at both of its ends by a significant form or space (Ching, 2011).

#### **3.2 *Symmetry***

According to Ching (2011), symmetry is prominence of the meaning or significance of a form or space compared to other forms and spaces within the

general organization by its size, shape and layout. Ching states that there are basically two types of symmetry. One is bilateral symmetry where equivalent elements are arranged on opposite sides of an axis. The other is radial symmetry where equivalent elements radiate from a central point and balanced around two or more axes.

Symmetry, a natural phenomenon, has historically been used widely in architectural design. The search for symmetry is observed in buildings and spaces where social rules and ideas such as worship, justice and culture are reflected. The understanding of aesthetics and beauty, which stems from the symmetry's feature of being perceived easily and quickly, also regulates the perceptual principles of spatial design (Karaağaç, 2006).

### *3.3 Hierarchy*

Hierarchy in terms of architecture implies that there are certain elements of buildings, whether space or form, which are more significant than the others. According to Ching (2011), for a space or form to be articulated as being more significant than others, it should either has a different size, unique shape or strategic location to elicit special attention. The emphasis on space can be seen on more than one point. Axes formed by more than one focal point create visual diversity and rhythm. However, overdoing it can lead to confusion. Emphasizing each item in a composition means that nothing was actually emphasized.

### *3.4 Datum*

A datum refers to a line, plane, or volume to which other elements in a composition relate. Datum organizes a random pattern of forms through its regularity and continuous form. It can be either linear or planar or volumetric. A linear datum should have adequate visual continuity to cut through or bypass all the elements that are organized. If it is planar or volumetric, it should have sufficient size, closure, and regularity to be seen as figure that can gather the pattern of element beneath it or serve as an encompassing background for the elements and frame them in its field (Ching, 2011). In terms of interior design, datum is a supportive concept in achieving balance while making symmetrical and asymmetrical arrangements. Comparison, evaluation and contrast are made based on this concept (Zöngür, 2008).

Ching (2011) illustrates the note lines as a datum in providing the visual basis for reading notes and the relative pitches of their tones (Image 3).

**Image 3:** The Similarity of Datum and Lines of a Musical Staff



**Source:** (URL-2)

### 3.5 Rhythm

Rhythm results in any movement characterized by a patterned recurrent of elements such as certain lines, shapes, forms or colors at regular or irregular intervals (Ching, 2011). Rhythm is typically associated with an auditory concept of recurrent sounds at regular or irregular intervals. According to Roth (2019), the ordered recurrent alternation of solids and voids and also intervals and events forms the rhythm in architectural structures. The rhythm in architecture is the pattern created by the windows on the wall, columns or pillars at the back. A musical piece is examined by reading the patterns formed by the notes in time. Architectural rhythm is similarly interpreted by examining surfaces (URL-3).

Space often recurs to accommodate similar or repetitive functional requirements. The simplest form of repetition is a linear pattern of regular elements. The elements should not be exactly the same, but it is important to group them repeatedly. Structural patterns often overlap with the repetition of vertical carriers corresponding to regular or harmonic intervals defining the modular space divisions. In such repetitive patterns, the significance of any space can be emphasized by its size and location (Ching, 2011).

### 3.6 Transformation

The principle of transformation allows a designer to choose an architectural model as a prototype, that has a suitable and reasonable formal structure and arrangement of elements. Then the designer can transform this model through a series of discrete manipulations and permutations in response to a specific context or set conditions without loss of identity of the concept. If the arrangement system of the prototype is perceived and understood, the original design concept, through a series of finite alternation, can be clarified and strengthened (Ching, 2011).

## 4. Principles of the Gestalt Theory of Visual Perception

Some of the certain perception principles critical for visual perception play an important role and serves as a guideline in forming the designs. Gestalt psychology, one of the main perception approaches, is one of the important school of thoughts developed in Europe, especially in Germany, during the early years of the 20th century and still continuing its effects today. Gestalt is a German word which literally means form, pattern, shape, and whole.

“The whole is greater than the sum of its parts” forms the basis of the central principle to the Gestalt theory which explains visual perception. There are six individual principles commonly associated with gestalt theory: figure-ground relationship, proximity, similarity, closure, continuation, proximity, and simplicity. In the context of the specified features, it can be said that Gestalt theory has a significant influence on today’s visual design events and is used in many different areas to provide effectiveness regarding visual perception. Considering the reflections of the Gestalt perception theory on the design environment, the nature of the holistic effect formed by the design in the context of the foreground-background relationship, composition order, the relationship between composition, and design elements are the dimensions that stand out (Erişti, Uluuysal, & Dindar, 2013).

### 4.1 *Simplicity*

According to Gestalt perception principles, the relationship between one piece of a stimulus with another is examined. Perception organizations are determined based on these principles. Accordingly, perception responds to the simplest formal meaning of the stimulus. The human brain matches a formal stimulus with the known simplest geometric information or tends to perceive simple geometric forms more easily (Karaağaç, 2006).

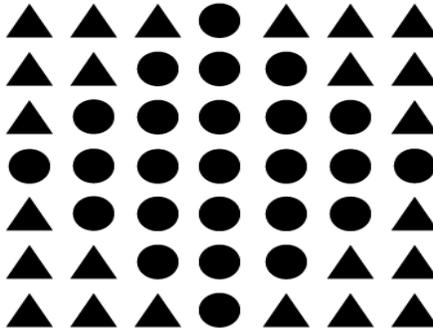
Pure and simple geometric forms are perceived more easily. The easily perceived object is defined as catchy and beautiful. The basic geometry is interpreted as balanced, proportional, restrained and aesthetical. Simple and easily understandable structure charts have been used since antiquity (Karaağaç, 2006).

### 4.2 *Similarity*

Objects of the same size, shape and color are perceived that they follow a similar pattern or look like they belong to a group. For example, when walking along a crowded street, we group people according to some of their characteristics.

We perceive them in groups such as male, female, child, and elderly. And also within the scope of the whole design, we interpret and perceive similar formal elements within the same group (Karaağaç, 2006).

**Image 4: Similarity**



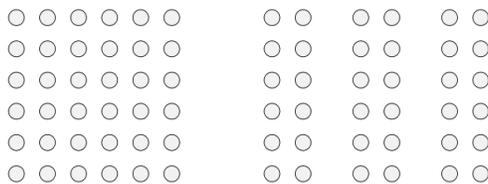
**Source:** (URL-1)

In Image 4, the eyes group the shapes as triangle and circle, and perceive the form of equilateral quadrangle formed by the circle group in the middle.

### 4.3 Proximity

Elements that are close to each other are perceived to be within a pattern and as the parts of the same object when compared with elements that are separate from each other. According to Roth, objects are interpreted as they represent a pattern and even if the points in space are far from each other, they can be perceived as lying on a single plane (Karaağaç, 2006). Although seven stars in the Big Dipper are actually at different distances from the earth, we cannot see the astronomical differences at this distance, and we see them as if they are on a flat plane and liken them to objects (Roth, 2019).

**Image 5: Proximity**



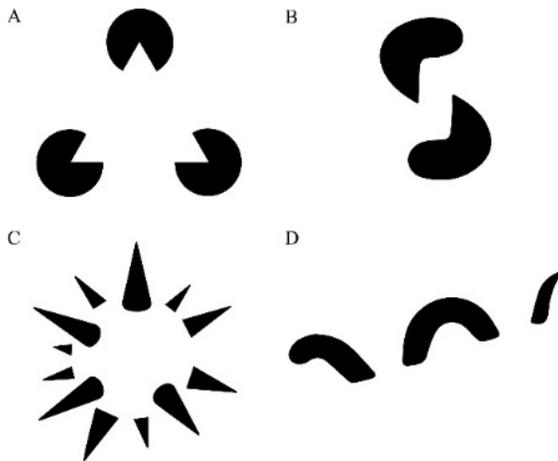
**Source:** (URL-4)

There are 72 circles in Image 5. But the human brain perceives those as aggregational groups of circles. And even specifically, the human brain perceives 36 circles on the left side of the picture as one group and 36 other circles on the right side of the picture as 3 groups of 12 circles each.

#### 4.4 Closure

According to Roth, people have the tendency to see the whole picture once items that could evoke an image are presented to them, which could be defined by their brains. If there are any gaps in a figure, the human brain will still understand the bigger context by ignoring the gaps. Mental processes that benefit from the previously acquired knowledge and experience create a force regarding continuity and closure. Anything seen as part of a circle will be completed as a circle rather than a crescent or any other shape, or the slash will appear to be broken where the line intersects it (Karaağaç, 2006). Although the shapes in the picture contain volumetric gaps, the human brain perceives the shapes by filling in those gaps (Image 6).

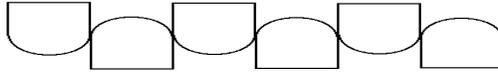
**Image 6:** Closure



**Source:** (URL-5)

#### 4.5 Continuity

The law of continuity suggests that pieces of objects tend to be perceived as if they form a group. Therefore, positioning the pieces of an object side by side creates perceptual integrity (Image 7).

**Image 7: Continuity****Continuity****Source:** (URL-5)

When there is an intersection between two or more objects, people tend to perceive each object as a single uninterrupted object. This allows differentiation of stimuli even though they come in visual overlap. The human brain is less prone to seeing objects defined by sharp and abrupt changes in direction as a group and perceive them as a single object (URL-1).

**4.6 Figure- Ground Relationship**

A figure and a ground are available for all perceptions. The figure-ground relationship encompasses all sensory organs. Within the mental perception process, among the stimuli in the surrounding, the ones that are particularly paid attention or grouped are perceived as shapes, while the rest are perceived as ground. The figure we perceive visually is closer to the eye, and it has a form that can be defined. The ground, on the other hand, is more difficult to define, and it is unclear. The figure can be replaced with ground and vice versa. In some cases, which formal element is the shape and which formal element is the ground may differ depending on the perspective (Karaağaç, 2006). Focusing on the figure in Image 8 would allow the perception of an hourglass shape, while focusing on the ground would allow the perception of two face to face human profiles.

**Image 8: Figure- Ground Relationship****Source:** (URL-4)

## 5. The Analysis of the Interior Space of Traditional Japanese House in the context of Visual Perception Elements and Principles

There are various styles, features and techniques unique to the region in terms of house design in Japan, an Archipelago with mountainous topography. The Japanese house has a simple interior space design. House and rooms are a whole within themselves. Rooms are equipped to meet daily needs. Despite this, they are not cluttered but simple spaces. This simplicity is associated with Japanese life philosophies, and it stems from the fact that nothing without a function is included in the house (Alicı Aka & Erten Bilgiç, 2020).

### 5.1 *The Analysis of the Interior Space of Traditional Japanese House in the context of Visual Perception Elements*

*Axis:* Japanese house spreads along the horizontal axis. The house is usually single storey. Although there are floor and ceiling surfaces on the horizontal axis, the emphasis is on the columns and sliding panels on the vertical axis due to the single storey structure.

*Symmetry:* The Japanese house enlarges with the addition of rectangular volumes side by side. Since the house takes its form according to the terrain, there is usually no symmetry in the entire structure. Every space is symmetrical in itself. This symmetry is supported by material and scale (tatami) repetition (Image 9).

**Image 9:** The Interior Space of Traditional Japanese House



Source: (URL-6)

*Hierarchy:* No space stands out in the house. Spatial hierarchy is not observed since almost every space can meet each other's functions. Every space is built using the same materials with the same quality. The emphasis is on tokonoma in the living space. Tokonoma is the only space in the house where household items are displayed. It is a sacred space for the household. Tokonoma is separated from the ground by a step. Ikebana and tea materials, which are important to Japanese culture, are kept in Tokonoma.

*Datum:* The Japanese house is organized through the tatamis, just like Ching (2011)'s example illustrating the note lines as a datum in providing the visual basis for reading notes and the relative pitches of their tones. The datum of the house is the tatami. The dimensions of the tatamis used on the floor can be observed from the sliding panels up to the ceiling height.

*Rhythm:* A frequent repetition can be seen in the house. The space is dominated by the rhythm formed by the material and scale repetitions.

*Transformation:* The most prominent feature of the house spaces is that they can be transformed. Spaces with multiple functions can be transformed into one another, and they can be spliced together with the flexibility provided by sliding panels.

## ***5.2 The Analysis of the Interior Space of Traditional Japanese House in the context of Visual Perception Principles***

*Simplicity:* The "Ma" philosophy underlies the plain, simple and ordinary appearance in Japanese house interior space. There are no household items without a function in the house. Even items used at certain times during the day are placed in built-in closets. Forms are used in buildings and spaces. Simple geometric forms are used in plan traces, but oval forms are not included.

*Similarity:* Every space is similar to each other since the tatami, which can be considered as the datum for space, was used in every space except wet floors. When looking at the space in terms of flooring, walls, and ceilings, it is possible to find traces of tatami on every item. The floors in the rooms are covered with tatami. Therefore, the size of the space was determined by tatamis.

*Proximity:* Looking at the trace of the house structure plans, the spaces can be considered as the parts of a whole, as in honeycomb. No corridor is available, and the part-whole relationship in spaces established adjacently stems from the close positioning. Besides, each space contains a tatami pattern in itself. The order provided by this pattern is due to the tatamis being adjacent to each other.

*Closure:* In Japanese house, each part is a whole in its own. The rooms are multifunctional and have the capacity of meeting daily needs. Rooms located adjacently complement each other side by side as well as they are a whole in their own. When required, spaces can be combined and transformed into a single space by removing sliding panels. In the meantime, the house is in harmony with nature. Nature and the house complement each other like a whole (Image 10).

**Image 10:** An Example of Traditional Japanese House



**Source:** (URL-7)

*Continuity:* Both spatial and structural continuity draw attention in terms of scale and material use in the house. This continuity is formed by the tatamis that we encounter all over the house, as well as the tatami-related factors such as the scale of the spaces, the intense use of wood, and the use of light and warm tones (Image 11). Continuity due to rhythm and repetition is dominant in the spaces.

**Image 11:** Continuity of Space and Nature in the House

**Source:** (URL-8)

*Figure-Ground Relationship:* Due to the intense use of wood, shades of yellow are dominant in the Japanese house. The focus is on tokonoma on the ground, which was formed by the wood material used in floor covering, sliding panels and cabinet doors, and that was dominated by shades of yellow. The shades of colors which are dominant in the room were used in the background of Tokonoma, which is the only space in the house where household items are displayed (Image 12). The ground being simple and plain draws attention to the figure, that is, to the items that are displayed.

**Image 12:** Interior Space of Traditional Japanese House

**Source:** (URL-9)

## 6. Conclusion

The user's environmental perception consists of the sum of the parts that form the space. The linkage between these parts directly affects the image which is formed by the object/space in the mind, that is, the perception of the user. The perception desired to be created on the user by the designer and how the mind perceives the design object have been the subject of perception theories. In light of these theories, design principles have been established for space and objects.

Spatial design principles, which have been the subject of various perception theories, can be collected under different design titles with similar approaches. The elements affecting the design of the space are listed differently in the early sources. In this study, two titles were formed as visual perception elements and visual perception principles, and the principles of design and forming were examined. Different principles can be added to the visual perception elements that were collected by Francis Ching under the titles of axis, symmetry, hierarchy, datum, rhythm, and transformation. Six individual principles, figure-ground relationship, proximity, similarity, closure, continuation, proximity, and simplicity were examined within the Gestalt perception theory which discusses the way the mind perceives the form presented to itself.

House spaces where users spend most of their lives play a significant role in maintaining inner peace and mental tranquility. The designer consciously builds the space which he or she wants to have the user perceive in accordance with certain principles, while the user can create a living space by following a similar path without even realizing it. Spaces formed by user intervention are especially shaped by socio-cultural influences in traditional houses. It could be said that in Japanese society, which has a deep-rooted and unique culture, the house spaces were formed by the users in the light of cultural factors based on the various elements and principles of visual perception

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## CHAPTER VI

# WINDOWS: EYES OF THE RESIDENCE

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### 1. Introduction

Space; in its simplest definition in architecture, means an area surrounded by boundaries. Space is the place where we maintain our daily life and meet our various needs. Mankind always needed surrounded areas, with the need to protect themselves from the outside environment and to create their private space. Especially in terms of the interior spaces, the boundaries surrounding us are equipped with structural elements that create the space. These building elements --such as walls, floors, columns, beams, staircases, doors, windows-- are the elements that define the boundaries of the space and are important components of it. It is not possible to create an environment to live in without these components that surround the space.

One of the most important building components that surround a space are windows. As a border element, windows contribute aesthetically to the spatial organization that establishes a relationship between the outer world and the inner world. Windows --which are an important separator especially in our traditional buildings-- not only allow the daylight to enter the building, but also play an important role in terms of functionality and aesthetics. Caves are a natural formation and they were the first shelter of human beings, and the gaps that were opened in caves served not only as entry doors, but as windows as well.

This form of use continued in the first settlements of the mankind; in the carved structures formed by human hands.

In a settlement created by human hands; the function of sheltering and living is always prioritized, and therefore the space carries a residential role. Therefore, the importance of residences in Anatolian settlements would be an appropriate question. Throughout its variable history, Anatolia was dominated by many rich cultural influences. Many different types of settlements were established, and besides many types of buildings, structures designed as residences were also important in varying degrees. Therefore, the birth of residences coincides with a certain stage of development in the evolution of humanity. Especially Çayönü archaeological excavations have a privileged place in Near East architecture. Seven phases and about 20 buildings were identified here, and they provide comprehensive information about the development phases of the building elements of Anatolian architecture.

As clearly observed; a simple hut knitted from branches and having a round plan was transformed into a rectangular planned structure with mudbrick walls on a stone foundation. It had a flat roof, a basement and doors and windows. It is clearly seen how solutions in architecture were found by trial-and-error method (Özdoğan, 1996, p: 24-25).

Window and door openings were found even in houses built like baskets. At any section where you would cut the braid, there are windows and doors that can be opened without damaging the whole of the building and they can be opened from another location by closing when necessary. Over time, with the houses evolving into a rectangular plan, the entrance to the houses was provided by stairs from the outside and the gaps opened on the flat roof served both as windows and doors, probably due to the lintel and safety problems. For this reason, the first known examples of stairs were found in Anatolia, Çayönü.

Each gap opened in the building drew a border between the exterior and the interior, and also enabled the volumes to connect with each other. At the same time, these gaps served many tasks: letting in light, providing ventilation, expelling smoke from the inside stove, providing protection from cold and heat, and protecting man: the most helpless creature of the nature. Although the first gap in the buildings was through the door; in the very first building examples, the window gaps were opened at the upper levels and their dimensions were kept very small for safety reasons. Feeling safe is the first step of architectural action, and the surrounded space created for this purpose began to take shape

differently with the transition to the settled collective order. With the addition of new units to living spaces, the gaps --which improved the housing organization-- took place on the facade of the building and turned into a form that ensures architectural continuity. In the historical development process, these primitive gaps have evolved to the present day, with more complex, more functional and more aesthetic solutions. The development of windows has progressed in parallel with the development of materials and techniques throughout history.

A space exists with light, and the source of natural illumination is the windows that equip that space. Throughout history, natural lighting was provided mostly on the façade of the building based on the needs. The windows --which developed in direct proportion with the development of architecture-- were previously in the form of a gap opened on the top of primitive shelters and underground houses. If we look at Anatolian civilizations, window construction goes back to 5500 BC. And if we look at the low reliefs on Egyptian sarcophagi, small rectangular windows can be found in palace and house depictions.

In this context, windows --which are the main elements of architectural and interior design-- constitute the main framework of this study. These building elements, which have an important place in our traditional civil architecture, are the cornerstones of the design and its rhythm on the facade. In this context, it is important to examine the journey of the window in the historical process and the traces of its influence on the traditional Anatolian structure. Anatolia, as the center of the world's oldest civilizations, also represents the essence of today's traditional residential architecture.

## **2. The Development of Windows in The Historical Process**

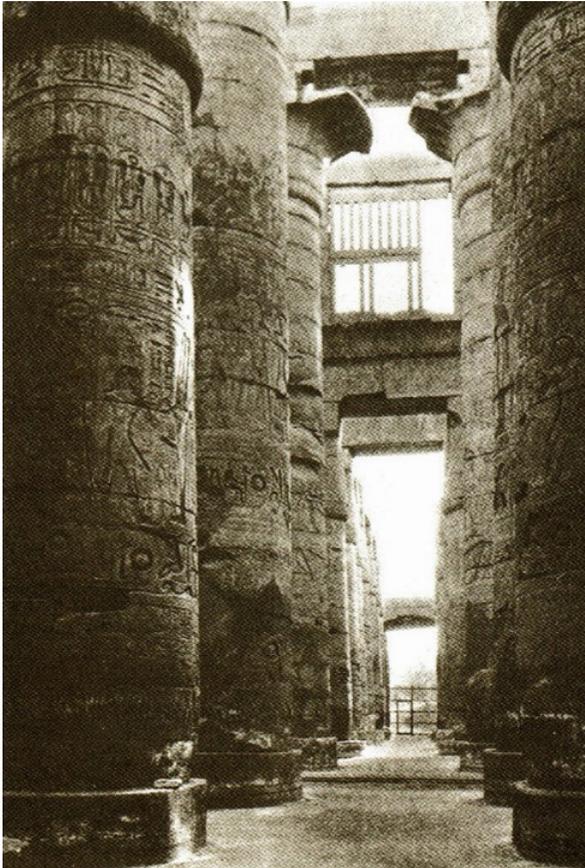
Throughout history, the development of the window has progressed in parallel with the development of architecture, technology and materials. Man built structures that he covered and surrounded with walls in order to protect himself from the natural environment. However, to be able to see the outside light, have contact with the air, and interact with the outside environment, he created gaps on the structure, and thus the first adventure of the window began.

Uluengin describes window as such: The window --which is defined with the concept of gap in a traditional wall-- creates a full-empty, transparent-deaf contrast on the facade of the building and provides a biological and psychological

relationship between interior and exterior. Size, proportion, color and rhythm-effect of the gap on the building façade, and its proportion with other elements that make up the façade is what creates the visual effect of the facade (Uluengin, 1998: 3).

As we mentioned before, the history of windows goes back to 5500 BC in Anatolian civilizations. However, two-meter-high window gaps were found in the castle wall of Poliochni of the Bronze Age. When a fortress in Mersin --dating back to 4500 BC and the Late Chalcolithic period-- was examined, it was observed that the gaps carved into the mudbrick wall (with a width of 1,5 meters) served as windows. In some Hittite ruins in Boğazköy, dating from 3000 BC, gaps that are thought to be windows were observed as well.

Apart from serving the purpose of entry, the oldest gap (window) built only to provide light and air was discovered in the Karnak Temple in Egypt. The windows located on the sides of the middle naves, which are much higher than human height, are covered with stone lattices called “claustra” (Picture-1) (Uluengin, 1998: 9).

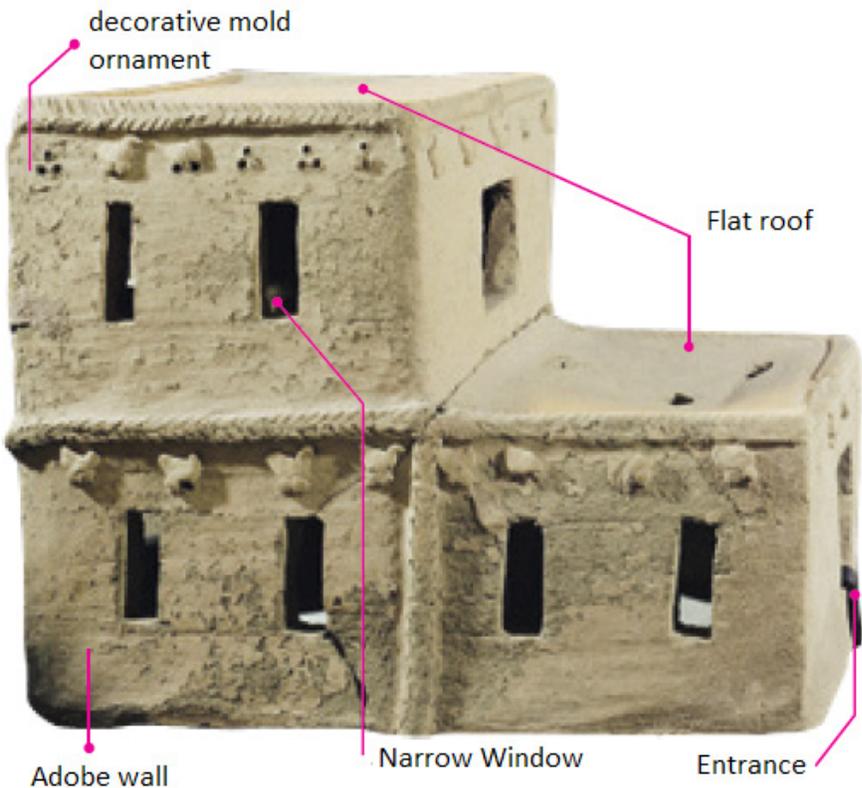


**Picture 1:** Karnak Temple, Egypt (B. Fletcher,) (Uluengin, 1998: p 9)

Although some sources state that the history of architecture started with Egypt, Mesopotamian art goes back to 5000 BC, and archaeologists who study the Mesopotamian ruins hold the idea that Mesopotamian art is much older. From this point of view, Mesopotamian architecture has two important features: the first is that, there are window gaps in the buildings; and the second is that, the dome architecture is very well implemented. In Mesopotamian architecture, residences consisted of rooms which were lined up around a courtyard and the windows of these houses --which resembled loopholes-- faced the courtyard (Picture- 2).

If we were to give an example of the development of windows in Anatolia; it is Çatalhöyük which was unearthed by archaeologists in Karaman.

It is observed that the houses in Çatalhöyük --dating back to the Neolithic period-- were built to be linked with each other. The gap in the roof was used as a door, and most importantly, lighting was provided by small window gaps placed just under the eaves of the flat roofs (Picture- 3) (Doğan, 2013: p 295).

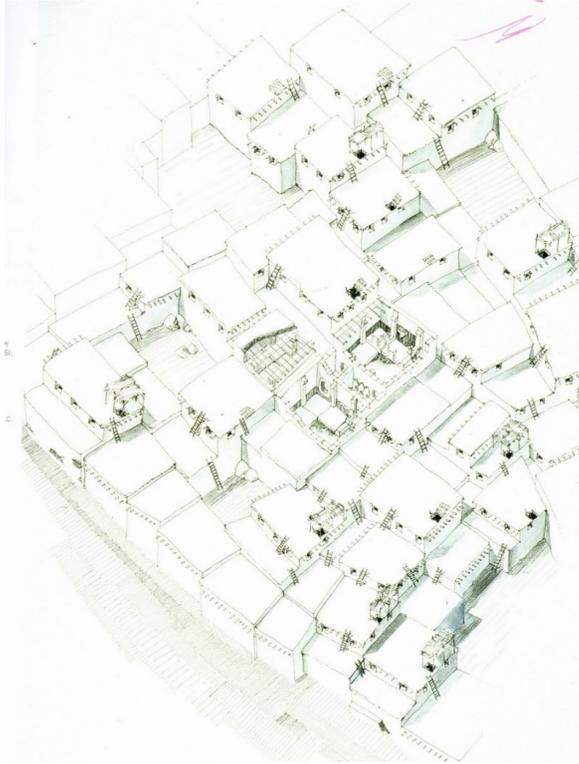


**Picture 2:** First Sumerian House and Windows (<https://peyzax.com/firatdan-dicleye-mezopotamya-mimarisi/> first Sumerian house, access date 18.04.2021)

Again, with the Hittites (one of the Anatolian civilizations), the windows of their residences --which were lined up around a courtyard-- were widening towards the outside, and there were one or two window gaps on the parts of the walls that meet the rooms. On the walls facing the large courtyard, which is in the middle of the building groups, gaps such as doors and windows are more numerous, as they provide protection for this segment. Windows are usually located just below the eaves on the outer walls. Or they were opened into the walls on the second floor (Doğan, 2013: p 301).

In addition, in the Hittite inscriptions, they mention windows, which is expressed with the word “luttai”. The combination of the word “Luttai” and the word “gis” which means “wood”, indicates that the material used in the windows is wood, and proves the existence of wooden lids or impermeable wings (Naumann, 1975: p. 181).

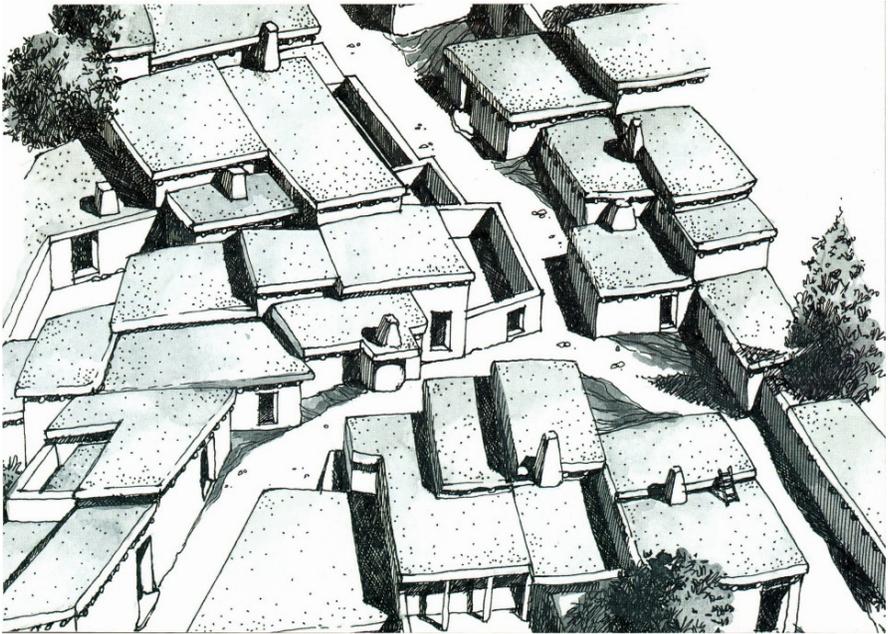
As depicted in all inscriptions, the windows are located on the lower floors of the buildings, at the door level, or on the upper floors of the buildings (Picture-4, 5).



**Picture 3:** Çatalhöyük Sixth Structure Floor Animation (From History to Present. Anatolian Residential Campus. Neolithic Chalcolithic Age, Erhan Acar)



**Picture 4:** Interior Door Plan Showing All Building Levels of Troia. Çanakkale (From History to Present. Anatolian Residential Campus. Bronze Age Cities. Erhan Acar)



**Picture 5:** Kaneş Karum's Second Building Housing Texture Animation. Kültepe-Kayseri. Middle Bronze Age (From History to Present. Anatolian Residential Campus, Erhan Acar)

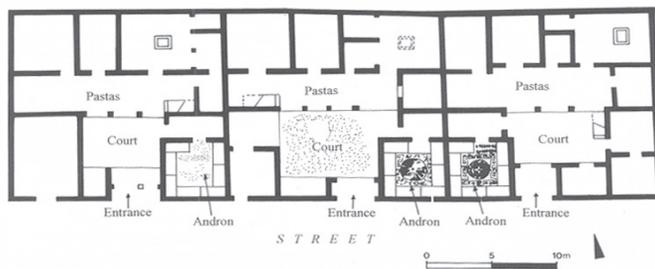
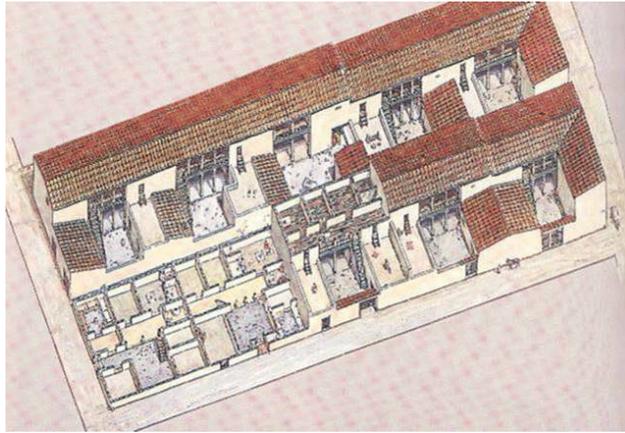
There are very few examples of windows from ancient Greek architecture that have survived to the present day. This was usually because the outer walls were kept blank. Especially in the archaic period, windows were built to face the courtyard and there were no windows on the exterior walls (Picture-6).

In ancient Rome, domes were built on thick walls, so the windows were opened at short intervals. In later periods, especially in churches, the central dome was placed on elephant legs, thus allowing the windows to be placed at large intervals. In addition, the Romans made use of windows to illuminate their homes and shrines, and developed the way they decorate them considerably. Another great feature of Rome was the use of glass in the windows. Again, the most important finding is that the Romans used glass for the first time to protect the window gaps. Translucent stones used for this purpose were found in Pompeii; Glass plates of 0.50 cm wide, 0.72 cm long and 5-6 mm thick were discovered. Numerous windows are found in houses in the Pompei and Herculaneum. Their height from the ground is higher than the height of today's windows, but as a facade element, they were not given much detail or exaggerated (Picture-7) (Uluengin, 1998: p. 10).

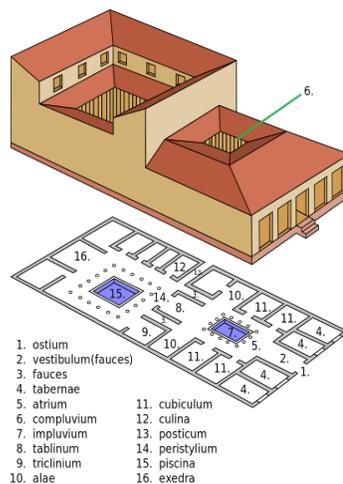
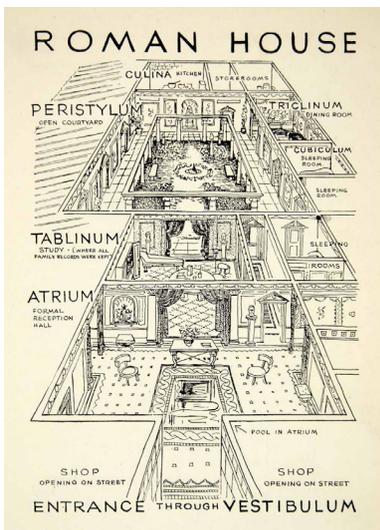
Until the destruction of the Roman Empire in the middle ages, it was the Roman architecture that prevailed. The narrow and small windows of the period were built in the middle of the walls, to be inclined inward and outward.

During this period, they made the windows very narrow and did not use glass. According to Fletcher, the reason they didn't use glass was for protection. For this purpose, they covered the window opening with stone, marble, wood, and metal-claustra, and sometimes decorated between these claustra's with small pieces of glass (Fletcher, 1963: p 265).

With the beginning of the Gothic period and the change of architecture, new effects were created in window design. Especially in gothic architecture, the window came to the fore; narratives about the Christian religion were embodied in the stained-glass windows. According to Uluengin; Gothic architecture emerged with the denial of matter, the mystical effect of the space, and the change in structure rules of the Middle Ages. The loads developed along the ribs were transferred to the vertical carriers at certain points, and these carriers were balanced with balancing elements at the required points. So glazed surfaces --instead of the bland mass-- could be applied to places other than ribbed carriers (Uluengin, 1998 p: 11).



**Picture 6:** House with Pastas Plan in Ancient Greece  
(Selma K. Tunali, Design History Lecture Notes)

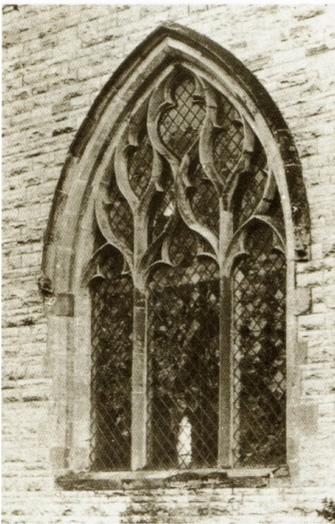


**Picture 7:** Roman Period Housing Plan and Animation  
(Selma K. Tunali, Design History Lecture Note)

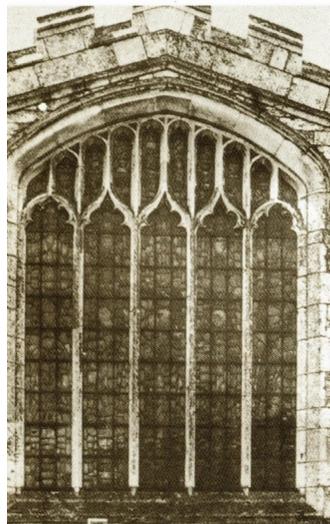
Two trends emerge in the Gothic window architecture: on the one hand, the continuity of old experiences is ensured; on the other hand, there is a search for unity in the interior. As a result of this search, the windows were widened, thus more light was provided, and a striking decoration style was formed in the architecture.

Along with the buildings, the windows were also embroidered like a lace work. Facade architecture was particularly important; windows and gaps came to the fore at that time. According to Uluengin; To find the history of a medieval building, especially in England, one must be able to see the subtle shaping of the stones of the windows (Picture-8,9). Ulueng summarized these periods as follows;

- a. Early Gothic 13th century: Narrow grouped pointed windows.
- b. Geometric Gothic 13th century: Thinning of walls; enlargement of windows.
- c. Decorative Gothic 14th century: More skylights divided vertically; the upper part is more elaborate and carved in flame shapes (Picture-8).
- d. Perpendicular Gothic 15th century: Windows are divided into horizontal sash bars; the tops are surrounded by pointed arches or flat arches with four centers. The windows have grown larger and the number of skylights gradually increased. Especially above the doors, rose windows named “Rosas” were decorated with stained glass inside. Again, in this period; at one end of the hall in the houses of the English nobility were bay windows that were extremely elaborate and colorful (Picture-9) (Uluengin, 1998 p: 14).



**Picture 8:** Decorative Gothic Window

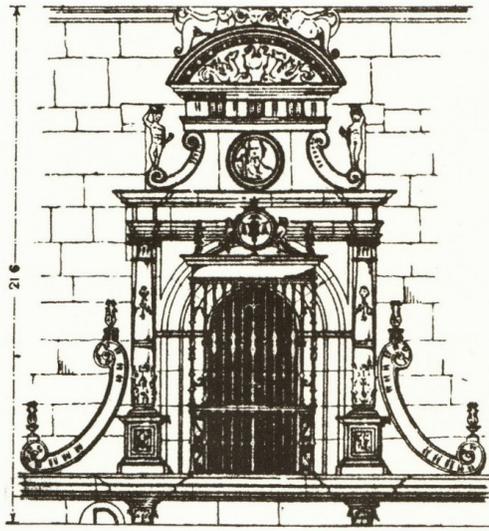


**Picture 9:** Perpendicular Gothic Window (Source: Development of Window Openings in Ottoman-Turkish Civil Architecture, Nihal Yöney Uluengin)

During the Renaissance, the windows decreased in size, but in contrast, the importance of the window as a building element, and the permanence of the rhythm on the façade became more essential. Especially in Italy of the Roman times, the windows were straight and half arched; they were placed in a rectangular frame with columns on the sides, and a triangular pediment on the top. Although the same features were seen in the French Renaissance, a small balcony was also added in front of the windows. Towards the middle of the 16th century, the first guillotine windows began to be implemented in the Netherlands and Belgium. Before long, guillotine windows replaced the wooden and stone sectioned windows. With the widespread use of glass during the Renaissance, different forms of windows began to be used even in middle-class residences. In this period, windows used in homes were not yet seen as a part of the building; they were taken from one house to another by the moving tenants (Uluengin, 1998, p: 18).

In later periods, the windows became openable with the design of metal-framed and wooden hinged wings. Casement windows continued to be used until the end of the 17th century, but horizontal and vertical sections began to be made of wood. The guillotine window, which was used in the Netherlands and its surroundings in the 16th century, was also used in England in 1680 and soon replaced the casement window. After a short while, the vertical movement of the frame was facilitated by weights and rollers, and that contributed to the increased use of the guillotine window. These vertical windows --called “sash window” or “Yorkshire Sash” in England-- became quite popular among Renaissance planners as well (Henderson, 1964, p: 40-50).

The extreme formalistic approach of the Late Renaissance gave rise to mannerism. This trend started to be seen in Florence and Rome in Italy and in a short time became prominent in design and laid the foundations of Baroque architecture (Picture-10).



**Picture 10:** Spanish Baroque Window (Source: Development of Window Gaps in Ottoman-Turkish Civil Architecture, Nihal Yöney Uluengin)

The most important feature of the Baroque period is that, all forms, colors and light were skillfully used; curved forms were reflected in architecture in a unique way. In the Baroque period, generally all walls and ceilings were rounded --from convex to concave-- and they were decorated with dynamic new forms. The windows were the places where rich ornaments were seen the most. Sculptures were placed in the window gaps, fake windows were created, and giant double columns, plasters, broken pediments and twisted columns were decorating the windows (Picture-11) (West 1976, p.30).



**Picture 11:** Baroque Façade from Italy (Source: Development of Window Openings in Ottoman-Turkish Civil Architecture, Nihal Yöney Uluengin).

Towards the end of the 17th century, the interest in Ancient Greek and Roman architecture gradually increased and the characteristics of this architecture were reflected in windows. Later, Roman and Ancient Greek influences also began to be seen on windows. Towards the end of the 18th century, the use of glass in windows became widespread in all types of buildings. In the 19th century, the art nouveau effect was quite prominent in the decoration of windows. In the 20th century, the widespread use of reinforced concrete and wooden framing and the popularity of concrete and steel enabled a wide variety of windows in buildings.

In this part of the study, the evolution of the window in the historical process is emphasized. However, Anatolia, which has formed the basis of many civilizations, contains many elements of architecture and interior architecture from the past to the present. We observe especially in Anatolia that; Front Asia and Mesopotamian architecture has a great importance in civil architecture and it has traces in today's traditional structures as well. Again, in Anatolia, there are many places of worship, caravanserais, Turkish hamams and palaces, all of which have survived until today, and windows appear to be a prominent element in the furnishing of these buildings. From this point forth, it is necessary to briefly examine the development of traditional Anatolian residential architecture in the historical process as well.

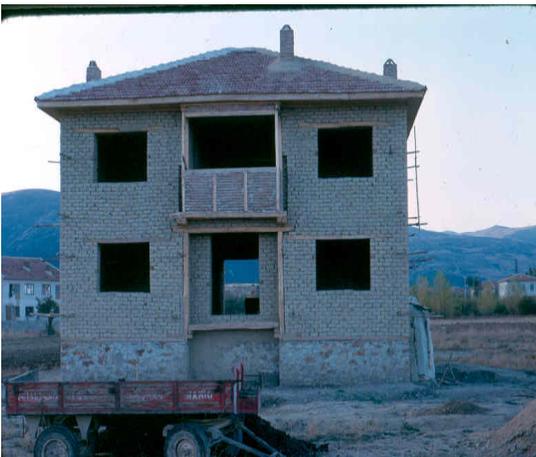
### **3. Development of Traditional Residential Architecture**

Anatolian traditional architecture has been influenced by many cultures. Civilizations such as Sumerians, Phoenicians, Cretans, Assyrians, Chaldeans, Hittites, Urati and Romans formed the basis of the traditional residential architecture, which has survived to the present day. Excavations made in Anatolia reveal that, the traces of a culture that spreads over a period of approximately 10 thousand years come into existence in our traditional residences. As we have mentioned before, the most primitive residences were shelters in which people were living publicly. In order to perceive the history of traditional architecture as a whole in the sense of "houses", we must first consider the primitive shelter, and the first issue we encounter is security.

The very first idea towards a building was an internally existing whole of space and at first it was a dimensional concept. So, in the most primitive sense, it was a family or a tribe sheltering in a closed space. As a result, the first shelters were built with tools far from architectural concepts and were used by their very first inhabitants. Naturally, all these structures are older even than written

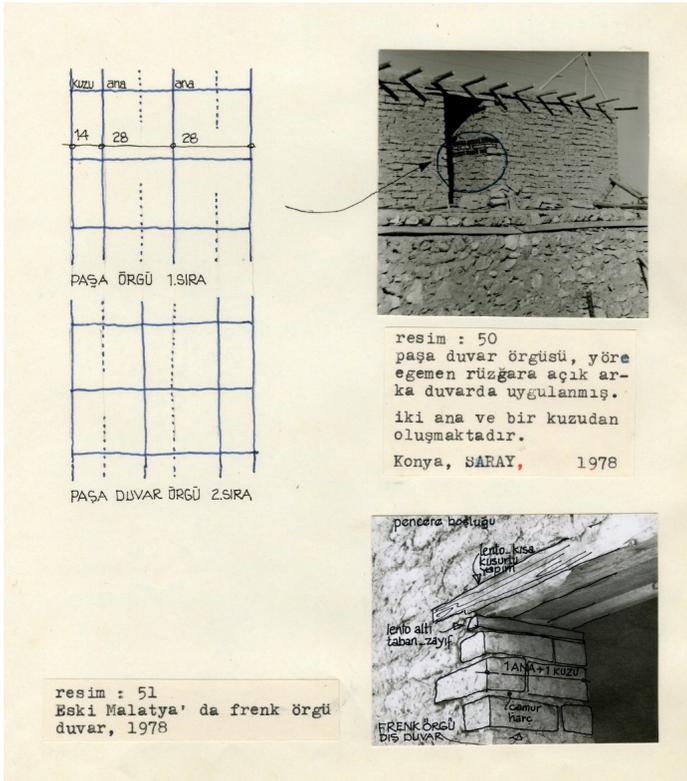
history. This is exactly why we find the aesthetics of the space in each structure; whether in Çatalhöyük, in Troi, or in the mudbrick-walled and flat-roofed residences of Central Anatolia. The first man had to cooperate with nature in order to survive, and for this he processed the material which we call technical, offered by nature. Mankind; on walls he used horizontal layers of mud brick that he himself created and formed, then he carved the stone, then learned to put the wooden sticks together, and ultimately, he managed to create a form that stood on its own, and he enjoyed the pleasure of the whole process.

Over time, architectural styles and building typologies have developed with the increase in material diversity and the accumulated knowledge on technical and styling subjects. The Anatolian geography is rich not only in archaeological ruins but also in terms of local styles of residential architecture. Anatolia is also home to many local architectural styles that are linked to the surrounding countries. For example: Southeastern Anatolia Region connected with Northern Mesopotamia; Eastern Black Sea associated with the Caucasus and Azerbaijan. The techniques used even in the construction of ordinary residences were developed very early in the Anatolian history, and therefore the emergence of distinctive residence patterns depended not on technical difficulties but on the socio-cultural fabric of the society in which they lived. Looking briefly at Anatolian history; the construction in Göbekli Tepe, which is 15 km away from Şanlıurfa, goes back approximately 12,000 years ago. The cultivation of soil was first realized in Anatolia. The first settlement built for sheltering and storage is in Çayönü (on the Diyarbakır-Elâzığ road) and dates back 10,000 years.



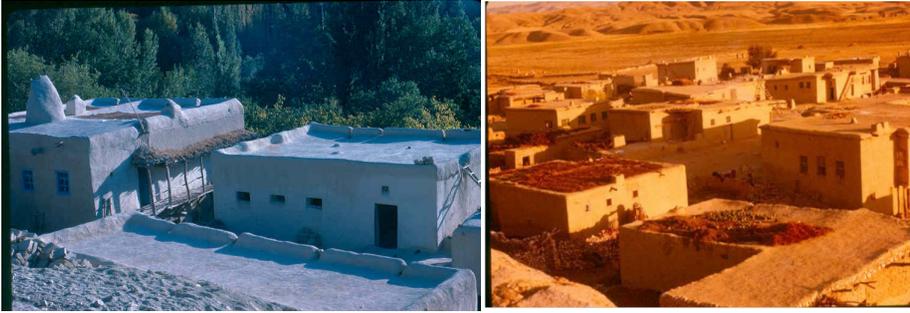
**Picture 12:** Mud brick house construction in Konya (Archive of Prof. Dr. Rifat Çelebi)

When we look at the history of construction, it was nearly 9500 years ago that they raised the Anatolian House a little from the ground so that it was protected from moisture and was ventilated, and they created the water basement, and used wooden frames, adobe fill and mud plaster on stone walls. Aşıklıhöyük seems to continue this tradition. Some flat roof houses with adjoining layout but with separate walls consisting of a main room and a warehouse were built 9400 to 8000 years ago, and it is possible to find the traces of these houses in many regions of Anatolia today. The shaping of the traditional Anatolian house was always based on function. For example; The megaron-style houses were first encountered in Troy in the Bronze Age, and this rectangular planned house is completely in accordance with the requirements of the period and the entrance part is on the front facade. Again, the Hittites --one of the first civilizations of Anatolia-- are the determinants of the residential culture that continued between 2000-1000 BC. In their house, there were other small rooms lined up behind a main room and they continued the tradition of the Çayönü in terms of construction technique (Picture-13).



Picture 13: Creating a Window in Adobe Building Prof. Dr. Rifat Çelebi Archive

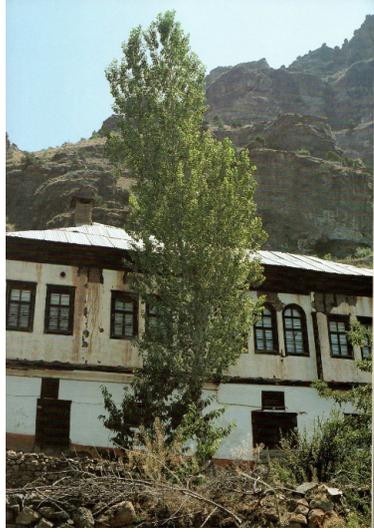
The Greeks left the legacy of their own residential culture on the Western Anatolian shores: they left their traces in Ionia, Caria, Lycia and the whole Aegean. The settlements in these regions also produced the first solutions in terms of urban design. They divided the islands --which are between the intersecting roads-- into parcels and this is a striking example of modern urban organization.



**Picture 14:** Malatya Darende Balaban Village, Mudbrick Residence (Prof. Dr. Rifat Çelebi Archive)

Many factors such as climate, topography, production, culture, geography, and the quality of the material from the surrounding area have all been effective in shaping the traditional residence. The installation system and interior volume layout of the houses were differently formed according to the regions, but most of the elements are identical. For example, the relationship between the two basic elements, the anteroom and the main rooms, is a common feature in almost all traditional architecture. The relationship between halls --which are the focal points of the building-- and the surrounding volumes has been very effective in the shaping of traditional houses (Picture-14).

If we were to talk about the rough features of the traditional residence; the relationship between the rooms were kept completely within the building. This was applied in situations where it was necessary to establish a central area that is protected against the external hazards. Due to the adjacent rooms, the connection was broken between the anteroom and the facade. Due to the retraction of the iwan, the room volumes moved to the facade and this formation brought movement to the outer surface of the building; the rooms were overflowing on the side surfaces. In some of the constructional applications, the surface that was determined as the side surface actually constituted the main facade of the house (Picture-15).



**Picture 15:** Traditional Residence, Iznik. Selma K. Tunalı Archive

The external environment-room relationship was increased by pulling the anteroom area inside. In addition, the rooms gained value within the structure as a whole with the protrusion movement they make. In the place of the bench section in the anteroom area, there were opposing rooms. The house type with an outer anteroom was also a house type with an intermediate anteroom. The anteroom area, which has a central feature in the plan, is a circulation area due to the room entrances (Picture-16,17).

By retracting the intermediate rooms inside, the anteroom area becomes a slightly more comfortable space. With the retraction of the anteroom area, all the corner rooms of the house gained substantial value.



**Picture 16:** Malatya Darende Balaban, Prof. Dr. Rifat Çelebi Archive



**Picture 17:** Bursa İznik, Selma K. Tunalı Archive

In the plan design that provides movement to the outer mass of the building, the volumetric values of the rooms to the outside were also emphasized. The most important feature of the rooms is that they are units that meet certain actions on their own within the building. The lifestyles that changed over time also led to a strong functionality in traditional housing. The rooms of Anatolian houses were multifunctional and they were used according to seasonal characteristics and therefore there was a certain dynamism occurring in the house. According to the needs of the household, intermediate zones and passages are created within the same room. These principles were formed depending on the social characteristics, and the place and condition of the common area within the building changed according to various influences. The relation with the external environment was provided by the lower and upper windows of different sizes. In all examples of traditional residences, two horizontal elements are very prominent. These horizontal connections are the relationship established with building elements such as windows, panes and door frames.

#### **4. Windows in Traditional Housing**

Dialectical relationship related to transparency was an important factor in the rooms of the Anatolian house. Whether transparency is available or not differs depending on the direction one looks at; it depends on whether he looks from the room to the street or from the street to the room. In addition, the rooms are in a complete visual relationship among themselves, so it is possible to look into another room through the windows in one room; for example, you can look

at the anteroom or the iwan, and from there you can look into another room or to the outside. The life in the anteroom contains the concepts of “inside” and “outside” together. (Bammer, 1996, pp. 243-244).

In order to provide a transition between the most outer space and the most inner space, gaps were created in a certain order. Each part of the house was equipped differently via various building elements. For example, elevation differences were created between the anteroom and the main rooms, so each space was divided into itself. The spatial organization and façade formation of the Anatolian house included windows as the most important element. Especially in the structure and facades, the most important area was the position of the windows. In addition, windows that included different functions and different materials in our residential architecture received numerous names. For example; rose window, eye window, deaf window, vault window, hajat window, false window, who is that window, skylight window.

In Anatolian geography, windows have an infallible geometry in terms of their sizes, shapes, and components around them. Windows, which remained very small for centuries, began to grow in size with the development of building materials. The windows were built as two levels until the early 19th century. While the lower-level windows could open and close, the upper windows were designed as fixed. The lower windows are 0.80 m wide and 1.20 to 1.5 m high. But for regular size homes, the dimensions never exceeded 1 meter width and 2 meters height. The number of windows was adjusted according to the size of the rooms (Picture-18,19) (Eldem, 1987, p: 87).



**Picture 18:** Edirne House, (Prof. Dr. Üzlifat Özgümüş Archive)



**Picture 19:** Edirne House, (Prof. Dr. Üzlifat Özgümüş Archive)

Window sizes were always adjusted according to the ergonomic dimensions of the human being. The numbers were based on the size of the room. However, even the largest rooms did not have more than 15-20 windows. By the 16th century, glazed and casement windows were very rare; the reason was that the glasses were produced in small sizes and in limited numbers by certain blowing techniques. Glass wings were used for a long time only in the homes of the wealthy and in buildings built in big cities. In areas where glass was not used or where it was rare, gaps were covered with covers. Sometimes oil paper and leather were used instead of glass. In the shaping of the rooms, the windows were usually designed in front of the sofa, and since the doors opened outwards and the windows opened inwards, those sitting on the sofa were in a comfortable relationship with the outside environment. As we often observe in some examples; small air wings were also used, apart from the large wings. Window sashes were the same face and thickness as the window frame. The movable frames were fitted in a threaded overlay window frame and secured with external hinges and butterfly latches. The glass was sometimes fixed in putty and sometimes in the rabbet cut into the frame. The thickness of the joinery would not exceed 3 cm. The window casing was on the inside of the jamb in the thin walls, and on the thick walls the jambs were on the outside, and window sashes would be fixed in special slots within the thickness of the wall. As we have seen in some important

buildings and mansions, jambs were made of marble in a wooden carcass (Eldem, 1987, p: 88).

Window covers and lattices have a privileged place in Anatolian residences. As we mentioned earlier, covers were common where glass could not be used in windows. Before the widespread use of glass in windows, the lids both provided security and prevented the sun and cold from penetrating inside. These covers would open outwards and they were fixed with special metal arms. When they had to be closed, they were attached to a metal part connecting the two jambs by means of various hooks. The covers were made of solid wood in a mirrored frame. Starting on the second half of the 19th century, these covers were in the form of blinds. Iron or wooden bars were also added to some windows; the majority of these are lozenge iron and the vertical bars are thicker than the horizontal bars.

Various decorative bars were also used in some traditional buildings. Especially in the Central Anatolia and Mediterranean Regions, these bars became a design element in their own right. In addition, the bars sometimes functioned as a railing in the lower part of the window when the window gap could not be completely covered.



**Picture 20:** Antalya House, (Prof. Dr. Üzlifat Özgümüş Archive)

In Anatolian traditional buildings, another important element in window design was lattices. They were usually built from linden wood and were often half the height of the windows. Lattices have a mechanism that can move up and down in windows with covers. Some lattices were protruding in the shape of a bay window, and some were added small gaps. The lattices not only let some sunlight in, they also provided privacy (Picture-20).

By the end of the 17th century and the beginning of the 18th century, vertically sliding windows were added to the window designs of traditional buildings. These windows were initially used only in wealthy mansions, but gradually they began to appear in every region. When vertically sliding windows were first built, they opened only half the gap. However, in time --obviously the size of the gap was not enough-- the gap was completely opened, by sliding the sash onto the upper wall. And they also allowed the joinery and the sash disappear into the wall. For this purpose, the space between the double windows is often used for the closing or oversized at the top of the lower window. If there is no top window, the top head of the window has made double wall (Picture-21,22) (Eldem, 1987, p: 88).



**Picture 21:** Antalya House 2, Over Door Window, (Prof. Dr. Üzlifat Özgümüş Archive.)



**Picture 22:** Milas House, Over Door Window, (Prof. Dr. Üzlifat Özgümüş Archive)



**Picture 23:** Milas House 2, Façade Sample, (Prof. Dr. Üzlifat Özgümüş Archive)



**Picture 24:** Antalya House 3, (Prof. Dr. Üzlifat Özgümüş Archive)



**Picture 25:** Buca House, (Prof. Dr. Üzlifat Özgümüş Archive)

Again, upper windows have an important place in traditional houses. These windows were fixed and thus quite convenient, because when the lower windows and covers were closed, they could let the sunlight in. We can classify these windows as interior and exterior windows. Exterior upper windows have a thicker and simpler design, while the interior windows were decorated with stained glass technique in various colors. With the advent of the Baroque era, these windows were given softer and more mobile forms. When we look at some examples of these windows, it is possible to see windows moldings in the form of shelves and eaves both inside and outside.



**Picture 26:** Buca House, (Prof. Dr. Üzlifat Özgümüş Archive)

## 5. The Effect of Windows on the Facade in Traditional Houses

As we mentioned before, traditional Anatolian residences are shaped around two main elements: rooms and anterooms. In addition, iwans, closed/open protrusions, bay windows and windows have an important place in facade design. Facades are directly related in the architectural schemes. In the traditional sense, all windows are an important part of the layout in various variations of homes. In addition, considering the shapes of the protrusions in the anteroom or the main rooms, it was seen that the regular projections on the second floors or third floors were equipped with windows. However, the importance of window architecture in design is very clear, although it varies according to climatic conditions (Picture-27).



**Picture 27:** Buca House 3, Prof. Dr. Üzlifat Özgümüş Archive

In the facade architecture, the lower floor windows were kept very small for privacy and security purposes, but on the upper floors, a purely exterior-interior relationship was emphasized. Again, as we have seen in many examples, the door-top windows --designed in a niche above the entrance door-- made an aesthetic and functional contribution to the facade. Sometimes, windows were

opened on both sides of the doors and thus the hall was provided with light. As a result, windows with different motifs add a different quality, originality and visual richness to traditional residences.

## 6. Conclusion

In the historical process, an uninterrupted emotional bond has been established between a human's life and his home. When viewed from this point, perceiving the texture and the culture of a society is only possible by recognizing the depth of their traditional housing structure. In order to protect himself from natural conditions, the mankind first created the surrounded spaces, and then to be able to communicate with the outside world, he created the structural gaps, and then in the historical process he developed the windows. So, in this study we will briefly discuss the history of windows and we will emphasize the emergence of the window in the traditional Anatolian residences. We will examine the traditional Anatolian residences --each of which is unique and creates the relationship between the past and the future-- and we will discuss the richness they add to our cultural history. Nowadays, the number of cities, towns and villages that are becoming more and more similar to each other is increasing exponentially; therefore, the importance of local values increases more and more every day. These buildings, which challenge an uniform urbanization, are the most important prestige symbols of cultural heritage. The windows of these buildings, which are symbols of diversity, constitute the essence of this work, but it is our greatest wish that these residences are preserved as our cultural heritage and handed to future generations.

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# CHAPTER VII

## THE DEVELOPMENT OF HITTITE HOUSING ARCHITECTURE FROM HATTIANS UP TO THE LATE HITTITE PERIOD

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### **1. Introduction**

“**H**attians” or “Hatti” are a race of indigenous people who lived in Anatolia, and perhaps they are the most significant prehistory civilizations. The oldest known name for Anatolia is “Land of Hatti”. Many scholars have the idea that Hittites are the descendants of the Hattians. But in fact, Hittites and Hattians are totally different from each other in terms of language and race (Akurgal, 2005, p.15). From ancient times, Anatolia has been the homeland for those of various races who emigrated, except for the indigenous people of Hatti. Hittites established one of the most prominent civilization in Anatolia. Although they were ethnically different, they learned to live together with Anatolian people. They have created a culture-art interaction and its effect continued throughout centuries in the Anatolian lands which they call the Land of Hatti.

Indo-European tribes who had recently arrived in Anatolia were highly influenced by Hatti culture and arts. The deep-rooted Hatti tradition was kept alive by Hittites and had been highly influential in the vast lands. Indo-Europeans, whose origins go all the way back to the Northern parts of Europe, migrated from the Atlantic coast to the South. They were scattered to today's homelands of Germanic, Latins, Greeks, Iranians and Hindus, who were named afterwards. They settled in Anatolia just like Trojans and Phrygians. This big wave of immigration put an end to the peace atmosphere in Anatolian settlements in the 2000s B.C. Signs of this war can be seen in the Alacahoyuk, Bogazköy, Bitik, Karaoğlan, Dundartepe and Karahoyuk settlements of Early Bronze Age. These settlements fell under Hindu-European Hittites rule one by one. And in the end, the foundations of the Hittite civilization was laid, which would prevail for centuries. It took 250 years for the ancient Hittite Kingdom to be composed of Hittites. In these wars of domination, Hindu-European princes dominated Anatolia by overwhelming the local beys (Akurgal, 2005, p. 35,36). In the last period of the Great Kingdom, migration of sea tribes took place which was known to generate a lot of anxiety even for the Egyptian Kings. This migration destroyed the Hatti Country, and even Hellas, that is, Greece. There was a dark period where the disturbances were thought to last about 400 years. Following this dark period, the Hittite Princes were scattered throughout Anatolia, and established the neo-Hittite Kingdoms (Bittel, 1970).

In terms of architectural disciplines, the period of the Hittite Civilization with its formation process of 250 years and its domination period of 800 years, had a great impact on the history of architecture in Anatolia. The purpose of the study is to reveal the spatial organization in housing architecture in a civilization which dominated Anatolian lands for such a long time. Because, as mentioned by Kuban (2002), the housing of primitive civilizations should be regarded as architectural products of similar quality of a modern housing. The utilitarian aspects of the housing of ancient civilizations prevail, which we barely know. In addition, the technique of the ages in which these houses were built is not appropriate for creating advanced spaces. Therefore, considering them as a product of primitive constructiveness and not recognizing them as architectural work would narrow down the extent of architecture (Kuban, 2002). Therefore, this process has been evaluated by doing research on the housing typologies of this period, which are thought to have given an important momentum to Anatolian housing development.

## 2. Literature Search

Architects and interior architects can have tangible data by doing field researches on structures in the architectural history studies of recent times. However, evaluating the finds and reports from the excavations is the most effective and efficient method in order to do research on the structures of ancient times. The literature sources reviewed in this study consist of excavation reports and unearthed artifacts in residential areas. Other primary sources are works of Naumann who studied on Akurgal and Ancient Anatolian Architecture, which come to the forefront about Hittite History and Art.

Pre-Hittite settlements in the Western Anatolia were not included in the study. The primary cause for this is the lack of relationship similar to Hatti-Hittite interaction between these communities. Besides these poor relations, there is no similarity between the architectural applications of the houses. Megaron-type houses with long corridor can be observed in Western Anatolia and Aegean Islands, whereas type of double core structure in rows is not common in Central Anatolia (Aydın, 2000). Whilst Troy structures are similar to the Bogazkoy Hittite palace structures in terms of using slopes in construction, fan-shaped settlements and houses being independent of each other, Troy structure type has nothing to do with Hittite structure type, and megaron-type house did not make it into the Hittite architecture (Naumann, 1985, p.501)

As part of the research, the housing typologies and structures in the following residential areas were reviewed.

For houses of pre-Hittite Civilization period;

- Acemhoyuk
- Kultepe Hoyuk

For houses of Old Hittite period;

- Alacahoyuk
- Bogazkoy

For houses of Hittite Empire period;

- Hattusas

For houses of Late Hittite Empire period;

- Karakamis

### 3. Findings

Studies have shown that there are changing typologies in the housing architecture for different periods and residential areas. The study includes these typologies according to the periods and residential areas.

#### 3.1 *Houses Of Pre-Hittite Civilization Period*

Alacahöyük in the Early Bronze Age, Acemhoyuk, Bogazkoy/Hattusas and Kultepe/Kanes in the Assyrian Trade Colonies Period are the most significant settlements that best reflect the housing types in pre-Hittite Central Anatolia. Housing types in the Early Bronze Age varies according to the regions in Anatolia.

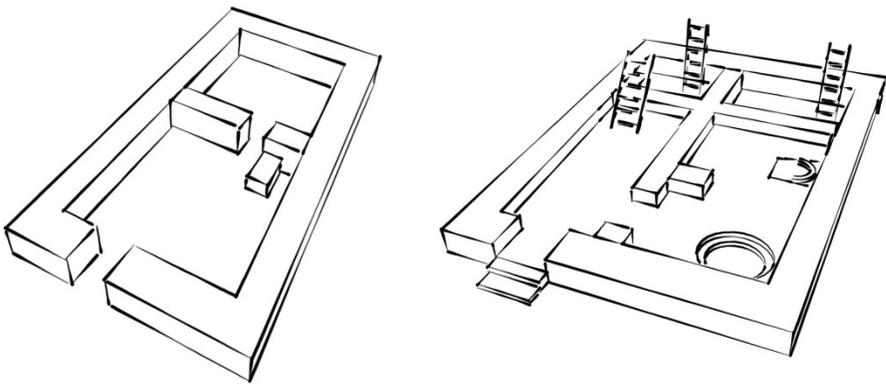
##### 3.1.1 Houses Of Kultepe Hoyuk

Archaeological work began in 1948 at the site of Kultepe Hoyuk by a team led by Prof. Dr. Tahsin Ozguc who initiated excavations that resulted in very important unearthed artifacts. Therefore, the sources of Prof.Dr.Ozguc were used and reviewed in this study. After Ozguc, the excavations continued under the presidency of Prof.Dr.Fikri Kulakoglu.

When the reports are reviewed, it is understood that Ozguc mentioned about different types of house. The conspicuous point is that there is a courtyard in almost every house unearthed at this site. It appears that houses are built in quarters. According to the quarter plans, it is understood that there is an average of 5 houses in each quarter (Özgüç, 1986).

The simplest house type in Kultepe has two-rooms but no courtyards (Picture 1-A). A house covering an area of 30,4 square meters in an area called "5th Quarter" is considered to be in this category. The house which has a rectangular plan consists of two rooms, one large, one smaller. The house opens to the square on its eastern side. The mudbrick walls are all well plastered. The sofa wall is situated inside the larger room on the right side of the door which is the inner connection between two rooms. Adjacent rectangular rooms without courtyards is another housing typology in Kultepe (Picture 1-B). Since the street level rises, the house with a size of 6,70 x 6,30 m is entered by climbing stone stairs of 2 steps. The stone surrounds on both sides of the door survived until today. The house is designed to have four rooms. Oven and fireplace are situated in the larger room. Room 2 which is narrow and long, and room 3 and room 4 are considered to have the function of storage room. Entrance to the house

from outside is through room 2. The width of the door is 98 cm. The short sofa wall is situated on the left side of the entrance. This entrance has no door frames. It appears that the frames must have been always open or closed with a wicker rug. Two walls which a stone oven of 110 cm height with thick plaster leans against is made up of stone from the base up to 96 cm height, and the top of the walls is made of mud-brick. This technique is common in oven rooms. The rooms are plastered 4 times. In order to protect storage rooms (which have earth floor) from moisture, the level of stone foundations are raised quite a lot. The significant thing about this housing example is that it has two storeys. The wooden stairs in room 2 goes up to the upper floor. Wooden stairs lead down to storage rooms from the upper floor (Ozguc, 1986).

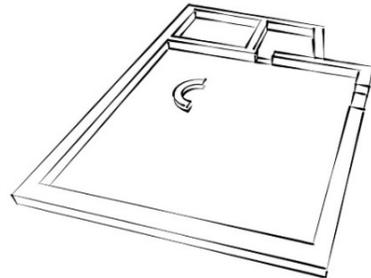
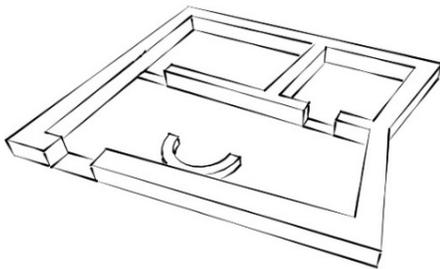


1-A: Two-room houses with no courtyard 1-B: Multiple room houses with no courtyard

**Picture 1:** Model of Kultepe houses with no courtyard. Drawn by Salihoğlu (2021)

The housing with the simplest typology among the courtyard houses consists of two rooms and a courtyard. When the housing example with two rooms and courtyard in the 1st Quarter is reviewed, it is understood that the size of courtyard is larger than the size of other two rooms (Table 2-A). Oven and fireplace are intended to be situated in the courtyard. The ground floor has the size of 7.5 x 5.5 cm. For the second floor, as in several structures, horizontal wooden beams are designed to be situated over the stone foundation. The blank spaces of these wooden beams in mudbrick walls can also be observed today. Mudbrick with a size of 22x21x6.5 cm are used for building the walls. The house opens to the street on its western side. The other house with two rooms and courtyard in the 5th Quarter (Picture 2-B) has the size of 9 x 6.30 cm. The detail which stands out regarding this house is that one of the small rooms is linked to the large room by

a door opening In another courtyard house model, three rooms are added into the courtyard. As in this house which is located in the 2nd Quarter, the room is divided into some parts (Picture 3-E). The size of the house is 8.5x8 m . Oven, fireplace and tandoor are situated in the northwestern part of the courtyard. Although the place where the door is not preserved, it is believed that house opens out onto the street from north. Room 2 with rectangular plan is entered through the courtyard. The mudbrick surrounds and mudbrick sofa walls of the entrance are preserved. This room is divided by a wall. Thus, a narrow corridor is formed, which leads into the storage room 3. The mudbrick walls of the house facing south starts over 50 cm of the base level. The size of an other house with courtyard in the 2nd quarter is 8.5x8 m (Picture 3-F). It is one of the largest houses of the quarter. The mudbrick walls of stairs leading to the upper floor are preserved. There is still the charred remains of the wooden stairs. It is quite interesting that the space below the stairs serves as a pantry. Through a 1.80 m wide door, this room leads to the courtyard where oven, fireplace and tandoor are situated. The size of the courtyard 1 with rectangular plan is 9x4,5 m . The mudbrick sofa wall is situated on the left side of the entrance. The room is divided subsequently, where a pantry with the size of 6.70x1.50 m is a later addition into its southern part. The wall which the oven leans against and the outer wall of the pantry are made up of stone. The floor of 2 meters wide section, which is next to the oven and along the northern wall, is paved with flagstones (Ozguç, 1986).



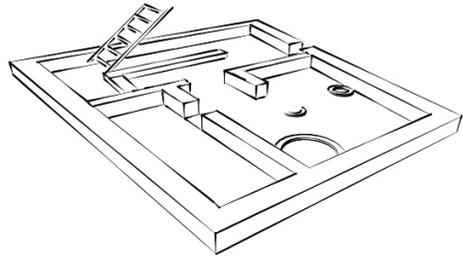
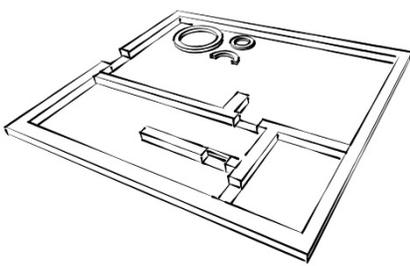
2-C: Two-room houses with courtyard

2-D: Two-room houses with courtyard

**Picture 2:** Kültepe two-room houses with courtyard. Drawn by Salihoğlu (2021)

In another housing typology in Kültepe, a house group is added to the courtyard. The structural complexity of houses become increasingly more common. Additions made to the houses resulted in the enlargement of houses as well as the failure to comply with the plan. The irregular plan of a house with the size of 15.5x6,80 m is an example of this (Picture 4-G). The connection of crooked and

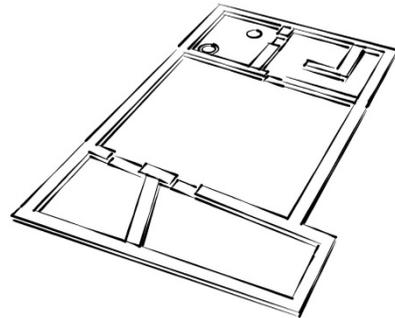
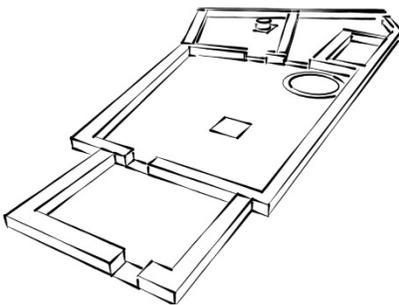
uneven walls of the structure are perpendicular to each other. Although they are built at the same time, eastern wall of the house and western wall of the adjacent house is not common. There is a gap of 15 cm between two walls of adjacent houses. There are 4 rooms. First, rooms 1-3 are built, and then room 4 is added. Other than three mud-brick walls of rooms 1 and 2, other walls are laid with well-dressed stone. Fireplace and similiar finds, which are situated in the middle of the southern wall of room 1 on the bench, show that this room is the kitchen. Room 2 serves as a pantry, where the stone base of the wooden stairs is also situated. The treshold stones of doors are still intact. Room 3 has the size of 6,5 X4.5 m. A fireplace is situated almost in the middle of the room and an oven in the southeast corner. According to Ozguc, this room represents the center of the house, where household spends most of their time. The courtyard being surrounded by rooms is an important feature seen in multi-room houses in Kultepe. This feature becomes widespread in time. In an example (Picture 4-H), both sides of the courtyard are surrounded by rooms and the courtyard is located at the center. There is also an increase in the number of rooms in multi-room houses (Ozguc, 1986).



3-E: Three-room house with courtyard

3-F: Multiple-room house with courtyard

**Picture 3:** Kultepe multiple-room houses with courtyard. Drawn by Salihoğlu (2021).



4-G: Rooms added to the courtyard

4-H: house with central courtyard

**Picture 4:** Transformation of Kultepe houses with courtyard. Drawn by Salihoğlu (2021).

Looking at the types of the houses in Kultepe, all houses have stone (andesite) foundations. The stone wall mostly rises up to the floor level followed by mudbrick wall. However, the stone walls which ovens lean against are also raised above the floor level. The walls of the storage rooms on the basement floors are completely made up of stone. It might be considered that the house is built that way in order to protect the internal areas of the house against the ingress of penetrating damp, as stated by Ozguc. One or more rooms of very few houses have walls made up of stone. Furthermore, the mudbrick wall rises from the floor level, whereas the adjacent wall, in the same room, is made up of both stone (first three rows from the floor level) and mudbricks. These walls are rare examples among the mudbrick walls. The frequent posts on which mudbrick walls are erected and the horizontal beams above stone foundations allow the houses to be multi-storey. This style of construction never changes in Karum. All of the houses are plastered and painted. Flat roofs of houses are coated with earth and timber. Door surrounds, the charred remains of wooden door frames and surround milestones are preserved and recovered in situ. The thresholds of the entrances are made up of stone or plastered with thick mud. Sometimes they are covered with wood. Although rarely found, sofas/benches for sitting made up of mud and mudbrick are situated in some rooms (Ozguc, 1986). All points mentioned above reveal how the details of fine structure become clear for the houses of the early period.

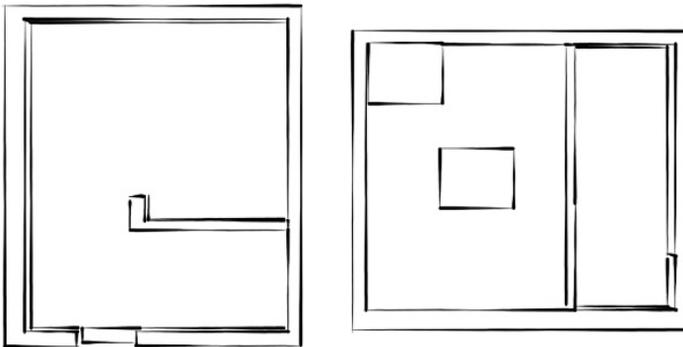
### 3.1.2 Acemhoyuk Houses

Acemhoyuk is known as the most favorite mineral production center of Anatolia 4000 years ago. Acemhoyuk is mentioned as Purushattum in Akad and Hittite inscriptions. Excavations initiated under the presidency of Prof. Dr. Nimet Ozguc in 1962 were continued by Prof. Dr. Aliye Oztan since 1989 (Turkish Culture Portal, 2021). 2000-2003 reports from Oztan's Acemhoyuk excavations were used in the study.

The structuring of Acemhoyuk Houses were more complex compared to Kultepe houses. Although there are houses that can not be considered within any typology as they are not preserved, five different types of house are determined by looking at the recovered structures with readable house plans. The typology in these different types of house differs as a result of the change in the number

of rooms. These houses can be classified as houses with courtyard, and single-room, two-room, three-room and four-room houses (Turgut, 2013).

Single-room house example covers an area of approximately 36 m<sup>2</sup> and extends in the northwest-southeast direction. The stones of different sizes are used within the foundation of the house. The mudbricks on the irregular stone row have the size of 45x30x10 cm. Entrance is probably on the southern direction. A wall that crosses over almost the entire room which starts from the middle of eastern wall of the space divides the room into two, one is small, the other, large. (Picture 1-a). The tip of this partition wall makes an elbow towards the compartment on the west. In another housing typology, houses have two rooms (Picture 1-b). For a house in this housing typology, it is understood that a rectangular fireplace is designed to be situated in the middle of the large room which is located on the western side of the house, and in addition, a section, made up of clay and built with the purpose of keeping firewood, is designed to be situated in the northwestern side of rectangular fireplace (Oztañ, 2001). In Picture 5, a general typology sketch is made for single-room and two-room houses.



**Picture 5:** Acemhoyuk Single-Room and Two-Room Housing Typology Drawn by Salihođlu (2021)

When a house with three-room housing typology (Picture 6) is reviewed, it is seen that the house has two rooms, one with a smaller plan on the east, and the other with a larger and uneven plan in the west. It is believed that the irregular-shaped rectangular room similar to trapezoid is likely to be a later addition. It is found that stone is partly used on the foundation of this structure. And also in the western wall of the room with uneven plan in the west, bonding timber are used for the support of foundation (Oztañ, 2004).



**Picture 6:** View of the excavation area of three-room house (Aliye Oztan, 2004)

In the examples of four-room housing typology, the idea occurs that some additions are incorporated into the main plan which was made in advance. As in the house example shown in Picture 7, the original two-room house is transformed into a four-room house with the later addition of two rooms. The larger room with the size of 6 x 5.5 m is entered through the 80 cm opening in the north. Two ground stones and a fireplace are situated in the middle of the room. A narrow long space parallel to this room is located in the east. In a different four-room house example, the “L” shaped corridor comes up as a new addition. This four-room house consists of two L shaped rooms in the north direction and two more rooms behind the L shaped rooms. The entrance of this house is on the north. It appears that there is a fireplace which is separated by a partition from a space which was previously located in the smaller room. The oven and the partition where the oven is situated are then removed, and converted into a small room (Turgut, 2013);(Oztan, 2001).



**Picture 7:** A view from the excavation site of a four-room house (Aliye Oztan, 2001)

The number of rooms added to the courtyard increased in another example of the courtyard housing typology. The courtyard is surrounded by group of rooms (Picture 8). A well-preserved oven with 1,5 m diameter, and a rectangular pantry adjacent to the western wall of the courtyard and next to a platform are situated in the middle of the central courtyard. In the northern wall of the courtyard, a 65 cm wide door gives passage to the only room in the north. In this room, a fireplace is situated against the southern wall which is common with the courtyard. The mudbrick walls with the size of 55x50x10cm are all well plastered (Oztan, 2001).



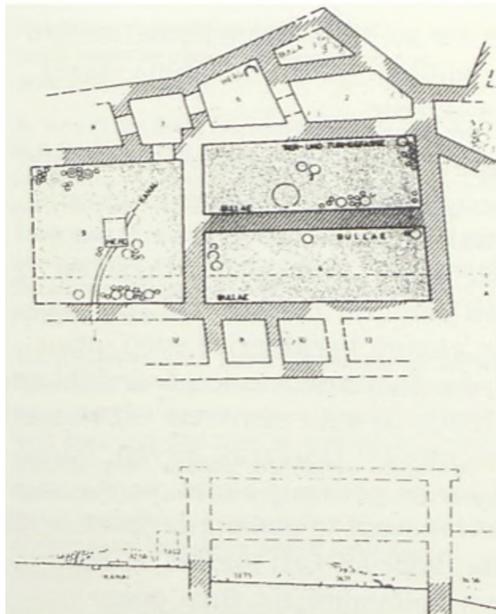
**Picture 8:** A view from the excavation site of a house with central courtyard (Aliye Oztan, 1995)

### 3.1.2 Bogazkoy Houses

Hattusha/Bogazkoy, former capital of the Hittite Empire, is another important settlement in the Pre-Hittite Central Anatolia Region where we can see many house examples. Traces of settlements in Bogazkoy can be seen as of the Chalcolithic age. As in Kultepe and Acem Hoyuk settlements, houses of the Assyrian Trade Colonies Period have been unearthed in Bogazkoy as well. The studies of Peter Neve were reviewed regarding this topic.

According to the house plans revealed, in general, one type of house is seen in the Period of Assyrian Trade Colonies in Bogazkoy. In this period, the houses in Bogazkoy consist of a group of rooms, that is, a courtyard and a few rooms. We see the examples of this house in Buyukkale and also in Asagi Kent. The only structure that is very well preserved in Buyukkale is house Ivd (Picture 9). The house is built on the foundation walls of an earlier structure that

is planned partially in a similar way, which represents the type of house with courtyard with its current condition. The key element in the structure is the inner courtyard and the main hall (space) adjacent to the courtyard. The basement floor, which is divided into two narrow and long equal units by a wall, is located under the main hall (space). There are two fireplaces in the house. While one of the fireplace is situated in the courtyard, the other with oven feature is situated in the wing, which restricts the structure from the east, and which its bottom is partially restricted by the basement floor (Neve, 1996).



**Picture 9:** Single courtyard and multi-room house drawing (Neve, 1996)

Multi-space structure groups mainly draw attention in the construction of Asagi Kent during the Assyrian Trading Colonies Period. Sometimes these groups are built in large blocks, but sometimes as an independent structure standing by itself. In order to go from one house to another, narrow streets with channels are used. All the structures are canalized in the same way. This indicates that houses are built in accordance with a certain plan. The majority of structures are designed as “courtyard house”. These houses have inner courtyards used as a serving space with a fireplace in the middle. According to the size of the structure, the courtyard, on one or more edges and regardless of any certain pattern, is surrounded by storage spaces, and sitting, gathering and service rooms that have fireplaces. (Neve, 1996).

### **3.2 Old Hittite Period Houses**

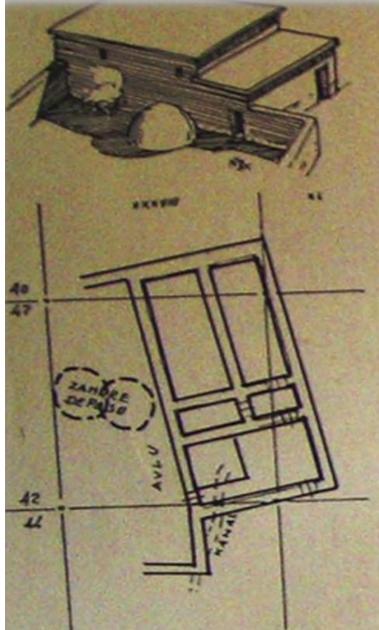
Old Hittite Period Houses were evaluated on the basis of the archeological finds unearthed from the layers in the Capital city Hattusha and Alacahoyuk Excavations.

#### **3.2.1 Alacahoyuk Houses**

In Alacahöyük, there are layers representing the Periods of Hittite Empire and Old Hittite. According to the unearthed house examples, diversity of houses is quite low in the Old Hittite period. According to the structure pattern found, structures are built separately and there are courtyards between structures. In general, the foundations are made up of stones (at least three rows) whereas walls are made up of mudbrick. In addition, plastered niche openings are observed on some walls. It is stated that the roofs are flat and supported by wooden beams (TAY, N.D.). Excavation site reports of Kosay and Akok about housing typology were reviewed.

It appears that in some layers, foundations are built using limestone with mud mortar, and the walls are built with mudbricks as in other houses in Anatolia. It is understood from the wall examples recovered intact that there are wooden bond beams in the mudbrick walls. It appears that the walls of houses are carefully plastered on the outer and inner face with mud mortar. The floors are made up of rammed earth. The rooms paved with flat stones seen at the beginning of the 2nd millennium in Anatolia are implemented in Alacahoyuk during this period. Main canals are constructed to drain the waste water from the middle of the streets formed by houses in this layer and other structures. Another housing typology seen in this period is the one consisting of multiple rooms and a front courtyard. In this typology, a big and wide courtyard is passed through before entering the house (Picture 10). There is an increase in the number of rooms compared to the houses with inner courtyards. As seen in the plan, these courtyards are built larger than the houses. Large ovens are situated in the courtyards of some houses. As seen in this house example, the oven was built right in the middle of the courtyard. The stone foundations of the walls surrounding the ovens are laid with great skill. This type of oven is also seen in Karum houses in Kultepe. Fireplace and tandoor floor traces are seen in the houses. Looking at the houses in this period, we see that diversity of houses is quite low. The only difference is the increase in the diversity of courtyard and the

number of rooms in the houses with courtyards. Rectangular shaped rooms, the general characteristic of this period, are used in all houses. “L” shaped corridors, which are widely used in the Assyrian Trade Colonies Period, are continued to be used. Especially, the scattered and simple built houses recovered from Level IV shows that this period is a time slot in which the Hittite village image is portrayed for Alaca Hoyuk, far from the urban view (Turgut, 2013);(Kosay & Akok, 1966).



**Picture 10:** Drawing of Multi-room house with front courtyard (Koşay & Akok, 1966)

### 3.2.2 Bogazkoy Houses

Bogazkoy Hattusha, the Capital of Hittite Civilization, was named “Hattus” by the Hattians, first indigenous people who lived in Anatolia. But it was named “Hattusa” after the city came under the rule of Hittites (Ministry of Culture and Tourism, 2021). Hattusha became the center of a federative state over time. In addition to synthesizing the Hattian indigenous culture with the raids they carried out, they took the advantage of the cultures of similar high-cultured indigenous people such as the Hurrians and Mesopotamian tribes (Akurgal, 2005, p. 111).

The layout of settlement in the Old Hittite Period differs in principle from the layout of the Assyrian Trade Colonies Period. The city consists of cramped

house blocks that are divided into independent house groups by streets with canals. The courtyard house continues to be the preferred house type. There are differentiations in the structures towards the end of the Old Hittite Period. Due to the damage in the houses, their walls are repaired again. We can see this difference better in the house walls which are drawn in bold lines in picture 11. In addition, due to the rise of population, irregular new houses commence to be built (Neve, 1996).



**Picture 11:** The Drawing of Settlement Layout of Old Hittite Period Houses (Peter Neve, Habitat II)

Thin-walled houses with small rooms are seen in the 2nd millennium B.C. In the second half of the same century, the walls gradually become twice as thick and the rooms also change in size. And even, the upper floors often exist (Naumann, 1985,p.390). Especially in the Hittite region, a constantly developing tendency of individualization is seen. Instead of closed formations where houses are hardly distinguished one by one, definite distinctions are made as in the early

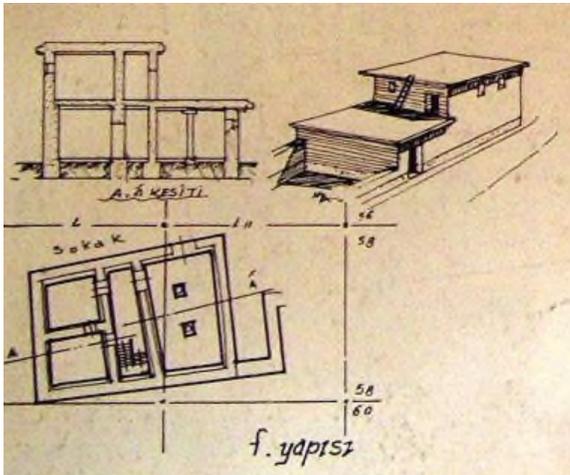
ages of Anatolia (Çatal Höyük). Common walls are avoided. Early period houses usually have two rooms (plan 490 in Figure 9).

### 3.3 Houses Of Hittite Empire Period

Hittite Empire period, also known the The New Kingdom period houses are evaluated on the basis of Alacahöyük settlement and the houses located in the capital city Hattusa. Thus, it has become possible to make a comparison on the same topography.

#### 3.3.1 Alacahoyuk Houses

Looking at the Empire Period houses, it is seen that some of them are located side by side and cramped, while some others separately. Rooms with rectangular plans, which is a feature of the Old Hittite Period, continued to be used within this period, albeit rarely. As understood from the plan, common walls are known to be used between some houses. Considering the shape of the rooms in the house, we can see that the land where houses are constructed plays a big role in the shaping of houses. It is possible to see a variety of houses ranging from simple courtyard houses to multi-room complex houses. An interesting example among the structural design of Alacahoyuk Empire period is the “house with sofa” (Picture 12).



**Picture 12:** F Structure house with sofa (Hamit Zubeyr Kosay; Mahmut Akok, 1966)

In addition, “L” shaped corridors are located in houses. The house plans are shaped according to the land and the later additions to the house. There is no

significant difference in the interior equipment of the houses (Turgut, 2013) Some houses built are two-storey. Most of the room floors are made up of rammed earth. The floors of partitions such as corridors are paved with flat stones (Kosay & Akok, 1966).

### 3.3.2 Hattusha Houses

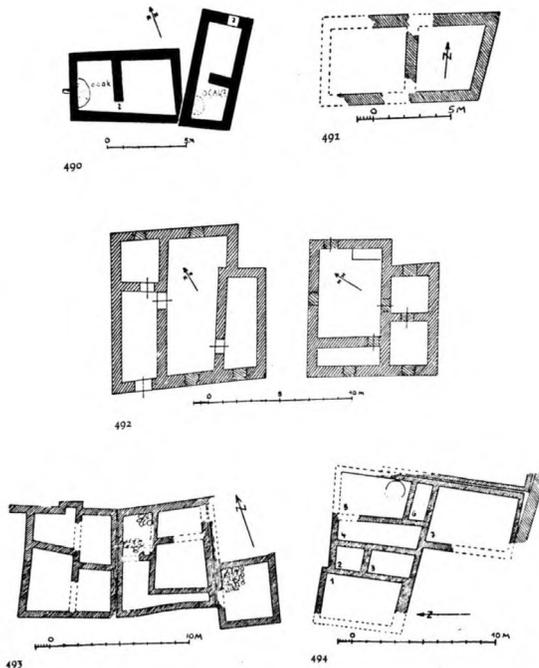
During the Empire period, the majority of the population in the capital Hattusa resided out of the city. Priests, civil servants and wealthy merchants resided in the houses in city center. Houses show significant changes in terms of spatial design (Picture 9). Houses with open courtyard, and over time, houses with interior sofa emerge. The walls are laid with mudbricks supported by wooden frames. Ovens, fireplaces and bathtubs are unearthed as reinforcement elements in multi-room houses. And even fresh water is provided from the central fountains, and waste water is collected from the houses through canals and discharged by the sewage system under the streets (Seeher, 2011, p.14,15) .

Old structures are completely removed due to new construction within the Empire Period. The path networks and sewage systems, which were used only in the Old Hittite Period, are repaired well and used also in this period. In Hittite Houses, the courtyard is always in the direction of the street and the entrance is undoubtedly made through this area. Today, the same system still exists in houses with courtyards in rural areas of Anatolia. Although Hittite house with courtyard is similar to the Assyrian Trade Colonies Period house with courtyard, it is much more developed than the Assyrian examples in terms of the number and widespread use of its spaces. However, dividing and changing the parcels turn the spaces into smaller units over time, and in return, an upper floor is added to the house, which contains living room and bedroom. The ground floor includes service and storage-pantry rooms, and in some cases, barns. There is no evidence that new courtyards are constructed towards the end of the Empire (Neve, 1996).

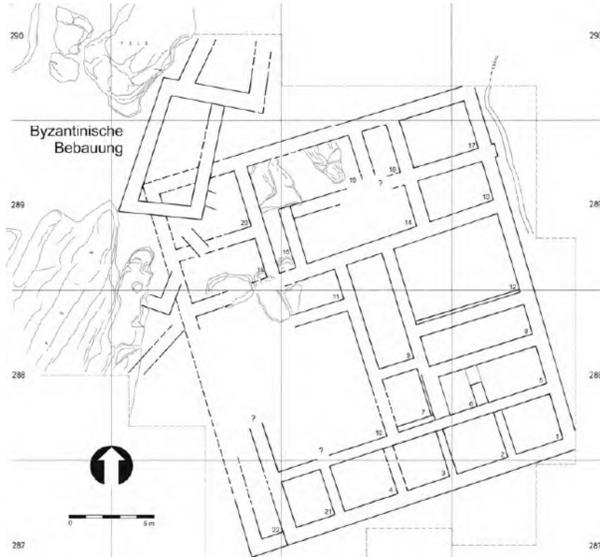
As mentioned for the houses of the Early Hittite Period, houses in Bogazkoy generally have no courtyards in the early times, whereas they turn out to be complex structures in time. The houses in plan 492 in Picture 13 should probably be the preliminary examples of this transformation. The transformation in the houses of the Great Empire Period over time can be seen in the plans 493 and 494 in Picture 13. When additional rooms are required, the

houses are transformed into four-room houses by adding a new two-room house. Courtyards are generally constructed next to houses. In the houses developing over time, wooden stairs is constructed which goes up to the upper floor from the courtyard. Living room and bedroom are located on the upper floor. The ground floor rooms are used as storage and workshop. Houses with the same and similar layout are also found in Anatolia today (Naumann, 1985, p. 377,378,381).

In recent studies made in Bogazkoy, findings indicate a new understanding in houses. In Orta Plato, Yukarı Şehir, a multi-roomed structure with a courtyard is unearthed, which indicates a proper architectural understanding. The structure has a size of 23x23 m and a square plan (Picture 14). This is the largest house plan ever unearthed. Although this structure is generally included in the house group, there is something special about it due to its symmetry. Because, such a proper house plan with a similar understanding has not been encountered in any Hittite city so far. This may be due to the lack of other architectural structures which could affect the house around the structure, that is, due to the proper construction of the walls. Looking at the other Hittite houses unearthed, this house exhibits a more developed house feature compared to other multi-roomed houses with courtyard (Turgut, 2013);(Schachner, 2010, p. 213).



Picture 13: Hittite House Plans (Naumann, 1985,p.375).



**Picture 14:** Gal Mesedi House (Naumann, 1985,p.375).

### ***3.4 Houses Of Late Hittite Empire Period***

After the collapse of Troia VIh and Hattusa, Anatolia again declines to a primitive level for 450 years. Akargul mentions that writing is no longer used, and rich and civilized cities were replaced by poor settlements within this period. Because the artifacts unearthed from dozens of archaeological sites that were excavated and researched in Central Anatolia until today are not belong to the period between 1200-750 BC. It can undoubtedly be accepted that there are settlements between 1200-750 BC. However, since the population is not dense and the civilization is primitive, the remains are also insignificant accordingly. Therefore, it is hard to identify the remains (Akurgal, 2005, p. 187).

The Hittites in large groups migrated from South-Anatolia to Northern Syria, and they established small city-states with smaller local communities that had already settled in these regions. Thus, the development of architecture in Anatolia was interrupted, but still a few features have been preserved for centuries (Naumann, 1985, p.509).

The Late Hittites in Southern Anatolia and Syria, the Urartians, who were the continuation of the Hurrians in Eastern Anatolia, Phrygians and Lydians in Central Anatolia, Lycians in Southwest Anatolia established civilizations that would leave their mark in the history of Anatolia. These communities, with the Egyptians, Phoenicians and Babylonians, had a considerable influence on

Hellenic civilization. Thus, they have also made significant contributions to the development of today's world art and culture (Akurgal, 2005, p. 195).

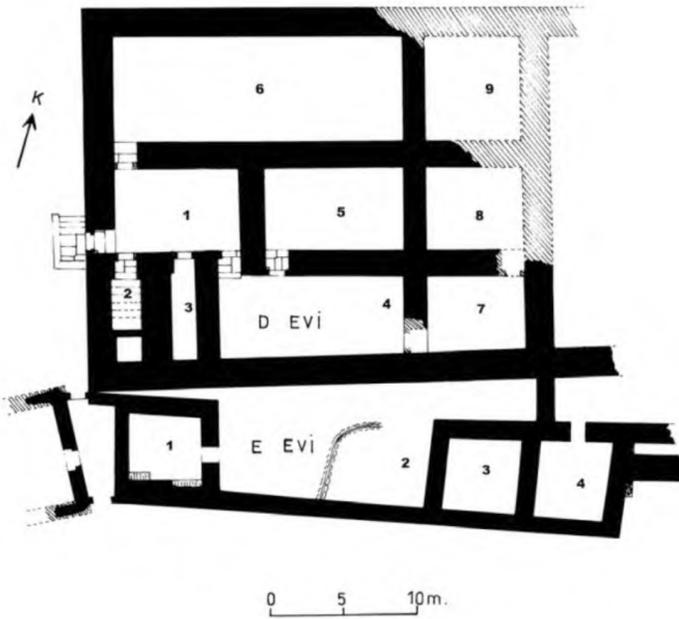
Although the Hittite Empire collapsed, Hittites managed to keep the Hittite culture alive for about 500 years across the southeastern provinces (Aksit, 1981). Important centers of this period are unearthed during excavations in Kargamış, Zincirli, Malatya - Aslan Tepe, Sakçagözü, Karatepe and Tell Tayinat. The importance of the Late Hittite Period for Anatolian art is that it kept the Hittite art alive until 700 B.C. (anadolumedeniyetlerimuzesi.gov, 2009). In this connection, Kargamış settlement was included in the study since its houses which are rich in remains of the relevant period shed light on the development.

### **3.4.1 Kargamış House**

Karkamis is situated on the west bank of the Euphrates and became the administrative capital of the Syrian region of the Hittites during the Late Bronze Age. After the collapse of the Hittite Empire, Karkamis survived as the most powerful of the Late Hittite Kingdoms. Karkamış, which is an important trade center, includes the Inner town surrounded with a first city wall and the Outer town with a second fortification (Bilgin, 1999-2001). Houses from other Hittite Kingdoms and houses special in terms of Hittite Empire general architecture are located in Karkamış settlement.

A group of houses are unearthed in the north of the Outer Town, which covers the largest area of the city in the northeast and east of the West Gate. Among them, House D and House E (Picture 15) are important in terms of both their architectural features and the finds uncovered inside them. The size of House D is approximately 32x25 m. The foundations of the structure consist of clean-cut and dressed hard limestone. The yellowish white wall plaster found locally on the inner surface of the walls shows that the interior of the house was dressed elaborately. On the western side of the house, a courtyard paved with boulder is located, where the entrance is found. The entrance consists of a platform with porch, which has basalt stairs to ascend, and the floor of which is paved with limestone blocks. A short dromos that can be ascended by a single stair leads the way into the house. The house consists of 8 rooms. Some rooms have higher floors than others. It is seen that these rooms are entered through stone stairs. Room 6 is the main hall, and it is believed that wooden posts are used to hold the roof of this large room. There are stairs inside room 2. The walls

with an average thickness of 1.70 m indicate that the structure has two storeys. Fine craftsmanship and architecture in the structural and equipment design suggest that the house may belong to a city notable. House E is built adjacent to House D. House E, which is built within the technique of stone foundation and mudbrick wall, and that has a wall with an average thickness of 1.20 m, has four rooms. The entrance to the house is located on the north wall of room 4. Room 2 is a main hall due to its size and location (Donmez, 2008).



Picture 15: Kargamış D and E Houses (Dönmez, 2008: 231).

#### 4. Conclusion And Assessment

Evaluating the studies structurally, the most common materials used in housing construction for nearly 1000 years are clay, mud and wood. There is no house in which only stone walls are used either in pre- Hittite period or in the Hittite Empire Period. Nevertheless, the preference of stone in foundation construction and in construction parts where insulation is required is an indicator of rational and intelligent design. It is possible to say that these materials come to the forefront not only in structural construction but also as fine construction material. For example, it is observed that clay is a common

surface coating material used on house floors. It appears that wooden material is also used as a beam in mudbrick walls in roofs or multi-storey houses, and in addition, it is also very common in fine construction equipment such as stairs, windows and doors. In terms of the materials used in these houses within a certain geography, it appears that there is no difference between Hittite Empire and pre-Hittite periods. It is a fact that people use the same material even in different periods as long as the geographical conditions remain the same. For example, mudbrick, which is very common in domestic architecture since the Neolithic Period, is a material frequently used in today's Anatolian houses. It is possible to say that the flat roof is a common implementation in all periods.

Evaluating house typologies, it appears that a certain spatial setup was not followed either in pre-Hittite period or in the Hittite Empire Period. Typological differences took place based on the residential areas. There is no example in which all the housing typology unearthed in any of the pre-Hittite and Hittite period settlements studied are used together. The later room additions to the house due to a rise in population or the need for an extra space in the houses are one of the most important reasons for the change in house typologies. The decision whether to construct a courtyard comes to the forefront as a development factor in structural design. It was observed that the courtyards are not built as only free spaces in the structures, but also as workshops. In Anatolian traditional structural design, the courtyard is not only a free space, but also a multi-purpose area. In the housing types which are unearthed, the location of the courtyards remain fixed, but the number of rooms around the courtyards is changed, thus allowing the houses to have a more complex spatial design. This transformation in houses with courtyards creates the central courtyard typology. Especially it can be predicted that the central courtyards give comfort in the houses in terms of light and climatization. It appears that fireplace and oven are the most commonly used reinforcement elements in the interior architecture design of the houses. As mentioned above, they are situated not only in the courtyard areas that are considered as workshops but also in different rooms in some typologies. It is possible to say that this area of activity has a significant effect on the development of house typologies, just like the growing population. From past to present, ovens or tandoors are the most important activity areas of most houses in Anatolian domestic architecture.

It is an undoubted fact that architecture constantly renews itself, and develops by incorporating past experiences, and it is within the process of a structural phenomenon. Considering this phenomenon of change in terms of housing structuring which is one of the smallest structural units of architecture, it is possible to say that it is making continual progress from one-room mudbrick houses to modern houses today. Studies have shown that there has been a rapid change in structural design in Anatolia even in the same centuries. Although many years of domination of the Hittite Civilization over the Anatolian lands had a profound effect in the field of art and architecture, it appears that the structural design, which is a part of the civil architecture group, was solved with a rational and reasonable style in the pre-Hittite Hattian period. For centuries, the factors affecting structural design have generally been the same and a progress has been made in itself, from one-room primitive houses to complex houses. In today's Anatolia, the increase in the size of households, the need for activity areas and the later additions to the houses show once again that the house space can always make a progress and transform like a living organism.

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# CHAPTER VIII

## HOUSING, LIFE AND FURNITURE IN PHRYGIAN CIVILIZATION

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### 1. Introduction

When the Phrygians' written works are examined, it is clear that their roots are Indo-European, and their language is indeed of Indo-European origin. The first written documents of the Phrygians come from Late Assyrian and Ancient Greek sources. According to Herodotus' information, the Phrygians settled in Anatolia on the left bank of the Kızılırmak curve.



**Figure 1:** The Map of Phrygian Civilization (URL-1, n.d.).

According to ancient authors such as Herodotus<sup>1</sup> and Strabon<sup>2</sup>, the Phrygians were one of the Thracian tribes who moved to Anatolia from Macedonia and Thrace. They were neighbors of the Macedonians and were known as Bryg when they lived in Europe (Erdoğan, 2016) (Aşlıoğlu & Memluk, 2010). Strabon describes the Phrygians as peace-loving, and Arrianos<sup>3</sup> (2nd century BC) of Nicomedia (from Izmit) mentions them as peaceful citizens. According to Roman historian Justinus (3rd century BC), the Phrygians founded a kingdom with Gordion as its capital (Sivas T. T., 2008).

Following the fall of the Hittite State, the Phrygians founded the Phrygian State, which ruled in the 10th, 9th, and 8th centuries BC in the area stretching from Afyon in the west to Kızılırmak in the east, with Gordion as its center. The Phrygians were ruled by the Gordias and Midas dynasty (Ünsal, 2018).

The Phrygians settled in almost the same areas as the Hittites had previously inhabited. Both states have the same geographical location. However, the political and cultural situation at the birth of the Phrygian State was somewhat different; unlike the Hittites, the Phrygians turned west, not east. Thus, the Phrygians, who were attacking the Assyrians, became friendly with the Greeks. Friendly and commercial relations, especially with the Greek and Aegean civilizations, aided in the growth of both civilizations' furniture design and use (Demirarslan, 2011).

Phrygia was primarily an agricultural and animal husbandry-based community. Their interest in agriculture is also explained by their worship of the god Cybele<sup>4</sup> (Sevin, 2003). The wine was also produced by the Phrygians, who were skilled in grain processing and viticulture. In addition to the villages that relied on agriculture and animal husbandry, the cities had an intelligentsia, trader, and artisan community.

According to Sevin's work (2007), there was an established bronze industry in the area where the Phrygian State was based between the middle of the eighth and seventh centuries BC, and Phrygian works were spread to almost the entire ancient world. The Phrygians were extremely advanced, especially in bronze craftsmanship.

<sup>1</sup> Herodotus was a Greek historian and author who lived in the fifth century BC. It is regarded as the "Father of History." He is best known for his work *The History of Herodotus*, in which he explains the places and people he encountered on his journeys.

<sup>2</sup> Strabon was a (64 BC - 24 AD) Greek historian, geographer, and philosopher who lived in the Roman Republic period.

<sup>3</sup> Ancient Roman historian, ruler, soldier and Roman and Byzantine era philosopher of Bithynian origin known as Arrianos of Nicomedia.

<sup>4</sup> Cybele: The mother Goddess, which symbolizes maternity, reproduction, femininity, the continuation of life, and thus fertility, seen in ancient Anatolia.

Syria had a strong impact on their craftsmanship in the production of bronze, for which they used forging and casting techniques. Furniture was a significant handicraft manufacturing line. They have also advanced in the fields of wool and weaving. During the Phrygian era, it was discovered that, in addition to animal-derived yarns such as wool and mohair, vegetable fibers such as linen and hemp were also used in Gordion (Figure- 2). Weaved goods were commonly used in culture as an aspect of commercial transition and recognition, much as they were in the Mycenaean and Minoan civilizations. Based on their study in the area at the end of the 19th century, Perrot and Chipiez claim that the weaving practices, which were common in the local people houses, were a form of manufacturing left over from the Phrygians (Figure-2) (Perrot & Chipiez, 1892). They are considered to be at an advanced stage in the manufacture of glass material (Demirarslan, 2011).



**Figure 2:** The Abundance of Weaving Loom Pieces Discovered in Phrygian Tumuli Excavations, As Well As Their Form and Manufacturing Methods, Demonstrate That Weaving Was A Sophisticated Industry Among the Phrygians (*URL-2, n.d.*); An Illustration of a Woman Weaving in the Region in the Perrot and Chipiez' Book (*Perrot & Chipiez, 1892*).

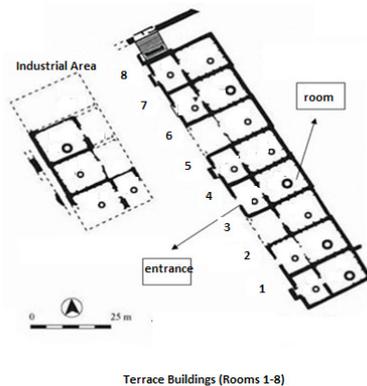
The Phrygians left behind many artifacts. Among these are furniture pieces that provide us with valuable knowledge about the use and design of furniture, especially in ancient times.

## 2. Settlement and Housing Features in the Phrygian Civilization

Art and architecture in Phrygian Civilization are divided into five periods: early style (750-730 BC), transition style (730-725 BC), mature style (725-650 BC), sub geometric style (BC. 650-575), and late Phrygian style (575-300 BC). During the Mature style era, it is recognized that the architecture was of Balkan or Hellenic origin (Akurgal, 2005).

The Phrygians, who had an economy dependent on agriculture and animal husbandry, created very successful works in the field of architecture, and the civilization has its characteristics. His significant architectural works can be found in the excavations of Boğazköy, Alacahöyük, Pazarlı, and Hacıtugrul / Yenidogan Höyüğü. The structures constructed in the megaron plan style are the most striking feature of Phrygian architecture. Homer is the name of the ancestor of megaron-type systems. The megaron was the great halls where men met, according to Homer (Bülbul, 2009).

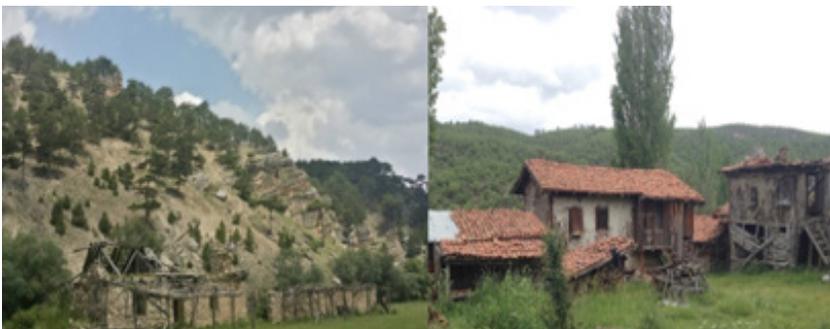
All structures in Gordion are megaron-planned, as can be seen. The houses in Bogazköy have been determined to be in the shape of a shortened megaron. The rock tombs made in the same plan style teach us about the Phrygians' megaron-planned structures (Figure-3) (Sivas, 2008). Rock temples and tombs were constructed in the Afyonkarahisar and Eskişehir regions during the Late Phrygian style. These rocks were quickly cut by the Phrygians using iron tools and machinery. They carved into the rocks not just tombs, but also castles, corrals, temples, and buildings. Significant settlements developed in this style include Midas City and Yazılıkaya City.



**Figure 3:** Terrace Buildings with Megaron Plans in Phrygians (Gönen, Liebharth, Naomi, & Dusinberre) (URL-3, n.d.) The drawing is rearranged by the author.

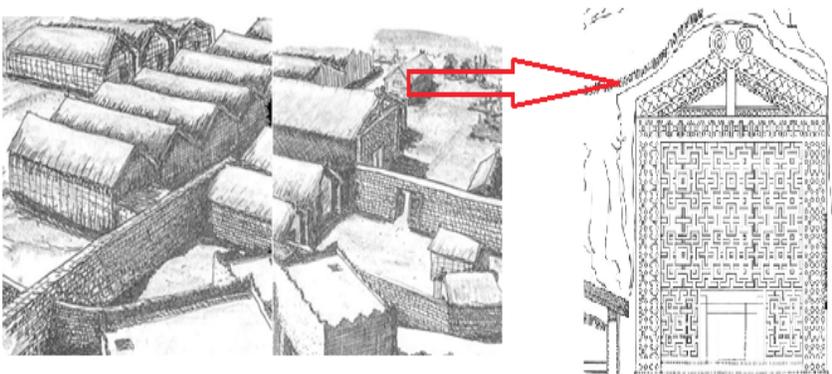
The remains of Gordion are important monuments of Central Anatolia's iron age architecture. They are dated from the end of the 10th century to the 9th century. Within the city's walls, two major parts have been identified. The palace is one of them, and the complex of terrace buildings is the other (Figure-3). As previously said, the buildings inside the city walls were built in the megaron style. This form of plan, with an entrance or veranda in front of a wide rectangular room, was common in Western Anatolian architecture during the early Bronze Age. The megarons in the city of Gordion come in many different sizes and features. These megarons, usually built with mudbrick walls and wooden beams on a stone plinth were destroyed by a fire around 800 BC. Any of the roof and exterior facades were coated in earthen plates with carved reliefs. Apart from Pazarlı, these types of soil plates have been discovered in various parts of Anatolia, especially in Gordion. Houses are also built using similar methods in Anatolia's rural areas today. Nowadays, the Phrygian period megaron houses can be seen reflected on Anatolian vernacular architecture structures, and building remains situated on the "Phrygian Road." (Figure-4, 5,6) (URL-4, n.d.) (Eraslan, 2015). In reality, images in the documents indicate that new houses were constructed on the site of the old settlements.

According to the Roman architect and historian Vitruvius, Phrygian houses were made of wood and planks and coated with thatch and mud on top. Furthermore, some of the houses in Gordion and Pazarlı were built of stone and adobe and reinforced with wooden bays and horizontal beams. Since 3000 BC, another type known as the Megaron type was used; it had one entrance hall and a living room behind it, making it suitable for cold weather. The facades of the rectangular megaron buildings, which the Phrygians constructed out of stone and mudbrick, were similar to the facades of the monumental structures (Figure-5) (URL-5, n.d.).

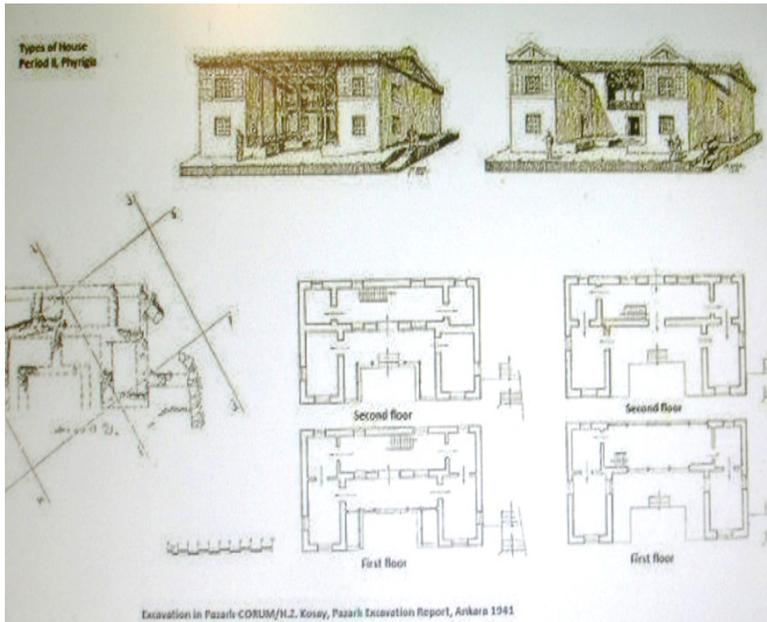




**Figure 4:** The Phrygian Period Megaron Houses Can Be Seen Reflected on Anatolian Vernacular Architecture Structures and Building Remains Situated on the “Phrygian Road.”; Images in the Documents Indicate That New Houses Were Constructed on the Site of The Old Settlements (*Perrot & Chipiez, 1892*).



**Figure 5:** Megaron Houses of the Phrygians (*Tuna, 2002*) (*Harmanşah, 2015*) (The drawing is rearranged by the author).



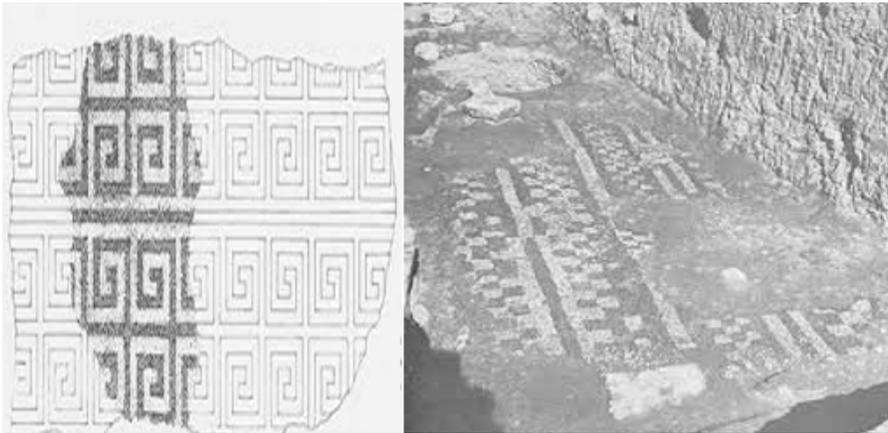
**Figure 6:** Plans and Drawings of Pazarlı Settlements Created Using Remains from the Pazarlı-Çorum Excavation (*URL-5, n.d.*).



**Figure 7:** An Example of Vernacular Architecture with Phrygian Housing Architecture, Phrygian Way (*URL-6, n.d.*).

Aside from the doors, which were decorated with wooden ornaments, the walls were later decorated with painted engraved plates. Though the ground outside these houses was puddled with clay mud, it was sometimes covered

with mosaics made of decorative pebbles. These field mosaics are said to be the oldest in Anatolia (Figure-8). The covering of the siding of Phrygia's buildings with painted plaques is seen as a Mesopotamian cultural influence on them. At the same time, Greek-style frescoes were used on the building's interior walls (URL-5, n.d.). Furthermore, textile, ivory, and metal furniture used on various bed furniture were discovered among the ruins of megaron structures. As a result, we were able to learn about the Phrygian Civilization's residential interiors.



**Figure 8:** Pebble Stone Mosaics on The Floor of a House Unearthed in The Gordion Excavations and Their Drawing (*Young, 1965*).

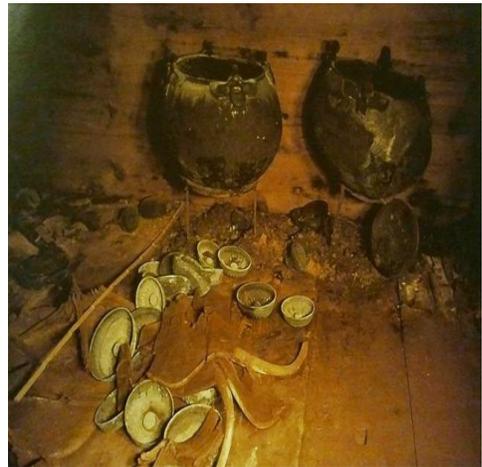
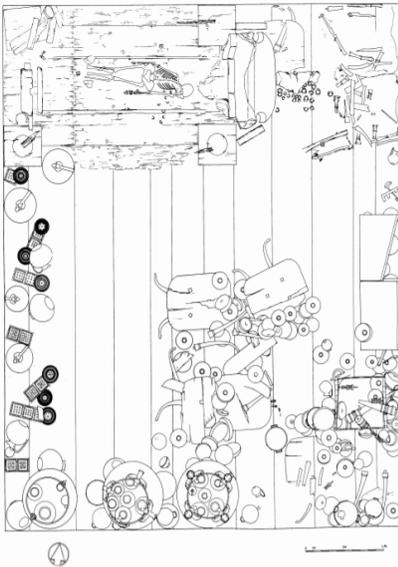
### 3. Furniture Design in Phrygian Civilization

Furniture is the most authentic artwork of the Phrygian civilization. Some of the furniture used in the burial chambers at that time has survived. In this way, we can see how much the Phrygians have progressed in terms of furniture design and craftsmanship. The Phrygians are also said to have produced the most skilled masters in the field of furniture (Demirarslan, 2011). One of the major reasons for the region's unique importance in wooden furniture production is that it is a forested environment, and the trees used in furniture production are readily available. In this respect, the furniture parts discovered in the tumulus in Gordion, which is thought to belong to King Midas, are regarded as a significant discovery that enlightens the whole world regarding Anatolian furniture design and craftsmanship. Furthermore, 20 pieces of the furniture discovered in a child's grave in the Phrygian area and the furniture found in Midas' tomb have parallels in terms of wood content and workmanship.

Between 1950 and 1973, archaeologists excavated the MM tumulus in Gordion and discovered an important wooden furniture collection. Long years of study on approximately 37 furniture pieces and 56 wooden items discovered in tumuli dating back to the 8th century show how advanced the Phrygian civilization was in producing wooden furniture (Rodney, 1958) (Figure- 9).

The inlaid table is known as the “pagoda table” (Figure-10) and occupies a prominent position among the Phrygian furniture samples. Although some of its components have been lost, the majority of them are still in good condition. The table is made of boxwood with juniper inlays and walnut inlays (Simpson & Spirydowicz, 1999).

The inlaid service tables discovered in the MM Tumulus were also discovered against the tomb chamber’s east wall (Figure-11,12). The designs on the service tables’ fronts are fascinating. The circular inlaid designs in the center of the tables’ front faces are thought to represent the Phrygian mother goddess Cybele, whilst the two paws on the front face are thought to represent Cybele’s lions. The front sides, rear, and side sections of the table, which were shaped like a front, were made of boxwood, and the inlays were made of juniper wood, according to the analysis. The top of the table and the curved foot pieces on the front face are all walnuts. Two small bits of yew wood are found under the foot of one of the screens (Simpson & Spirydowicz, 1999).



**Figure 9:** Items Found in the MM Tumulus and the Inside of the Tumulus (Young, 1965) (URL-7, n.d.).



**Figure 10:** An Example of Furniture from The Phrygian Period  
Pagoda Table Drawing And (*Demirarslan, 2016*).

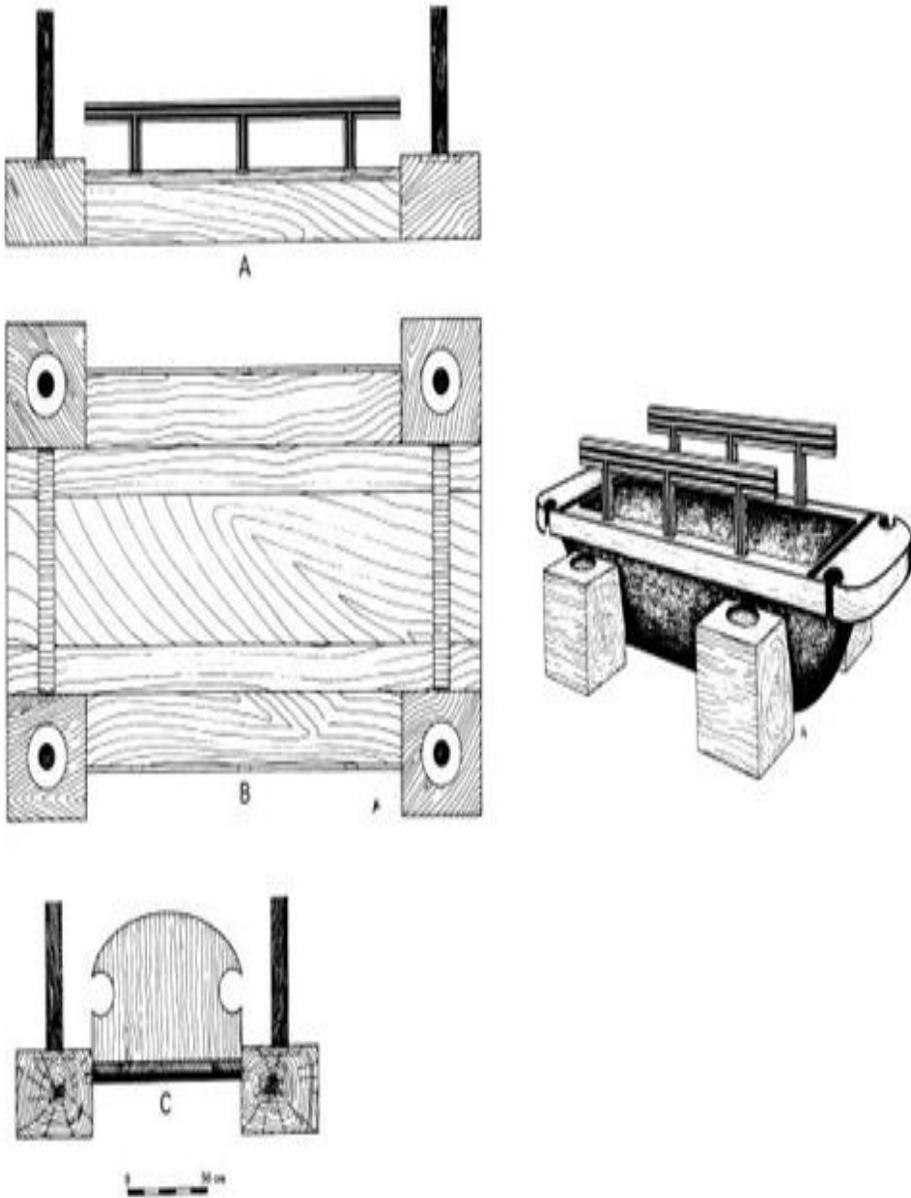


**Figure 11:** The Inlaid Service Tables Discovered  
in the MM Tumulus (*Demirarslan, 2016*).



**Figure 12:** Service Desk. 94. cm. is in Height. The Detail is Seen from the Inlaid Work in Front of the Service Desk (*Simpson & Spirydowicz, Gordion Ahşap Eserler- Wooden Furniture, 1999*) (*Demirarslan,2011*).

In addition, several stool legs and a wooden spindle with an animal figure carved on them from a chair were discovered in the same tumulus. This spindle is thought to be attached to the chair's back. The wicker-covered seats of the chairs also were suggested by the mats found among the items. In terms of style, the bed that serves as the king's coffin, which is also located in the same tumulus, is also fascinating. The coffin bed's body was made of cedar, the corner pillars were made of pine, and the railings are made of yew and boxwood (Figure-13) (Simpson, 1990).



**Figure 13:** Midas' Coffin-Bed. A: Front Side View, B: Top View, C: Side View and Perspective (*Simpson, 1990*) (The drawing is rearranged by the author).

In the P tumulus, a service table similar to the one found in the MM tumulus was discovered. A leg from the back supports the front face and upper table of this service table. The table's front, top, and back were all made of boxwood, with inlaid embroidery made of juniper and yew wood (Figure-14).



**Figure 14:** Detail Drawing and Original Version of The Service Table In Tumulus P (*Young, 1965*).

In the P tumulus, carved and inlaid stools were also discovered. Each of these stools has inlaid and embroidered front and back sides. It is thought that the traces on it indicate that it was adorned with bronze hobs. The upper portion of the seat, as well as the front and back sides, was made in stripes and then stuck together with an adhesive. The front and back of the stool were made of two separate wood strips, one after the other, boxwood and yew. The yew trees were inlaid on the boxwood, and the boxwood was inlaid on the yew trees (Figure- 15).



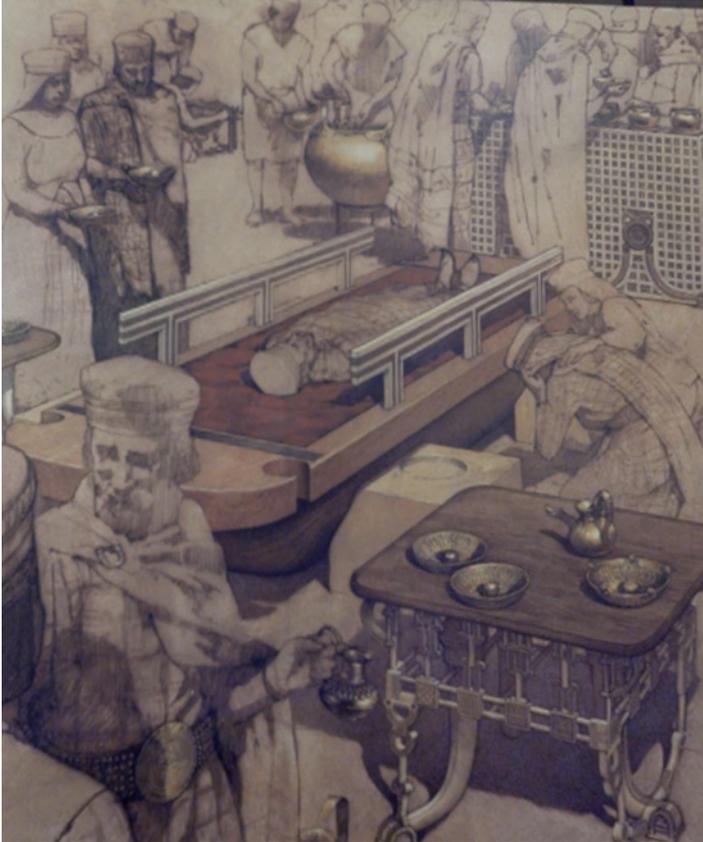
**Figure 15:** The Carved and Inlaid Stool (*Demirarslan, 2016*)

The P tumulus had several more items of the furniture. However, there is a boxwood chair that is thought to have belonged to a boy (Figure-16). This chair is a simplified version of the Eastern Mediterranean countries' sphinx thrones. A children's bed is another piece of the furniture discovered in the P tumulus. The inlaid technique was used to process the wooden portion of the bed's headboard. The footrest has an etched design. Boxwood was also used for the bedside and foot ends, as well as the legs and frame construction (Simpson & Spirydowicz, 1999).



**Figure 16:** Drawing of Child's Bed in Tumulus P (*Simpson & Spirydowicz, 1999*).

Several parts of furniture have been discovered in tumuli. This book contains only the most important material. These pieces of furniture are thought to have been used in funeral feasts in tumuli and then buried with the deceased after the banquet (Figure-17).



**Figure 17:** Reconstruction of The Funeral Ceremony Held Outside Tumulus MM Before the Burial, Illustrator: Greg Harlin, Anatolian Civilization Museum (*Demirarslan, 2016*).

The Phrygians also inspired other cultures in the area of carpentry and woodworking methods, as shown by specific examples. The woodwork on the blackboard, which is one of the findings from the Uluburun shipwreck and has a prominent position among these examples, is said to be in Phrygian style and of superior craftsmanship (Payton, 1991).

Furthermore, carpets hanging on the walls and felt and decorative cloth scattered on the floor in Gordion tumuli indicate that carpets and textiles were

used in the interior. In reality, the term “tapetes,” which is still used for tapestries in many European countries, is Phrygian (Demirarslan, 2011).

On the other hand, as previously mentioned, the spring-loaded hooked needles, which are a mechanical advancement and a significant product design of the time and known as “fibula,” are an important product introduced to the world of design by the Phrygians, who are at an advanced stage in the mining sector. Fibulas were especially sought after in Assyrian and Late Hittite cities. Similar ones were later produced by Ionian artists. Aside from metal, especially bronze fibulae, the Phrygians made pots, boilers, ladles, and arches similar to those seen in modern baths (Figure-18).

Apart from these designs, we can see that during the Phrygian period, ceramic material was used as a building and fine structural element in Western Anatolia. The Greeks used kiln-dried clay tiles as covering material on the roofs of temples for waterproofing at the end of the eighth century BC. Indeed, the Greeks produced architectural terracotta materials manufacturing technology in the 7th century BC, which reached the Phrygians around 600 BC, and the Phrygians developed terracotta tile production and revealed significant designs (Figure-19). The distinction between these and Greek tiles is that they are found in both palaces and religious structures.



**Figure 18:** Various Fibulae and Daily Using Items Made of Bronze Belonging to the Phrygians. Istanbul Archeology Museum (Demirarslan,, 2011).

The Phrygians adorned the terracotta covering the part with ornaments or simply created it without them, but the curvilinear surfaces and sharp corners were designed to be used horizontally and vertically. The terracotta roof covering materials, in particular, were made from various materials based on their insulation properties, and two styles of roofs were used in the architecture. The first type of roof tiles was made of volcanic glass, mica, and polycrystalline quartz, while the second type of roof tiles was made of calcium carbonate and feldspar particles, volcanic rock, glass, and quartz.



**Figure 19:** A Ceiling Tile Adorned with Geometric and Floral Forms. 6th Century BC. It is Exhibited in The Metropolitan Museum of Art (*URL-8, n.d.*).

The production of everyday objects from the glass was very advanced in the Phrygians, who produced a large range of industrial goods from terracotta materials. Glass-like designs were created in Nemrud during the Iron Age, Rhodes during the Classical era, and Macedonia during the Hellenistic period. The ancient world produced glass objects with such unusual characteristics which were not found anywhere else in the world. In the first century BC, designs made of glass material resulted in technical and cultural exchanges through trade, especially between eastern and western civilizations.

#### 4. Conclusion and Suggestions

The civilization of Phrygia existed in Central Anatolia. Gordion was their capital city. Midas was the most powerful king of the Phrygians. The Phrygians ruled all of Anatolia during King Midas' reign. The influence of agriculture can be seen in the religious practices of the Phrygians, since they were an agriculturalist tribe. Cybele, the goddess of earth and fertility, was, for example, the greatest

goddess of the Phrygians. Weaving grew as a result of the Phrygians' animal husbandry practices, and their Tapates carpets and rugs became popular.

The Phrygians lived at a crossroads between major trading routes. The Phrygians were able to advance in the commercial area as a result of this situation. Many Phrygian artifacts were discovered in Western Anatolia, the Aegean Islands, and Greece, indicating that they engaged in extensive trade with the Western world.

It was possible to collect details about the furniture and belongings of that time since the dead were buried with their objects, as they were with the Egyptians. Furniture is the Phrygians' most original art form. The Phrygians are also said to have produced Anatolia's greatest masters in this branch. The region's abundance of forest may be the primary explanation for this superiority and originality.

As a result, a successful forestry-related furniture industry developed. The best proofs of the superior degree Phrygians achieved in furniture are the wooden tables and inlaid panels found in the Great Tumulus, which is believed to belong to Midas in Gordion.

Cauldrons, ladles, belts, bowls with omphalos (navel), the ancestor of modern Turkish bath navel bowls, and fibulae, all of which were common among the Phrygians in Anatolia, indicate the existence of advanced mining technology and industry.

Cities like Gordion, Alacahöyük, Boğazköy, and Pazarlı are among the most significant settlements that demonstrate the advanced stage of Phrygian art, which produces unique architectural works. During the excavations in Gordion, the monumental buildings located in the eastern direction of the settlement, enclosed by walls, are among the most significant examples of architecture. The houses designed in the megaron plan type were constructed of stone, timber, and adobe. All the buildings in Gordion are megaron-planned. Some of the buildings are decorated with pebble mosaic floor, the walls are decorated with geometric-patterned plates coated.

In the lands occupied by Phrygia, today's vernacular architectural examples show features of Phrygian residential architecture. These houses, which represent the architectural features of the Phrygian civilization, are on the verge of disappearing due to neglect. The construction of new settlements on top of the ruins of previous monumental buildings and dwellings is a common occurrence in history. It is important to conserve the examples of this culture, which has

made significant contributions to world civilization in terms of architecture, as well as the tangible results that can still be seen today. It is important to conserve the examples of this culture, which has made significant contributions to world civilization in terms of architecture, as well as the tangible results that can still be seen today. This culture, which has made important contributions to the world in the fields of woodworking, furniture art, ceramics and glasswork, and weaving, should be exposed to a wider audience, and today's designs should include influence from this civilization.

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## CHAPTER IX

# FOLLOWING THE DESIGN: A READ ON CHARLES RENNIE MACKINTOSH'S ART NOUVEAU

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### 1. Introduction

The Art Nouveau movement, which influenced Europe in the 19th century, came to the foreground with certain representatives in the West. In this movement; they heavily used visual elements, ornamental motifs, moving and asymmetrical and squiggly lines, and floral-based decorations. The movement was adopted and applied by certain architects in the major cities of Europe. Art Nouveau movement; Victor Horta in Belgium, Henry Van De Velde and Paul Hankar, Hector Guimard in France, Gaudi in Spain, Peter Behrens in Germany, Berlage in Holland, Otto Wagner in Austria, Voysey in England, USA Louis Henry Sullivan and Turkey Raimondo D'Aronco representing major names. The representative of the Art Nouveau movement in Scotland is the architect and designer Charles Rennie Mackintosh. In this study, the main works of the designer and his milestone achievements were investigated. Mackintosh was a designer at the Glasgow School of Art; a school in which many important names in art history were raised. Mackintosh combined the romantic influence

of the Art Nouveau movement with the predominance of Japanese traditional linear elements and thus created his own unique style. Macintosh; interpreted this trend with its own knowledge and created unique designs. He also produced projects with his wife Margaret Mc Donald, and the duo prepared many pioneering designs together. In this study, we focused on Mackintosh's famous "Willow Tea Rooms", located in Glasgow and we emphasized the architectural and interior architectural elements of that period. And through a research based on literature review, we also examined the restoration stages applied to the Willow Tea Rooms and we made an assessment of the current state of the design.

## 2. A Short Look at Art Nouveau

When we examine the works of Scottish Designer Charles Rennie Mackintosh, we see that they have an important place in the history of architecture and interior architecture. Mackintosh has always conducted all his work with his wife Margaret Mc Donald. The works of these two designers still have a considerable value today. In order to interpret Mackintosh and his designs, we must especially draw attention to the Art Nouveau movement and the development of Glasgow School of Art.

Art Nouveau is the romantic and individualist movement that influenced Europe between 1890-1910. Starting in the middle of the 19th century, *raisonneurs* (thinkers) such as John Ruskin and William Morris started individualistic attempts to get rid of formal and artistic anarchy. Morris's thoughts greatly formed the starting point of Art Nouveau in Europe (Hasol, 1998: 51).

The most distinctive feature of the Art Nouveau movement is that it uses nature as its main theme. Visual elements, comfortable motifs with ornaments, moving and asymmetrical squiggly lines, a dense floral-based decoration are among the most striking features (Başoğlu, 2011: 26).

The Art Nouveau movement emerged as a different and new style apart from the classical architecture that was common in the 19th century. The term was first heard in Belgium with *L'Art Moderne* magazine. The stream has been given different names in different parts of the world. It is called *Jugendstil* in Germany, *Stie Floreale* in Italy, *Modernismo* or *Modernista* in Spain and *Sezessionstil* in Austria. It has been frequently seen in interior designs and product designs, especially in architecture. Pioneers of the trend in England; Aubrey Beardsley and William Morris, Paul Gauguin and Henri de Toulouse-Lautrec in Europe. The most prominent feature of the Art Nouveau movement; uses plant and animal

elements in nature in design. The current shows itself with asymmetric and organic elements far from symmetry, just like all objects in nature. Its effect in architecture has been to capture these features and aesthetic forms. From structural elements to joinery elements and decorative elements, the current has shown its aesthetic effect at every point. This ornamentation-dominated trend displays a contrasting stance with plain and clear spaces. After 1910, the trend came to the fore with its decorative decoration features. The Art Nouveau movement manifested itself in important exhibitions at the Museum of Modern Art (New York, 1959), the Musée National d'Art Moderne (1960), and the Beardsley exhibition at the Victoria and Albert Museum (London, 1966). Thanks to these exhibitions, the trend that certain segments thought is not permanent has reached an important point. The movement has also been embraced by popular culture, and designs related to the trend have been used in various art sectors.

Among the most important architectural representatives of the Western Art Nouveau style are the following artists: Victor Horta in Belgium; Henry Van De Velde and Paul Hankar and Hector Guimard in France; Gaudi in Spain, Peter Behrens in Germany; Berlage in Netherlands, Otto Wagner in Austria; Voysey in England, Mackintosh in Scotland; Louis Henry Sullivan in America; and Raimondo D'Aronco and Turkey (Bream, 2007: 42). Many architectural works with Art Nouveau features are present in Turkey as well. For example; Ipar Mansion, Huber Mansion and Mizzi Mansion in Istanbul were built in Art Nouveau style. The Glasgow School of Art and the leadership of Mackintosh had an enormous influence on the spread of this trend, which was developed against the Victorian style in the 1890s.



**Figure 1:** Ipar Mansion (Url-1)

### 3. Glasgow School of Art (1899-1909)

Glasgow School of Art and Architecture, founded by the state administration in 1840, is one of the two institutions that provide architectural education in the city today. The purpose of its establishment was to increase the aesthetic values of mass-produced products in the industrial city of Glasgow. After the Second World War, the school gave greater importance to architectural design, but since the main principle of their education policies is towards crafts rather than a technological approach, the fields of painting, sculpture, handicrafts, graphics and advertising also holds important place. In the school, where industrial design, ceramics and poster branches were added later, night courses are also given in addition to daytime education. The architect of the school structure, Charles Rennie Mackintosh, was educated in this institution taking night courses (Aslanoğlu, 1975: 23).

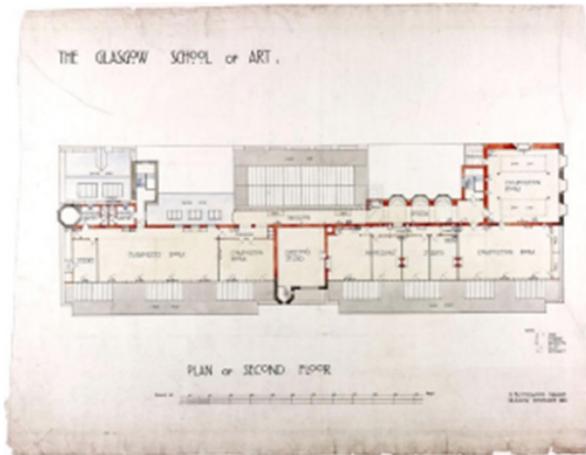
Mackintosh designed the Glasgow School of Art with a holistic architectural understanding as interior and building design, adhering to the elements of early participatory architecture. Building made of stone with reference to the baronial style (Scottish); It sets an example in terms of the use of iron and glass. While designing the building, it has adhered to the traditional style, paying attention to harmony with the environment. To the left of the building is an old entrance area built in non-classical proportions, which calls to mind a ziggurat. As far as the interior, Mackintosh put the emphasis on Japanese-style designs. There are measured decorative elements throughout the entire building. While the designer captured simplicity with Japanese lines in the interior, he emphasized various aspects with Japanese traditional elements. Structure, with its linear composition and window designs, was an important inspiration for the Fagus Factory of Bauhaus manager Walter Gropius (1911-13).



**Figure 2:** Glasgow School of Art (Url-2)



**Figure 3:** Glasgow School of Art Library (Url-3)



**Figure 4:** Glasgow School of Art, Plan of Second Floor (Url-3)

The most recognizable interior area of the Glasgow School of Art's is the library which was completed in 1906. The Great Hall contains three floors. There is a reading room, gallery and a book storage. The gallery sits on thick square columns. The ceiling of the library serves as the floor of the book storage (Polyakov & Donchuk, 2018).

The library is located at the central point of the School Building. In the architectural structure, attention was paid to lighting with wide window openings. The effects of the simple linear elements of Japanese architecture can be seen in the interior design. According to Art Historian Crawford, the building is “a creative resting place between parts of a literary work”. There are influences from Guimard's Paris Metro designs in the studio designs of the school. The designer has preferred to add movement to the space by using contrast and complementary elements together. The contrast between the lighting elements and the shapes in the windows saved the space from stagnation. The Glasgow art school library was also destroyed by a fire in 2018.

## 4. Charles Rennie Mackintosh

Charles Rennie Mackintosh; Scottish architect and furniture designer. Art Nouveau emerged in Scotland with geometric shapes and this style was called the Mackintosh style (Hasol, 1998: 52). Mackintosh interprets the Art Nouveau style differently. His works do not oppose the traditional style of England, but they are original designs that comply with the Gothic features of the region (Cespedes, 2020).

Mackintosh's work covers all elements, including lighting, all interior design, furniture and exteriors of buildings (Thornton, 2009).

Charles Rennie Mackintosh was not appreciated much during his lifetime in England, but at the end of the 20th century he was recognized as the father of Glasgow Style and became one of the pioneers of avant-garde design in Europe. Mackintosh combined the Art Nouveau aesthetics of the Scottish culture with the simplicity of Japanese forms, and he has brought a new approach to modern architecture with quite complex and distinctive designs. In his designs, he created contrasts by combining the rigid vertical angles with squiggly floral motifs, prioritizing the dynamism in the space. Believing that an architect should be responsible for every single detail of an interior design, Mackintosh always handled a space as a work of art, and he and his wife Margaret MacDonald together produced the most creative interior designs of the period (Vural, 2018).

Mackintosh's wife Margaret MacDonald graduated from the Glasgow School of the Arts as a painter and stained-glass artist. In the Tea Rooms and residences, they as a couple designed a series of interiors decorated with stained glass windows, paintings, panels and embroidery (Polyakov & Donchuk, 2018).

Mackintosh was a versatile artist as an architect, interior designer and painter. He was born in 1868 in Glasgow. He started to work in John Hutchison's office as an apprentice in 1884. He also attended the Night Art School. While he was a student, he won various awards; among which was the "Alexander Thomson" travel scholarship, and with that he traveled through France and Italy. He was later employed by the Honeyman and Keppie Company in 1889, where he worked as chief designer. He later organized an exhibition in Vienna in 1900 with his group of four designers, where he attracted the attention of Hoffman, Olbrich and Kolomon Moser; the founders of the Austrian Sezest movement. The same group opened their exhibitions in Torino in 1902 with great success. Mackintosh's works were taking the first steps of the rational and functional approach that would lead to the Bauhaus (Aslanoğlu, 1975: 24).

Mackintosh's most important architectural project is the Glasgow School of Art (1896-1909). The main projects showing the architectural features of the Art Nouveau movement are Windyhill, Kilmacolm (1899–1901); Hill House, Helensburgh (1902); Willow Tea Rooms, Glasgow (1904); and Scottish Street School, Glasgow (1904-06). There are also projects that have remained in the design phase of the designer and have not been implemented. Willow Tea Rooms are designed for women as an alternative to places where Scottish men commonly consume alcohol. The space designed by the designer with Japanese aesthetic perceptions was created with wooden beams. While plain and plain colors are preferred as the exterior design, the metal workmanship that shows itself on the facade draws attention to the space. The motifs in the paintings in the interior symbolize the woman. While providing opportunities for visitors to spend social time, aesthetic values and sexist emphasis were made. Mackintosh's Hill House project is the architect's most famous residential project, combining traditional and modern lines with a design based on Scottish cultural values.

The structure reveals Mackintosh's eclectic tastes. As he put it, the building was "designed not as an Italian Mansion, English Mansion, Swiss Chalet or Scottish House, but as a Residential House." Along with the traditional architectural style, the Voysey architecture and arts and crafts movement are also prominent in the space.

In the asymmetrical building whose plan is reflected in its facade; Mackintosh minimized the exterior decoration and emphasized a safe and fantastic transition from the outside world to the interior, thereby emphasizing the design of the interior. While stronger and masculine lines and colors were preferred in the common living areas in the interior design of the residence; Softer and organic forms were used in the recreation areas. The white color used in the recreation rooms has left an important mark on the designer's career. Mackintosh designed all the elements in the space with his wife Mc Donald (Vural, 2018). In Hill House, Mackintosh and Macdonald designed most of the interior rooms, furniture, and objects with attention to detail and color (Cespedes, 2020).

The interior design of the building, which is the only project of the designer to date, was first designed. Light and windows calculated to come from the gallery spaces in the building, reflections due to the artistic effects applied are among the important elements of the building.



**Figure 5:** Hill House (Url-4)



**Figure 6:** Hill House (Url-4)



**Figure 7:** Hill House (Url-5)

Watercolor works have a great importance in the career of the designer. The designer, who generally focuses on flower paintings, has done a lot of work

in this direction. He conducted painting studies with his wife Mc Donald. In the works, the initials of the two are seen as “CRM MMM” as signatures. The font for this signature was created with a custom font invented by Mackintosh (URL-6).

All of Mackintosh’s projects demonstrate a mind with extraordinary creativity and aesthetic perception, while having traditional features. Although Mackintosh’s influence on the history of architecture and art was tremendous, his architectural career did not last very long. He was able to build relatively few projects in the short ten years between 1895-1905. After the completion of the Glasgow School of Art in 1909, he could not get involved in another serious project. In 1928, the designer left her architectural projects and focused on watercolor painting, and died of cancer at the age of 60 (Vural, 2018).

## 5. Willow Tea Rooms

It was contracted by Catherine Cranston.

Design: Charles Rennie Mackintosh 1903

Organizations in Willow tea rooms; It is carried out in different halls within the building and in the building next to it (2017, November / URL-9). In 2019, Willow Tea Rooms were awarded the “Project of the Year Award” by RICS (Ozhisar, 2019). The conservation works carried out for the sustainability of the building have been awarded the best practice award. Mackintosh’s efforts to preserve the tea parlors were maintained with great discipline, adhering to their original form. A center for visitors, such as exhibition and training halls, was created in the building on 215 Sauchiehall Street, next to the tea rooms.

Mackintosh and his wife did not receive any support from the architects of the period when designing the Willow Tea Rooms; However, when the design was realized, *Dekorative Kunst* magazine (Germany) included publications describing their likes.

Willow Tea Rooms, despite Glasgow’s cold gray image, is an environment that has inspired many designers by showing the innovative traces of Mackintosh (Emerson, 2016).

In 1896, Mackintosh met Catherine Cranston (1849–1934); the daughter of a tea magnate, and also in tea business. The intended use of the building had been of great importance for Mackintosh. The idea that a smart person should spend his free time not around alcohol but with a cup of tea in a comfortable

club environment was a different and remarkable project for the city of Glasgow (Polyakov & Donchuk, 2018).

The building takes its name from the old Shotland street Willow Meadow. In the building, the motif of the willow leaf formed the basis of the interior design (Polyakov & Donchuk, 2018).

The most extravagant space in the building is the de Luxe rooms which is on the first floor. These rooms feature white walls with colored glass friezes, magnificent mirrors, silver & lead embellished windows, double doors, purple armchairs and high-backed sofas. Large windows offer a panoramic view of Sauchiehall Street (Polyakov & Donchuk, 2018).

Mackintosh had almost the entire facade of the building rebuilt. A full width bay window protrudes outward in a gentle curve. There is no decoration on the facade, only two simple cornices were added. On the exterior, the surroundings of the windows have asymmetrical curves that do not have much depth. White natural stone is used in the coating. Many different functions are included in the interior design of the building. There is a tea room for women on the front of the ground floor and a dining hall at the back. On the upper floor, there is a tea room for women on the front facade facing the street. The tea room on the upper floor has the gallery space. In the building, the areas specific to women are generally located as bright sections that receive light, while the sections for men are located as dark sections that do not receive natural light (Kerr, 2014). One of the most famous features of the ground floor halls is that it has a vaulted ceiling and bay windows. The hall is designed with soft and light colors. Mainly white, dry rose and gray colors are preferred. Oak and gray colors are used for the paintings in the dining halls. Mackintosh's chairs, which have high backs and have an important place in the literature, were used in the halls. From the interior design, to the furniture, to the worker's clothing and cutlery, it has been thought out and designed in detail. Söğüt, which gave its name to the tea rooms, was frequently used in the design (Kerr, 2014).

It is aimed to attract tourists to visit Glasgow so they can experience Mackintosh's work first hand (URL-10). Mrs. Cranston was the owner of the first tea room in central Glasgow. Mackintosh worked with George Walton during the early years of his career. He made many designs on Ingram Street in 1900. Willow, one of the most important tea room projects, designed the tea rooms in 1902-1904. Using willow at every stage of his design, the artist has carried out a holistic work in his project by designing the interior space as well as the facade

design. He continued his work by designing the Chinese Room on Ingram Street in 1911. Mrs. Cranston handed over the tea room when her husband died. The hall, which has an important place for Glasgow, has been reopened today. The hall, which was re-opened with a new room opened in Buchanan Street in 1997, is of great importance for the people of Glasgow (URL-11).

When the historical development of the building is examined, Buildings 215-217 on Sauchiehall Street had a plain façade made of cut stone before the renovations were made in 1903. To the left of the entrance door of the building, there was a door that allowed access to the common internal stairs at the back. Mrs. Cranston wanted to take both structures and create a larger space. Mackintosh divided the front into two. The first floor and the ground floor are separated by a wire mesh. He designed the building completely from the beginning. Large glass strips in the structure are supported by rolled concrete filling. Rolled steel supports are applied in beams. The ground floor is retracted from the sidewalk level to the background. The entrance door is metal framed and is designed adjacent to leaded glass. Glass is placed above the doors and windows. Top glasses are metal wrought iron application.

The project has become new with the extension of the first-floor beams in the original project. It is designed to correspond to the slope of the facade window. The windows are made of leaded glass and a metal frame. There is a wrought iron workplace sign representing the willow and the swallow on both sides of the front.

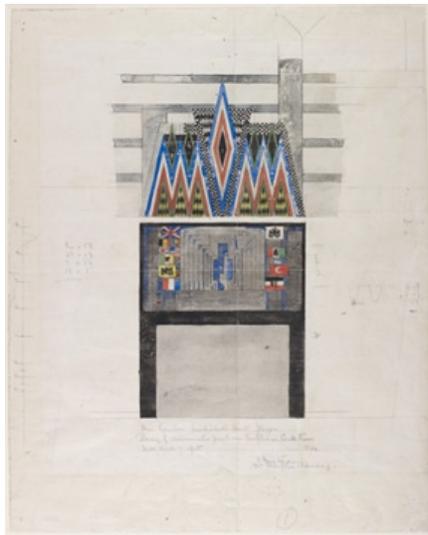
The upstairs windows have been preserved in their original form by Mackintosh. It has been intervened to strengthen the windows on the third floor, whose initial form is quite thin. Lintel levels have been pulled down. Changes in window dimensions; By emphasizing the windows in the lower floors, it gives the facade a strong appearance. For Mackintosh, the architectural place of windows is also important. In a publication he made in 1892, he emphasized the importance of window openings. All glasses in the structure are lead glass and have small panels. The windows on the second floor consist of two parts. While the upper sections have deep moldings, the lower sections form an arc flush with the façade. While the windows on the third floor adhere to traditional forms; The windows on the right are aligned with the façade, while the windows on the left are deep.

White plaster was applied to the facade without any application. Frames were made of tiles on the outer edges of the ground floor and upper. Lintels

applied to the second-floor windows caused the windows to be emphasized. Interior designs of the building took place in 1903. Service areas have been expanded up to the building number 211. Changes were made in 1906. In 1917, Dug Out was added to the basement as a new tea room. Restoration works were started in 1979-80 based on original pieces. When it comes to these years, the original pieces that remained in the building; the gallery cavity, lead glazing and wall panels.

When Mackintosh opened the project in 1903, there are three different but connected areas on the ground floor. It used structural restraints and decorative elements to separate the areas. The front room, where the ceiling height is left in its original form, is richly designed in terms of natural lighting with wide glass openings. There is a domed glass ceiling in the entrance hall on the ground floor. Colored glass panels and wooden panels were used as the limiters. On the wall of the anterior room is a fireplace designed by Mackintosh. In the corridor running towards the back of the building, the designer created a “Back Room, Hall” and a “Gallery” on the upper floor. The Back Room for men is designed in dark tones. It is connected to the front room with a wide circulation area. The gallery provided natural light up to the ground floor thanks to the partially glazed roof. The gallery is designed on six rolled steel beams. Transition between spaces is provided in the building without interruption. Wooden beams strengthen the aesthetic perception and strengthen the floor from the lower floor. Wooden balustrades were carved in shapes made of willow leaves. Around the balustrades are columns tapering from round to square, which can be seen on the glass ceiling. The floor height of the gallery floor is 90 cm lower than the ceiling height of the anterior room. The designer has designed a wrought iron railing in this area. While security is ensured thanks to wrought iron, the open vision is protected since there are no cuts in the image. The main stairs, which are made of wood on the original stone surface, are decorated with glass spheres and completed with wrought iron railing designs. The materials and designs used have been named the luxuries of Mrs. Cranston’s Willow tea rooms. The women’s room has its own wet areas along the corridor. The billiard area and smoking rooms are designed on the second floor. Smoking rooms and toilets are located towards the back of the building. For the pool hall, Mackintosh designed the pool table and wooden wall panels suitable for the created space. The third floor was used as a storage area while preserving its original structure. Initially, the doors on the second and third floors, providing access to the adjacent

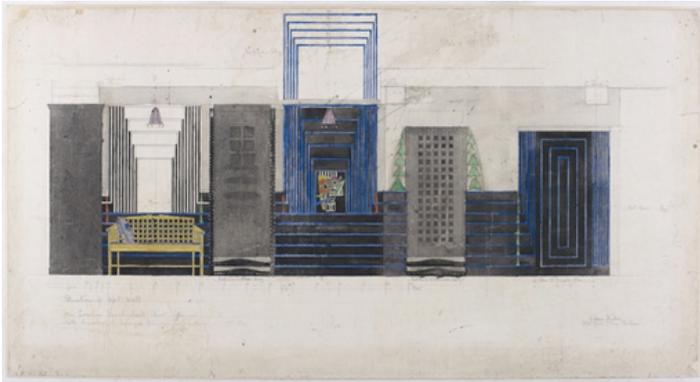
building numbered 211 via stairs, were closed. There are kitchen and staff toilets in the basement of building number 217. Ventilation ducts are extended from the basement walls to the roof level. Architect James Carruthers presented many projects in December 1916 to expand the structure. Recreation rooms and an entrance hall have been built in the basement of the annex building no. 219. In the Front Room, there is a staircase to reach other rooms. Combining the three interior facades of the rooms in this way constitutes one of the designs exclusive to Mackintosh in those years (February, 1917). In the drawings of the architect Carruthers, the large basement room of the building numbered 219 was transformed into a tea room by placing a fireplace on the west wall. A service area was opened on the east wall and connected to the kitchen.



**Figure 8:** W. Wall Fireplace

In the middle of the building, between the tea rooms and the waiting room, a reception area has been created, which can also be accessed by stairs from the Front Room of the building numbered 217. A wider area has been created by canceling the walls leading to the Tea Rooms. Storage areas and wet areas are redesigned to create a more spacious space. Wet areas for women and men were expanded to the basement. The connection between the basement and the kitchen was established in 217 by a door in the E. wall. Additionally, in the drawings, cabin doors were selected. The structure from Daly & Co. He rented. Buildings 211 and 217 are reinforced from the basement floor with columns covered with cast iron. The kitchen area has been removed in the building. The

gates and entrances in the basement of the building numbered 219 were closed. In the east wall, the connection with the ground floor is provided by a door.



**Figure 9:** E. Wall Connection Gate, The height of the stairs and the entrance west wall, 1917 (Url-26)

Fifty years after Daly bought the Willow Tea Rooms, he moved it to the newly built Sauchiehall Center on Sauchiehall Street. Building 217 and surrounding structures Arrowcroft Ltd. It was purchased by. In the subsequent planning, decisions were made to restore the building numbered 217. Then the restoration work had begun. According to the description of the project architect, the first stage of the project is to restore the load-bearing walls of the building numbered 211 to their original state. Then, building number 217 will be made independent by removing steel columns from the stairs on the ground floor. Although the ground floor was changed considerably, the repairs were carried out comfortably. On the facade, the massive rolled steel and concrete beam carrying the upper floors and the side connections for the main window were fixed in place. In 1904, Willow tea rooms were restored in accordance with the original, as a result of studies made based on photographs. Daly's made many changes in the building. He made a standard ceiling by removing the natural light cages in the gallery section. However, conical columns and wooden covered beams were removed. In 1960, columns were placed in place of the wooden beams on the ground floor. Although the restoration of the changes made in the building in 1979 came to the agenda, it did not happen. Columns, lattice ceilings and timber covered beams were reinstated in the 1980s. The smaller width of the gallery windows on the south wall were brought to 1903 proportions in the 1980s.

During the restoration of the building, difficulties were encountered in finding suitable materials for the building and in finding expert restorers. The

measures taken in the fire regulations in the buildings in 1970 restricted the interventions and made unwanted situations compulsory. The architects involved in the project focused on the protection of the gallery space and decorative elements. Despite the objection to the Ministry, the staircase leading to the gallery was closed to make fire-resistant doors and windows. A new staircase was built on the west wall to access the gallery. Restoration work started on the first floor of the tea rooms in 1980. The pointed columns are all painted white, with wooden balustrades in some mauve. Copies of the plaques and handmade metalwork in the Salon de Luxe were made. This work, which is made in order not to destroy the decorative elements that give the soul of the space, is of great importance for both the designer and the owner of the space.

The Women's Tea Room and Salon De Luxe were reactivated by Anne Mulhern in November 1983. In the same year, a separate shop area was created by placing a partition wall on the ground floor and it was rented by the jeweler M. Henderson. In 2014, this additional wall was removed to reveal the fireplace in the back room. In 1996, the Gallery section was re-opened as a Tea Room. When the tenants who used the building ceased to use the building, the restoration work started on the building taken over by Willow tea rooms, and it was reactivated with its original function and supporting units.

### 5.1 Willow Tea Room Items

				
Name	Tea Hall Small Chair (4 pieces were produced)	Argyle Chair		Front Room Chair
Place of Origin	Isle of Man	Glasgow		
Date	1916(built)	1897-1900 (designed)	1903	1903

Designer	C.R. Mackintosh	C.R. Mackintosh	C.R. Mackintosh	C.R. Mackintosh
Material	With Cane Seat, Painted Wood		Silver painted wood; recoated as believed to be the original color	Medium ebonized oak.
Dimensions			40 1/2 x 21 1/4 x 17 3/4 inch	104,6 × 46,3 × 42,0 cm
Remarks	A	B	C	D
<p>A: 2 of the chairs are in the Victoria and Albert Museum, the other 2 are in the Northampton Museum Collection.</p> <p>B: High Back Chair. It is specially designed in plan and section. It has a rectangular base and then curved back legs that become circular.</p> <p>C: Chair Designed for Room De Luxe and the ladies' tea room on the upper floor. (URL-14).</p> <p>D: 1970 Part International Decorative Arts Credit Limit National Gallery of Victoria, Melbourne, Purchased (URL-15).</p>				

### 5.1.1 British Museum Works

								
Name	Candlestick	Candlestick	Dessert Spoon	Jelly Spoon	Meat fork	Soup spoon	Fish Knife	Pudding spoon
Place of Origin	England		Glasgow	Glasgow	Glasgow	Glasgow	Glasgow	Glasgow

Remarks	Dimensions	Material	Designer	Date
A	Base Diameter: 15cm Height: 40.20 cm	Plastic	C.R. Mackintosh	1917 (approx)
B			C.R. Mackintosh	
C	Length: 18.30 cm	Silver alloy silver	C.R. Mackintosh	1905 (designed)
D	Length: 15.30 cm		C.R. Mackintosh	1905 (approx)
E	Length: 25.80 cm	Material	C.R. Mackintosh	1902
F	Length: 25.80 cm	Plastic	C.R. Mackintosh	1902
G	Length: 20.80 cm		C.R. Mackintosh	1905 (Approx)
H	Length: 23.20 cm	Silver alloy silver	C.R. Mackintosh	1902

A: Produced on a lathe. British Museum (URL-16)

B: Tapering candlestick; ebonized wood and handmade silver sconce; four shafts rise from a low pyramidal base and are joined by a silver ring on top of which the sconce rests; straight section shafts tapers inwards and the base is inlaid with mother-of-pearl squares; The sconce has a small bowl with a wide mouth and a small hole in the base. British Museum (URL-17).

C: Electroplated nickel silver; trifold from start to finish. British Museum (URL-18).

D: Electroplated nickel silver; clover end to end. Technique; Electroplated British Museum (URL-19).

E: Meat fork; silver, hand raised, flat long handle; tear-shaped perforated; four prongs; dashed lines decorate the back of the fork. Technical; hammered, perforated, cut. British Museum (URL-20).

F: Soup spoon; silver, hand raised, flat long handle; tear-shaped perforated; the handle continues on the back of the bowl to create a rectangular motif with incised parallel lines. Technical; hammered, punched, cut British Museum (URL-21).

G: Electroplated nickel silver; end-to-end trifold to handle; inverted mouse tail Technique; electroplated British Museum (URL-22).

H: Pudding spoon; silver, hand raised, flat long handle; tear-shaped perforated; the handle continues on the back of the bowl to create a rectangular motif with incised parallel lines. Technical; hammered, punched, cut British Museum (URL-23)

## 5.2 Willow Tea Rooms Under Restoration

Designed in 1903, Mackintosh's building has now been converted into a tea room, museum, learning center and event space. The original "Tea Rooms" and the famous Salon de Luxe have been restored. The restoration project of the Willow Tea Room is run by the Willow Tea Rooms Foundation, Doig & Smith, Simpson & Brown and Clark Contracts. As part of the restoration, the Tea Rooms and Salon De Luxe will be restored to their original state. The money transferred from the Heritage Lottery Fund (£ 3.579 million) was used for the restoration project of Charles Rennie Mackintosh's famous tea rooms located at 217 Sauchiehall Avenue in Glasgow. It was opened on June 7, 2018, to mark the 150th anniversary of Mackintosh's birth. While the project can be used interactively, it is sustained for future generations with its living spaces (conference hall, training rooms, stores, etc.).

The project was supported by the people of Glasgow, contributing to the restoration project with the income from the Lottery, and the project gained momentum. Work on the exterior of the building has been completed. With the acquisition of the Willow Tea rooms by Trust in 2015, Scottish Social Investment CEO Alastair Davis accelerated the restoration projects (URL-18).

At the RICS Awards 2019 organized by Catriona Sheerer, the project was nominated for many categories (URL-11). By the RIBA (Royal Institute of British Architects); Willow Tea Rooms Building has been selected as the best building of the last 175 years as a result of the survey conducted by professionals and the public (URL-24).



**Figure 10:** Willow Tea Rooms, 217 Sauchiehall St, Glasgow's Exterior Sauchiehall Street Looking E.1910–12(Url-25)



**Figure 11:** 217 Sauchiehall Street, 1905 (Url-25)    **Figure 12:** Back Room, 1905 (Url-25)



**Figure 13:** Front Room, 1905 (Url-25)    **Figure 14:** Ladies Room, 1905 (Url-25)



**Figure 15:** Stairs Leading to The Gallery



Figure 16: Stained Glass and Tea Room

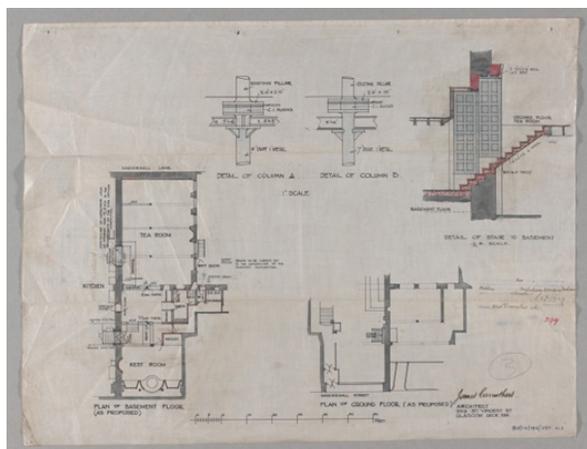


Figure 17: Basement Floor Plan (Url-26)

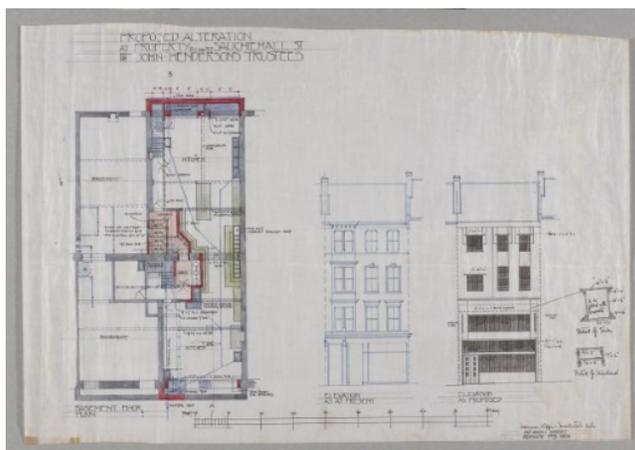
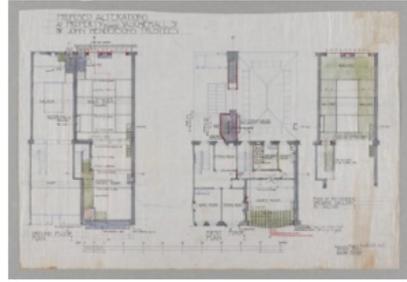
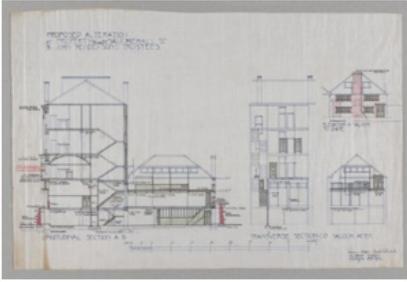
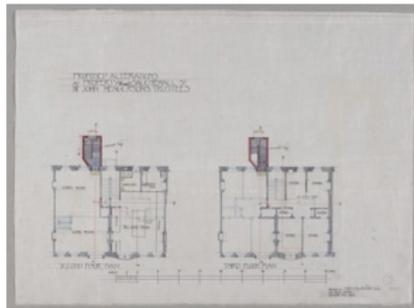
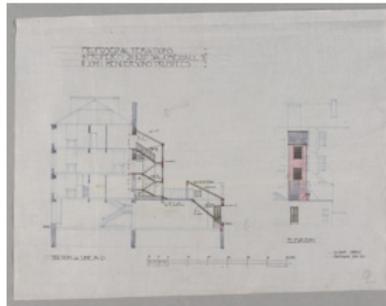


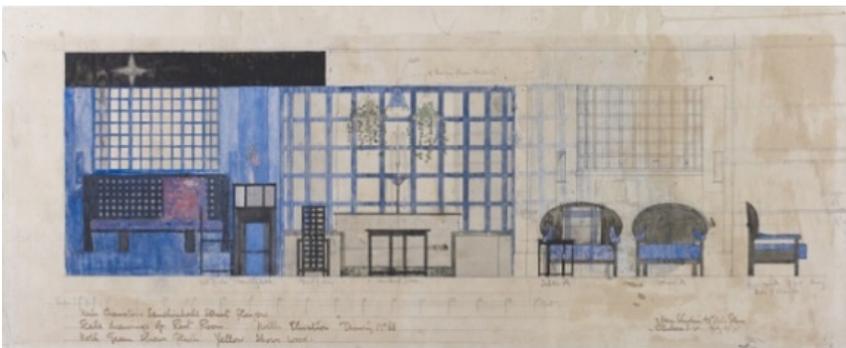
Figure 18: Ground and First Floor Plans (Url-26)



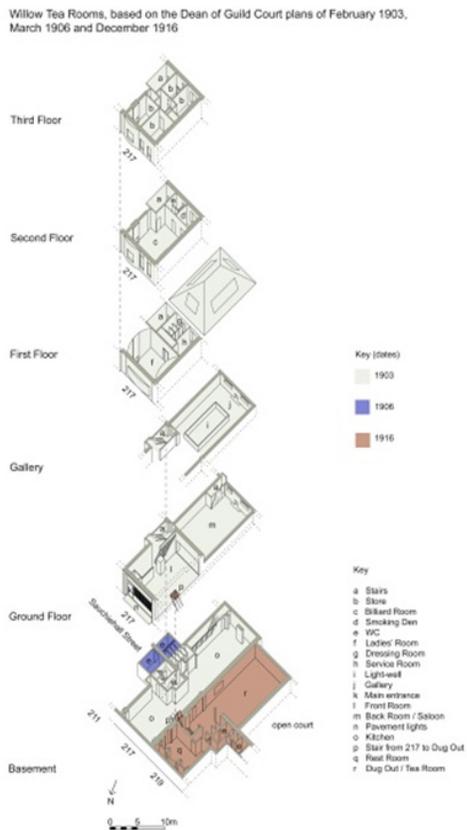
**Figure 19:** Second and Third Floor Plans (Url-26) **Figure 20:** South Facade (Url-26)



**Figure 21:** Episode AD (Url-26) **Figure 22:** Second Floor Plan



**Figure 23:** Recreation room height of the north wall, February 1917



**Figure 24:** Draw Axonometric Showing the Building Stages of Willow Tea Rooms (Url-26)



**Figure 25:** Basement Floor Plan

**Figure 26:** Ground Floor Plan



**Figure 27:** Second Floor Plan (Url-25)

**Figure 28:** Third Floor Plan (Url-25)



**Figure 29:** North Elevation (Url-25)

Willow Tea Rooms  
West Elevation - Proposed  
Scale 1:50



**Figure 30:** West Elevation (Url-25)

## 6. Conclusion

Charles Rennie Mackintosh, the representative of the Art Nouveau movement in the United Kingdom, interpreted the movement in his own style and created different designs. The artist has left an extraordinary impression in the history of furniture with his right-angled furniture designs. It is an important responsibility in terms of cultural heritage to examine and keep alive the works of people who have carried out important projects in history and have been pioneers in many fields. Since there are not enough sources about Mackintosh, it is an extremely important task to introduce this pioneer in his field to future generations. The most important characteristic of architect Mackintosh, as one of the leading designers of his period, is that he thinks and designs a building as a whole. In the buildings he designed; he conceived all the fine details from the exterior to the interior, and has expanded his working area according to the features of the projects he worked on. The designer has also done watercolor works and his work is now included in many important museums, especially the Victoria Albert Museum and the British Museum. The fact that he gives importance to the smallest detail not only in building design but also in space design is an important feature that distinguishes Mackintosh from other designers. Willow Tea rooms, which has an important place in the artist's career, is among the best examples of this utmost care. Tea Rooms is an extremely sophisticated project all the way from the exterior design to the cutlery design. Willow Tea Rooms is an example of social entrepreneurship in Glasgow as a reaction to alcohol consumption. The owner of the project freed Mackintosh completely in the project to highlight the value given to women in society. Emphasizing in the project the place of women, Mackintosh designed the spacious spaces that receive light especially for women. Tea Rooms is a holistic project designed by Mackintosh and his wife Margaret Mc Donald, all the way from decorative elements to the design of the menu and the employee clothes. Tea Rooms is still an important venue that Mackintosh's fans visit to experience the designer's works. The restoration projects carried out and the financial and moral support provided by the people of Glasgow have an important place in keeping the place alive until today. Only those cities that protect their cultural heritage and preserve the link between the past and the future can have greater importance in the world, and the Willow Tea Rooms restoration project is a good example of this. While the project was being carried out, the main purpose was to remain loyal to the original state of the building

and to ensure its sustainability. Some areas in the building had not survived to the present day or their originality was damaged by the users, but these areas were restored in accordance with the original designs by utilizing the old archive photos. Bringing the interior architectural features back to life and presenting it to visitors has great importance for the city of Glasgow. The survival of such an important building for the city has been possible thanks to the financial support provided by the local authorities and the people of Glasgow. The space is still actively used today and continues to function just as it did when it was first founded. Visitors spend social time in the tea rooms just like the first visitors did in the past. In this way, it is now possible to experience Mackintosh's design, which has an important place in the history of architecture. The preservation of the cultural heritage in this way, this effort to keep the past and the future alive together, will ensure that future generations will have the same experience.

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- URL18:[https://www.britishmuseum.org/collection/object/H\\_1980-0304-1](https://www.britishmuseum.org/collection/object/H_1980-0304-1)
- URL19:[https://www.britishmuseum.org/collection/object/H\\_1979-1201-1](https://www.britishmuseum.org/collection/object/H_1979-1201-1)
- URL20:[https://www.britishmuseum.org/collection/object/H\\_1980-0104-3](https://www.britishmuseum.org/collection/object/H_1980-0104-3)
- URL21:[https://www.britishmuseum.org/collection/object/H\\_1980-0104-2](https://www.britishmuseum.org/collection/object/H_1980-0104-2)
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## CHAPTER X

# RESPECT FOR THE ‘OLD’, CHANCE FOR THE ‘NEW’ GENERAL OVERVIEW OF INTERIOR AND FURNITURE DESIGN IN THE CONTEXT OF ART MOVEMENTS

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### **1. Introduction**

**S**patial design has always been present in every place where human beings exist, in terms of the characteristics, needs and usage purposes of people, companies, cities, public spaces; and it has been under the influence of functions, movements, fashion, laws and regulations, comfort and aesthetics and lifestyle.

Social order, politics, technology, social life and economy have guided, in the historical process, people’s lives and indirectly the places where they live; it has also affected architecture, interior architecture, furniture selection and taste.

The space, which is the life itself and exists for the maintenance of life, is an important social data reflecting every change and development of life. There are changes in architecture, interior architecture and furniture design with the effect of time and other factors, just like in other fields. These changes are sometimes experienced with the effect of opportunities, technical possibilities and economy; on the other hand, sometimes it just happens due to the change of taste and aesthetic understanding. It is of great importance to preserve the design

values which are the mirrors of their own eras, to give the right messages to the next generations, to be inspired by the past, to bring them together with the future, to prevent degeneration and / or deviations to cause degeneration of the design power and aesthetic understanding while using contemporary possibilities.

## 2. 'Respect for the 'Old' / Chance for the 'New'

The symbols of the past, the historical and design values, the messages they try to convey to the present, the value of the final product, the way how technical data are used, the way how sociological events and movements are reflected in architecture and interior architecture are of great importance even for today. It is inevitable to create the necessary and sufficient infrastructure for the correct evaluation of these data, their usage as a source of inspiration, their correct transmission, reflection in the literature, and also the emergence of contemporary products. These steps are sometimes distorted, interventions making design products cheaper by removing them from their own value are made, and the current procedure is unable to develop the order to prevent that. However, designers have the missions to receive the messages coming from the past correctly, to be able to reuse them to a certain extent and to create room for new designs according to current technological possibilities, lifestyle, functionality and taste level, and to reflect the present to the future by providing contemporary products.

It is important to respect what reached to the present from the past and to give a chance for the new which will convey today's message to the future correctly.

How is this possible?

By interpreting the historical process in design in a contemporary way,

By being inspired from the old and looking forward,

By building bridges between the old and new,

By remaining continuity,

By protecting and using,

By repairing and using,

By renewing, re-functionalizing,

By reinterpreting its style and form,

By using it as a source of inspiration,

By feeling the unique smell, color and taste of the old,

By reflecting technical opportunities, contemporary view and design power on the product.

The “old” to be respected comes up in many ways. It would be useful to have a general overview rather than making separate analyses for each. It is necessary to determine the most suitable behavior for each historical value within the framework of its own characteristics.

### **3. Art Movements and Their Effects on the Design Process**

During the history of design; technology, economy, social events, competition, prestige and instinct of gaining appreciation, state policies, fashion, aesthetic tastes and many other factors have had significant effects in every branch of art, architecture, interior architecture and furniture design. In general, movements which have had an impact on art, especially painting, as a result of social changes / transformations, have extended to architecture, spatial design and fashion. Although there have been many movements which have influenced art and design throughout history, focusing on the main ones will give an idea in terms of describing the old in design and witnessing their journey to the present.

#### **3.1 Gothic**

Gothic started in France in the 12th century and has had influence until the 16th century as a movement where the principles of spaciousness and illumination were adopted. Aesthetics is of great importance in gothic, which transmitted art and architecture to the Renaissance and created works until the emergence of the classical architecture (Yıldız, 2015). Mathematics met art and architecture with geometric patterns on stained glass which has been used in cathedrals (Bozyokuş et al., 2016). In the first examples of Gothic furniture, the thick wooden legs turned out of lathe stand out, however it is seen that these legs have become thinner later on. Massive tables were frequently used in wooden furniture of this period (Kurtoğlu, 1987). It is known that these massive elements were usually made of oak and walnut trees and the linden tree was also used widely. A bulky and heavy appearance stands out in the quite uncomfortable furniture of this period. Carvings, decoration and painting, gold leaf embroidery left their mark on the gothic tradition; furniture design and architecture interacted with each other such that they carried the traces of each other during this period (Boyla,

2012). While Gothic architecture and interiors had great influence during their era, they came to light again and were reinterpreted with the Neogothic architecture which developed in the 19th century. Architect Augustus Welby Pugin, the greatest actor of this revival (Gothic Revival), gained the title of great architectural revolutionary with his gothic designs (Patrick, 1981).



**Figure1:** New Wave Gothic Desk / Library Table (URL1)



**Figure2:** The Northeast Chapel of St. Giles Roman Catholic Church, Cheadle, Staffordshire, England, Designed by Pugin (URL2)



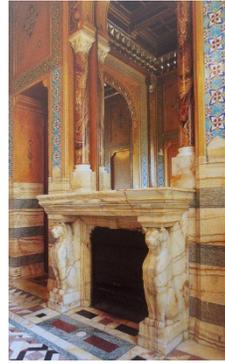
**Figure 3:** Pugin / Neo Gothic Carved Oak Armchair (URL3)

### 3.2 Orientalism

According to some sources, it started in 11th century or in the 13th century for some others, as a tendency which emerged as a result of the tendency of western explorers and researchers towards the mystery of the east in their travels and studies, in short, as a result of the curiosity of the west towards the east (Şenyurt, 2016). “East”, which is on the focus of orientalism, has been interpreted as the eastern observed when viewed from the “West” and as styles related to it. Orientalism, which generally reflects the effects of the east on painting by distorting them, has built cultural, spatial, and visual mythologies and stereotypes in architecture. The knowledge production process has also been affected by these mythologies (Demerdash, 2021). One of the most important turning points of Orientalism was the book “Orientalism” written in 1978 by Edward Said, Professor at Columbia University. This book expressing how the knowledge of the West on the East in every field follows a deceiving path and how it has become stable in spite of time, was accepted as a milestone that would lead to reinterpretation of the reflection of orientalism in all fields (Jhally, 2016).



**Figure 4:** Oriental Style Music Cabinet in Stained Beech (URL4)



**Figure 5:** Oriental Bathroom of the Hôtel de la Païva, 1856-1865, 25, Avenue des Champs-Élysées, Pierre Manguin (URL5)

### 3.3 *Early Renaissance / Renaissance*

The Renaissance having the meaning of rebirth and revival started in the early years of the 15th century with the expressions of freedom in Florence; and it influenced the whole of Europe until the 16th century with the themes of respect for individual rights and independence. Interior designs in Renaissance Europe showed a decorative and waxy appearance; and walnut trees were mainly used in wooden furniture. The decorations are made of gold, ivory and marble materials. The chair named “caquetoire”, which means “to chat” in French, drew great attention in France and built a reputation as the Renaissance chair. Forms and decorations having the appearance of palazzo were preferred in the sideboards and closets. The fact that furniture had architectural forms was interpreted as a reflection of the exterior to interior (Saruhan, 2016). Wooden copies of carved marble table legs used in Ancient Rome were also found in Italy of the Renaissance period. The use of wood at such a scale led to a great advance in wood carving. There were also increases in grotesque, caryatide and telamon production during this period. While this style was used especially in facade decorations in architecture, it also stands out on the legs of tables and coffee tables in interior spaces. “Grotesque” has become an unusual attraction element by comically or repulsively combining human-animal-flower figures in a deformed way, and it has expanded and proliferated in architectural and interior designs at that time. The “caryatides”, which appear as columns in the form of a woman sculpture, were used on facades in architecture and it has also been observed that it was reflected in furniture designs as a carrier. Facade designs

decorated by 'telamons' as columns having male figures were also reflected in the interior as furniture carrier legs; thereby maintaining the interaction between architecture and interior architecture. In the furniture of the Renaissance period, the upright positions of the backrests changed and gained a more reclined position. Light furniture also attracted attention especially in Italy and furniture that are named 'Savanarola' and 'Dante' are known as the first examples of this movement (Boyla, 2012). There was also a seek for finding ways to soften the sitting parts of expensive and uncomfortable chairs / armchairs and to increase comfort (Lupton, 2012).



**Figure 6:** Italian Renaissance Furniture / Curule Chair, 16th Century (URL6)



**Figure 7:** Italian Renaissance Style Walnut Cassapanca (URL7)

### 3.4 Baroque

Although the baroque movement, starting as a fashion in the 17th century, was identified with being extraordinary and with its absurd and irregular definitions, it had an influence on architecture with its deformed forms and it found place especially in palace architecture and religious buildings (Güven, 2014). Especially the walls and furniture in palaces and mansions were decorated and embellished with gold, silver, gemstones, woodwork in various colors and textures, ivory and mother-of-pearl materials, therefore they had an intense appearance. Carving was a method having special importance and that was widely used in baroque period decorations. The use of mirrors as well as the carvings in the interior stood out. The mirror was often used in palaces. Versailles Palace Mirrored Gallery draws attention as one of the most important examples in this sense. The mirrors in this hall were produced as a technological wonder of that period. Wall tables were placed under the mirrors, which started to be increasingly used in the 17th century, in order to eliminate

the risk of damage to be caused by any possible accident. These tables are generally narrow tables with a marble platform, and they started to be widely used with the name of “console” and spread all around the world. Thus, an understanding of integrity began to dominate in baroque spaces (Boyla, 2012). Enthusiasm in Baroque style, patterns imitating love, leaf and flower patterns inspired by nature, use of heraldry, carvings and inlays spread to wide areas (Corrigan, 2021).



**Figure 8:** Baroque Chair Made of boxwood, by Andrea Brustolon (URL8)



**Figure 9:** Baroque Coffee Table by Andrea Brustolon (URL9)

### 3.5 *Rococo*

This embellishment and ornament-based movement had influence between 1715 and 1774; and it drew the attention of the noble with its ornate spaces and decorations. During this period, which is also named as late baroque, the baroque movement shifted towards religious architecture as well as non-religious architecture; and significant examples of interior spaces in civil architecture were provided. Leaf and floral motifs are frequently used in ornaments. Sitting elements serving for special purposes, writing desks, small service tables, and light bedsteads were used in the spaces the walls and ceilings of which were decorated with these ornaments. That the furniture was light and small compared to its previous examples draws attention (Boyla, 2012). While the spirit of freedom is reflected with curves and curlicues; elegance, charm, sophistication and sincerity found life in spatial details (Saisselin, 1960). Rococo is in the tendency of being organic, and has charming, feminine delicacy and grace with asymmetrical, natural motifs (Brady, 1975).



**Figure 10:** Boule Rococo Single Drawer Glass Top Writing Table (URL10)



**Figure 11:** Vernis Martin Rococo Vitrine (URL11)

### 3.6 *Classicism*

During this process, which can be described as a period of simplification that arose as a reaction to the late baroque and rococo styles, Renaissance imitations were also found. While solid, linear, serious-looking architectural and spatial designs revealed themselves, inspirations from previous trends were frequently encountered in architecture, interior design and furniture (Hasol, 1975). Perfectionism prevailed during this period; also, adherence to the measure, concerns of harmony of the forms and artistic elements were highlighted (URLX, 2021). Classicism, which is also expressed as a revival and turning back to principles, has been defined as a reflection of a general desire. There is a sense of visual balance in the spaces and buildings having the clues of classicism, which is expressed as a symbol of noble simplicity and tranquility (Spadafora, 1992). Russian architect and educator Ivan Zholtovsky glorified the classical style by saying that “Classical is the highest wisdom; everything wise is classical” (Kazhar, 2019).



**Figure 12:** Robert Adam Classic Styles interiors (URL12)



**Figure 13:** Classic Furniture Robert Adam Armchair (URL13)

### 3.7 *Art Nouveau*

In the name of the movement, freedom in English and Italian, innovation in French, modernism in Spanish, and youth in German are emphasized. One of the important characteristics of the movement, which manifested itself predominantly between the late 1880s and 1920s, is the approval and use of both handicraft and industrial products. The characteristic of the furniture's being integrated with the space stands out. Decorative elements used on the surfaces of furniture can also be observed on walls and ceilings. Metal examples are also included in Art Nouveau, where the whole structure of the furniture consists of curved lines. Frank Lloyd Wright, who is an important representative of Art Nouveau, had the movement draw attention in America with his works, unlike all the movements that were generally influential in Europe. Wright, who designed furniture as well as his architectural designs, was known as the American representative of this movement by using inspirations of art Nouveau in a quite wide area (Boyla, 2012). Art Nouveau, regarded as a decorative style by some, brought a new perspective to the aesthetics of that period (Grady, 2015).



**Figure 14:** Diplomat's Art Nouveau Chair Graf Kessler by Henry van de Velde (URL14)



**Figure 15:** Victor Horta Rocking Art Nouveau Chair (URL15)

### 3.8 *Neoclassicism*

From the middle of the 18th century, signs of escape from the curved lines of the rococo style began to be observed; and elegance approaches began to be expressed with simpler forms. A period of competence started in furniture workmanship with the tendency of renewal. The integration of the spaces with the furniture, the contributions made to the spatial design with the panels, and

the chic and simplified spaces with elegant-looking thin legs were preferred in this movement. Neoclassicism, which had influence for a long period, is accepted as the last period of fine craftsmanship and industrialization started to reveal itself in this period (Boyla, 2012). The transition from Late Baroque and Rococo to Neoclassicism started as an immediate turning point and prevailed for many years (Fransen, 1990).



**Figure 16:** XVI. Louis Neo Classic Chair ( (URL16)



**Figure 17:** David Roentgen Neo Classic Writing Table URL17)

### 3.9 *Romanticism / Romance*

Romanticism affected all fields of art and spatial design as a movement which emerged in the 18th century, included emotions, enthusiasm and symbols, and which challenged the bourgeoisie starting from the art of painting (Gök, 2017). It continued to exist in the historical process along with other movements. Romanticism, in which emotions, individual freedom, imagination and nature prevail, was regarded as an enlightenment from ideas to spaces. Enlightenment is the outcome of the multiplied and integrated mediation. Enlightenment mediations contributed to the process by creating change (Siskin & Warner, 2011). During the romantic movement, interest shifted to ethnicities, exotic and mysterious; pleasures affected the literature by being transformed into fiction and poetry, and this was also reflected in the spaces. There were designs that challenged what is ordinary in architecture and furniture, which aimed to be magical and striking rather than functional; and ornate furniture and spaces decorated with floral motifs stood out (Kenny, 2004).



**Figure 18:** Romantic Style Interior Design (URL18)

### 3.10 Empire

The name of this process, which expresses the Napoleonic period and creates a difference in design / art, has its origin from the expression “empire”. Different identities emerged in the furniture, which basically contained classical elements. Second-class masters were located for the vacancies of the masters who was scared of imprisonment and migrated from France. This movement, which manifested itself between 1804-1834, is expressed as the final of the palace styles. Empire, which includes gothic and rococo effects is called as the style of a new century. It also witnessed the traces of industrialization and it was recorded as a period in which simple methods and more economical materials were used in workmanship instead of valuable ones (Boyla, 2012).



**Figure 19:** Delightful Thomas Hope Empire Armchair (URL19)



**Figure 20:** George Jacob Directoire Empire Sofa (URL20)

### 3.11 Modernism

Modernism which aimed function, simplicity, and designs appealing to a wider population, was built on the search for an egalitarian and peaceful society. The foundation of modernism was laid as a result of the publication of the magazine “De Stijl” in Rotterdam before the end of the First World War, the peaceful behavior of its intellectual followers and the unity formed by them. It gained strength by Adolf Loos’ expression “Ornament is a crime”. Innovative trials emerged in furniture in Bauhaus Germany; materials such as pipes, metal parts, tarpaulins were used. Mies Van der Rohe, Mart Stam, Marcel Breuer, Fauteuil Dossier Haut were one of the most important designers of that period (Boyla, 2012). Mies Van der Rohe’s project “Glass Skyscraper” created great reactions as a visionary project which was far beyond the application techniques of that period. The Schröder House, which was designed by architect and furniture designer Gerrit Rietveld in 1924, has also been one of the most important symbols of modernist architecture. Aesthetics and practicality are positioned together in modernism; and comfort and applicability at a maximum level stood out. Modernism, which was softened with natural materials, started to appear at the homes and daily lives of more people in the 1930s. There was an effort to make it attractive for consumers by softening it with wood, leather and fabrics (Malcolmson, 2006).



**Figure 21:** Mies Van der Rohe Barcelona Chair (URL21)



**Figure 22:** Le Corbusier LC1 Sling Chair (URL22)



**Figure 23:** Le Corbusier C4 Loung Chair (URL23)



**Figure 24:** Marcel Breuer Wassily Chair (URL24)

### 3.12 Art Deco

Art Deco, which has become contemporary with modernism, shows a warm attitude towards the artistic value judgments of the past while respecting the modern age. In this context, it does not involve a social depth towards the past or the future (Polatkan, Özer, 2006). In spite of that, it has been described as the golden age in decoration and interior design. Spatial designers, many of whom performed also as architects, applied the exemplary spaces that they designed to the finest detail and/or displayed their perspectives by renting spaces in department stores such as Lafayette and Printemps. So, they tried to attract customers in this way. This movement emerged from the exclusion of founded values of the new fashion Dada trend even before the war, cubists' separation of objects into geometric plans, the interest of futurists in machines and the future, childish point of view of the naive painters to the environment, the vivid colors of the fauvists, and even from the arty simplicity of the modernists (Boyla, 2012). People who side with the innovation and originality such as movie artists, stylists, advertisers, young children of wealthy families who like to live the life fast, automobile racers showed interest for artdeco. The common tastes and impressive visuals in the stage decorations and international exhibitions mediated the spread of this understanding. During the years 1930-40, modernism and art deco came pretty close to each other. Cincinnatti Union Terminal as impressive designs and events in the art deco process where metal and glass can be identified as symbol materials; stage decorations designed by Leon Bakst for Ballets Russes, the decors of the ballet performed with the Scheherazade suite, Contemporary Industry Exhibition (De L'exposition Internationale des Arts Decoratifs et Industriels Modernes) stand out (Boyla, 2012). Exclusive furniture produced during this period draws attention with luxury design, rare and exotic materials and the places where they were integrated with impressive decorations; and they were topped with high quality workmanship (Binding, 2004).



**Figure 25:** Maurice Dufrene Early Art Deco Armchair (URL25)



**Figure 26:** Maurice Dufrene Art Deco Table (URL26)

### 3.13 Expressionism

Expressionism which can be defined as expressing the emotions and inner world of the artist through color, line, plane and mass in the 20th century, is a movement that can also be expressed with selfism and expressiveness (Keskinalemdar, 2011). In this movement, which arose against positivism, naturalism and impressionism movements in Germany after political instability, the effect of emotions and the inner world stand out rather than the reflection of the realistic sides of nature (İstanbul Sanat Evi, 2015). It is fundamental for the artist to express an idea or an emotion independently and to produce his work with this ideology. As well as using the developing technology in spatial design and architecture, there has been a mutual interaction especially with painting with the idea of reviving design in fine arts, (Lum, 1999). Although there are opinions claiming that expression in architecture elevates ugliness, this expression has also been interpreted as clarity, freedom and transparency (Bletter, 1978).



**Figure 27:** Expressionist Slot-Together Kids Chair by Philip Leytens (URL27)



**Figure 28:** Life in Expressionism by Brani & Desi (URL28)

### 3.14 Pop Art

Graphic images, comics etc. that are produced with advertisement techniques started to be regarded as an element of decor in daily life spaces with the development of technology in the 1950s. The understanding of approaching life with surprises and jokes is reflected in the spaces; and the furniture sometimes had surprising and scandalous appearances with the themes of sarcasm, rebellion, humor and exaggeration. Colored plastic materials are mostly used in this type of furniture. British pop artist Allen Jones was transferred into furniture as a table and chair. Tables, chairs and coat hangers were made from naked female figures.

Gionatan de Pas, Donato D'urbino, Paolo Lomazzi, Piero Gatti, Cesare Paolini, Franco Teodoro, François-Xavier Lalanne stood out with their unusual furniture designs (Boyla, 2012). Pop Art, which is also described as a confrontation for designers, is largely reflected in architecture and interior designs as an important reflection of pop culture that became widespread in society (Brown, 1969).



**Figure 29:** Black Leather Poltronova Joe Baseball Glove Chair (URL29)



**Figure 30:** Paolo Lomazzi, Donato D'Urbino, Jonathan De Pas Blow Inflatable Armchair (URL30)

### *3.15 Opposing Design*

Opposing design movement, which is based on the idea of breaking taboos with an ironic devaluation (Duran, 2015), which adopted the creation of products for display instead of products for consumption (Oğrak, 2015), and which allows the production of furniture and spaces that will be influential manifests itself with plastic flags, clouds and colorful paintings attached on furniture. It also made a great impact with its effort to make the spaces and furniture ridiculous. There is a playful and anarchic attitude that opposes the good and elegant features of modernism, inspired by popular culture and corrupt taste (Bedir, 2015). Proust chair by Studio Alchimia (Alessandro Mendini) and Superleggera chairs by Posti are some of the important designs that represented the base for opposing design (Boyla, 2012).



**Figure 31:** George Nelson Opposing Design Marshmallow Sofa (URL31)

### 3.16 HighTech

High Tech is considered as a concept used as a style for architecture, as well as its lexical meaning. In this architectural style, there is an understanding that does not make reference to history but provides for progress (Öztürk, 2012). In high-tech design, which uses technology with an aesthetic approach and rejects the classical understanding; the use of metal materials, functionality (Bayram, 2013), technological image, flexible spatial solutions, use of glass and plastic materials, arrangements that make the carrier system and installation systems to be perceived from the outside, the design approach aiming energy conservation, automation and new performance criteria stand out (Eşsiz, Özgen, 1999).



**Figure 32:** Mario Botta  
Seconda High Tech  
Chair (URL32)



**Figure 33:** Hans Coray Landi  
High Tech Outdoor Chair  
(URL33)



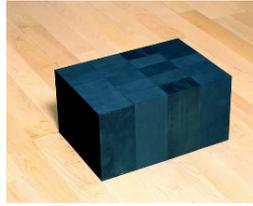
**Figure 34:**  
Castiglioni Brothers  
Mezzadro High Tech  
Stool (URL34)

### 3.17 Minimalism

Minimalism, which started with the feelings of simplicity and objectivity in the 1960's and which was reflected in the space in the form of elimination of the excessive and creation of living spaces by using simple, cheap and useful materials, emerged with abstract painting and sculpture. Its philosophical history dates back to Far Eastern philosophies; it has very deep meanings as a way of life and understanding. Minimalism, which can be associated with the concepts of serenity, tranquility, voluntary poverty, spiritual wealth, settling for less, and simplicity, is in the same line with the understanding of obtaining the most in an aesthetic and physical way with the least material in architecture. Mies Van der Rohe's expression "Less is more" supports minimalism (Nergiz, 2005). Minimalism, which can also be defined as the art of realizing an idea by reducing it to a minimum number of colors, values, forms, lines, textures and materials (Islakoğlu, 2005), was also mentioned as the quite simple representative of modernism.



**Figure 35:** Scott Burton  
Minimal Steel Furniture  
(URL35)



**Figure 36:** Carl Andre  
Minimal Furniture Wood  
Cube / Sculpture (URL36)



**Figure 37:** Donald  
Judd Minimal Chair  
(URL37)

### 3.18 Eclecticism

Eclecticism, which can be described as the approach formed by the preference of the styles of the previous trends when providing products of a movement, indicates the preference of furniture belonging to the previous period, especially in the furnishing of the spaces, and the design of the spaces within this framework. Eclecticism found a lot of favor not only at the spatial level, but also as a style used in the design of a furniture. In 19th century Europe, where Gothic furniture design was widespread, eclecticism was preferred by adding curved baroque armlets, rococo accessories or with similar inspirations to bulky gothic furniture (Boyla, 2012). Eclecticism was sometimes expressed as collage or animation; and interpreted as a style which is a magic combination of all times. It was sometimes highlighted as a vaccination, a mixture, and a synthetic condition (Carroll & Meeks, 1953).



**Figure 38:** The Eclecticism  
of the Victorian Era (URL38)



**Figure 39:** Eclectic Style in  
the Interior (URL39)



**Figure 40:** Venice  
Studio Black Task/  
Office Chair (URL40)

### 3.19 Postmodernism

Postmodernism, as an extraordinary current that condemns capitalism and bureaucratic socialism at the same time and gives the message that they establish an unnecessary monotony on the modern social world (Turner, 2002) expresses

complexity from the conflict of styles as a wind of change extending from the 1960s to the present (Pektaş, 2006). It reached a wide population as a protest movement which was built by joining to modernism, which adopted pluralism and evoked the idea of “both this and that” (Erinç, 1994) with the understanding of “anything happens” and with an eclectic perspective. The method of satire was frequently used in postmodernism, which is interpreted as “Pastish” from time to time; and it drew attention with the methods that can be expressed as strange and eccentric (Jameson, 1983).



**Figure 41:** Consumer's Rest  
Lounge Chair Designed by Frank  
Schreiner (URL41)



**Figure 42:** Eccentric Looking Post Modern  
Armchair by Sarang Sheth (URL42)

In addition to these, movements such as cubism (geometric expressionism), purism (purity, refinement), futurism, realism, surrealism, de still order, constructivism, deconstructivism, impressionism, post-impressionism, fauvism (predation), Dadaism, mannerism, abstract art, conceptual art, Art Povera (Poor Art), and feminist art played an important role in the transfer of the understanding of their period to the next generations by influencing literature, space and furniture in certain periods.

## 4. Conclusion

Movements which influenced societies in multiple ways express various interpretations and situations that reflect social, political, cultural, technological and economic situations in art, literature, lifestyle, architecture, interior design and furniture. They constitute a concrete evidence for art's, architecture's and furniture's being the mirror of the present in the historical process. The design emerges as an important document reflecting its period, when viewed from this perspective. When respect for the old is correctly built in the context of historical continuity, it forms the historical process itself by being integrated with the chance for the new.

Branding old, nostalgic designs, antiques, old values that have reached today, trends, old / new / timeless ones, technological products, original and innovative designs, interpretations of the future exist by interacting with each other with the roles of forming parts of the whole and making bridges from the past to the future.

The fact that current designs, information and concepts exist in the light of past experiences, inspiration, knowledge, experience, and concepts strengthens the effects of old buildings and furniture on today's design. This effect is significant in that it is not limited to the meaning of doing the same / similar and of inspiration, but it often denies this and expresses an accumulation in this field. This accumulation has an effect on the process from the past to the present and the future, sometimes with inspiration and sometimes by setting light to completely original designs. Using up-to-date knowledge and technology by being aware of the past, taking inspiration from past experiences, sometimes creating technical innovations, offering different opportunities for design, and sometimes making innovative approaches for the future require a concrete and multifaceted infrastructure. Healthy bonds established with the past and the ability to follow the current constitute the indispensable cornerstones of this infrastructure. It is important to create contemporary products in the light of the principles of 'respect for the old and chance for the new' in order to make a mark on the history of future-oriented designs.

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**URL42** <https://www.yankodesign.com/2020/10/16/this-eccentric-looking-armchair-interprets-furniture-as-a-postmodern-art-piece/>



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# CHAPTER XI

## READING THE ARCHITECTURE OF LE CORBUSIER IN HIS OWN HOUSES

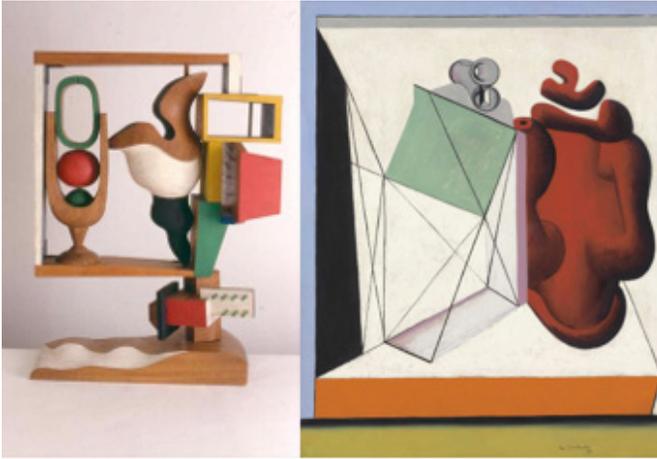
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### 1. Introduction

Charles Edouard Jeanneret (6 October 1887-27 August 1965), better known as Le Corbusier, was a Swiss architect who made his mark on architectural history in the twentieth century. The designer, who researched traditional Turkish houses and cities and developed the Modulor Ratio system, designed many residential, religious, and cultural buildings in Europe, India, and Russia. Le Corbusier, who contributed to the development of modern architecture by creating works in the International Style, often produced works of art influenced by Cubism and Expressionism, such as *Taureau*, *Nature morte*, *Totem*, *Femme*, and other works (Figure-1).



**Figure 1:** On the Left is Le Corbusier’s “Nature Morte” Work (1957) (*URL-1*, 2021). This Artwork is a Kinetic Sculpture. On the Right is Another Work Titled “Nature Morte” (1930) (*URL-2*, 2021). This Work is also Made as an Oil Painting.

This study begins with an overview of Le Corbusier’s personal and professional life, followed by a discussion of his architectural works and features. The second step is to analyzing the effect of Le Corbusier’s lifestyle and architectural elements on these designed and lived-in houses. As a result, the architect’s designs are evaluated by his personal and professional life.

## 2. Who Is Le Corbusier?

Charles Edouard Jeanneret, known as Le Corbusier, was born in Switzerland in 1887. Besides being an architect, he was also an urban planner, furniture designer, sculptor, artist, and author. Therefore, he was a versatile designer who adopted the “Holistic Design” approach with the effect of “Gesamtkunswerk”. The architect, who continued his education at the Art School, first encountered the “Arts and Crafts” movement in his personal life. He was later concerned with Cubism. In the years that followed, his Cubism experiences inspired Modernism (Yannis, 2012).

He started working with Auguste Perret, one of the founders of the reinforced concrete building system, and learned about the system’s complexity. To learn more about reinforced concrete, he contacted the “Deutsche Werkbund,” which was influential in the creation of the Bauhaus Academy (Francesco, 1997).

He went on a four-year observation trip in 1907 and studied the Mediterranean, the Balkans, and Turkish architecture. These trips are regarded

as one of the most important stages of his architectural life. He made painting works alongside the painter Amédée Ozenfant and wrote opinion articles with Ozenfant in the “L’Esprit Nouveau” magazine (Amédée, 2011).

He opened his architectural studio in 1922. He also designed furniture in this studio with Charlotte Perriand. He wrote the book “Towards a New Architecture” in 1923. This book, which emphasizes the beauty of mass production and machine houses, and the importance of function, is a manifesto.

Le Corbusier is a creative master who pioneered twentieth-century architecture and presented practical and innovative solutions to construction problems. To learn about him, it is necessary to understand all of his works, designs, writings, and life.

### 3. The Works and Architectural Identity of Le Corbusier

Despite the fact that he was influenced by the Arts and Crafts movement when he first started his career, Le Corbusier advocated for simplistic structures over traditional ornamentation and decoration. In his book titled “Towards a New Architecture,” Le Corbusier identified five basic principles for the new architecture:

1-*Structure rising above the pilots*: The structures are raised from the ground by reinforced concrete columns, creating space underneath the residential area for a garden or parking lot.

2-*Band windows*: Windows can be designed of nearly any size and layout due to the frame construction.

3-*Free-plan layout*: As the walls are no longer bearing (due to reinforced concrete frame), the interior space gets rid of them completely. As a result, interior planning can be organized much more efficiently.

4-*Free facade layout*: Carriers are indoors. Since there is no carrier on the facade, the desired facade look can be achieved.

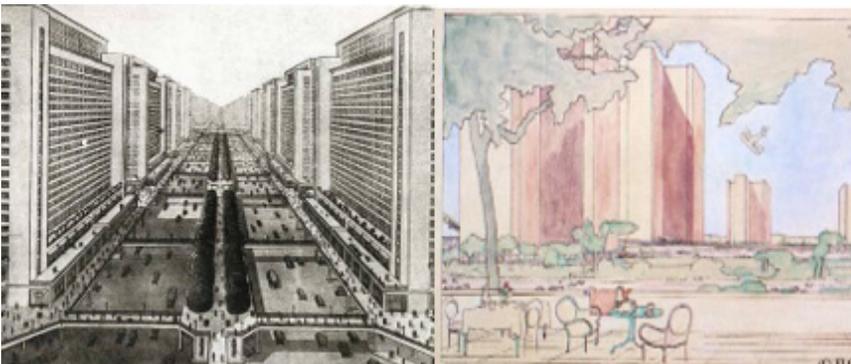
5-*Terrace roof*: Corbusier suggested arranging a flat roof terrace on top of it as a small garden or a place to relax, instead of the traditional pitched roof with an attic below.

Le Corbusier’s architecture was shaped within the art of “Orphism” (Samuel, 2007). Orphism reflects its essence from Ancient Greek philosophy to art. Orphism is characterized as an interpretation of Cubism that values color and color harmony. This art also advocates the necessity of geometry and proportion. Le Corbusier’s interest in Orphism’s art manifested itself in the

architecture of harmony, geometry, contrasts such as light and shadow, sun and water. Le Corbusier's introduction of logical structures, basic materials, and standardization is the reclusive and harmonious Orphism doctrine.

William Curtis's<sup>1</sup> critique of Le Corbusier's architecture is that he was negligent in completing details and used materials based on his early works (Samuel, 2007), (Curtis, 1986). On the contrary, Tim Benton's<sup>2</sup> comment is that Le Corbusier treated the specifics very skillfully when constructing and evaluating his works. "The furniture, the walls, all the windows and doors speak to the space consumers," Le Corbusier said. In this word, he meant that all of the components that make up a space should represent the lives of the people who use it. Such a design can only be achieved with great attention to detail (Samuel, 2007). One of Le Corbusier's greatest purposes was to show people how to live in places.

Standardization, on the other hand, is the basis of his designs. Housing is the spirit of standardization designs, especially designs for mass housing (Corbusier, *Towards A New Architecture*, 1986). *Ville Radieuse* (Radiant City), designed in 1924, was a significant project that emphasized the principles and standardization of the Modulor ratio scheme. Although it has not been implemented, it constitutes one of the most influential and controversial urban doctrines of European Modernism. This project represents a "future city" that is shiny, intertwined with green, and well-connected. Le Corbusier's aim in this project was to create a better life for the campus residents and the whole community. It is very progressive in its definition of order, symmetry, and standardization. The city was considered a living machine (Figure-2).

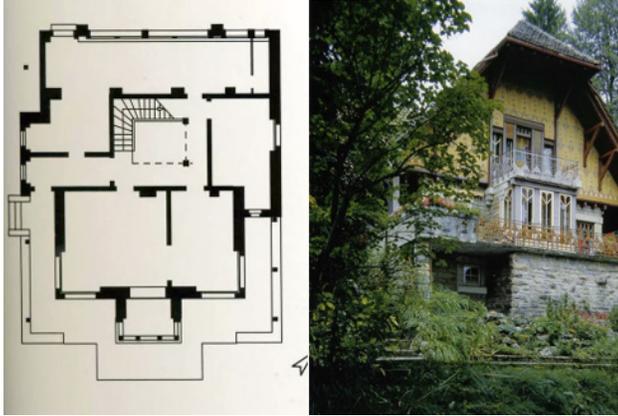


**Figure 2:** *Ville Radieuse* (Radiant City) (URL-3, 2021).

<sup>1</sup> William Curtis: He is an architectural historian who focuses on twentieth-century architecture in his works.

<sup>2</sup> Tim Benton: Art historian and author.

While Le Corbusier designed his first work, Villa Fallet (1905), a mountain house in Switzerland, he drew attention to his architecture's details (Figure-3). "This is a question, a significant issue in architectural education," he said, pointing to the need for architects to work with technical experts in the future (Samuel, 2007).



**Figure 3:** The Plan and View of Villa Fallet (URL-4, 2021).

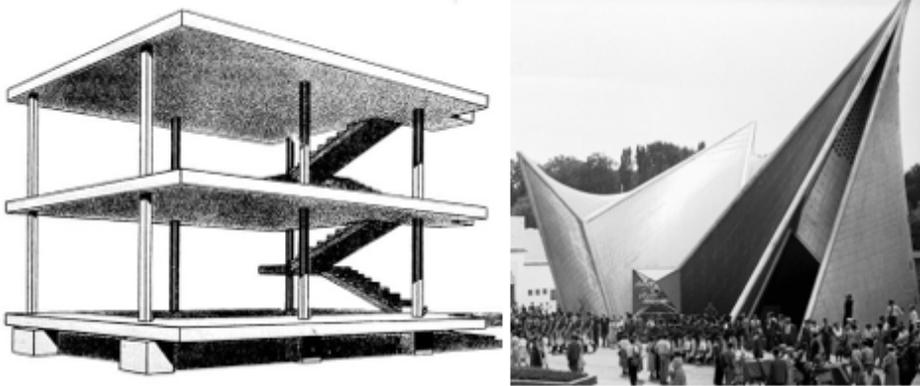
While concrete was used as an auxiliary material in his early works, it became the primary material in his later works. About exposed concrete, in particular, Le Corbusier said:

"Exposed concrete was born in the residences of the Unité d'Habitation (1947-1952). The word 'brutalism' has arisen following this work. " (Samuel, 2007). The architect developed a style that goes against the traditional residential texture with exposed concrete in his building called the Carpenter Centre for the Creative Arts (1962). This building, Le Corbusier's first project in America, is also a rare example of the use of glass bricks (Figure-4) (URL-14, 2021).



**Figure 4:** The Use of Exposed Concrete and Glass Bricks in the Carpenter Center for the Visual Arts Building (URL-5, 2021).

With its skeleton structure architecture, the Dom-ino House (1914-1917), built to meet the housing needs that would arise after World War I, allowed for an open-plan housing model. This building feature was consistent with the concepts of flexibility and pragmatism (utilitarianism) of modern architecture (Figure-5). It also included Corbusier's five principles outlined above. People would also plan their interiors according to their needs in this layout. The massive effect is evident in Chandigarh Parliament Building (1962) (Vincenzo, 2009) (The Dom-ino Effect, 2021).



**Figure 5:** The Dom-ino House ( *The Dom-ino Effect*, 2021), and The Philips Pavilion (*Vincenzo*, 2009).

While he is known as a specialist in the use of concrete materials, the architect's experience in using steel materials can be seen in Pavilion Suisse (1933). Le Corbusier described the steel structure as "a spider's metal web" in this work. The Philips Pavilion (1958), inspired by nomadic tents, is a hyperbolic parabola structure. This structure is not only with its geometric structure; it is also accepted as a progressive production using sound (Figure-5) (Corbusier, 2015).

The architecture of Le Corbusier is based on the dimensions of the human body. Therefore, it is very comfortable. Human ergonomics play a leading role in the design. The entrance ramp of the Maison des Jeunes building, the Ronchamp Chapel altar bar, the low and sloping parapet walls of the Maison du Brésel are important examples of harmony with the dimensions of the human body (Figure-6).



**Figure 6:** The Entrance Ramp of The Maison Des Jeunes Building, The Ronchamp Chapel Altar Bar, The Low and Sloping Parapet Walls of The Maison Du Brésel (*URL-6, 2021*), (*Samuel, 2007*), (*URL-7, 2021*).

According to Le Corbusier, the term furniture is not sufficient for the modern design concept. According to him, the new term should have been ‘equipment.’ Le Corbusier described his furniture in two categories: Portable (Meubles) and storage furniture. He collaborated with Charlotte Perriand<sup>3</sup> to design the majority of his portable furniture. Le Corbusier defined furniture as “an extension of the human body”. For example, the Pavilion Esprit Nouveau (1925) seating units were designed as an extension of the building. Functionality was at the forefront, rather than formalism. This style was most certainly inspired by the Turkish house sofa. (Figure-7).



**Figure 7.** The Seating Units in The Pavilion Esprit Nouveau (1925) Building were Designed as an Extension of the Building (*URL-8, 2021*).

<sup>3</sup> Charlotte Perriand, who lived between 1903 and 1999, was a French architect and artist.

Le Corbusier symbolically used color to emphasize architectural features in his architectural designs (Figure-8). The ratio is the harmony of the senses like a melody in his buildings. Le Corbusier defined architecture in his book as establishing a sensory relationship with materials. Architecture is, for him, a plastic form. The spirit of architecture is in order. Light and shadow, walls, and space are fundamental parts of the architecture. Mass production in architecture is based on analysis and experience (Corbusier, 1986). Order speaks in Le Corbusier's architecture. Le Corbusier expressly mentioned the following feature:

“Everything within the rules- that's my motto! Nothing outside the rules! If not, then I no longer have any reason for existing. There we have the key to the situation. A reason for existing: to play the game.” (Boseiger, 1970).

Gardiner (1985) describes Le Corbusier's architecture as follows: “His work looks like a flower. It has roots that extend deep into the soil. The food that comes out of them is transmitted up to the body. This is a form of light colors in total balance. “

Apart from the examples given in the subject, he had a variety of works such as the Yacht Club (1965, Chandigarh), the Zurich Exhibition Pavilion (1967) and the Central Hospital in Venice (1965), the Swiss Student Dormitory (France/Paris), the National Museum of Western Arts (Japan/Tokyo), such as the Heidi Weber Museum (1967) (Figure-8).



**Figure 8:** The Heidi Weber Museum (Centre Le Corbusier 1967), Zurich, Switzerland (*Ruzzin, 2012*).

## 4. Housing Architecture of Le Corbusier

This chapter should start with a quote from Le Corbusier on housing design:

“A woman, a man, and a few children, elements of the harmony of the earth. But, today, the mother of the family is crushed by housework.” (Boesiger, 1995).

In this argument, Le Corbusier proposed making provisions to promote the role of women in house design. The houses designed by Le Corbusier are free from labor-saving kitchens, surfaces made of free-form curves, large-scale cornices, baseboards, moldings, and dust-holding surfaces. Le Corbusier said his famous quote while describing the housing architecture: “A house is a machine for living in”. (Gardiner, 1985). In his book “Towards an Architecture”, he wrote a “Housing guide”, particularly for housewives. In this guide, he mentioned how a modern house and modern people using this house should be and how to use this house. In this guide, he specified requirement about how to hang paintings on the walls, what kind of dinnerware to use on tables, what music to listen to, and what furniture to buy, and he advised them to live their lives accordingly (Corbusier, Towards A New Architecture, 1986).

In the 20th century, Corbusier found the roots of new architecture in the concept of shelter. The shelter is humanity’s most necessary need and the first material they designed (Corbusier, Towards A New Architecture, 1986). For this purpose, a modern home on dogmatic values from the past must declare its independence. For Le Corbusier, the greatest responsibility resides in architecture (Dilaveroğlu, 2020).

As in his other works, he also used the cube form to design housing. Cube aesthetics continued in this design, which was part of an open-plan design in the Dom-ino building, as previously mentioned. Le Corbusier created the housing spaces by emptying the inside of the cube. The Villa Stein in Garches (1926-1928) also has a shape consisting of cubes and a rectangular shape of a sitting balcony (Figure-9) (Wood, 2021).



**Figure 9:** The Villa Stein in Garches (1926-1928) also has a Shape Consisting of a Combination of Cubes and a Rectangular Shape of a Sitting Balcony (Wood, 2021).

The white walls of the Savoy Villa (1929), considered to be one of Le Corbusier's most important works, tend to shield itself from the wind. The building was designed in line with the Pilotis system, one of Le Corbusier architecture's five principles. Horizontal windows are seamless. The view of the landscape is continuous. The Savoye Villa shows an object, the Parthenon, and its frame consisting of columns in an association level (Figure-10). In Gardiner's (1985) words, it reflects the spirit of 17th century Rome. The triangular ramp and concrete table are the attractive features of the house. It has repeated the surrounding space in its interior. Pilotis effect continues in interior items (Figure-11) (Özcan & Ürük, 2019). The building is also regarded as one of the important examples of the "Living Machine" idea, of which Le Corbusier was the mastermind. Other housing designs represent the independence that emerges in Savoye Villa. This emancipation also manifests itself in his paintings and drawings (Figure-10).



**Figure 10:** The Villa Savoye and the Living Room View (URL-9, 2020).



**Figure 11:** The Villa Savoye-Kitchen (URL-10, 2013).

In the 1920s, he began building houses in Paris and its environs by using the cube form as a starting point. The Cook House, which he designed in 1926, was a significant example of that time's houses. Once again, he implemented a square plan in this building. The non-bearing walls are, however, more pronounced here than in the Villa of La Roche. The configuration of the interiors in the plan is extraordinary. Although the bedrooms are on the first level, the dining area is on the upper levels. Like the Savoy Villa, there is a flat roof terrace. The cube form is dominant in the Stein villa (1927). Yet, he paid more attention to the inside (Figure-9).



**Figure 12:** General View and Interior of the Cook House (*URL-11, 2021*).

Again, Le Corbusier drew a standard house project called “Citrohan” in 1922. This name, which Le Corbusier chose to evoke the Citroën car brand name, stemmed from the idea that houses were built in the factory like cars, then taken away and built. The idea that a house is a living machine, along with the economic conditions of the postwar period, ensured that it was a low-cost, economical machine that could meet more realistic needs. Le Corbusier never discarded the idea of the pile of foundations needed for this, and in 1956, he extended it to housing units in Marseilles (Ragon, 2010).



**Figure 13:** General View and Interior of the Citrohan House (*URL-12, 2021*).

Marseille dwellings are the first precursors of sun breakers (*brise soleil*). The building has the most flexible structure ever constructed by the architect in compliance with the climate. *Unite d’Habitation* is a mass housing design principle developed in collaboration with architect and painter Nadir Afonso. Two-story housing units in a linear layout can receive sunlight from two directions, and services such as shopping, dining, and cleaning are provided within the building. Some apartments are arranged on a shelf like bottles and appliance units to be used together, such as a kindergarten, theatre, shopping center, and gym, inside this 18-story building that can accommodate 1,800 people. This structure was declared a World Heritage Site by UNESCO in 2016. The proportions of building, which increase to the feet to achieve continuous land use, were arranged using Le Corbusier’s Modulor ratio system. This ratio system uses the height of a 1.83 m tall person (his waist height 1.13 meters above the ground, 2.26 meters when he raised his hand) as a unit of scale. Le Corbusier wanted the breezes to penetrate and cool the rooms, so he designed the open spaces (Figure-14) (Şentürk, 2011). In other works, Le Corbusier describes the Shodhan House’s architecture in Ahmedabad as: “Brick, rough concrete, whitewash, and intense colors.” (Corbusier, 1986).



**Figure 14:** The Interior of the *Unite d’Habitation* (*URL-13, 2021*).

## 5. Le Corbusier’s Homes

The first house investigated in this chapter is the hut near Monte-Carlo (1951). Le Corbusier died in this hut called “Cabanon.” This house of Le Corbusier and some other works were inscribed as UNESCO World Heritage Sites in July 2016 (The Architectural Work of Le Corbusier, an Outstanding Contribution to the Modern Movement, 2021). The Cabanon is an archetypal minimum cell based on ergonomic and functionalist approaches. The Cabanon presents a standard,

minimum unit for living. The modulator, a harmonic system based on a human scale, was used for the exterior spaces of the Complexe du Capitole, which reflect the silhouette of a man with the raised arm (The Architectural Work of Le Corbusier Nomination File For The Inscription, 2015).

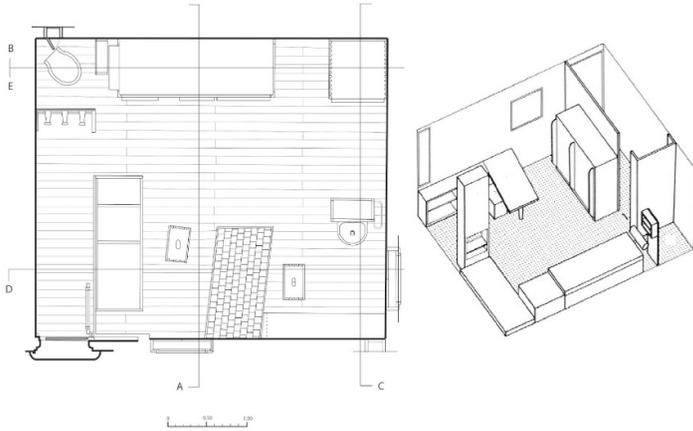
Cabanon is a diminutive of the French word for ‘cabin’ but carries several additional meanings. One is mad-house, another is bucolic-primitivism: Scattered all over the south of France are little structures used by shepherds. These cabanons are a reminder that the very origins of architecture lay in the design of the primitive hut (URL-16, 2021).

This hut, in his opinion, was representative of the holiday home concept and was built to Modulor measurements. The living room and sleeping area (4 m long and 2 m wide) were planned as two squares. The working area is 2m<sup>2</sup>. The total area is 14 m<sup>2</sup>. The basic modulator unit is 2.26m long, or the height of a six-foot man with one arm lifted over his head. The sides of the cabin are 3.66m, twice the length of a six-foot man. The interior is divided into living, sleeping and washing zones on the same system.

Le Corbusier said with regard to the hut, that was all he needed (Gardiner, 1985). There is a picture on the left when entering the interior. It was built with a completely prefabricated system. The walls were made of pine plywood. Square ceiling panels of different colors and heights allow for storage above. The majority of the furniture, including the bed, were fixed equipment. There is a desk at the focal point of the space. The window shutters are partially mirrored to bring the ravishing landscape inside, as well as to make it a “repository of sun and light”, as Le Corbusier said every home should be (Figure-15, 16,17,18,19).



**Figure 15:** General View of the Cottage (URL-14, 2021).



**Figure 16:** The Plan of the Cottage (*URL-15, 2014*).



**Figure 17:** The Table is the Focal Point in the Interior of the Cottage (*URL-16, 2021*).



**Figure 18:** The Window Shutters Work as an Oil Painting and Mirror in the Interior (*URL-14, 2021*) (*URL-17, 2016*).



**Figure 19:** The Bed Corner of the Cottage (*URL-14, 2021*).

Built-in wooden furniture was designed by him, along with a pair of stools made from whisky crates. There is a small sink, a toilet behind a curtain. The architect would replace his Paris loft with this place in the summer, and his suits and famous bow tie with shorts and old espadrilles. While staying here, he designed possibly his most famous building, Notre Dame du Haut's chapel in Ronchamp (*URL-16, 2021*). There are no ornamental elements or unnecessary accessories in the place. Everything is functional. Le Corbusier already created a shelter to meet all a person's needs in daily life. He planned a sustainable space years before the sustainability approach appeared.

Le Corbusier's residence, where he lived between 1934-1965, was a studio apartment in Paris. The building, named Immeuble Molitor, where he lived with his wife Yvonne Gallis, was designed by Le Corbusier and his cousin, Architect Pierre Jeanneret. An open-plan layout dominates the house designed with a modernist approach. Studio apartment has a front and a back facade. On one side, there is a residence section, and on the other, a workshop section. There is the workspace on the left before entering the apartment and the residential section on the right. When you step into the residence area through a wide vertical axis door, the living room section meets guests first (*Figure-21*). The bedroom and bathroom were designed as open spaces. Only toilet is an indoor space. A bidet is placed across the bed in the bedroom. The perception of the bedroom has changed again with Modernism in this residence. The bedroom

in Le Corbusier's own home contained extraordinary features contrary to the architectural style and lifestyle of the period (Figure-20) (Samuel, 2007).



**Figure 20:** Le Corbusier by His Bed in His Apartment (1934) in Front of a Painting by André Bauchant (*Samuel, 2007*).

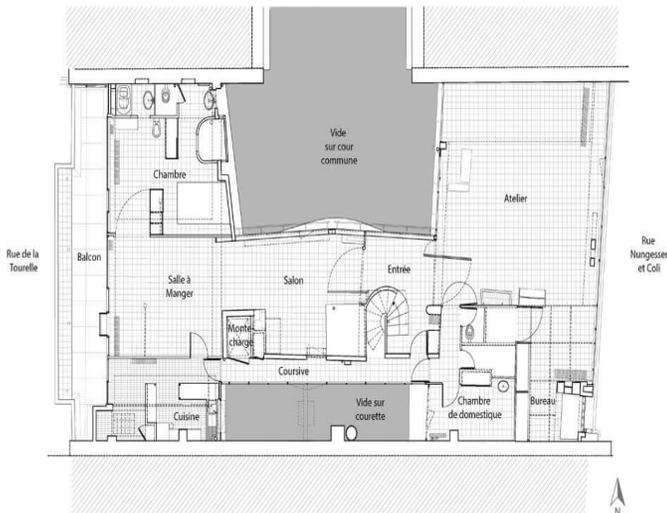
When people opened the door, people were immediately compared to a very high bed. The height of the bed adjusted to the height of the window. Le Corbusier made such a design to see the view from where he was lying in bed with his wife. It is not possible to talk about a full bedroom. Sleeping, sitting, toilet, bathroom, and working actions were all solved together in a single space (Demirarslan, 2020). In the bathroom and toilet areas, the plumbing was not hidden in the wall or floor. Plumbing pipes are visible.

The kitchen is a highly technical space and is connected to the dining room. The composition of yellow, red, and blue glasses on the window draws attention to the dining hall. The four primary colors, used together in the glass composition, are featured in other apartment areas in isolation. The combination of these colors within the window box feels metaphorically appropriate given its proximity to the dining table, a place of gathering and community (URL-20, 2021).

There are a workshop area and office space in the workshop section. There is also a toilet and maid's room. The workshop draws attention with its stone wall texture (Figure-22). Artists' studios have traditionally faced north because the alignment provides an indirect and continuous sunshine quality, free of dark shadows and glare. To compensate for the building's East-West orientation, Le Corbusier designed a white vaulted ceiling and used textured, diffused glass in all the windows. These elements both resulted in a reduction of glare and softer

shadows, thus creating a more desirable lighting condition for his atelier. A rear corridor also connects the residence and workshop.

There is no ornamental element in the house. Rugs were used where necessary on the ceramic covered floor. Storage units were fixed or made in the form of niches in the wall. The colors used throughout the house are primary colors such as red, yellow, and blue. The use of color is very balanced, too. The use of glass bricks is seen in the kitchen and bathroom. Natural light prevails throughout the house. It has been on the UNESCO World Heritage Site list since 2017. The old period photographs of the house, which was later restored and converted into a museum, are given in this study and new photographs. It is also easier to consider the house's condition in the time in which Le Corbusier lived (Figure-23,24,25,26,27).



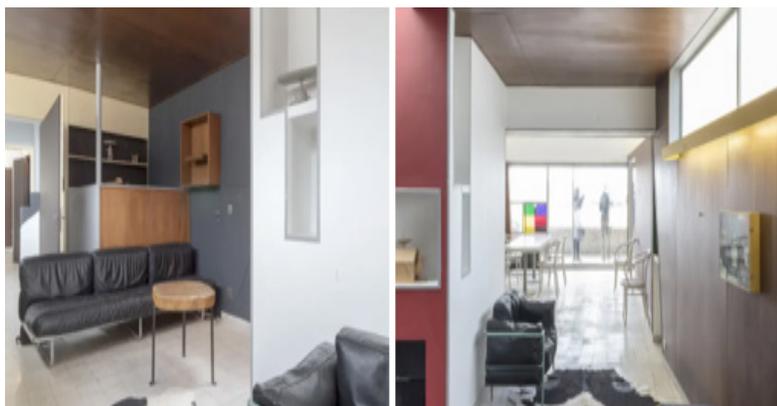
**Figure 21:** The Plan of the Studio Apartment (*URL-18, 2021*).



**Figure 22:** Le Corbusier Photographed in Studio-Apartment (*URL-19, 2018*).



**Figure 23:** Studio Apartment Interior (*URL-18, 2021*).



**Figure 24:** Studio Apartment Interior (*URL-18, 2021*).



**Figure 25:** Studio Apartment Interior (*URL-18, 2021*).



**Figure 26:** Studio Apartment Interior (*URL-18, 2021*).



**Figure 27:** General View of the Building and Roof Garden (*URL-21, 2021*).

## 6. Conclusion

Le Corbusier argued that an architect should be able to influence all aspects of society's living conditions and types, from the very large to the very small, and his residences demonstrated this idea. According to Le Corbusier, the architect shapes and guides the whole metropolitan life through the projects that he addresses in a holistic perspective and, at the same time, enters the houses, takes an interest in people's meals, clothing, tastes in art, and also curtains. Thus, as he predicted, people would have a significantly better quality of life.

Because traditional rules also prevented the modern architectural perception of the 20th century, Le Corbusier thought of the house as a machine to get rid of the traditional house rules. His famous five principles are a list of his demands for change. Besides, as an architect who believed in the necessity of mass housing, mass housing could not be designed with the rules that constitute the traditional housing architecture: You can enter the house from here. The kitchen should be located here in the plan. The living space should face this direction. Toilet and bathroom actions should be done in this way. Since office and residence are separate actions, they should be designed as different spaces. It is inconvenient to see the installation. The larger the living space, the more comfortable it would be, and so on.

Le Corbusier upset all these similar stereotypes. The traditional house was fixed, both in usage and living practices, and construction techniques. Life inside the dwelling was fixed. The rules of the traditional world had gradually formed over the centuries and settled inside the house. In essence, Le Corbusier

created a new period in residential architecture. He put forward and advocated the idea of “housing for all”. The houses that created this concept were designed with a functional, flexible, simplistic, and minimalist understanding, whether large or small. He designed housing for others with the same understanding of the housing concept in the houses he lived in. As in the Pessac residences, Le Corbusier was not angry with the users of any of the residences he designed when they rearranged the interiors of the residences in which they lived. He used the following expression: “It is not the architect who is right, but life.” (Huxtable, 1981).

While proving with Cabanon house that a comfortable life in a small space can be possible and that everyday life can be lived as comfortably as possible, it has demonstrated that the office workshop and residence can be under the same roof in the studio flat. In these houses, he used the free plan layout from the five principles of his architecture. He used the piloti concept in interior items such as beds and kitchen countertops. There is a roof garden on the Immeuble Molitor building roof, where the studio apartment is located. The Cabanon House is also a part of nature in nature. The simplicity, functionality, flexibility, modularity, and even sustainability seen in all of these houses are also seen in his own homes.

“Everything is sky and light, space and simplicity”.

Le Corbusier, 1934.

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# CHAPTER XII

## DEVELOPMENT OF ARCHITECTURAL STRUCTURES IN A WATER ENVIRONMENT AND FLOATING HOUSES

**Elif ALTIN**

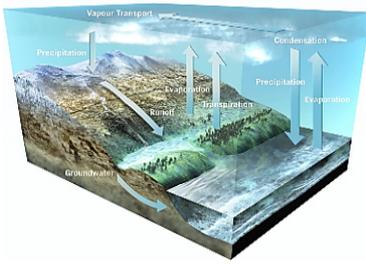
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### **1. Introduction: The Importance of Water**

**W**ater is an important factor in the survival of living things as much as air; it is a chemical compound containing minerals, which contains hydrogen and oxygen atoms in its structure, can take the shape of the container it is in, odorless, tasteless, colorless and its volume, state can be observed to change depending on the temperature. The accumulation of water that can be considered as a competent reserve in the whole nature is possible thanks to the water cycle that triggers each other. Water, which is important enough to ensure the continuity of the life of all living things; ocean, sea, fresh water, rivers cover %71 of the earth as underground reserves. Water (hydrogenic) cycle; while solar energy affects the formation of clouds in the atmosphere through evaporation in the terrestrial plane, it transforms into different states of water in forms such as rain, snow, hail due to cold weather and falls back to the terrestrial plane owing to the force of gravity. This effect includes other steps such as soil moistening, plants releasing water by perspiration, groundwater mobility (URL 1).



**Figure 1:** Earth's water cycle activity (URL2)



**Figure 2:** Glacial melting and drought (URL 3)

Through this endless cycle between the sun and the force of gravity, water, oceans, atmosphere and land remains the same in terms of its total amount in the world (Figure 1). For livable nature, the protection and continuity of the cycle is also important in terms of weather and climate variability. Summers are more hot and dry than usual due to climate change; the fact that water evaporates into the atmosphere and directs more easily decreases the humidity on the ground. Also; suddenly changing weather conditions bringing intense downpour, flooding of water reserves, flooding and deformation on the coastline cause environmental damage due to the decrease of available water resources(Figure 2). The disruption of the cycle is not the coastline cause only negative fiction that reminds the importance of water; while the need for water use and pollution values due to the increasing population density should be reviewed by all countries, at the same time, energy production and economical use should be considered (Marvin, 2019).

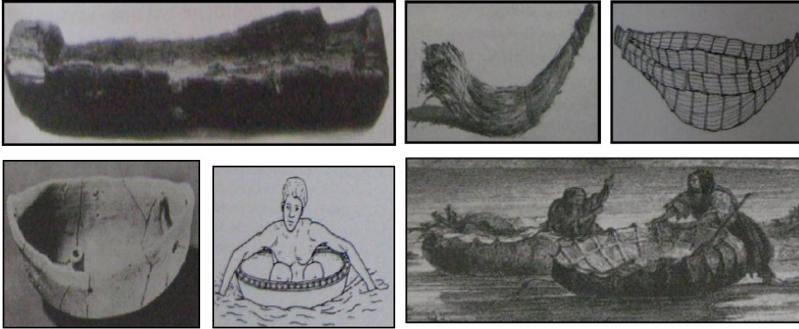
Today, global warming and climate change have reached a noticeable level. All these negative developments due to climate change, developments such as unplanned urbanization, population growth and industrialization increase the negativities even more. Endless approaches to water resources and the economic situation play a major role in adversely affecting water resources (Kılıç,2018). Temperature increase from successive effects; it causes a decrease in the groundwater level and a decrease in wetlands. Excessive spraying activities in agriculture cause pollution of groundwater and threaten the sustainability of water resources. Unconscious use of groundwater; it causes the destruction of water resources and agricultural lands, as well as a decrease in biological diversity. The reduction and pollution of groundwater also threatens food safety. If measures are not taken for climate change and unconsciously used underground water

resources, it means that people's living spaces will decrease. Water resources are mostly used in agriculture, industry and energy production. With the pollution of clean and potable water resources resulting from these uses, water scarcity is increasing gradually. Increasing global demand for water due to temperature and population increase, increases the importance of water day by day (Gökkür, 2016).

### *1.1 Purpose of Water Usage of Civilizations*

Considering that water, the source of life, may be the first starting medium of life according to Darwin's theory of natural selection, the fact that it has been used as a shelter, hiding, escape, protection, hunger relief, exploration, transportation and even trade route in more competent societies is today's floating. It can be said that it has contributed to the creation of living spaces, on the basis of developing designs.

The first human did not need a fixed shelter, as a characteristic of nomadic life, due to the fact that it was not permanent anywhere. For this reason, it is thought that they can benefit from easily transportable and short lived materials such as tree branches, leaves and bushes. Looking at their daily routines, they did not go beyond individual behaviors such as searching for water resources, hunting, finding food for survival and storing. The diversification of vegetation over time with the effect of the temperate climate; the fact that the chipped stone people, accustomed to living as nomads with hunting and gathering, obtained enough food for themselves and their animals enabled them to settle down with the human communities they felt close to each other. In the Neolithic period when agriculture and animal husbandry emerged; the first settlements are villages established by the water. They made the village houses used for sleeping, burning fires and storing supplies from plant parts such as branches, reeds, stalks, which they could find, from stone, clay or mud brick material obtained from a muddy mixture of various plants. Although they prepared the spatial order for the activities in the house, they produced fixed solutions without furniture brought by the habits of the nomadic life. The first settlements in the formation of floating life were not only terrestrial houses, but also various primitive tools made using branches, logs and puffed animal skins to be used in small water bodies. The first vehicles used in water transportation; reed bundles, puffed animal skin, wide mouth cubes and nowadays it consists of rafts used in.



**Figure 3:** Different floating trials in ancient times (McGrail,1988)

New Zealand indigenous people surrounding the area in which they live and can swim by sitting like a horse on the tightly interconnected reed bundles they uses in lake, Iraqi shepherds could cross rivers by wrapping their inflated goat skins, Tamil natives were dragged along the river banks with logs under their arms, Sindlians were able to reach another shore by making wide- mouthed clay cubes and half floating half-submerged in the water (Figure 3). It can be seen in figures depicted on various pottery.

In Mesopotamia; to take advantage of the Tigris and Euphrates rivers, they built rafts with floats consisting of a wooden skeleton and inflated animal skins. With this method, several posts are tightly tied under a platform so large numbers of people can be transported. If the post that coincides with the sharp rocks is pierced, the raft is not toppled with the help of other posts. Then the mail patch is done (Casson, 2002). As tools that meet the needs of social life have developed over time, humanity has created civilizations that can extend from small puddles to the oceans. From this point of view, floating spaces play the role of an important bridge where different civilizations can benefit from each other in cultural and commercial terms. It is not accidental that the furniture, which is used in the interior settlements of the coastal civilizations such as Ancient Egypt, Greece and Rome, which communicated with each other by using water in the same century, in terms of its use, form and location in terms of the same purpose, showing similarity in terms of material and application (Altın,2014). While the water provides a suitable environment for irrigating agricultural lands and establishing commercial affinity for different civilizations, it has also brought negative effects such as plundering, destruction and pirate attacks with its ease of access. In accordance with the approach of the age, many thinkers have imagined the fictional narratives of ideal state governments independently

from other civilizations in the island settlement surrounded by water. The water here is the boundary between the imagined government and other civilizations. For example; according to the descriptions, the civilization of Atlantis, which Plato conveyed to its surroundings as an ideal state, ruled on an island located in the Atlantic Ocean and was sunk by natural disasters after the ice age.



**Figure 4:** Utopia by Sir Thomas Moore in the 16th century(URL 4)



**Figure 5:** Sfordzinda town of the Filarete (URL 5)

In Sir Thomas Moore's Utopia, which is the combination of 54 cities with the perception of the island state and an approach to the formation of an ideal social order, the fiction is again a settlement surrounded by water(Figure 4). It is also seen that water is used as the only controlled transportation route in defense architecture. For example; Sfordzinda of Antonio di Pietro Averlino Filarete; it is a highly sheltered city design that includes administrative structures and other settlements in the form of a star that opens to the outside world with a river-connected canal system that passes through and around it (Figure 5),(Altın, 2008). While water brings fertile lands, transport and food for urban settlements, it can sometimes cause disasters by bringing pandemics, pests and floods and sludge deposits.

The buoyancy of the water, the cooling of the environment with the breeze brought by the wind, the meaning of calmness in religious buildings, the meaning of simplicity, the ability of daylight perceived by its reflection to make the environment more spacious, bright and magnificent, has been used as an application element with different architectural approaches from the primitive period to the present. The use of water as a residential settlement and other floating building elements in architecture is possible in today's technology and there are design approaches that evolve towards floating cities that can develop as colonies in the future.

## 2. Architecture and Water

Settlements on the water are found almost throughout human history. Life on water, which is a way of life in Far Eastern countries especially in Thailand and Cambodia, has gained a new dimension in recent years through the support of technology in America, Canada and developed European countries. In the Netherlands, which has been living on the water in a controlled manner since the beginning of the 16th century, more modern floating houses and even floating neighborhoods have been designed with the effect of technology in recent years. It has managed to overcome the long-standing water problem (Soykut, 2006).

Looking into the past, the place where all advanced civilizations were established is by the water. With the development of technology, the increase in the way and rate of using water, the ability to progress for various purposes such as drinking or using water resources, energy production and irrigation, and the fact that water has an indispensable place in the economic development of many countries (Yıldız, 2014).

Numerous floating building design proposals and applications are seen today for the creation of new living spaces. In addition, floating building examples can be found in the past. The small-scale floating structures implemented are seen as the pioneer of floating city designs designed for above water living spaces in the future. When we look at the initial state of floating structures, their current state and futuristic projects, it is understood that many changes and developments have taken place. Floating systems can now be self-sufficient with the great effect of technology advancing day by day. There are many examples of floating structures that can be used in various ways; there are different floating structures such as residences, offices, restaurants, bazaars, hotels, as well as floating neighborhoods and floating cities.

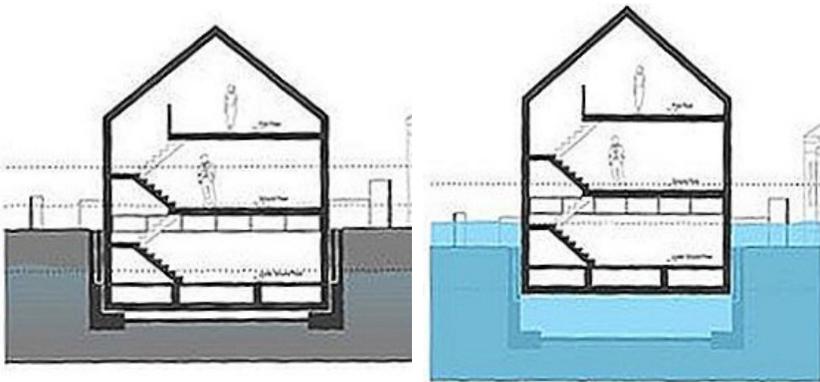
Floating structures built and being built in various parts of the world are shaped according to regions, countries and cultures with very different characteristics. The Netherlands, which has been living on the water for many years, is one of the prominent countries in the world. For instance, there is a site consisting of seventy-five floating houses in the city of Ijburg (Moon, 2015).

Today, life in water stands out as a topic that excites scientists and engineers. In the coming years, new living space needs on water will arise due

to factors such as sea level rise and population increase due to the effect of global warming. In future projects, what features floating cities will have and how these structures cope with natural disasters are questions to be resolved with the collaboration of architects and engineers.

### 2.1 Water Structures and Features

Water, which is of great importance for living things, sustains all life, from the smallest to the largest living thing. It is seen that no natural or artificial material can replace water resources and it is the most important source material after oxygen. Life on water is spreading day by day in various parts of the world. Water structures, which have made a lot of talk about themselves in recent years, are designed with the aim of creating new living spaces on the water, except for areas on land. It is known that the main reasons for preferring floating structures are the occasional rise in the water level, floods or floodings.



**Figure 6:** Amphibious House water settlement (URL 6)

Floating house; sea, lake, etc. it is a type of structure built on a platform that can move both horizontally and vertically on the water. There are two types of floating houses depending on their movements. The first of these are the houses that are connected to the terrestrial ground with their foundation connection. These houses have mechanisms that can move vertically, depending on the rise and fall of the water surface due to various natural factors; they are “amphibian” houses found in streams, lakes, seas, oceans or their shores(Figure 6).

Amphibious houses are based on Archimedes principle; the mass and volume of the house is lower than that of water, which determines its buoyancy. These structures are common in the USA, Netherlands, Italy, England, New

Zealand, Bangladesh, Philippines, Sweden, Canada and Cambodia with various materials and architectures for a wide variety of uses. These structures, which are proposed as an option against the threat of sea level rise due to global warming, are especially popular in regions where floods, floodings, tides and hurricanes are experienced. Therefore, amphibious houses offer a good solution to reduce flood damage caused by various natural factors and to save a large number of people from victimization.

The second type of floating houses, on the other hand, is a type of building that is not connected to the terrestrial ground, can move horizontally on the water surface and is also known as “mobile or roaming houses” and is widely used for fishing or tourism(Güner, 2019).

## ***2.2 Settlements on the Waterfront***

Life on water in cities surrounded by water reduces the anxiety caused by intensive urbanization and becomes a suitable solution for the decreasing ecological values and nature. Living on water is often preferred as land is getting harder to find in countries with a high population. Housing prices, which have increased rapidly in recent years, are pushing people to turn their boats into living spaces. The fact that floating houses will be implemented in countries where the water level is expected to rise primarily in the world causes further intensification of use and application research in these countries, and also creates the basis of life on water (Yıldız, 2014).

### **2.2.1 Netherlands**

Situated on a large delta formed by the three biggest rivers of Europe, the Rhine, the Maas and the Schelde, the Netherlands lives with water. Almost 26% of the country, which is a low land (Nederland) with its name integrated, is below sea level. The history of life with water is very old in Amsterdam and floating houses can be seen on almost every channel. Water has both positive and negative aspects for the Netherlands. Throughout history, they have experienced significant floods and are cautious against all kinds of disasters. The North Sea Flood, where 1836 people died in 1953 and was a disaster as a result of the sea tides, is an example of this danger. With the methods they used against disasters, the process of converting water into land since the 16th century has expanded the country's limited land.



**Figure 7:** Terps-Mound (URL 7) Netherlands 1953 flood disaster(Parlayan, 2018) Windmills, Netherlands(URL 7)

Locals have created tiny hills called Terps (mounds) in order to protect their land, and this non-permanent method succumbed to the waves over time, prompting people to find new solutions. For the last 900 years, the country has been trying to prevent the rise in sea level from reaching the city with the water sets they call Dijken, but this method cannot prevent water outflows. Then, by building a solution-like windmill, the water pumps through the wind prevent the water overflowing from the channels(Figure 7),(Parlayan,2018).The “The Zuiderzee Works” project has been carried out in the light of advancing technology in order to solve problems such as the inability of water sets to withstand disasters, the desire to prevent mixing of fresh water with sea water and the effort to protect it from the North Sea. The study, which includes soil reclamation, dams and drainage systems, takes its place among the Seven Wonders of the Modern World.



**Figure 8:** Water barriers map and Oosterschelde Barrier (URL 7)

By creating dams and sets in the North Sea, it can prevent the elevations in the water level. In the system consisting of 15 different sets, it is closed only in cases where there may be floods. The reason for keeping the Oosterschelde Barrier open is to ensure that they can continue without disturbing the natural flow of water and endangering the life of the aquatic creatures. The barrier is about 9 kilometers long and 14 barriers outside this barrier are closed (Figure 8),(URL7).



**Figure 9:** Schoonschip Project, Netherlands (URL 8), (URL 9)

There are 46 residences in the Schoonschip project, each with a different design. The buildings are built on land and lowered into the water by boats, and all residences are located on special concrete fields connected to columns.

While designing the houses, calculating what will be included in it and its weight are among the most important details of the design. Solar energy is used in some houses in the region where sustainability is very important and they are built with environmentally friendly materials(Figure 9). The Netherlands has become a country that benefits from water instead of staying under water

and hosts many floating houses today thanks to its technology and engineering developing day by day (URL 8).



**Figure 10:** Canal Houses, Netherlands (URL10),  
Canal Houses Indoor (URL11)

The Canal Houses, one of the first things that come to mind when it comes to Amsterdam, were once the houses where only the rich lived, today they are generally used as museums and hotels. The facades of the buildings on the street side are quite narrow, the reason for this is that a solution was created in the past because the building taxes increased according to the width of the facade (Figure 10). Although the buildings look very narrow from the outside, it is noticed that they actually expand towards the inside as they are entered (URL10).



**Figure 11:** Canal House freight ledge Netherlands (URL12),  
Canal House Plan, Amsterdam (URL13)

Almost all of the roofs have hipped roofs and slopes. In addition, most of the canal houses are inclined towards the canal from their front facades and there is a protruding hook on the roof part (Figure 11). They solve the problem of carrying items to very narrow houses by making the houses inclined forward and pulling the items up with the help of the hooks on their tops (URL 10).

Wouter Van Elburg, an architectural historian and doctoral student at the University of Amsterdam, points out that canal houses were a combination of housing, storage and workplace from the earliest days. For example, commercial products can be stored in houses around the canal in the city (Figure 11).



**Figure 12:** Giethoorn Canal House, Netherlands (URL 14)

Giethoorn is located in the northeast of the Netherlands and is at the center of the Overijssel canal system. It is referred to as the “Venice of the North” because of its village channels. It was founded around 1230 by refugees from the Mediterranean region. The canals are of great importance to the village because most of the houses do not have roads and can only be accessed through the canals. The houses are connected by bridges and there are about 200 bridges. Transportation is provided by boats (Figure 12).

### 2.2.2 Thailand

Floating markets, which have an important place in Thai culture, have been seen in different parts of the country from past to present. The difference of the markets where fresh vegetables and fruits are sold in various goods as well as the normal markets is that they are established between canals and shopping with boats.



**Figure 13:** Floating Market, Thailand (URL 15)

The most famous floating markets in the country are TalingChan Market, BangKuWiang Market, ThaKha and Damnoen Saduak. Damnoen Saduak Floating Market is located 100 km from the capital. Thailand is an exemplary country for modern floating systems with traditional solutions (Figure 13). The flood disaster that occurred in Thailand in 2011 is a warning for the country to reevaluate its relations with water, which increasingly affects the economic activities of the country as well as the lifestyle of the individuals (URL 15).



**Figure 14:** 2050 Ultra Flood Plain, Thailand (URL 16)

The understanding of living by respecting the structure created by nature, which was the general approach of the settlers in antiquity, and taking advantage of the features of the region, seems very difficult to meet today's basic needs. The understanding of living by respecting the structure created by nature, which was the general approach of the settlers in antiquity, and taking advantage of the

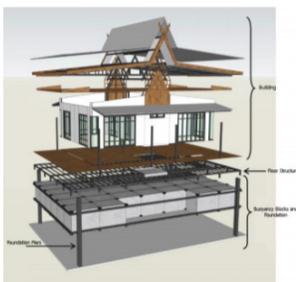
features of the region, seems very difficult to meet today's basic needs. This approach does not apply to Thailand. With a project belonging to the city of Ayutthaya, which has to live with water, agriculture, food stocking, treatment, tourism and settlement, always struggling with floods in the rainy season, it is being realized in 2050 by adapting to the nature (Figure 14).

With a city planning created, the country holds the new possibility of how the city of Ayutthaya and the Chaophraya floodplain could live with water for modern Thai society in the years to come. The design strategy of the project is to transform the existing irrigation network covering approximately 70% of the city into a water retention network (URL16).



**Figure 15:** Ayutthaya Project (URL17)

In the 1350s, Ayutthaya was known as the water city in the real sense, although it was the capital of Thailand. In accordance with the scope of the project to be located in Ayutthaya, water is viewed not as a threat but as an economic opportunity (Figure 15). After all, Ayutthaya has always been the land of waters by its nature. Thai people have realized this feature of the region in the past and have benefited from water in food production, logistics and settlement (URL 17).



**Figure 16:** Ayutthaya Project Floating House Project ( Saengpanya & Kintarak, 2019)

Among the goals of the project completed in 2013; materials are easy to build and have a low budget, while the structure is sustainable. Although the concept of amphibious building is not new in the engineering world, it attracts much more attention today (Figure 16). In Thailand; new floating houses are being developed due to seasonal monsoons, climate change and the fact that some parts are prone to flooding (Saengpanya & Kintarak, 2019).

### 2.2.3 Italy

The most important source of income of Venice, the famous city of Italy with its canals, continues its life with water from the past to the present. It is located on 120 islands connected by canals in the coastal lake at the entrance of the Po and Piave rivers in the far north of the Adriatic Sea. Since most of the land it owns is swamp, it has started to erode over time.



**Figure 17:** Venetian canal houses (URL 18) and floor detail (URL 19)

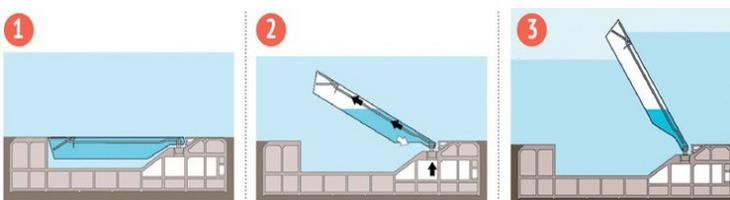
The buildings in Venice are built on wooden piles that are joined together too closely. Wood that does not rot with its salt water structure at the bottom turns into a hard substance in water with a high mineral level, at the same time the piles pierce the soft sand and mud layer and sink into the harder clay. Six centuries ago, Venetians diverted precious streams towards the lagoon as a precaution against possible attacks. Venice began to sink as groundwater was extracted in the 20th century when artesian wells sank while providing water for local industry. For this reason, the sinking process was slowed down after 1960, with the ban on the use of artesian wells (Figure 17). Despite this, today the city is still in danger of being flooded.



**Figure 18:** Venice Type Sample Houses (URL20)

As Venice developed its dominance over the Eastern Mediterranean, it grew even more, and this situation allowed the city to take shape in terms of architecture. The houses built by the nobles of the city for themselves are still the most beautiful examples of classical Venetian architecture (Figure 18). Houses built with Venetian architecture stand out with their simplicity and away from show. These structures usually consist of two floors. The house has two separate entrances, one from the land and one from the sea. Venetian merchants bring their goods by sea from the ground floor and place their goods in their warehouses on the same floor. On the first floor of the house, there is a hall that opens to other rooms on the right and left and extends to the end of the house. This large hall was generally used as a ballroom or a place where the nobles host their guests (URL 20).

The country, which is struggling with the danger of flooding, aims to protect the inhabitants of Venice and buildings from being submerged by creating an obstacle between the rising waters and the city with the MOSE Project (Modulo Sperimentale Elettromeccanico). Since MOSE is the biggest construction project that people have ever attempted, the design, acceptance and construction of the project took a long time.



**Figure 19:** MOSE Project Working Principle (URL21)

Lido, Malamocco and Chioggia gulf entrances through which water passes in Venice are closed and barrier systems are installed in front of the water. It is aimed to sink into the seabed by constructing 78 gates of 30 x 20 x 5 meters and 350 tons, each of which is made of steel, in these three gulfs of Venice, which are open to the sea (Figure 19). The working principle of the doors is included in the project. These gates are in line with the commands given; when the waters descend, these hollow doors are filled with water and the doors are sunk. When the water rises, compressed air is given to drain the water inside the doors, thus allowing the steel doors to rise. In this way, the water rising to the bay is prevented from filling and flooding Venice, in theory (URL 22).

Until this point of the study, urban settlement approaches in different water countries that have suffered many times of devastation due to heavy rainfall and floods developed within the framework of global warming have been examined. Common features of all three countries; to learn from the disasters they have experienced and to create their own urban settlements in a solution-oriented manner.

	<b>Netherlands</b>	<b>Thailand</b>	<b>Italy</b>
<b>Purpose of Use of Floating Houses</b>	<ul style="list-style-type: none"> <li>• Housing</li> <li>• Storage</li> </ul>	<ul style="list-style-type: none"> <li>• Food production</li> <li>• Trade</li> <li>• Residential</li> </ul>	<ul style="list-style-type: none"> <li>• The most important source of income</li> <li>• Housing</li> </ul>
<b>Threats</b>	<ul style="list-style-type: none"> <li>• Flooding</li> </ul>	<ul style="list-style-type: none"> <li>• Seasonal monsoons</li> <li>• Climate change</li> <li>• Flood</li> </ul>	<ul style="list-style-type: none"> <li>• Flooding</li> </ul>
<b>Measures Taken</b>	<ul style="list-style-type: none"> <li>• Terps (Mound)</li> <li>• Dijken (Watersets)</li> <li>• Windmill</li> <li>• Barrier system</li> </ul>	<ul style="list-style-type: none"> <li>• Irrigation network</li> </ul>	<ul style="list-style-type: none"> <li>• Change the direction of the stream</li> <li>• Barrier system</li> </ul>
<b>Floating Houses Basics</b>	<ul style="list-style-type: none"> <li>• Docking on iron piles</li> <li>• Building on the soil they create</li> </ul>	<ul style="list-style-type: none"> <li>• Interlocking urbanization</li> </ul>	<ul style="list-style-type: none"> <li>• Building on wooden planks</li> </ul>
<b>Transportation</b>	<ul style="list-style-type: none"> <li>• By water</li> <li>• By land</li> </ul>	<ul style="list-style-type: none"> <li>• By water</li> <li>• By land</li> </ul>	<ul style="list-style-type: none"> <li>• By water</li> </ul>

**Table 1:** Comparison of the Floating Building Approaches of the Netherlands, Thailand and Italy

Table 1 includes the characteristics of water countries in line with the information examined and obtained. The intended use and the measures taken differ from

each other due to factors such as their geography and climatic conditions. The measures taken from the past to the present show progress with the effect of technology. In general, floods are a common threat to all three. The elements that form the foundations of the floating houses differ in all three. While there is a situation in the Netherlands to sit the floating houses on iron piles and build them on the land they create with straw, Thailand provides an interlocking urbanization. Venice, on the other hand, places buildings on wooden planks, as it has been known for many years.

### *2.3 Main Features of Floating Systems and Usage Examples*

The general characteristics of floating structures are that it can easily adapt and adapt to changes with its mobile and flexible structure, and can be open to development. The superiority of these structures is that they are an interesting design method as they can respond to new functions, and they are a frequently preferred living space with its view and proximity to nature. In addition to all these, problems such as global warming, climate change, floods, floods and changes in water level make these structures open to problems and pose a threat.

It has been observed that environmental conditions play a major role in determining the materials to be used for floating structures. External environmental factors affecting these structures; weather conditions, weight of the structure, center of gravity and form of the structure, chemical and biological effects of water, wave or current data and ground characteristics data are very important (Tartar, Işık and Ünsan, 2017).

Considered as an alternative design area, water is preferred due to its ability to create an environment for the utilization of the floating settlement potential and to allow the realization of new designs.

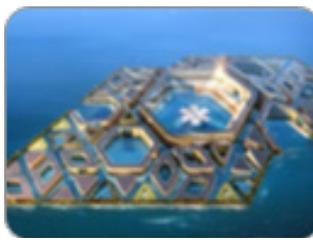
Today floating houses; it is becoming widespread in various parts of the world with new needs, new architectural approaches and new legal regulations. houseboat-type prevalent in the world, though amphibious houses, almost all of the examples shown in Turkey, according to the aquaculture browsing homes that are movable horizontal direction. Floating houses stand out with their unique needs and qualities as a new design, architecture and engineering field.

For example; due to needs such as electricity, floating house structures make self-sufficient energy systems mandatory. Hybrid technologies, which can produce energy thanks to wind, tidal, wave power and solar energy, are rapidly becoming important developments in terms of floating houses (Güner, 2019).

### 2.3.1 Floating Cities

Floating houses and markets, which are found in Thailand and Cambodia and whose almost all materials are natural, are a part of the social life in that region. A fisherman who prefers to live on water in order to be close to the sea and arable agricultural lands, which are their main means of livelihood, can go to work with his house, with their own means and in these houses built of natural materials (Soykut, 2006).

From the legendary Atlantis underwater projects designed to be influenced by are also ecological and fantastic designs. Underwater hotels and houses that can float on water. They are utopian buildings designed for people who cannot swim and dive.

	<p>Floating Village, Cambodia (URL 23) In Southeast Asia, fishing tribes are one of the oldest examples of floating structure around Lake Tonle and have built numerous floating villages. These villages, like all floating villages, change their positions by moving due to the rise of the water.</p>
	<p>Lilypads Floating City Design (URL 24) Designed by Vincent Callebaut, the Lilypads floating city project derives its inspiration from the leaf shape of the Amozonia Victoria Regia plant in the lotus species. The floating city design is planned to host a population of 50,000 people with its sustainable and nature-friendly feature.</p>
	<p>Floating City Design (URL 25) Floating city design is made by AT Design Office. Thanks to the developing technology in the structure, a transportation consisting of submarines and yachts will be provided and it is designed to meet all kinds of needs.</p>

**Table 2:** Floating City Examples

The future that has been envisioned as a part of the utopia is now designed today, and with the effect of technology, smart buildings offer their residents perfect living spaces. Interiors built for floating city designs are ideal designs for those who prefer an unchanging interior layout (Altın, 2008).

Table 2 includes examples of floating cities. It is expected that the number and possibilities of floating cities will increase in the future and become a popular living center. These cities, which can be given as an example for sustainable approaches, can also provide a living space to countries where the world population increases.

### 2.3.2 Floating Tourism Structures

	<p>Floating Hotel - The Ark (URL 26)</p> <p>Designed by Remistudio, The Ark is designed as a self-sufficient hotel. In this design, which is based on recycling, a system has been developed in which the generated wastes can be used as fuel while creating an environment where the plants inside the building can live thanks to the panels on the roof.</p>
	<p>Floating Hotel in Qatar (URL 27)</p> <p>Designed by Sigge Architects for the 2022 World Cup in Qatar, the floating hotel provides suitable accommodation for more than 25,000 visitors and is considered an environmentally friendly design in terms of energy efficiency.</p>
	<p>Temporary Floating Hotel (URL 27)</p> <p>In Qatar, which will host the 2022 World Cup, the temporary floating hotel concept building is planned to be ready in 2022. Temporary hotels, which will have a total of 16 hotels with 4 floors and 101 rooms in each hotel, will be located near the stadium and will be transported to a coastal area by 13 feet deep water right after the World Cup..</p>

**Table 3:** Floating Tourism Structures Examples

The residence periods of the buildings designed for places other than travel and accommodation, residence and workplaces are short-term and non-permanent. The phenomenon of travel has developed over time, especially after the Industrial Revolution, and the production of holiday trips outside of work has started.

Table 3 contains examples and descriptions of some floating tourism structures. In recent years, life on water has attracted attention, and individuals

also prefer temporary shelter in these places. Today, engineers and architects work on floating hotels, resorts and island projects. The capacity of these structures is approximately 10,000 people and it is expected that there will be crowded floating holiday resorts and floating cities with swimming pools and marinas (Soykut, B., 2006).

### 2.3.3 Multipurpose Floating Structures

Floating system buildings, which are progressing day by day throughout the world, are designed and built not only like residences or hotels, but also with entertainment, food and drink, worship and many more functions.



#### Archipelago Cinema (URL 28)

Archipelago Cinema in Thailand, surrounded by a landscape created by rocks, was designed by architect Ole Scheeren. This structure is similar to floating lobster farms in the way it is built.



#### Floating Mosque (URL 29)

The interior of the project, which belongs to Waterstudio NL, has funnel-shaped transparent columns designed not only to support the roof but also to enable the light to illuminate the interior.



#### Floating Restaurant (URL 30)

It resembles Chinese architecture with its floating restaurant design. Wall paintings and handcrafted ornaments adorn the interior, costing about \$ 6 million. The building, which is the world's largest floating restaurant with a length of 76 meters and three floors, is located in Hong Kong.



#### Floating Office (URL 31)

Designed by K2S Architects, floating office design is located in Helsinki. The building, which has an area of 950 m<sup>2</sup>, has working areas, staff cafes and meeting rooms. Owing to the windows up to the ceiling of the building, which is saturated with wooden materials in its interior, it also makes good use of the view.

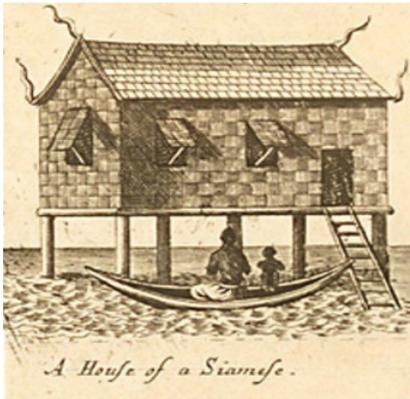
**Table 4:** Multipurpose Floating Structures Examples

There are many structures around the world that host different functions in floating structures. Examples of these structures are given in Table 4 with their explanations. Sample for functions such as floating cinema, mosque, restaurant and office can be increased.

### 3. Floating Houses

It is the sheltered area between the horizontal and vertical planes where the home user is located, physically detaching himself from the outside world with its boundaries and responding to personal comfort values in line with his wishes. Unlike the house in terrestrial architecture, the floating house can be moved from one place to another, and can remain fixed on the ground as much as desired in water environments where it is located, such as streams, sea, ocean and so on. When preferred, settlement can be achieved by moving to another location. Floating systems are in the class of amphibious houses, some of which are located on the water's edge and some of them are placed on land without changing their location, or those that are designed to be able to move 3-6 meters in a vertical plane while floating on the water surface. Floating houses in the waterfront European and most Asian countries are included in this classification. Throughout the study, explanations on amphibious floating samples on the solution-oriented approach to the disasters coming from the water in the countries, tourism and structures used for different purposes are discussed.

The design feature of floating dwellings with amphibious systems is different from terrestrial structures; within the scope of sustainability, it produces its own energy, is not as heavy as the land structure in terms of construction technique with the materials used in its construction, and is sheltered from global disaster. Of course, in the future, besides these features, many more will be added. The design that can be considered as an example of these features is the amphibious house that Thai architect Chuta Sinthuphan has undertaken the project. The house designed for the Thai government has sought solutions to two of the region's major problems; low cost and flood disaster that is inevitable in the rainy season. The architect has succeeded in solving both problems without disturbing Thailand's traditional architectural feature( Figure 20).



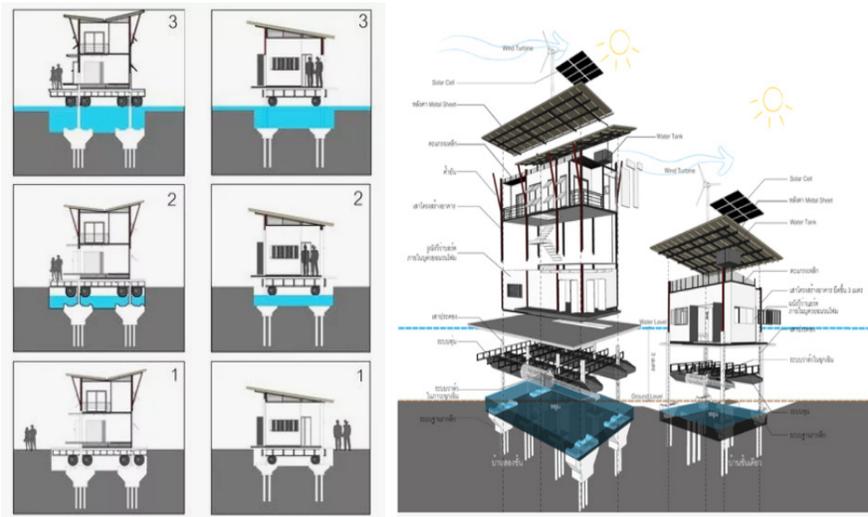
**Figure 20:** Traditional Tay Houses (URL 32)

The name of the traditional house of the region is Tay House. Although the construction technique varies regionally, in general terms; they are structures that are placed on pillars, with a frame roof made of bamboo or another wooden material, positioned parallel to the water, reflecting the unique lifestyle of the settlers. The Thai house has a classification that differs in the middle, north and south in terms of social position in the society, the number of family members and its appearance based on different purposes such as commercial and short-term use, the variety of materials, the number of rooms, the height of the building, and the building additions (URL 32). Architect Chuta created his own house design, inspired by the raft-type houses in the south, resting on short piles.



**Figure 21:** Thai architect Chuta Sinthuphan's Project map, old and new settlement image(Alter,2018)

In the project, four different types of building examples, namely commercial housing, residential, civil and commercial hybrid structures, have been studied and the structures have been placed close to each other so that the settlers can help each other in any flood disaster(Figure 21). The main material of the houses is thought to be built from steel-framed prefabricated material for long-term water resistance and light structural weight. Owing to this material, it is lighter than the wooden weight of traditional building and safer to protect from any invaders.

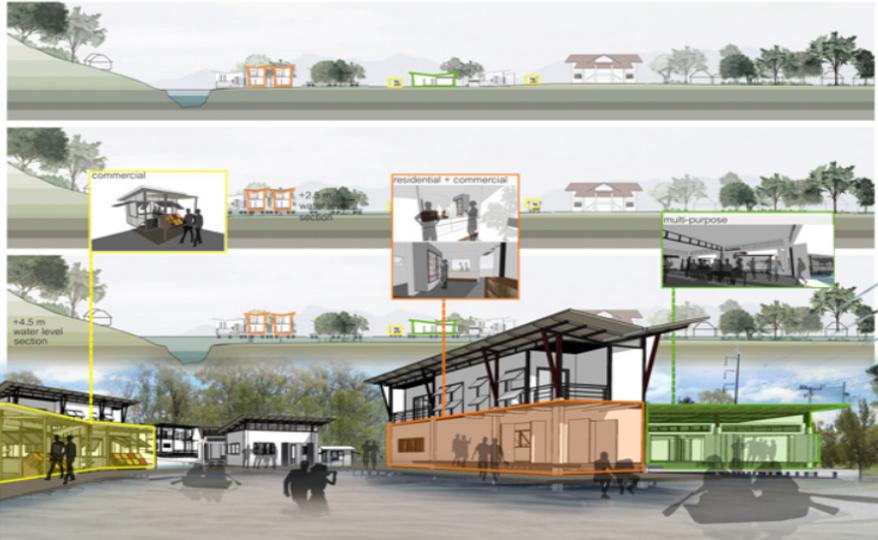


**Figure 22:** Thai architect Chuta Sinthuphan’s Project Amphibious House(Alter,2018)

The house can be aligned with the water level with the help of sliding columns that allow it to move vertically up and down by sitting on a platform made of flotation tanks built under it. It has solar panels and wind turbines in terms of energy efficiency, and it is self-sufficient by harvesting rainwater (Figure 22).



**Figure 23:** Thai architect Chuta Sinthuphan’s Project Amphibious House(URL 33)



**Figure 24:** Thai architect Chuta Sinthuphan's Project Amphibious Houses Solidarity in case of flood (URL 33)

While the lower part of the house is not visible under normal conditions, in the event of flooding, the rain water fills into the tank under the house and provides the necessary reservoir. Since fruit varieties and other food items, which are commercial products of the region, can be sold in other buildings shown in color and positioned together in accordance with different functions, it is aimed that people can survive until help arrives by sharing them with each other (Figure 23-24). As in this example given for the amphibian type of floating houses, home security and adaptation is important against the disasters that may come from water on the coastline (URL 33).

Apart from floating houses with amphibious systems, floating houses that stand independently of the land on the water and can be taken to another water environment are also designed. The difference of this house type from yacht and boat houses is the materials of production, the hull structure that provides its position in the water, the water environment in which it is used, and the absence of a command place for displacement. Floating houses are different from others; they cannot move on their own and need other mobiles that pull the house to move away from the water environment they are in, lift it from the water surface with a tugboat or a lever and carry it to another water environment by land. Floating houses are located on the upper surface of the water and meet the wave movement on the water with the carrier of the wide platform underneath to

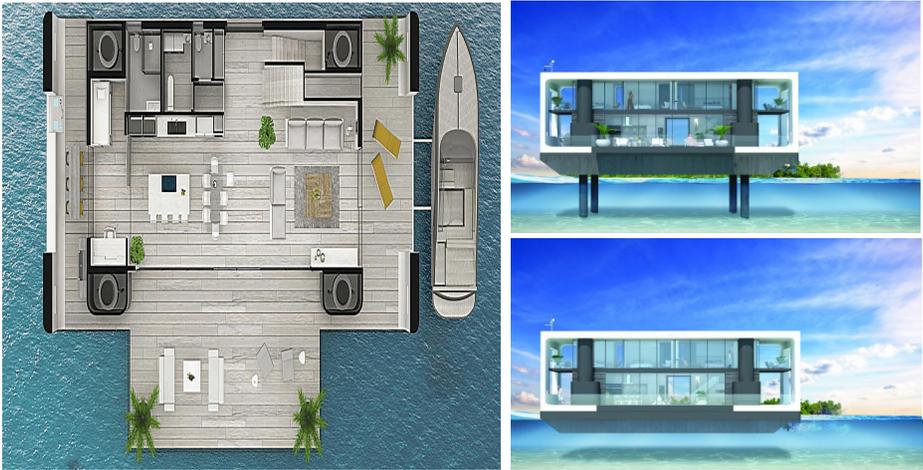
prevent sinking. As with yachts, instead of breaking through the water with its hull, it drifts above the water. The width of the platform (float floor) beneath it forms the basis of the architectural spaces of the residence (Newcomb, 1974). While the platform enables sailing on the water, it is also connected with a road that connects it to the land.



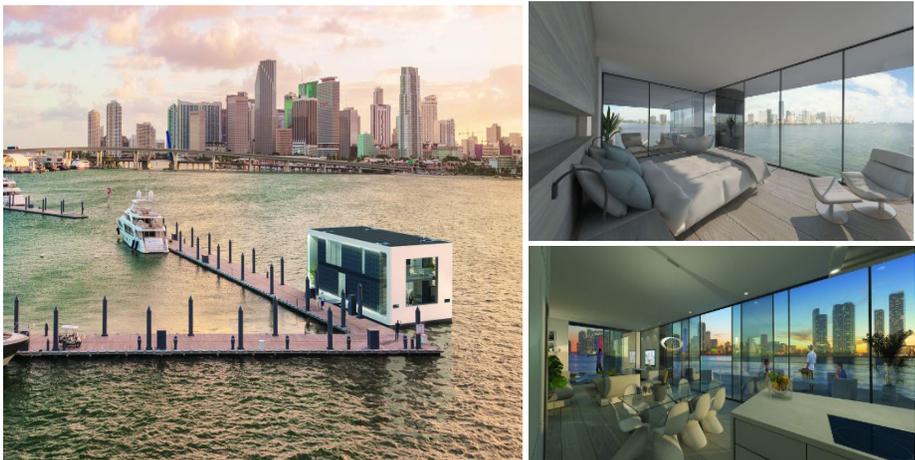
**Figure 25:** Example of Floating Communities Mega Curioso Project(URL 34)

Floating houses can also be located in an independent area on the water, or they can be part of the crowded water settlement, which is generally preferred. With these features, the social communication of the residents of the house does not break with others depending on the need. Floating home communities are highly valued by homeowners for their sense of security and connectivity(Figure 25). With the positioning of many floating houses side by side, a neighborhood formation will occur on the water. Especially for reasons such as global warming, population increase, and the high cost of limited land, the floating houses, which are increasingly preferred day by day, have started to establish rules and regulations for control purposes for the locations where the floating houses will be settled in water countries.

The characteristics of floating houses that can be considered within the scope of sustainability make them environmentally sensitive as much as terrestrial structures. Elements such as the use of energy, recycling of existing resources, and defense design in terms of self-sufficiency for an independent life on water provide an idea of how to create more competent future variations.



**Figure 26:** Figure 26: Interior view of Arkup Floating House (Magloff, 2020) and hydraulic lifting system against hurricane (Jasta, 2017)



**Figure 27:** Arkup Floating House and its interiors (Jasta,2017)

Dutch architect Koen Olthuisin, the founder of Waterstudio company, which has electric propulsion system for mobility on water, automatic hydraulic lifting system against hurricane waves and other factors, is an example of a zero-emission floating house design luxury houseboat (Jasta, 2017). In terms of energy use, the use of the sun for the propulsion system, air conditioning and electricity generation, and the independent rainwater harvesting and waste management ensure that the house is self-sufficient (Magloff, 2020).

In the general layout of the house, there are four bedrooms and bathrooms, as well as living quarters (Figure 26-27). The four facades of the 22-meter-long building, equipped with a sliding glass facade system with an uninterrupted view, provide the ideal setting for the user with its retractable terrace (Jasta, 2017).



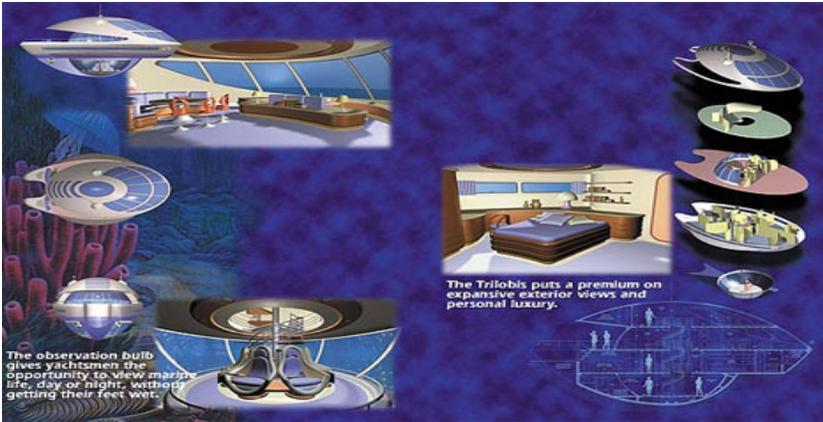
**Figure 28:** Water Nest Floating House and its interiors (URL 35)

Water Nest, designed by Giancarlo Zema, is an example of eco-energy floating structures produced from fully laminated coating and recyclable materials such as aluminum, which can only be used in quiet water environments and hot climates, is a solar-powered cocoon-shaped structure. Through the air conditioning and micro ventilation system of the building, the energy system, which is evaluated in an economical framework with its low power consumption; it is associated with the ability to generate up to 4 kW of electricity per hour with the help of photovoltaic panels placed on its rounded wooden roof(URL 35).



**Figure 29:** Trilobis 65 Floating House and its interiors (URL 36)

Giancarlo Zema's floating house called Trilobis 65, which can be seen as an underwater observatory below for different depths of water environments such as lakes, rivers, oceans equipped with power systems; it is a futuristic design solved for life above and below the water(Figure29).



**Figure 30:** Trilobis 65 Floating House layers and its interiors (URL 36)

It is a self-sufficient structure that does not pollute the environment, which can provide the opportunity to live alone in the ocean, as well as a residence in coves and marine parks. The body of the design is made of steel and the upper structure is made of aluminum(Figure 30). The windows have an electrochemical system that makes them opaque when desired. Photovoltaic panels convert solar energy for energy efficiency. The building, which has six people, is functionalized separately on each floor and provides viewing opportunity. Unlike other floats, the observation sphere made of high-strength acrylic is equipped with high-tech computers and six seating furniture (URL 36).

#### 4. Conclusion

The principle of living on water and the idea of floating houses are projects in which new life styles and environments for our future begin to be considered and produced in today's conditions. The fact that floating houses will be implemented in regions where the water level is expected to rise primarily in the world causes the use and application research in these countries to become more intense. Although life on water has not been implemented in some countries yet, it constitutes an important design idea in which intensive research is carried out and scientific studies are prepared for the future. In this study, a research has

been conducted on floating systems and their properties, water country examples and 3 selected water countries have been evaluated within the scope of the study. Floats used for different functions are discussed under separate headings. In the Floating Houses section, which is considered as an example, the criteria for separating them and the futuristic approach are included. The applied examples show the living quarters and how they can change according to the user's wishes as technology advances. Although self-sufficient structures are designed that can be adapted to singular life in the ocean environment and other calm waters, it has been observed that the most basic need of human beings since the primitive period was living in collective form. The most obvious design purpose of floating structures is to resist disasters to survive. In addition to solutions such as wave resistance, automatic elevations, sunlight shading or rainwater harvesting, designs that can respond to issues such as agricultural activities, drinking water production, combating epidemics, underwater research opportunities can be developed in the future.

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## CHAPTER XIII

# DIRECTOR'S SPACE FROM PAST TO THE PRESENT: "NURİ BİLGE CEYLAN, LÜTFİ ÖMER AKAD"

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### 1. Introduction

Lifestyles, social, political, and economic events, which are changing over the course of time are somehow reflected on the cinema screen. Cinematographic images on the screen are shaped with its creator's accumulation of knowledge, experiences, surrounding psychological, economic, political, cultural, social aspects and many other phenomena (Battal, 2006). As one of the building blocks of cinema, the concept of space, with its function of conveying feelings to the audience, also had an effect on cinematic continuity. In this way, the interaction between cinema and architecture, made the space in cinema an important aspect. Cinema is a field of art, which is close to the architectural discipline not only due to its temporal and spatial structure, but also because of the way it narrates the space (URL1). "Cinema intends to convey to the audience a sense of space, whether it is real or virtual. Cinema conveys the life in the mind of the director or scriptwriter by means of the space, and complements its realization with the concept of time" (Akyıldız, 2012a). Coexistence of character and space as reflected on the screen, is presented by the director through the narration of emotions. Therefore, as the space on the screen conveys emotions to the audience from the perspective of the director, it suggests that the spatial setting in cinema is as important as the characters.

From the day it entered Turkey until now, cinema continuously changed within the framework of social events. The country was introduced to cinema in the last period of Ottoman Empire thanks to the initiatives of foreign movie makers, and the developments in the film production process during Republic period increased the number of Turkish movies. The period from 1950's and 1960's onwards was a period of social events and change of Turkish Cinema, and paved the way for the emergence of film-makers who led the development of cinema. 1950's was a period during which new film-makers emerged, and Turkish Cinema started to develop (Hakan, 2012), while 2000's was a period in which the director was able to express herself/himself freely, and a director's cinema, which digress from the old themes, formed (Sevinç, 2014). These two periods brought the changes and transformations in Turkish Cinema to the forefront, and facilitated the director's cinema.

In this sense, the study analyses 1950's, the period which is considered as the beginning of film-makers in Turkish Cinema, and 2000's, which is called the period of new filmmakers within the context of "use of space by the directors". Accordingly, the study aims to present the characteristics of two directors in Turkish Cinema, one from 1950's, the other from 2000's, in terms of use of the space with similar and different aspects. Five films directed by Lütfi Ömer Akad, who is considered as one of the pioneers of "filmmakers' era", and who helped separating the concepts of theatre and cinema with distinct characteristic lines, during the period between the years 1949-1974, and five films directed by Nuri Bilge Ceylan, who is regarded as the founders of 2000's "new cinema", during the period between the years 1999-2018 were analysed within the scope of the study. These films were selected from the popular and award-winning films of the period, and subject to use of space analyses. The study is limited to five films of two directors of the cinema of old and new era, and ten films in total were evaluated in terms of "use of space". Within this scope, the study addressed Turkish Cinema from past to the present, directors' spaces in Turkish Cinema, and the use of space by the directors in the selected films were analysed.

## **2. Turkish Cinema from Past to the Present**

Western culture and technology came to the forefront with the idea of Westernization during the Republican period of Turkey as well as Ottoman period (Pösteki, 2005a), economic, legal, and social structure took on a completely new form with the Republican period, and such changes were reflected to the

cinema as it was reflected to all the other fields of art (Tunc, 2012a). With the establishment of Republic, the influence of Muhsin Ertuğrul was very frequently seen in the attitudes of private film companies and movies, and an unbreakable “theatre monopoly” reigned over a period of 17 years (İşığın, 2000). “During this period, which was characterized by the films that affect the public, the economic, social and cultural process of Turkey brought cinema to the brink of extinction, and the reign of theatre continued until 1950’s” (Meriç, 2007a). “1950’s was a period during which multi-party political system was realized, liberal economy dominated the markets, and cultural environment changed. The Filmmakers Period, which was led by new directors, started with an artistic understanding of cinema for the first time between 1950 and 1970” (Meriç, 2007b). Strong foundations of Turkish National Cinema were laid, Yeşilçam industry, the new cinema of the period came into existence, and the number of movie theatres increased (Tunç, 2012b). 1960 was in some ways starting year of cinema with attempts to exercise newly gained liberties and liberties to be gained (Scognamillo, 2003a). This period, during which the idea of self-adaptation prevailed, was called Yeşilçam, and Yeşilçam responded to the audience’s wish to see their own identity in film frames (Güçhan, 1992). For this reason, the new understanding of cinema, which addressed social problems, caused the emergence of directors who gave the period its name, and the period between 1950-1960 was considered as an important milestone for the structuring of Turkish Cinema and the production of more than two hundred films (Kayalı, 1994). Social problems of 1960’s served the purposes of Turkish Cinema, and films, which discuss the social problems of the period were created by the so called new filmmakers. “The gradual disappearance of Yeşilçam production, which determined the cinema in Turkey from 1950’s until the mid 1980’s, changed the content of films and started the new era of director’s cinema” (Kıraç, 2011). The disappearance of Yeşilçam films starting from the mid 1970’s, since 1980’s social events like migration, rural-urban mobility, feminism, sexuality, arabesque films, economic and political events necessitated the changing of the movie of the period. In 1990’s, the tendency towards American production films as well as producer and director-based films increased, and the understanding of new era cinema, which provides different aspects in terms of narrative and technical features, came to the forefront.

The period starting from 1980’s, which was characterized with foreign expansion and the introduction of technological innovations to the country,

continued with the development of technology in 1990's, and facilitated the progress of cinema and cinema publications. While developments in economy and politics affected the society profoundly, the new formations that reflected the characteristics of the era shaped the progress of cinema (Pösteki, 2004). "The 'happy era', which started in 1960's, and during which films, which attracts the audience in prime-time hours even today, gave way to sex movies after mid 1975's, American productions or the luxury of watching video films in 1980's, and Turkish Cinema entered 1990's with serious challenges with the broadcasting of private radios-TV channels" (Pösteki, 2005b). The understanding of cinema, which started in 1990's and continued in 2000's, progressed along the axis of new filmmakers, who addressed their own stories within the possibilities. "In 2000's, a period of transformation different from Yeşilcam movement started in Turkish Cinema, and during this period, which was called the new cinema, no ideal typologies or models, no concept of "good", no reference point emerged. A director's cinema, in which the director could express herself/himself freely far from the old phrases and themes, came into existence" (Sevinç, 2014). Emergence and disappearance of Turkish Cinema in certain periods, was because of the global problems that surrounded the country. Turkish Cinema, which was weak in the 1990s with the introduction of foreign films, social events, new liberal policies, started to gain an identity with the understanding of director's cinema of the new era. "Emergence of director's cinema was based on the fact that directors presented a cinematic language, this language had an attitude, perspective, criticism, a quest for reality, and this cinema captured a sense of universality that produced profound and permanent meanings" (Çelik, 2009). Turkish Cinema gained popularity especially with the participation of national, international festivals and the awards. In 2000's, as technology gained momentum, "art movie" as a narrative style emerged in Turkish Cinema thanks to the films of new generation artists (Ulusay, 2008). In this development process of the old and new era cinema, directors accelerated and contributed to the progress of cinema with their unique narratives and fictions.

### **3. Directors' Spaces in Turkish Cinema**

"An urban discovery, cinema was born in the suburbs of Lyon, took its first steps in the big boulevards of Paris, and reached all the capitals of the world in a few years. Urban images of Lumiere, sidewalk streets of Vincennes and Joinville,

hidden depths of Buttes-Chaumont, streets of New York and urban areas like Hollywood unwittingly became the decors that witnessed the past” (Marie, 2004), and the space in cinema gradually started to be used more and more consciously. Cinema is a branch of art, which analyses social events, creates different fictions with a space setup to make the story realistic, and “reflects the scenes taken from life, and current conditions of the society to movie frames” (Tugen, 2011). The space is an essential quality of architecture and an architectural product, and the fundamental condition that bring the product into existence (İnceoğlu, 2007). The space can be put under the command of narrative as well as direct the narrative. It can become an instrument for conveying director’s messages on the cinema screen, or be the purpose of the film (Tüzün, 2008). The space in cinema makes references to the cultural codes of the society. On the other hand, cinema, with its own technical development, exhibits all the elements that confines the space, and the objects in the space within the frameworks it creates (Ergin, 2007). In this way, director creates the message to be conveyed to the audience by establishing a sense of completeness with the storyline of the film, language of the space and its narrative.

Although directors in the history of cinema from silent movies until today had different styles, their common grounds are the space (Akyıldız, 2012b). The director uses fictional spaces as well as real ones in the movie, creating the space according to the subject of the film. The space in cinema is applied as natural, fiction or virtual depending on the plot and setting of the film. The first space created according to the subject of the film is the natural spaces that are generally used as they are. Natural space is the most preferred type of space from past to the present both because of economic reasons and also in terms of time management. Fictional or virtual spaces are also created when natural space cannot be created, by “ignoring location and time” or by “paying regard to location and time”. In this sense, the director aims not only to design the space, but also conveying this emotion to the audience. Conveying emotions to the audience in cinema, and to the user in architecture, suggests that physical elements that constitutes the space must be selected and used correctly (Akyıldız, 2012c). In cinema, the director presents the product with conscious or unconscious architectural fictions in a concept of time that designs the relationship between human and the space (Allmer, 2010). The spaces seen on the cinema screen also reflects the social and cultural life of the period, and in some ways, the documents of modernisation (Akyol and Uzun, 2012).

In Turkish Cinema, a new, director centred understanding of cinema, which became prominent in 1950's, and gained momentum in 1960's, emerged. Directors such as "Atıf Yılmaz Batıbeki, Lütfi Ömer Akad, Metin Erksan", who had an influence on Turkish Cinema's creating its own language, have an important place in the history of Turkish Cinema (Scognamillo, 2003b). In the new filmmakers' period of 1960's, the space in cinema was not only used as a background, but also conveyed a sense of reality to the audience by adopting to the environment (Sarı, 2010a). In this period from 1950's to mid 1975's, the character of the film and the space were used in the same frameworks, and the films were generally shot in certain spaces such as slum, mansion, apartment, or Istanbul panorama. In Turkish Cinema, apart from the interior spaces such as slum, mansion, apartment, outdoor space is generally the city of Istanbul. With spaces such as Haydarpaşa, Sirkeci stations, Yeşilköy Airport, Karaköy pier, ferry scenes, Eminönü square, Sultanahmet (Abacı, 2004), Istanbul was the most commonly used element of narrative in Turkish films. Cinema environment, which developed as a result of technology in 1980's, continued to gain momentum starting from mid 1990's with the commercial film mentality of directors, and individual attempts to become prominent. This period of 1990's, and with 2000's paved the way for the emergence of the cinema of new generation directors, who reflected their own art and style to the screen. "In the Turkish Cinema after 1990, name such as Derviş Zaim, Nuri Bilge Ceylan, who sought a cinematic language different from that of commercial movies, far from the daily concerns and sectoral conditions, and wrote and directed their own scripts, became successful in international festivals, are considered as the filmmakers of the new era" (Altundağ, 2006). Since 1990's until today, while the character of the film and the use of space were selected according to the possibilities of the director and the plot of the movie, the films were mostly shot in areas like city, village town other than few uses of interior space. Development of technological possibilities also allowed creating the film in different spaces such as natural, fictional, and virtual spaces in accordance with the narrative of the film.

### ***3.1 Directors' Use of Space Analysis Method***

In films, human is only a complementary element, while the nature is the main character (Bazin, 2000). In cinema screen, the subject, emotion, and narrative of the film is reflected on the screen through human so that the film can have an effect on the audience. It is the duty of the director to make an impact on the

audience by presenting the subject and space of the film as a whole. The director creates the film layout by building the style, script, background, narrative, music, and space in a cause-effect relationship. The space is actually the invisible main character of the film and an important element that makes sense of the emotion and subject of the film reflected on the screen in the background. The character of the space is generally determined as closed areas like “apartment, mansion, country house”, or open areas like “forest, park, sea, coast”. Apart from the main locations in the films, auxiliary spaces shown as short scenes are also used. Areas such as “city centre, seaside, town, forest, village” where the film is staged in general area the urban areas. Depending on the storyline of the film, spaces of the film can be constructed as fictional as well as natural. Accordingly, the use of space in the films by “Lütfi Ömer Akad, one of the directors who made a ground in cinema sector with a different style and technique in a period considered as the beginning of cinema starting in 1950’s and gaining momentum in 1960’s” and “Nuri Bilge Ceylan, one of the new generation directors, who brought art film, to the forefront with his own efforts in cinema environment, which institutionalized after 1980’s, and developed with technology in 2000’s” were analysed in the study. The study was limited to five popular and awarded films from each director of 1950’s and 2000’s (Table 1), use of space by the directors was analysed, and the use of space was discussed as “the main space and auxiliary space”. Selected films were examined according to the titles “director, scenario, producer, actress/actor, feature, genre, style, importance of the film, storyline, character/space oriented, shooting location, space setup, and space analysis”.

**Table 1:** Directors and Their Analysed Movies

	Lütfi Ömer Akad’s Movies		Nuri Bilge Ceylan’s Movies
1	Vurun Kahpeye (1949)		Mayıs Sıkıntısı (1999)
2	Üç Tekerlekli Bisiklet (1961)		Uzak (2002)
3	Vesikalı Yârim (1968)		Üç Maymun (2008)
4	Gelin (1973)		Kış Uykusu (2014)
5	Diyet (1974)		Ahlat Ağacı (2018)

### 3.2 Directors’ Use of Space Analysis

The study was limited to five films by Lütfi Ömer Akad, one of the directors of 1950’s period, and five films by Nuri Bilge Ceylan, one of the directors of 2000’s period, ten films in total were defined, and “main space and auxiliary spaces” used in the film were evaluated in the context of use of space analysis.

### 3.2.1 Use of Space in Lütfi Ömer Akad Movies

Lütfi Ömer Akad (1916-2011) is considered as a director, who pioneered transition of Turkish Cinema from theatre tradition to cinema, and guided his successors. Akad wrote articles on theatre and cinema, worked as a financial advisor and production director, and started his career as a director with his movie "Vurun Kahpeye" in 1948. In 1952, he abandoned the theatrical narration technique with his film named "Kanun Namına" and adopted the style of narration unique to the cinema (Coşkun, 2009). His trilogy consisting of the films Gelin (1973), Düğün (1974), Diyet (1975), was considered as one of the important pieces of Turkish Cinema because of addressing not only rural-urban migration, but also social problems (URL3). In the film "Kanun Namına", he used Istanbul as a cinematic decor for the first time, used realistic space in his "Migration Trilogy" and these films started to be considered as classics (Sarı, 2010b). Akad gave a new impulse to Turkish Cinema, and produced his works with a brand new perspective contrary to films lacking in cinematic language (Sarı, 2010c). He pioneered the period called the generation of filmmakers, shot films on urban-rural stories, children, women, and helped Turkish Cinema gain a cinematic language with the way he made use of emotions, techniques, stage setting, actresses/actors and his selection of stories (Scognamillo, 1973). In addition to receiving many awards, he directed 71 films, wrote the storyline of 2 movies, script of 62 films, and took part in 1 film as producer, and 1 film as an actor. Lütfi Ömer Akad created his films being influenced by real events with his tendency to touch upon the realities and problems of the society he lived in (Teksoy, 2007). Within the scope of the study, films "Vurun Kahpeye (1949), Üç Tekerlekli Bisiklet (1961), Vesikalı Yârim (1968), Gelin (1973), Diyet (1974)" directed by Lütfi Ömer Akad were analysed in the context of use of space.

#### 3.2.1.1 Vurun Kahpeye (1949)



Figure 1-2-3: "Vurun Kahpeye" Exterior and Interior Space Image

**Director:** Lütfi Ömer Akad

**Scenario:** Lütfi Ömer Akad, Selahattin Küçük (Novel by Halide Edip Adıvar)

**Producer:** Hürrem Erman

**Actress/Actor:** Sezer Sezin, Kemal Tanrıöver, Settar Körmükçü, Temel Karamahmut, Arşavir Alyanak.

**Feature:** Black-White, **Genre:** Drama, War, **Style:** Social

**Importance of the Film:** Shot in 1949, the film “Vurun Kahpeye” was the first film to distinguish cinema from theatre.

**Plot of the Movie:** The film narrates the story of a teacher, who resisted occupant enemy forces during War of Independence, and was lynched as a result of a slander (URL4).

**Character/Space Oriented:** In interiors, the film is mainly character-oriented, and in exterior areas such as squares and streets, it is space oriented.

**Shooting Location:** Adapazarı

**Space Setup:** Natural Space

**Space Analysis:** The film starts with a steppe landscape, and continues with a municipality building located on the main street of the town. Interior of the municipality building features plain walls, light coloured table, chair, and net curtain. In stone and partially earthen streets, there are light-coloured, tile-roofed houses with either single or double-storey high wooden doors and wooden shutters on the right and left sides. Main space of the film is the country house. The house is entered through a high garden entrance with high wooden railing. Inside the main living area of the house, there is a simple rug, a dining table with a white embroidered cloth on it, wooden chairs, a mirrored console, a sofa, floor cushions, a wall clock, a tapestry, and a curtain. Another setting of the film is the school, which is a two-storey masonry building, entered with a high staircase surrounded by greenery. The classroom has high ceilings, a chalkboard, a high wooden cabinet, and desks. Another frequently seen place in the film is the village coffee house with wooden tables and chairs. Although the space is in the background in the film, accessories such as mirrored console, chandelier, vase, lamp, painting are clearly shown in the focal point of the camera. Generally, the space or the elements belonging to the space are framed with character. The auxiliary spaces of the film are single-storey, rarely two-storey wooden village houses, coffee house garden, village house garden, village square, village school

garden, fabric shop front, village streets, town hall, blacksmith front, mosque front, fountain, stream, bridge, stone and earth streets, stone arch, woodland, cemetery. In this film, interior elements are shown in certain places and with a focus on character, and the outdoor spaces are used as auxiliary spaces.

### 3.2.1.2 Üç Tekerlekli Bisiklet (1961)



Figure 4-5-6: “Üç Tekerlekli Bisiklet” Exterior and Interior Space Image

**Director:** Lütfi Ömer Akad

**Scenario:** Vedat Türkali (Novel by Orhan Kemal)

**Producer:** Nusret İkbâl

**Actress/Actor:** Ayhan Işık, Sezer Sezin, Nusret İkbâl, Osman Alyanak, Sadettin Erbil, Reha Yurdakul.

**Feature:** Black-White, **Genre:** Drama, **Style:** Social

**Importance of the Film:** The film “Üç Tekerlekli Bisiklet” directed by Lütfi Ömer Akad in 1961 is one of the important films that documents the unplanned urbanization in Istanbul. In addition, Akad shot most of the film, and Memduh Ün completed the final parts.

**Plot of the Movie:** The film narrates the story of a fugitive wanted for murder, a young woman who has not heard from her husband for years, and her little son (URL5).

**Character/Space Oriented:** In interiors, the film is mainly character-oriented, and in exterior areas such as squares and streets, it is space oriented.

**Shooting Location:** Istanbul

**Space Setup:** Natural Space

**Space Analysis:** The movie starts in the forest area in Istanbul and continues in the slum district. There are four to seven-storey apartment buildings in the city centre in the background of the slums. Main space of the film is the shanty

houses. There are plain walls, terek on the wall surface, kitchen counter, sacks hanging on the wall, a wooden staircase leading to the attic, a wooden chest, wooden dining table and chair. The bedstead with iron headboard is seen in the bedroom. The main space of the house is the kitchen, and the scenes in front of the kitchen and counter are often seen in the film. The other space of the film is a luxurious villa where vibrant colours stand out. In the background are the stairs, the massive furniture belonging to the hall, the paintings, and candlesticks on the wall surface. In the film, where the urban space is generally at the forefront, the characters are at the forefront in the interior spaces, and elements such as the table, chair, bed, and house door are clearly conveyed in the focal point of the camera. The auxiliary spaces of the film are city square, driveways, traffic, mosque, slums, four-seven-storey apartments in the city centre, coffeehouse garden, slum house garden, stone and dirt streets, market area, green area, police station, hill, hut on the hill, the sky, the empty space surrounded by brick walls, the villa, and the junkyard. Urban spaces are also used as the main space of the film, just like interior spaces. In this film, interior elements are shown in specific spaces and with a focus on the character.

### 3.2.1.3 *Vesikalı Yârim* (1968)



**Figure 7-8-9:** “Vesikalı Yârim” Exterior and Interior Space Image

**Director:** Lütü Ömer Akad

**Scenario:** Safa Önal (Novel by Sait Faik Abasıyanık)

**Producer:** Şeref Gür, Hürrem Erman

**Actress/Actor:** İzzet Günay, Türkan Şoray, Ayfer Feray, Semih Sezerli, Aydemir Akbaş, Hakkı Kıvanç.

**Feature:** Black-White, **Genre:** Drama, **Style:** Social

**Importance of the Film:** “Vesikalı Yârim”, shot by Akad in 1968 in his unique cinematic language, is one of the important films he worked on about urban life.

**Plot of the Movie:** The film narrates the story of a greengrocer who lives a simple life. One day, he goes to a night club at the insistence of his friends, meets a singer working there, they fall in love and go through problems (URL6).

**Character/Space Oriented:** In interiors, the film is mainly character-oriented, and in exterior areas such as squares and streets, it is space oriented.

**Shooting Location:** Istanbul

**Space Setup:** Natural Space

**Space Analysis:** The film starts with the view of a mosque in Istanbul, two-three-storey houses, and a greengrocer on the street. Main spaces of the film are greengrocer, open areas, night club, and an apartment house. The night club, one of the places where the majority of the film takes place, features wooden panelled walls, a high wooden stage, different wall concepts on the surface of the wall behind the stage, wooden coffee tables and tables around the marble table, lighting elements and paintings. Wooden musical instruments, decorations on the walls of the night club, and the accessories on the table are shown in detail. The other place where the film frequently takes place is the apartment. There is a four-winged light coloured entrance door, wooden solid furniture, a table covered with an embroidered sheet, armchair, fabric screen, long net curtains, and massive furniture in the house. Wooden beds, bedside tables, dressing tables and wardrobes are often portrayed in the bedroom. In addition, from every point of the hall, the kitchen with open shelves and table enters the film frame. There is a wide column in the middle of the main living areas in both the night club and the apartment. In the interior of the wooden detached house, cedar, wooden furniture, and fabric curtains are displayed together. Usually, the urban space and characters are in the foreground, the details of the interiors are clearly captured in the focal point of the camera. The auxiliary spaces of the film, are the city square, the streets and avenues of Istanbul, the silhouette of Istanbul, the seaside, roadways, traffic, mosques, slums, four-seven-storey apartments in the city centre, two-storey wooden houses, avenues and streets, greengrocer, pavilion, bakery, fruit and vegetable market, apartment, jewellery-clothes shop, grocery store, market place, fish restaurant, fishermen, Beşiktaş square, shopfronts on the street, partial historical areas, green area, prison, hospital and hospital garden. Urban spaces are also used as the main space of the film, just like interior spaces. In this film, interior elements are shown in specific spaces and with a focus on the character.

### 3.2.1.4 *Gelin* (1973)



Figure 10-11-12: “Gelin” Exterior and Interior Space Image

**Director:** Lütfi Ömer Akad

**Scenario:** Lütfi Ömer Akad

**Producer:** Hürrem Erman

**Actress/Actor:** Hülya Koçyiğit, Aliye Rona, Kamran Usluer, Ali Şen, Kerem Yılmaz, Kahraman Kırıl.

**Feature:** Coloured, **Genre:** Drama, **Style:** Social

**Importance of the Film:** Akad’s film “Gelin”, shot in 1973, is the first of his trilogy with “Düğün” and “Diyet”, which addresses immigration problem.

**Plot of the Movie:** The film narrates the story of a family, which migrates from the country to the city, their attempts to keep up with the city life, and the problems they experience (URL7).

**Character/Space Oriented:** In interiors, the film is mainly character-oriented, and in exterior areas such as squares and streets, it is space oriented.

**Shooting Location:** Istanbul

**Space Setup:** Natural Space

**Space Analysis:** The movie starts with the demonstration of the train station, ferry port, sea views, ferry ride, crowded streets in Istanbul and continues in the garden of the slum house. The majority of the film takes place in the slum garden. Daily activities such as eating, laundry and sitting are often carried out in the garden. Slum house, small grocery store, slum streets dominate the film. Space setup is mostly based on these places. While the slum interior is often used for dining in the evening, the centre of the seating area is the dining table, chairs and daybed, part of the living area is the kitchen and bedroom. In the background of the streets and slums where children play, high buildings are also included in the movie frames. Urban images are frequently used in the film as well as the interior areas. Usually, the characters are in the foreground, the details of the interiors are clearly visible in the focal point of the character and

the camera. The auxiliary spaces of the film are the silhouette of Istanbul, the train station, the ferry pier, the beach, the streets and avenues of Istanbul, the seaside, the vehicle roads, the traffic, the shanty houses, the slum garden, the coop, the grocery store, the minibus stops, the five-six-storey apartments in the city centre, a -two-storey houses, slums, streets lined with high garden walls, hospital, playground, livestock market, cemetery, mosque, factory are outdoor areas. Urban spaces are also used as the main space of the film, just like interior spaces. In this film, interior elements are shown in specific spaces and with a focus on the character.

### 3.2.1.5 *Diyet* (1974)



**Figure 13-14-15:** “Diyet” Exterior and Interior Space Image

**Director:** Lütü Ömer Akad

**Scenario:** Lütü Ömer Akad (Novel by Ömer Seyfettin)

**Producer:** Hürrem Erman

**Actress/Actor:** Hülya Koçyiğit, Hakan Balamir, Erol Taş, Erol Günaydın, Osman Alyanak, Atıf Kaptan.

**Feature:** Coloured, **Genre:** Drama, **Style:** Social

**Importance of the Film:** Akad’s film “Diyet”, shot in 1974, is the third of his trilogy with “Gelin” and “Düğün”, which addresses immigration problem.

**Plot of the Movie:** It narrates the living conditions of a family migrating from the village to the city and the worker-employer relations in a factory from the perspective of working class (URL8).

**Character/Space Oriented:** In interiors, the film is mainly character-oriented, and in exterior areas such as squares and streets, it is space oriented.

**Shooting Location:** Istanbul

**Space Setup:** Natural Space

**Space Analysis:** The film starts with the portrayal of machines in a factory in Istanbul. The film often takes place in the garden of the factory where one and

two storey barracks are located. One of the main spaces of the film is the slum house garden. There are several detached, side-by-side houses surrounded by a garden, and daily tasks such as sitting, eating, washing are usually done in the garden. The factory workshop, factory garden, slum garden are frequently used in the film. Slum streets and houses appear along the way at the time of departure and entrance from the factory. The auxiliary spaces of the film are the factory garden, a single and several-storey factory structure, slums, slum and slum garden, coffee house, two-storey houses that are rarely seen in the slum streets, Istanbul streets and avenues, union building, five-six-storey apartments in slums, city In the centre, high-rise buildings, open area, park, picnic area, forest area, roadways, traffic, eight-ten-storey apartment buildings under construction. Urban spaces are also used as the main space of the film, just like interior spaces. In this film, interior elements are shown in specific spaces and with a focus on the character.

### *3.2.1.6 Analysis of the Use of Space in Lütü Ömer Akad Movies*

Lütü Ömer Akad presents social events in his films by blending them with the elements that make up the city. Akad is a cultural filmmaker who reflects on historical and cultural issues, and a film director with a flexible view of cultural accumulation and diversity. Akad's cinematography makes use of the cultural richness of Turkey, and develops it in a concrete form (Kayalı, 2006). In his films, he "attempts to understand Turkish people, seeking answers to the questions How do they talk? What are their dressing preferences? How do they solve their daily problems?" and has developed his own unique cinematic language with its decor, lighting, camera angles and actor management in accordance with the formal characteristics of the Turkish people. In his films, he tries to understand the subject by going to the regions where story takes place, and instead of classical narration, he deals with the individual in various networks in the society. He used the social environment of the period as a natural decor through Turkish economy, urbanism, music, political structure, warm relations, and solidarity of the society (Gündođdu, 2020). In his films, Akad reflects the use of screen on the screen through such cultural themes and diversity. He uses space as a complementary element to his character in the films. Shaped under the influence of social events of the period, his films have a social purpose to convey them to the audience. While the scenes of Istanbul, the streets of the city, the seaside, partly historical areas are portrayed in the films depicting migration

from the country to the city and unplanned construction, the main space of the film is formed by certain spaces such as shanty houses and apartments, and the film frames are alternately reflected in these spaces. While he frequently uses slums, apartments and urban images in his films, the main space is based on interior spaces such as slums and flats. In main spaces, he uses the interior as a background by keeping the characters in the foreground. The surrounding area of the dining table, accessories such as kitchen counter, sitting area, bed, tapestry, kitchen shelves, sofa, cedar, closet are often displayed in the films. While he uses the urban space and nature in the background to the characters or separately, interior elements are used as the background of the character. It is observed that Akad narrates the social events through the people and the environment he lives.

### ***3.2.2 Use of Space in Nuri Bilge Ceylan Movies***

Nuri Bilge Ceylan (1959-...) is considered one of the filmmakers of the new era with his identity as a director, scriptwriter, and producer. He started his cinema career with his short film named "Koza". "The movie "Kasaba" was his first feature film and was an autobiographical and pastoral film that was shown in many festivals. Autobiographical traces portrayed in his first two films continued in the film named "Mayıs Sıkıntısı" which achieved a great success. His movie "Uzak", shot in 2002, competed in 56th Cannes Film Festival, and received the "Grand Jury Prize", which is the second most prestigious award after Golden Palm (URL3). Common characteristics of filmmakers of the new era is their portrayal of the possibility of a supernatural phenomenon, a sense that govern, directs the human behaviour rather than the psychology (Güney, 2012a). Ceylan's films try to intuitively grasp the meaning of life by providing time for the viewer to intuitively reach the spiritual reality, blank shots, static scenes obtained with a fixed camera (Akbulut, 2005a). In Ceylan's films, it is seen that image techniques such as thunder, the hum of the wind, the rotation of a wheel, and ordinary landscapes, which cannot resolve the conflicts caused by human interaction with nature, but aesthetize it in the form of metaphysical transcendence, are presented in the form of a documentary or semi-documentary (Güney, 2012b). Nuri Bilge Ceylan is one of the prominent representatives of the director's cinema, with a unique style of expression, where visual aesthetics come to the fore, and with films that focus on the phenomenon of "going", "staying" and "returning" (Kıraç2008) of the people in the big city rather than

social issues. Within the scope of the study, the films “Mayıs Sıkıntısı (Clouds of May) (1999), Uzak (Distant) (2002), Üç Maymun (Three Monkeys) (2008), Kış Uykusu (Winter Sleep) (2014), Ahlat Ağacı (Wild Pear Tree) (2018)” directed by Nuri Bilge Ceylan were analysed in the context of use of space.

### 3.2.2.1 *Mayıs Sıkıntısı (Clouds of May) (1999)*



**Figure 16-17-18:** “Mayıs Sıkıntısı” Exterior and Interior Space Image

**Director:** Nuri Bilge Ceylan

**Scenario:** Nuri Bilge Ceylan

**Producer:** Nuri Bilge Ceylan

**Actress/Actor:** Muzaffer Özdemir, Mehmet Emin Toprak, Fatma Ceylan, Mehmet Emin Ceylan.

**Feature:** Coloured, **Genre:** Drama, **Style:** Social

**Importance of the Film:** Ceylan’s movie “Mayıs Sıkıntısı”, which was shot in 1999, is a film that achieved great success without using professional actors and with film frames in the form of postcards.

**Plot of the Movie:** The film tells the story of a man who goes to his childhood town to shoot a movie (URL9).

**Character/Space Oriented:** In interiors, the film is mainly character-oriented, and in exterior areas such as squares and streets, it is space oriented.

**Shooting Location:** Çanakkale-Yenice

**Space Setup:** Natural Space

**Space Analysis:** The movie begins with a view of the street from the coffeehouse window and then continues with the streets and the family house in front of the coffeehouse. One of the interiors, which is displayed in the film most is the detached house and country houses. The detached house has light coloured walls and doors, small narrow areas. Some of the walls of the interior are light coloured and some of the walls are covered with coloured wood. There is a sink corner in the dim narrow corridor. Patterned and fabric upholstered wooden

armchairs, dining table and chairs, wooden whatnot, and family photos appear on wooden light-coloured wall surfaces. The bedroom has a brass bedstead, bedside table, thick curtains and tulle, a small kitchen has a terek and bottom bench cabinets on the wall surface, a small table and chair in the working corner. In the brick-covered, tile-roofed village house, there are unpainted walls, clothes hanging on the wall surface, a floor bed, and a sofa. The auxiliary spaces of the film are the factory environment and interior, coffee shop, village house garden, village coffee house, central coffee shop, sports field, taxi stands, market area, tailor shop. Mainly, outdoor areas are used in the film. Mountain view roads, park, town centre, detached village houses, stream, forest area, fields, sea view, monumental areas, sunflower fields, day and night forest areas are frequently featured. In this film, the interior is shown in certain places and with a focus on character, and the main space of the film is outdoor spaces with frequently used open spaces.

### 3.2.2.2 *Uzak (Distant) (2002)*



Figure 19-20-21. “Uzak” Exterior and Interior Space Image

**Director:** Nuri Bilge Ceylan

**Scenario:** Nuri Bilge Ceylan

**Producer:** Nuri Bilge Ceylan, Ayhan Ergürsel, Feridun Koç

**Actress/Actor:** Muzaffer Özdemir, Mehmet Emin Toprak, Nazan Kesal, Fatma Ceylan, Ercan Kesal.

**Feature:** Coloured, **Genre:** Drama, **Style:** Social

**Importance of the Film:** Ceylan’s film “Uzak”, shot in 2002, which he not only directed, but also undertook scriptwriting and cinematography, is an important film that aims at simplicity.

**Plot of the Movie:** The film tells the story of a young man who left his job in the factory where he worked in the town and came to Istanbul for his dreams (URL10).

**Character/Space Oriented:** In interiors, the film is mainly character-oriented, and in exterior areas such as squares and streets, it is space oriented.

**Shooting Location:** Çanakkale, Istanbul

**Space Setup:** Natural Space

**Space Analysis:** The film begins with a village with snow-covered mountain views and continues with the interior of an apartment in Istanbul and the streets of Istanbul. The most used day and night shots in the film are the living room, kitchen, working area, photo studio, bedroom of the apartment. There are many paintings on the light-coloured living room walls of the apartment. There are lighting elements in the living room, thick curtains, carpet, wooden cabinet, cupboard, bookcase, study table, archive cabinets, wooden dining table and chairs, a floor bed in the bedroom, a wooden wardrobe, a hanger on the wall, a wooden coat rack at the entrance of the house and a balcony of the living room. Kitchen and bathroom appear very little in some scenes of the movie. Another setting for the movie is the house in the town. In the wainscot covered living room interior, there are armchairs covered with dark fabric, large windows, paintings on the wall surface, a table on the coloured walls, wooden solid cabinets, and the bedroom with coloured curtains, two sofas and a table, a bedroom with a cot, a kitchen, and a balcony. Apart from the apartment, mainly outdoor areas are also used in the film. The auxiliary spaces of the film are the town's two-five-storey houses, mosque, mosque interior, street and street views, steppe, hospital corridors, patient room, snowy Istanbul views, seaside, tea garden, park, historical areas such as Sultanahmet square, shipyard, coffeehouse, ferry pier, five-six-storey apartments, passage, restaurant, music house, artisan restaurant, office, apartment entrance, apartment blocks, urban texture, and airport. In this film, the interior is shown in certain places and with a focus on character, and the main space of the film is outdoor spaces with frequently used open spaces.

### 3.2.2.3 Üç Maymun (*Three Monkeys*) (2008)



Figure 22-23-24: “Üç Maymun” Exterior and Interior Space Image

**Director:** Nuri Bilge Ceylan

**Scenario:** Ebru Ceylan, Ercan Kesal

**Producer:** Nuri Bilge Ceylan, Zeynep Zbatur Atakan, Valerio De Paolis, Fabienne Vonier, Cemal Noyan.

**Actress/Actor:** Ahmet Rıfat Şungar, Ercan Kesal, Cafer Köse, Gürkan Aydın, Yavuz Bingöl, Hatice Aslan

**Feature:** Coloured, **Genre:** Drama, **Style:** Social

**Importance of the Film:** "Üç Maymun", which Ceylan shot mainly drama style in 2008, is his third feature-length film that was accepted to the competitive section of Cannes Film Festival.

**Plot of the Movie:** The film narrates the story of a family's breakup (URL11).

**Character/Space Oriented:** In interiors, the film is mainly character-oriented, and in exterior areas such as squares and streets, it is space oriented.

**Shooting Location:** Istanbul-Yedikule

**Space Setup:** Natural Space

**Space Analysis:** The movie begins on a dark road surrounded by trees and continues in the interior of a house. A living room with a sea view, where pictures are hung on light coloured wall surfaces, two separate bedrooms, a kitchen, and a terrace with the attic of the house are frequently used. There is a bedstead, mirrored cabinet, table in the main bedroom, only a chair and bedstead in the other bedroom, a table in front of a large window with a view in the living room, and a cloth covered armchairs around the chairs, a kitchen, and a bathroom in one corner of the living room. Apart from the natural light coming from the living room window of the house used in the film, parallel to the subject of the film, the place is depicted as very dark. The auxiliary spaces of the film are the railway, the railway underpass, the train station, the three-four-storey apartments next to the railway, the prison, the factory, the office, the bus station, the industrial kitchen, the seaside, the wedding hall, the apartment corridor, the walls, the highway sides, cemetery, Emimmü, mosque, mosque interior, coffeehouse, police station, roof floor. Apart from the house, mainly outdoor areas are also used in the film. In this film, the interior is shown in certain places and with a character-oriented focus, while the outer spaces are frequently used with character-oriented narrative.

### 3.2.2.4 *Kış Uykusu (Winter Sleep) (2014)*



Figure 25-26-27. “Kış Uykusu” Exterior and Interior Space Image

**Director:** Nuri Bilge Ceylan

**Scenario:** Ebru Ceylan, Nuri Bilge Ceylan

**Producer:** Zeynep Özbatur Atakan

**Actress/Actor:** Haluk Bilginer, Melisa Sözen, Demet Akbağ, Nejat İşler, Mehmet Ali Nuroğlu.

**Feature:** Coloured, **Genre:** Drama, **Style:** Social

**Importance of the Film:** Ceylan’s film “Kış Uykusu”, which he shot in 2014, is a film in which he brings nature to the forefront and turns it into a long story with long dialogues.

**Plot of the Movie:** In the film, the problematic relationship of someone who has settled in Cappadocia to spend his retirement days with his environment is narrated (URL12).

**Character/Space Oriented:** In interiors, the film is mainly character-oriented, and in exterior areas such as squares and streets, it is space oriented.

**Shooting Location:** Kapadokya

**Space Setup:** Natural Space

**Space Analysis:** The film starts with Cappadocia’s landscapes and continues with the exterior and interior view of a hotel in the natural texture of Cappadocia. The main shooting spaces of the film consists of the study room, living area, kitchen area and bedrooms in the hotel. In the film, where the natural structure is frequently used, the interior wall surfaces of the building are left naturally, the tables and decorative items unique to the region, fabric-covered wooden armchairs, coffee table, stove, bookcase, desk, chair, whatnot, terek on the wall surface in the kitchen, kitchen cabinets, tables and chairs, and outdoor wrought iron seating furniture. In the bedroom, there are solid woodwork tables, bedsteads, and decorative elements on the wall surfaces. In the exterior of the building, a concrete staircase also provides the passage between floors. Apart

from the main space, there is another detached house where chester type sofas, wooden furniture, local fabrics, and covers are frequently used. Another space used in the film is the village house, with decorative elements on the sofa, coffee table, cupboard, plastic chair, stove, fireplace, table, and wall surfaces in the living room. The auxiliary spaces of the film are the horse field, the river, the open spaces, the village house, the coffee house, the school building, the streets and landscapes of Cappadocia, the railway station, the village house garden, the cemetery, and the detached house. In this film, the interior elements are shown in certain places and with a focus on character, and the main space of the film is outdoor spaces with frequently used open spaces.

### 3.2.2.5 *Ahlat Ağacı (Wild Pear Tree) (2018)*



Figure 28-29-30. “Ahlat Ağacı” Exterior and Interior Space Image

**Director:** Nuri Bilge Ceylan

**Scenario:** Nuri Bilge Ceylan, Ebru Ceylan, Akın Aksu

**Producer:** Zeynep Özbatur Atakan, Alexandre Mallet-Guy, Olivier Père

**Actress/Actor:** Doğu Demirkol, Murat Cemcir, Bennu Yıldırımlar, Tamer Levent, Ahmet Rifat Şungar.

**Feature:** Coloured, **Genre:** Drama, **Style:** Social

**Importance of the Film:** The movie “Ahlat Ağacı” shot by Ceylan in 2018, which narrates the problems of Anatolian people, is the Ceylan film that was funded most by the Ministry of Culture and Tourism.

**Plot of the Movie:** The film narrates the story of a man who returns to his hometown after graduation and tries to raise money so that he can have the book printed (URL13).

**Character/Space Oriented:** In interiors, the film is mainly character-oriented, and in exterior areas such as squares and streets, it is space oriented.

**Shooting Location:** Çanakkale

**Space Setup:** Natural Space

**Space Analysis:** The film begins with a view of the coast, then continues with the bus station, Çanakkale avenues and streets. The main setting of the movie is a detached house. In the living room of the house, there are fabric covered wooden armchairs, coffee table, console buffet, dining table, thick fabric curtains, decorative items on the wall surfaces, sofa with wooden shelves, coffee table, study table, kitchen cabinets, counter, table, and chairs in the bedroom. Another space used in the film is the two-storey village house, with armchairs, a floor table, a plastic chair, and decorative elements on the wall in the sitting area. Auxiliary spaces in the film are village house, village house garden, village streets, woodshed, town hall, presidential room, office, district views, woodland, factory area, bus station, restaurant, market, shops, taxi stand, jeweller, coffeehouse, detached houses, school garden, beach restaurants, bookstore, marina, three-four-storey apartments, side streets, classroom, barracks, village roads, iron bridge, the square where the Trojan horse is located, coffee shop, wedding area, beach. In this film, the interior elements are shown in certain places and with a focus on character, and the main space of the film is outdoor spaces with frequently used open spaces.

### *3.2.2.6 Analysis of the Use of Space in Nuri Bilge Ceylan Movies*

Nuri Bilge Ceylan presents human and environmental relations in his films by blending them with all the elements that make up the city. In his films, he uses the interior space as a complement to his films by reflecting the character and the urban area with his own character. “In his films, Ceylan presents the modern urban life, the migration from the town to the big city, the traditions in a rapidly urbanizing and suburban society and the reshaping of the environment through alienated characters who seek loneliness” (Diken et al., 2020). There is a social purpose in his films, he conveys this social purpose to the audience, especially by using urban elements and nature. While outdoor landscapes, neighbourhood streets, seaside and partially historical areas constitute the main space of the film, a certain number of interior spaces are used alternately in his films. While the apartment is frequently used in the village house, the director also makes use of the nature, as well as the interior spaces where the main scenes take place. While Ceylan’s films have a lot of interaction with nature such as “thunder, sky, the sound of the sea, the sound of the streets, the roar of the wind”, he conveys his films like documentaries. Creating concise times with slow or still camera

movements, natural light, natural space, and natural sound preference, creating a frame within the frame (Akbulut, 2005b) reveals its unique cinematic language. In addition to this, he also uses auxiliary spaces such as coffee house, prison, bus terminal and shop. While its characters are at the forefront in interior spaces, he uses nature as the main space in open spaces. It transfers the main living areas where the user's life takes place in a limited space, keeping character in the foreground. Apart from the dining table surroundings, kitchen countertops and beds, he also frequently uses accessories such as paintings, kitchen cupboards and shelves, sofa, cupboard, massive furniture on the wall surface, which are the social elements of daily life. He uses the elements of the interior space as the background of the characters of nature or urban space, or alone, as the background of the character. In Ceylan's movie, it is observed that he reflects human problems with scenes of daily life and while using this, he conveys this by turning the interaction with the nature into a goal.

### *3.3 An Evaluation of Directors' Use of Space*

The use of space was analysed in the films of Lütfi Ömer Akad and Nuri Bilge Ceylan, who stood among other directors of the period in 1950's and 2000's. Akad and Ceylan tended to make films within the framework of their own means under different period conditions, and made films with a perspective that addresses a social issue and people. Lütfi Ömer Akad addresses the society and the social events of the society as a whole with the urban environment, reflects it on the cinema screen, and uses the space as a complement to the character. While using the urban space as a background or on its own in the background of the person in accordance with the subject of the film, the interior space, which is the main space of the film, is used in the background of the character. It is observed that he narrates mostly the urban space, and partially the nature, through social events, people, and the environment he lives in (Table 2-3). Nuri Bilge Ceylan narrates the problems of people with scenes of daily life, blending cities and towns with nature, reflecting his films in the form of photographs. He uses people in interior areas, and nature in open spaces. While using nature or urban space as a background or on its own in the background of its characters, he uses the elements of the interior space in the background of the character. It is observed that he partially conveys the interior space through humans, who bear the problems of the daily life, and the environment (Table 2-3).

In this context, “*director, scenario, producer, actress/actor, feature, genre, style, importance of the film, storyline, character/space oriented, shooting location, space setup, and space analysis*” information for ten films by two directors of Turkish Cinema from different periods were defined, and “*main spaces and auxiliary spaces*” used in the films were evaluated in the context of *space analysis*. In this sense, it is observed that Ceylan’s films come to the forefront with a minimalist style, less people, less space, and nature, and Akad’s films with a simple expression, less people, less space, and urban environment. In this context, it is observed that two directors who have produced works in different periods have a similar style, and they use the interior space as a background with similar techniques, blending nature or the urban environment with the people and the subject of the film. Similar characteristics of use of space in the cinematography of Lütü Ömer Akad and Nuri Bilge Ceylan, directors of different periods in Turkish Cinema, are as follows:

- The use of interior space is limited and focused on character in certain areas.
- Areas such as living rooms, bedrooms, and kitchens were frequently used in interior spaces.
- The interior spaces are used as the background of the character.
- In the interior spaces, a connection is established with the exterior through windows.
- The locations used according to the plot of the film strengthen the narrative of the film.
- The exterior spaces are used either as the background of the character or as the main space.
- Elements of nature such as forests, rivers and sea are used as the main place.

**Table 2:** Directors’ Use of Space

Use of Space	Character/ Space Oriented	Director	
		Lütü Ömer Akad	Nuri Bilge Ceylan
Use of Interior	Character Oriented	+	+
	Space Oriented	-	-
Use of Urban Environment	Character Oriented	+	+
	Space Oriented	-	-
Use of Nature	Character Oriented	+	+
	Space Oriented	+	+

Table 3: Directors' Use of Space Comparison Table

Director	Lütfi Ömer Akad					Nuri Bilge Ceylan				
Film	Vurun Kahpeye (1949)	Üç Tekerlekli Bisiklet (1961)	Vesikalı Yârim (1968)	Gelin (1973)	Diyet (1974)	Mayıs Sıkıntısı (1999)	Uzak (2002)	Üç Maymun (2008)	Kış Uykusu (2014)	Ahlat Ağacı (2018)
Style	Social	+	+	+	+	+	+	+	+	+
Space Setup	Natural	+	+	+	+	+	+	+	+	+
Character/Space Oriented	Fictional									
	Character	+	+	+	+	+	+	+	+	+
Frequently used spaces in the Film	Village House	+				+				
	Coffeehouse	+				+				
	Slum House	+			+					
	Slum Garden		+		+					
	Grocer				+					
	Apartment			+			+			
	Detached House			+			+		+	+
	Hotel								+	
	School	+								
	Factory					+				
Factory Garden				+	+					
	Pavilion			+						
Greengrocer			+							
Village-Town Views	+					+	+		+	+
	Urban Landscapes		+				+	+		
Nature Landscapes	+					+	+	+		+

## 4. Conclusion

Cinema reflects the transformation of all kinds of social, social, and economic events between the past and the present. Spatial images reflected on the screen of the cinema are important in the current and historical perception of the change, progress, and technology between the past and the present. It reveals the limited character of rural life and the increasing crowd of urban life, consumption, and thus the relationship that cinema establishes with the city. The director endeavours to convey a social problem to the audience in every film she/he shoots, so she/he strengthens the film's spatial elements and narrative. Films that reflect rural-urban migration, social problems and human-oriented problems give references about the past. In this sense, the cinema understanding that the director put forward with his own efforts due to economic constraints in 1950s cinema also manifests itself in the cinema of the 2000s. In the director's cinema, there is a purpose that the director sets forth with his own efforts and style, which he wants to take from the society and give to the society. Issues arising from daily life such as class differences, rural-urban migration, town-to-city departure, rich-poor distinction, worker-employer problems are presented by blending them with the spatial setup. Using a real or a natural place in the film and presenting the interaction of space and character together increase the effect of film's message. Accordingly, the use of space in the cinema of the 1950s and 2000s was discussed through the director's cinema, and the change in the use of space in the old and new periods of Turkish Cinema was analysed in the study. Lütü Ömer Akad, one of the filmmakers of the former period, and Nuri Bilge Ceylan, one of the new period filmmakers, are seen to have transferred the problems of daily life to the cinema with similar style and similar economic conditions, although they have worked in different periods.

Lütü Ömer Akad developed his films with melodrama, drama, social style, and the social problems and conflicts of the period through "shanty town, city, worker, rich, poor" concepts. He tried to convey the emotion of the film in a cause-effect relationship with a composition that is limited to its character and its surroundings, both its interior and exterior. He used the characters as purpose and space as a means to support and reinforce the narrative. In Lütü Ömer Akad's films, the focus is human, and he presents space by blending it with people. While using the interior and exterior space as an instrument in the context of its relationship with people, it strengthens the narrative by using the

outer space as a composition with a visual presentation of the social events of the period.

Nuri Bilge Ceylan's films are based on a drama, social style, and the individual's own problems, "moving away from a place like town, city, personal depression". He tries to convey the emotion of the film in a cause-effect relationship with the character and his environment, especially the exterior. He used the characters as purpose and space as a means to support and reinforce the narrative. In Nuri Bilge Ceylan's films, the focal point is human, and any subject on human is presented with the urban space in a plain narrative style. While the interior space is used as an instrument in the context of its relationship with the human, the outer space is presented as a visually expressive composition, strengthening the narrative by connecting the interior with the outer space.

In this sense, it is observed that directors' spaces of the 1950s and 2000s have transformed in parallel with the changes in social events. Family structure, social relations, rich-poor distinction, urban-peasant distinction, individual problems, economic and technological innovations are important concepts, which are reflected in and affect cinema. While social problems are addressed in the cinema of the old period, the new era cinema deals with the problems of the individual, who is alienated to himself/herself and the environment he/she lives in. Despite the change in the social process of the films, the concept of "space emerging as traditional and modern" has led to the consideration of interior and exterior spaces as a whole. The space has turned into an element that strengthens the narrative rather than being the background of the movie. The directors' use of space influenced both the narrative of the film and the emotions conveyed in the film. The change created by the economic conditions on the society in different periods has transformed the use of space as a "traditional and modern" concept.

Accordingly, although both directors' limited selection of actors and their use of specific locations show similarities in their films, their preferred spaced differ depending on the subject of the film. While Akad addresses people mostly in the context of the urban environment, Ceylan presents people by blending them with nature. It is observed that Akad and Ceylan prefer the use of character in interiors and urban space-oriented outdoor spaces. Lütfi Ömer Akad deals with the individual in a network of various relationships within the society as a whole, and without detaching from the environment, while Nuri Bilge Ceylan films discuss the individual alienated within the society on his/her own. Despite

the differences reflected by the characters of Akad and Ceylan, it is observed that they prefer similar styles and similar use of space within the framework of economic conditions. The limited interior views and focus on the character in the interior, the use of the outer space integrated with the character, and the focus on the outer space reveal that both directors use a similar narrative language. As a result, it has been determined that, since the very beginning of cinema, “the use of space in the sense of director’s cinema” has the same style and similar features despite different approaches, and preferred the use of character-oriented, nature or urban images, although two directors’ use of space was shaped within the framework of changing living conditions.

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### **Figure References**

Figure 1-30. Screenshots were captured by watching the films.



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# CHAPTER XIV

## EVALUATION OF URBAN SILHOUETS ON THE ART OF PAINTING: THE CASE OF ISTANBUL

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### 1. Introduction

Art is an action that is produced by blending in creativity, and feeding from humanity, society and the environment. It reveals a new form as well as technique. It is original; it transforms the well-known existing forms, colour, texture and light. For this reason, art, artist and their works are used as a tool for the society to develop and get different perspectives in all aspects. The subject of this work is painting, which is one of the life veins of art, as it reflects and even directs the political, economic and social situation of the society.

In Turkish painting, cities are often dealt with in terms of “fund” or “ground”. The space, which is considered as a theme in the art of painting, is also an important part of the city skyline. In this study, the common point of painting, the city silhouette and the transformation of space, will be examined through the works of 20th century painters. Comparing the works of different artists describing Istanbul in the same period will provide an opportunity to look at the spaces that make up the urban identity from an artistic and sociological perspective. There are similarities and differences in the way the painters depict Istanbul. These differences can be evaluated as aesthetic works that show the sociological changes Istanbul experienced before the Republic or reveal the

established values that form the identity of Istanbul. Istanbul is the main venue for Turkish painting as well as for social and cultural changes. It can be said that many details about Istanbul such as districts, ferries, neighborhoods, daily life, historical artifacts, mansions and streets are described in Turkish painting. Beyond being a place for painting, Istanbul is an important city that harbors historical changes. For this reason, the focus of the study is based on paintings describing Istanbul.

Painting is an independent art form. However, it has affected other disciplines and has also been influenced by other disciplines. In painting, space takes place as a concept, expressing the individual's environment, actions, perception and life. The space is defined by its limited form, details and features such as colours, forms, and textures. For this reason, it shows itself in the art of painting as well as in other disciplines. The first examples of painting-space relationship can be seen in the paintings drawn on cave walls at prehistoric times. The place, where the first painting (cave wall) is located is a space. The relationship between painting and space had been limited to the space only until the painting has been taken to the next step, which is the perspective. Not knowing perspective encumbered the creation of the space in painting. With the discovery of perspective in the Renaissance Period, the usage areas of the space in painting have been expanded and the effects of the two areas on each other respectively increased. The artists also have created a space within the paintings. These two disciplines, which seemed different from each other, became very close to each other, especially in the drawing phase of the spaces in the paintings. The picture has been used as an expression language during the presentation of the designed spaces. Similarly, in the art of painting, the space has been used by the artists as a language of expression.

Each cultural period has distinctive characteristics. It is not possible to limit their formation and transition to exact dates because the formations have a development process that goes back to the past. When we talk about Republican Period Turkish Art, it should be foreseen that the Ottoman Period has a dimension extending to its culture and art. Turkish Art uses its traditional art form of "miniature" before the Republic; but then leaned towards Western art forms. Among the factors affecting this orientation, there are factors such as taking the West as an example. At the early times of Turkish Republic, lectures on perspective with an European approach takes its place in the curriculum of military schools, establishing lithography workshops, etc. The pupils graduated

from these military schools were then sent to France in the 19th century to receive training from the classicalist-romantic period artists, who dominated France at that time, and artists who were representatives of such academic understanding. Until the 20th century, the interest of most of our artists who went to the West was limited to drawing patterns from models and painting carefully and meticulously. The interior space can be designed with scientific, technical and artistic knowledge and facilities. Space affects the design as well as the other areas. Although interior architecture and painting use separate concepts of space, they fundamentally contain the same art element. Space is two-dimensional canvas in painting (real layer), while it is three-dimensional shell in interior architecture.

In this context, in the study, space will be examined within the concept and perception of art of painting. Within the scope of the study, 10 paintings by 10 painters, who have produced highly qualified works of art in their field, among the painting groups established in the 20th century, were selected as examples.

## **2. The Concept of Space and the Perception of Space in Painting**

Space is the designer's first material and the main element in interior design. The volumes consist of points, lines and planes, turn into columns, beams, volumes of planar walls and roofs in an architectural scale. These elements in an architectural design are arranged to shape a building, to separate the interior from the exterior and to define the boundaries of the interior space. Interior design consists of equipment/ fittings that are designed and chosen according to its purpose and visual and circulation areas/ gaps between this equipment. The choice of materials, colours, textures, form and the proportions/ratios between them meet both the physical and spiritual needs of human beings. The purpose in interior/space design is to create/form/provide a healthy and comfortable lifestyle. It is, therefore, important that the forms used in the space are visually harmonious within themselves and in the whole space, and for occupancy and space ratios, colour and material selection to be in a certain relationship. It is necessary for the space to be balanced and in order/harmony, and the equipment/ fittings and fixtures, which are used, to contribute to that. This balance and order should also be in line with the functionality of the space. Space should be an environment, of which its size and quality meets the physical and spiritual

needs of the user, where actions such as walking, sitting, resting, working can be carried out effortlessly in accordance with the purpose of the user. Further, it should be an environment where the places of circulation areas and equipment should be determined correctly.

Whether theoretically or conceptually, space has been used by every artist throughout history as the element that embodies the form. Space has become the most important element used in painting, because of its interaction with people. Space in architecture presents an immediate interaction with people as being physical, three dimensional. However, space in painting, is a piece of perception, presented on a two-dimensional platform, where depth is given by a linear perspective and as an imitation of real space. This interaction with the people in architecture only exists with the uniting components. Depending on where they are used, these components of space can play limiting, focusing and directing roles. These roles are a clue for the individual to perceive the space. In the art of painting, the artist uses this perception in its own art through space. In painting, the first shape perceived at a glance is the figure and form; those remaining embody the space according to the form. The painting, which abandons two-dimensional surface when human thought and imagination unite, creates the “form-space” image dimension. Painting is a two-dimensional surface where image exists, and it is limited by the space where it is located. The picture plane, which is two-dimensional, is perceived as three-dimensional by the use of space. The space in the painting creates an image. A connection is established between the painting and its audience through/by virtue of this image. While painting creates a spatial reflection, its purpose is not to make viewer to forget his/her own space, but the opposite; to enable the viewer to see both together by creating another space within his/her own space. Painting elements such as colour, texture, tone, stain, line, light, and visual forms used in painting are also an important part of the space design. The principles defined as rhythm, coherence, contrast and balance, which should be present in every art product, are another common aspect of the space-painting relationship.

The use of space in painting facilitates the perception process in the individual by appealing to the senses of the viewer. Knowledge and experiences are interpreted in memory with the help of spatial perception and senses. It should also be taken into account that the perception varies from person to person, as the interests, experiences, expectations, motives and attitudes of individuals are different. In addition, each user communicates with the space through their

location, movement, perspective and experiences. Painting also benefits from this relationship established between the individual and the space.

### **3. Use of Space in the Early Republican Period Painting**

In the history of painting, it is seen that the use of space has gone through four stages in time: Two-dimensional surface concept, three-dimensional space understanding, multi-dimensional space understanding and conceptual dimensional space understanding. Before the 15th century, a two-dimensional spatial understanding prevailed. The pressure of religion, monocentrism has given rise to an understanding with a single focus. Although art could not develop under the pressure of religion, with the discovery of perspective, especially after the Renaissance, a new style of expression emerged in painting. With the shadows, forward-backward plans, the back-front relationship used in the drawing of architectural structures, differences in the form of visual expression gradually began to occur. In the following centuries, space and volume have become an important element with perspective. Important changes are encountered in the understanding of painting initiated by the Impressionists in the 19th century. At the beginning of the 20th century, after Braque and Picasso's use of perspective, the biggest revolution took place. Cubist revolution, that is the period in which the concept of three-dimensional space breaks into pieces and an understanding of a multi-dimensional space emerges.

Art of painting has come to Turkey from the West. The origin of the art in Turkey, 'Peinture' in other words, is based on the so-called old miniature art. This ancient painting has a rich history of more than five hundred years. Ottoman Miniature is an art that keeps pace with the principles of the religion of Islam and expresses the metaphysics of Islam with lines and colours. The best, most clearly legible area of the difference brought by modernization or Westernization has been the art of painting, which started with the Emperor Mahmud the 2<sup>nd</sup> and gained momentum with the Reform period so called "Tanzimat" period (corresponds to the years 1839-1876 in Ottoman history). The Ottoman empire that is becoming westernized had to adopt some Western systems and some artistic tendencies with the Westernization movement. Educational reform, especially in the field of military education, led to the spread of the art of painting. Some of the soldiers who took the European style perspective lessons in school decided to move forward in the field of painting. The state sent young people

abroad to get a more competent art education in the field of painting. When this generation turned back to Turkey, they contributed to the versatile development and modernization of the country in Republican Period. In the meantime, they brought the trends of the age to Turkey, such as Fauvism, Cubism, Expressionism. And they were assigned as art teachers on their return for the next generation. İbrahim and Tevfik Pasha, Servili Ahmet Emin, Şeker Ahmet Pasha, Süleyman Seyyit, Hüseyin Zekai Pasha, archaeologist and painter Osman Hamdi are the classics and the first representatives of Turkish art of painting, who consider the West as a leading example. Turkey in the history of painting, the artist has been shaped over more groups. Successive ‘military painters’ began to become civilian with the 1914 generation. With the proclamation of the Republic, it wholly left its place to civilian artist groups.

#### **4. An Analysis of Istanbul Spaces Through 20th Century Painting**

One of the things that allows us to perceive the work as a section of life in the art of painting is the inclusion of the criteria that create the space in the painting. The presence of these criteria in the painting makes the work realistic. It is important in terms of using the elements that make up the natural or artificial space in painting, separating the spaces from each other, functionalizing and determining the spaces. In this way, the use of space elements in the painting provides different contributions to the work. Spatial elements such as flooring, walls, columns, beams, stairs, windows and doors, which are used as restrictions in the space other than their own functions, form the geometry of the space, thus the painting, according to their formations. The visual elements of the space, such as colour, texture, form, establish relationships such as surrounding, covering, unification, division and continuity within the space. Spatial elements can also be classified according to their material features, locations, functions and relationships. The same features can be seen in the art of painting. There are horizontal components, vertical components, inclined components used in the painting to describe movement. At the same time, it is seen that the elements defining the space such as form, size-ratio, style, color and texture used in painting, that is, spatial components, are also used in architectural spaces. These components communicate between the space and the user as well as between the image and the viewer. In painting and architecture, a space is created by using

various boundary elements to define a space according to need. The space used in architecture is not just a hollowness created by borders. It is a creation that collects the memories of the people who live in it and boundaries that define it. Space is also defined as living spaces where people spend most of their time and supply their physiological and psychological needs.<sup>1</sup> In the study, it was observed that the spaces of Istanbul, depicted in the 20th century, reflect the characteristics and lifestyle of the period.

#### 4.1 The Painting entitled “Güzin Duran Portresi”:



<b>Painting's Name:</b>	Güzin Duran Portresi
<b>Name of the Artist:</b>	Feyhaman Duran (1886 – 1977)
<b>Technic:</b>	Oil Paint
<b>Year of construction:</b>	1946

**Painting Analysis:** In this work of Feyhaman Duran, it is observed that the colour spots have melted into each other. It is understood from this technique that he took Monet as an example. The painting has an impressionistic point of view with the solidity of its pattern, the harmony of light and shadow, the relationship between light and dark tones, and also the tone degrees. Colour and subject harmony is at the top level in the picture where brown tones are used extensively. It has been noticed that Duran does not use too many figures in his paintings which is focus on land scape. When he wanted to use the figure in

<sup>1</sup> Ertemli, M.(2018). Mekân Tasarımında Sınır Ögelerinin Görselliğe Katkısı: Düşey Yüzeylerin Estetiği, Maltepe Üniversitesi, Modular.Journal

such compositions, he used it as a complementary element. Likewise, he used the space as a complementary element in portrait drawings. For example; In Güzin Duran Portrait, the Hacivat Karagöz motifs on the window, give clues about where the figure(woman) is. It point that the figure/woman can be in Turkey. Topkapı Palace, which is in silhouette in the background, confirms this point. Unlike his previous generation and many of his contemporaries, he has elaborated Turkish arts(calligraphy, architecture, visual arts, etc.) in his painting composition. He produced works that dealt with the motifs of calligraphy and writing, which were used as a complementary element of the composition by Turkish painters until that time. Feyhaman Duran, who generally chose Topkapı Palace and various religious buildings as the venue, depicted the Topkapı Palace in this work. From the sharp shadow seen on the figure and the light tone of the structure behind it, it is understood that the painting took place in the afternoon.

#### 4.2 *The Painting entitled “Taksim Meydanı”*



<b>Painting’s Name:</b>	Taksim Meydanı
<b>Name of the Artist:</b>	Nazmi Ziya (1881 – 1937)
<b>Technic:</b>	Oil Paint
<b>Year of construction:</b>	1935

**Painting Analysis:** Nazmi Ziya is one of the representatives of the impressionism movement in Turkish painting. The ‘Taksim Square’ painting is an oil painting on plywood/cardboard. In his work, it is seen that he reflected the living standards that the Republican Turkey provided to the public and the freedom it

brought especially to Turkish women on his canvas. Nazmi Ziya also included the Taksim Republic Monument located in Taksim Square, in his painting. The monument is the main symbol of urban modernization. The 1928 monument built by Pietro Canonica is as modern as apartments, cars, women in hats. The monument has become the symbol of Taksim in its time. It was conveyed to the audience with the help of the architectural structure that the place in the painting is Istanbul.

### 4.3 *The Painting entitled “Emirgan”*



<b>Painting’s Name:</b>	Emirgan
<b>Name of the Artist:</b>	İbrahim Çallı
<b>Technic:</b>	Oil Paint
<b>Year of construction:</b>	1935

**Painting Analysis:** Oil paint on canvas. Emirgan Fountain is an architectural symbol in this painting. Emirgan Fountain is located in Istanbul, and it was built in 1783 by Abdülhamit I in memory of his wife Hümaşah Hatun and his son Şehzade Mehmet. Emirgan fountain has been the subject of many artists. The fountain, which is the symbol of Emirgan, is also at the focus point in İbrahim Çallı painting. While the sun illuminates the architectural structure in the perspective of İbrahim Çallı, it overshadows the people. This causes the attention to shift to the architectural structure. With this architectural structure, the painter hints the venue of the scenery to the audience. During the Tulip Period, monumental fountain architecture was abandoned, fountains were begun to be built in higher and narrower forms. Emirgan Fountain, is one of

the examples of this new architectural understanding. The painting also gives information to the audience about period architecture and social life through the space. Çall, who bring the impressionism and applying it to Turkey's art, also gave his surname to the Çallı period. In the view of İbrahim Çallı on Istanbul, the historical texture of the city within the social and cultural structure of the period is a remarkable feature in his paintings.

#### 4.4 *The Painting entitled "Beylerbeyi İskelesi"*

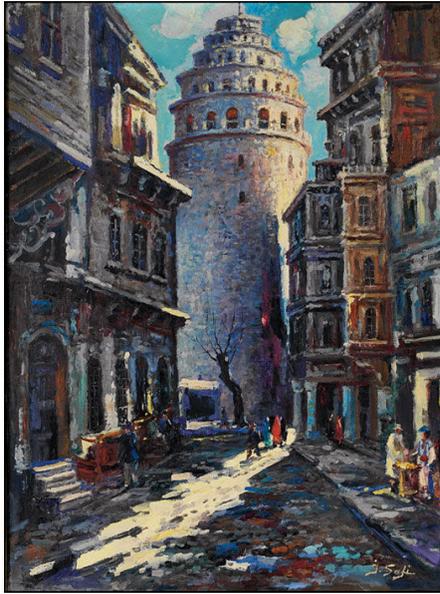


<b>Painting's Name:</b>	Beylerbeyi İskelesi
<b>Name of the Artist:</b>	Cevat Erkul (1897 – 1981)
<b>Technic:</b>	Oil Paint
<b>Year of construction:</b>	1935

**Painting Analysis:** There is a house and a pier on the left side of the road facing Marmara Sea in the Beylerbeyi Pier painting. The sea is positioned on the right. In front of the double-storey house, there is a pier and a ferry approaching the pier opposite. The steamer directs the focus out of the land towards the sea. While the structure of the pier continues towards the sea and stops at the end of another space, the path along which the figures walk emphasizes the entrance of the single-storey building. The pier extending outwards at the entrance of the house is defined by a horizontal plane forming an angle of 90 degrees. In Cevat Erkul's works, fishermen, fishing boats, Istanbul's bazaars and markets, in short, the daily living spaces shaped by people, more colourful seen to depict. In these Istanbul compositions where yellow stands out a little more people seems like

they photographed unaware. Street vendors, fishermen, shoppers at the market middle- and lower-class people and lifestyle are also a part of Istanbul identity. That is why Cevat Erkul used these figures with the spaces of İstanbul.

#### 4.5 *The Painting entitled “Galata Kulesi Sokağı”*



<b>Painting’s Name:</b>	Galata Kulesi Sokağı
<b>Name of the Artist:</b>	İbrahim Safi (1898 – 1983)
<b>Technic:</b>	Oil Paint
<b>Year of construction:</b>	1935

**Painting Analysis:** The stand-alone vertical surface that stands out in the work is the Galata Tower. A composition was created by positioning the Galata tower in the middle of the vertical surfaces on both sides of the painting. The other structures in the picture are composed of ordinary (box) volumes. The fact that the structure in the table is different in terms of building material does not spoil the texture of the painting. On the contrary, it has adapted to the landscape behind, as it has the colour tones and shading in its area. It is seen that the Safi belt adheres to the tradition of portrait, still nature and landscapes. The tower sits on the ground like the rest of the structure and is in contact with the sky, not in empty space. At the same time, perspective, in other words, the painting is given depth with light, shadow, proportion.

#### 4.6 *The Painting entitled “Kapalı Çarşı”*

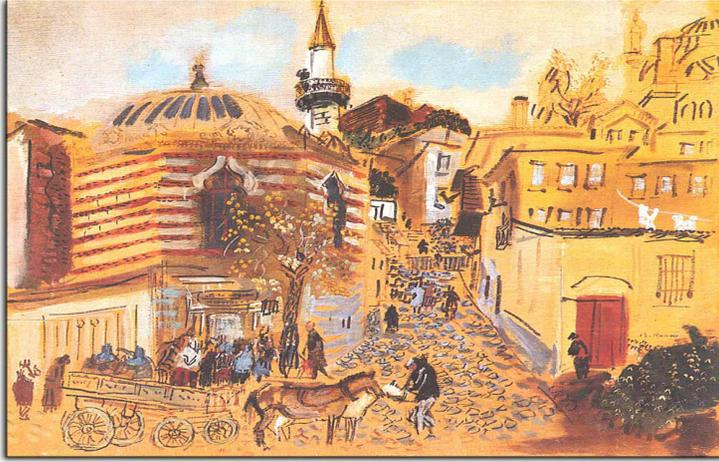


<b>Painting’s Name:</b>	Kapalı Çarşı
<b>Name of the Artist:</b>	Şevket Dağ (1876 – 1944)
<b>Technic:</b>	Oil Paint
<b>Year of construction:</b>	1939

**Painting Analysis:** Şevket Dağ was famous for depicting the interiors of historical buildings in his works. He was standing close to Ottoman - Islamic nationalism, focuses on the interior and exterior spaces of historical, religious and architectural structures such as mosques, tombs, inns, bazaars, and doors. At the same time, he made pictures that commented on the primitive tradition on the streets and other buildings where the buildings are located. The main character of the Grand Bazaar painting is the space. The human figures used like motifs which is complete the painting. The light and colour are handled with an impressionistic sensitivity and the guiding effect of academic art. Bedesten architecture includes architectural elements used in Seljuk Ulu mosques<sup>2</sup>.

<sup>2</sup> Karacali, A. O. İstanbul Kapalıçarşı’nın Çekirdeği Eski Bedesten’de Tarih, Kültür, Mimari Yapı ve İşlev Değişimleri Üzerine Bir İnceleme. Modular Journal, 2(1), 1-11.

#### 4.7 *The Painting entitled “İstanbul’da Bir Sokak Painting”*



<b>Painting’s Name:</b>	İstanbul’da Bir Sokak
<b>Name of the Artist:</b>	Bedri Rahmi Eyüboğlu(1911 – 1975)
<b>Technic:</b>	Oil Paint
<b>Year of construction:</b>	-

**Painting Analysis:** Bedri Rahmi Eyüboğlu is a Turkish painter, writer and poet. It is seen that he has worked on Istanbul in most of her works in his paintings he presents views from different districts of Istanbul and daily life panoramas, for example : “Beyazıt Kulesi”, “Beylerbeyi İskelesi”, “Salı Pazarı” paintings. These paintings, which were mostly made with impressionist effects, present city landscapes where history, nature and life intersect. Especially “A Street in Istanbul” painting, mosque, transportation vehicles suitable for the period, horse carriage, donkey, steep cobblestone slopes and piled-up houses are an important part of Istanbul. What constitutes the character of the artist in his Istanbul paintings is the changes Istanbul went through in the process and the fact that she personally witnessed these changes. The urbanization process that Istanbul has entered since the 1950s has brought about the loss of the neighborhood’s identity, natural beauties, street and neighborhood life. Bedri Rahmi Eyüboğlu also depicted the aspects of Istanbul facing the danger of disappearance and the new life styles and slums that emerged with the urban identity.

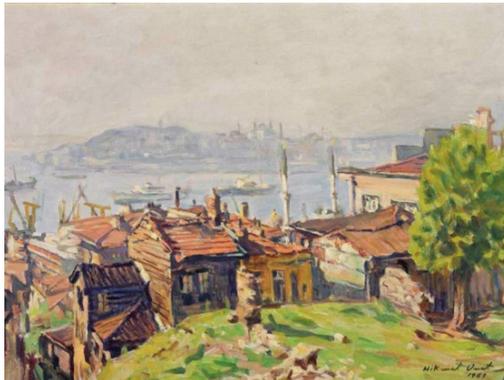
#### 4.8 *The Painting entitled “Boğaziçi”*



<b>Painting's Name::</b>	Boğaziçi
<b>Name of the Artist:</b>	Cemal Tollu (1899-1968)
<b>Technic:</b>	Oil Paint
<b>Year of construction:</b>	-

**Painting Analysis:** It was seen that Cemal Tollu who was adopting a Cubist movement, treated local subjects in his paintings. The subjects of his paintings consist almost entirely of paintings that reflect the daily life, nature and landscapes of Istanbul. It presents sections from the daily life of Istanbul with its fishing boats, fishermen, districts such as Beylerbeyi, Kanlıca, bazaars and markets. It has been seen that the artist creates compositions that deal with the ordinary structure of the city and the countryside, such as nature, parks, gardens, neighborhood markets, life in rural areas, working women and men. The “Bosphorus” painting is an important moment which is describing Istanbul by the sea, the ship, the historical building and the wooded area behind it.

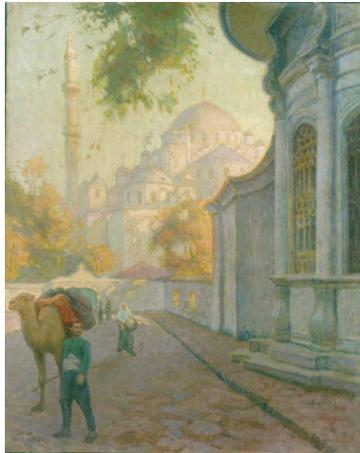
#### 4.9 *The Painting Entitled “Sultanahmet’e Bakış”*



<b>Painting's Name:</b>	Sultanahmet'e Bakış
<b>Name of the Artist:</b>	Hikmet Onat (1882 – 1977)
<b>Technic:</b>	Oil Paint
<b>Year of construction:</b>	1963

**Painting Analysis:** Oil paint on cardboard. In the picture, New Mosque, Grand Bazaar and boats are seen in silhouette form as examples of civil and religious architectural details/items. As it can be seen in the picture, the sea transportation of the period is made by boats. The direction of the forms, placed in vertical, parallel and angled, constitute the geometry of the painting as in the real space. Using different directions in the postures of boats has brought movement, vitality and interest to the content of the artwork. Perspective and big-small association create direction perceptions in the pictorial environment. At the same time, the fundamental elements of the architectural space such as flooring, wall and column form the source of directional effect. Hikmet Onat is known as a still-life, portrait and landscape painter. In his works, he engraved the sea, calm beaches, boats on the sea side, sailboats, barges, mossy rocks. The subjects of calmness, peace and tranquility are dominant in his works. The other most important subjects he covers in his paintings are Istanbul and the Bosphorus.

#### *4.1 The Painting entitled "Nakşidil Sultan Sebili Önünden Fatih Camii"*



<b>Painting's Name</b>	Nakşidil Sultan Sebili Önünden Fatih Camii
<b>Name of the Artist</b>	Hüseyin Avni Lifj (1886 – 1927)
<b>Technical</b>	Oil Paint
<b>Year of construction</b>	1946

**Painting Analysis:** It is possible to say that the mosques, fountains, sea and ferries were complementary parts of the Istanbul skyline. Based on this information, in this picture of Hüseyin Avni, there are two figures, the camel carrying their burden, the Nakşidil Sultan fountain and the Fatih Mosque, which is illuminated by the sun at the back, which draws attention. There are public fountains designed in different plans in the city's squares. Because the designs of the fountains vary according to the characteristics of the period. The Nakşidil Sultan fountain in the picture was built in 1818 and continues to exist today. After the classical style in Turkish public fountain architecture, with the Tulip era, the plans began to round. It is seen that the public fountain in the painting was built semicircle form and it was overflowed the street. In this period, the semicircular plan type was widely used.<sup>3</sup> He used photographs that he took in small-scale Istanbul landscapes; besides that he paint the landscape, his imagination and emotions against that landscape were reflected in his works.

## Conclusion

In a way, the history of painting plays an important role in the historical representation of the space. However, many of these works depict actual cityscapes, there are plenty of examples where painters reinvent and fantasize the actual topography by adding imagined architectural repertoire to the historically documented urban environment. Therefore, the art of painting should not be considered as a historical document, but it can be considered as a shedding light on history. There is a functional link between the space and elements such as colour, line, shadow, light, perspective etc. used in painting. It has been observed that these items have changed over time. Accordingly, the representation of the space has also changed. In the painting phenomenon that has developed since the early Republican period, the existence of the space has come to the fore by making the space visible. While the developing space phenomenon determines the relations of objects with each other in the painting composition, it has also been influenced by all kinds of social, economic and cultural structures that direct this process. The space is pictured in the painting supported by objects.

In the study, it has been observed that the perspective based on geometrical rules has been replaced by graded tones and colour varieties, starting from the

<sup>3</sup> Tali, Ş. (2009). İstanbul Su Mimarisinde Eminönü Sebillerinin Yeri ve Önemi. Sanat Dergisi, (15), 47-64.

foreground to determine the space and volume, and extending to the horizon. Looking at the works of the painters of the Early Republican Period, it was observed that due to the impressionism trend adopted, instead of precise lines they were preferred depicting the space, and brush touches. Even though perspective is not given much importance, a sense of emptiness and volume is felt in composition. A sense of depth is created by the use of tones and colours in the space. It is understood from the war themes that are generally depicted in the paintings that the effect of the War of Independence continues. The war-themed paintings are depicted with more gloomy spaces, using darker colours (mostly red, orange, yellow, and brown). When the effect of the war begins to wear off, landscapes required by the impression in painting, open-air parties, bars, cafes etc. required by social life are seen in impressionist paintings.

Space has been the object of art throughout history. It can be said that since the Renaissance, a certain place was tried to be drawn with some symbols in art (especially in the art of painting). The focus of the painting has shifted from the concepts of figure, form, volume, light, stain, and height. Today, we are not content with the space in the painting, but the real space where the painting is located has started to be designed in a supportive way according to the painting. In the art of painting, an artificial space has been created within the real space. Today, it is seen that these two concepts are intertwined. While the space inspired the art of painting, especially with the painting drawn from the impressionist perspective examined in the study, the paintings drawn today have also begun to inspire space designs. The innovations brought by the art of painting to the space design and to the formation of today's architectural and interior architecture thinking should not be overlooked.

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## CHAPTER XV

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# HOUSING AND NEIGHBORHOODS IN THE TURKISH ART

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### 1. Introduction

The concept of ‘east’ for Europe was the Ottoman lands. This different exotic culture closest to them was both intriguing and threatening to their own existence. Apart from the painter ambassadors who came to the Ottoman lands from Europe to document the cultural diversity and the stronger military structure that are not their own, many artists such as architects, writers and musicians came. Istanbul was the place where these artists were most curious and fascinated. Today, paintings that reflect Istanbul and the city life of Istanbul belonging to the 17-20th century were made by European painters (Demirarslan& Savçın, 2017, p. 123). When it comes to Turkish painting art, miniature painting came to mind in the Ottoman period. With the reforms made in education in the last quarter of the Ottoman period, the origin of painting education also changed. The first military painters emerged with the painting training given in the newly opened military schools, and later, with the change seen of painting education in Galatasaray and Darüşşafaka High School it was that non-military painters emerged (Erden, 2012, p. 6). Military painters mainly produced landscapes. Among these painters, we can count Mirliva Osman Nuri and Ferik İbrahim Pasha. Following these

painters, military painters such as Ferik İbrahim Pasha, Ferik Tevfik Pasha, Süleyman Seyyid, Şeker Ahmet Ali Pasha and Osman Nuri Pasha were sent abroad for education. (Asker Painters, 2021) After opening the Sanay-i Nefise Mektebi by in 1883, the first academic education in the field of painting and sculpture started during the Ottoman Empire period. With the proclamation of the Republic, painters were encouraged to travel around the Anatolian lands, painting lessons were given in community centers, and efforts were made to spread the understanding of western painting throughout the country (Erden, 2012).

The geographical change that took place before and after the First World War brought along an intense migration movement. During this migration movement painters also had come in Turkey. These painters, who adopted the impressionism style, also painted the districts of Istanbul and daily life. Within the scope of this research, the processing of the houses and neighborhoods, which are the Ottoman period Turkish painting art and the Turkish painting art of the Republic period, and their reflections on the painting art will be explained through the selected examples.

## **2. Research Method**

The aim of this study is to examine the landscape-type paintings that depict the pre and post-Republic paintings, houses and neighborhoods in the history of Turkish painting, through the selected sample, and the change of residences and neighborhoods that do not exist today will be revealed. The descriptive analysis method was preferred in the study. Descriptive analysis method is an analysis method used in qualitative research. It is made by interpreting the data collected by various techniques according to themes (Karataş, 2015, p.73).

## **3. Periods And Painters In Turkish Painting Art**

Considering the history of Turkish painting, the introduction of perspective and technical drawing courses in the Muhendishane-i Berri Humayun, which was opened in 1793 during the Ottoman Westernization Period, and the addition of painting courses to the curricula of the Turkish Military Academy and Naval Schools are reforms in education in the name of Turkish painting art. Our first painters are also the artists who graduated from these schools. Kolağası Husnu Yusuf Bey graduated from the Muhendishane-i Berri Humayun.



**Figure 1:** Kolağası Husnu Yusuf Bey (URL-1)



**Figure 2:** Caglayan Palace in Kagithane-Husnu Yusuf Bey 1817-1861 (URL-2)

One of our most important painters in Turkish painting is Şeker Ahmet Ali Pasha. Born in Üsküdar in 1841, Şeker Ahmet Ali Pasha worked as an assistant painting teacher while studying at the School of Medicine, and later, after studying at the School of Charity, he was sent abroad by Sultan Abdulaziz. Having studied in France, Şeker Ahmet Ali was accepted to the exhibitions of 1869 and 1870 in Paris, won the Rome Prize in 1870 and went to Rome in 1870. After staying in Rome for three months, Şeker Ahmet Ali Pasha, who returned to Istanbul in 1870, opened his first group painting exhibition in Istanbul on April 27, 1873. After the exhibition in which his own students were present, he opened the second group exhibition on July 1, 1875 at Darulfunun Building. The works of Osman Hamdi Bey and Halil Pasha are also included in this group exhibition along with foreign painters. Until both exhibitions, in fact, no painting exhibitions were held in Istanbul. Therefore, a first exhibition was realized by Şeker Ahmet Ali Pasha (Erden, 2012).



**Figure 3:** Ahmet Ali Pasha MSGSÜ Painting and Sculpture Museum Collection (URL-3)



**Figure 4:** Portre, Halil Pasha, 1924 (URL-4)

Halil Pasha was born in 1857 in Istanbul. The artist, who graduated from the Mühendishane-i Berri Hümayun, was sent to Paris in 1880 to study painting and became a student of Jean Leon Gerome and Gustave Courtois. He lived in Paris for eight years and worked as the director of the Sanay-i Nefise Mektebi between 1917-1918. The artist, who depicts the views of the Bosphorus, is also considered to be the pioneer of Turkish impressionists.

The Ottoman Painters Association, which was established in 1909 aimed to solve the problems of art and artists of the period and was an independent organization. It carried out activities with different names between 1919-29 until the Independent Painters and Sculptors Union which was established in 1929 (Ottoman Painters Association, 2020).



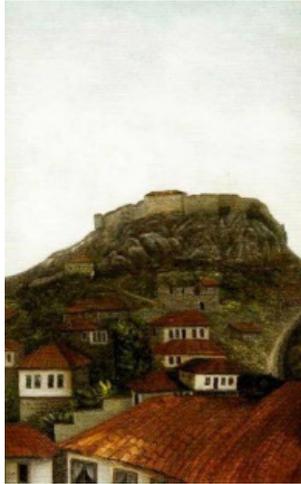
**Figure 5:** Portrait, Ahmet Ziya Akbulut (URL-5)

Ahmet Ziya Akbulut, who was appointed as the president of the Ottoman Painters Association in 1913, retired from there in 1914. Ahmet Ziya Akbulut was born in Istanbul in 1869 and graduated from Harbiye in 1887. Akbulut, who taught mathematics and perspective at the Sanay-i Nefise Mektebi, served as the deputy director until his death in 1938 (Ahmet Ziya Akbulut, 2021). The artist group known as the 1914 generation connects the Ottoman period and the Republic period. Artists who were sent to Paris in 1910 returned home with the outbreak of the war. The painters in this group that adopt impressionism are artists such as İbrahim Çallı, Hikmet Onat, Namık İsmail, Feyhaman Duran, Avni Lifij, Nazmi Ziya Güran, Ruhi Arel and Ali Sami Boyar (Erden, 2012).

Hikmet Onat, born in 1882, completed the Heybeliada Naval Academy in 1903. Onat, who is one of the founders of the Ottoman Painters' Association and

the Fine Arts Union, went to Paris with the scholarship he received in 1910 and studied in the atelier of Fernand Cormon. The artist, who participated in country trips in 1939, went to Bursa. Hikmet Onat opened his first solo exhibition a few months before his death in 1974.

### *3.1 Residences and Neighborhood in Turkish Painting During the Ottoman Subtlemet Period*



**Figure 6:** Fortress and Houses, 1899, Ahmet Ali Pasha (URL-6)

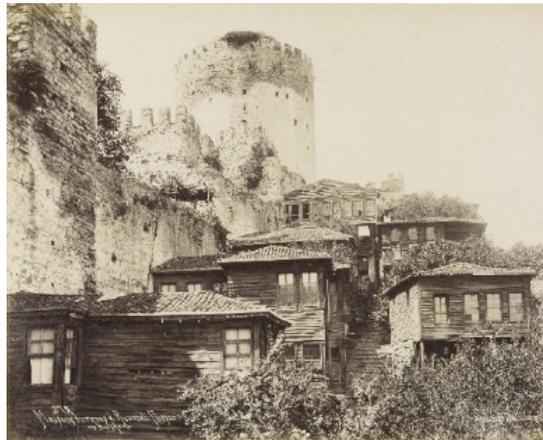
Ahmet Ali Pasha's picture named *Fortress and Houses* in Figure 4, who has many paintings on landscape and still life, is dated at 1899. This neighborhood located around the Fortress is one of the examples of traditional Turkish houses built during the Ottoman period. According to Sedat Hakkı Eldem; the definition of a Turkish house is as follows. It is a type of house formed in Anatolia and Rumeli Fortress with its own characteristics. Therefore, Eldem transforms the Ottoman style house into a Turkish house type with a single definition (Korkmaz, 2008, p. 43).

Hagop Baronyan was born in Edirne in 1842 and settled in Istanbul in 1864. Baronyan, who produces literary works, has produced works that criticize all segments of the society and that are written in a humorous language. He wrote a critical book about the Armenian people living in various regions of Istanbul in his "A Journey in the Districts of Istanbul". In the section called Rumeli Fortress, he mentions that this is a fishing village and that they want to sell lobster and fish by force to everyone who comes there. He mentions

that there is a school in this village, which falls to eighty households in the summer and sixty-five households in the winter, and that this school does not have a teacher. He added Armenian students from Robert College come and teach voluntarily, and students were bringing their food. Men are either seamen or fishermen in this village, where women making a head-dress and sell. He continued that the vast majority of the people are drunk but extremely healthy, and their normal speech is very loud. In this village where men are big, unemployed people would get married immediately so that their spouses would take care of them. He mentioned that life in this village, where there is no gossip, extravagance, pomp, casinos and theaters, is very simple and plain (Baronyan, 2016, p.49-52). On the other hand Evliya Çelebi visited Istanbul and its environs in 1630 and mentioned Rumeli Fortress in his travel book. He described it as follows: (Evliya Çelebi, 2021) there are 180 households in the castle, all of them are adjacent like a swallow's nest and without a garden. While talking about the Fatih Sultan Mosque with a single minaret, he also says that there are two masjids and two wheat granaries. He says that there are 1080 households on steep rocks outside the castle and there are no gardens in them, and there are mansions, mosques, eleven madrasas, seven subyan schools and two hundred shops by the sea. He said that there were Greeks in seven households and that there were no Jews, and that the people were Muslim. There are no taverns and bazaars and the ones living in central locals were fisherman, while fortress locals were boatman (Çelebi, 2003, p.421).



**Figure 7:** Rumeli Fortress,  
Sabiha Rüştü Bozcalı  
(URL-7)



**Figure 9:** Detail **Figure 8:** Rumeli Fortress  
Houses/ Photograph taken by Sébah and Joaillier.  
(URL-8) (URL-9)

Kaleiçi District, located in Rumeli Fortress, has a history of approximately 650 years. The neighborhood, which was expropriated in 1953, was demolished and only water wells were preserved, today only old photographs of civil architecture examples are found (The Lost Neighborhood of Fortress Revealed., 2017).

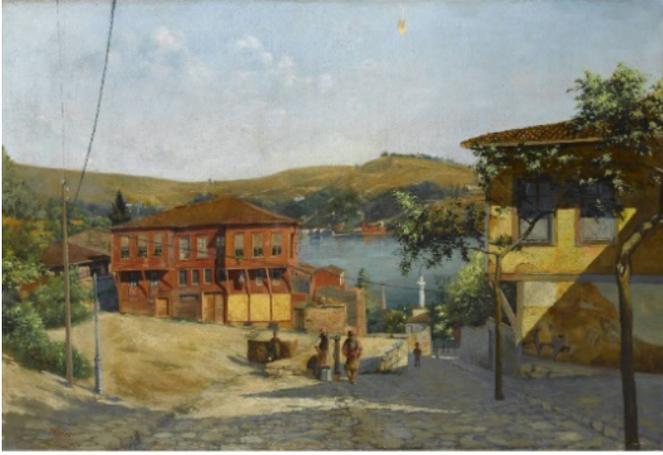


**Figure 9:** Istanbul, Turkish House and Street, Halil Pasha (URL-9)



**Figure 9:** Detail (URL-9)

Halil Pasha depicts a street and houses in Istanbul in Figure 9. The wide dirt road in this settlement by the sea tells us that this is not in the city center. While the little girl sitting in front of the door of the house, a man carrying flowers in a wheelbarrow and a little dog wondering what she was carrying, geese are walking in groups at the corner of the houses. A roadside car, the watermelon seller shows watermelons one by one to the lady of the house. Here we can see that it is an ordinary summer day. Le Courbusier, in his book named “La Voyage D’Orient”, mentions that the Turks are fond of dark green watermelon in red and black core inside and Topatan melon with golden yellow outside, long slippery rind, and golden yellow inside very fragrant. In fact, they were exaggerated their watermelon and melon matter. Le Corbusier said that in his book saw ten boats loaded with melons and watermelons approaching the estuaries every morning and When the cholera epidemic, Turks, Greeks, Armenians and Maltese were sick enough to die in one day from eating watermelons and melons Sultan banned to eat watermelon and melon (Le Corbusier, 2018, p.128). The painting is a composition that Halil Pasha skillfully created in an impressionist style, with vibrant colors and touches.



**Figure 10:** Istanbul, 1918, Ahmet Ziya Akbulut (URL-10)

In Figure 10, we can see that the houses of two different neighborhoods of Istanbul in the compositions of Ahmet Ziya Akbulut in 1918 and Hikmet Onat in Figure 12-13 in 1958. In the composition in figure 10 named Istanbul, we see that the floor is paved with cobblestone and there is a telegraph pole in this neighborhood by the sea. The telegraph arrived in the Ottoman Empire in 1855 along with the steam train. The first telegraph line connected Istanbul and Europe. One of the biggest reasons for the Ottoman Empire's rapid adoption and spread to Anatolia is its low cost. It is easier and cheaper to erect poles and attach wires to hills, valleys, rivers than to straighten roads to build railways (Davison, p.347).



**Figure 10:** Detail (URL-10)



**Figure 11:** Electric Telegraph Mast (URL-11)

### 3.2 *Housing and Neighborhood in the Turkish Painting Art of the Republic Period*

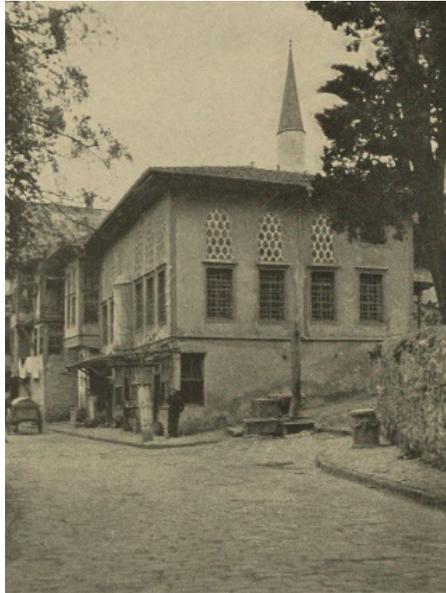


**Figure 12:** Kuruçeşme Tezkireci Osman Efendi Mosque, 1958, Hikmet Onat (URL-12)



**Figure 13:** Kuruçeşme, Hikmet Onat (URL-13)

In Figure 12 and Figure 13, we see that Hikmet Onat worked twice at the Tezkireci Osman Efendi mosque in Kuruçeşme, at different times. The mosque, which was built in 1740 by Osman Efendi, the tezkireci of Sultan Mahmud I, was repaired in the 17th century and restored in 1953. (Şaşmaz, 2019) Hikmet Onat made the picture in Figure 13 before the restoration. In both pictures, we see that the mosque is a wooden structure and there is a historic fountain.



**Figure 14:** Photograph from the book of Constantinople Old and New, 1915 edition (URL-14)



**Figure 15:** Tezkireci Osman Efendi Mosque (URL-15)

Today, the wooden mosque, which is three centuries old with its pink color, its kiosk under it, the asphalt road in front of it, the single-storey concrete structure next to it, and the dried fountain, seems to have kept up today. In his travel book, Evliya Çelebi mentions that there are mansions of well-known people by the sea, the Muslim quarter inside a wide stream, a mosque, a bath and eleven Jewish households, and the presence of Greeks in three neighborhoods. He says that the opposite side of Kuruçeşme, where there are three synagogues, two churches and two hundred shops, is Kuzguncuk (Evliya Çelebi, 2021, p. 413). Baronyan says that Kuruçeşme is a village, its name comes from its dried-up fountains, that the villagers built a fountain here but forgot to bring the water. He says that the women of the village do not like to travel because there are no places to visit. The atmosphere of the hills of the village is nice and the people living there have good habits compared to those living below and if they change places, thanks to the beautiful weather, both of them will be good (Baronyan, 2016, p. 116).

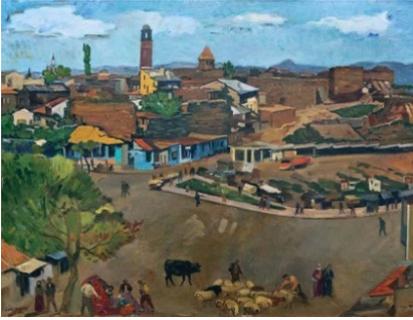


**Figure 16:** 'La Voyage D'Orient' Istanbul 1911' Old House (Drawn by Le Courbusier)

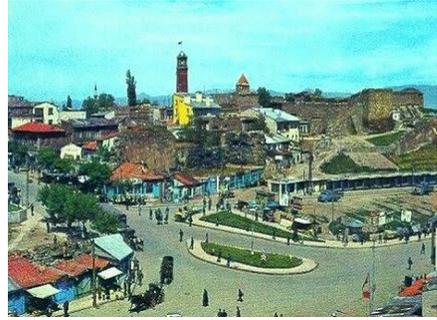


**Figure 17:** 'La Voyage D'Orient' Istanbul 1911' Picture of Street (Drawn by Le Courbusier)

Le Corbusier says in his travel book that all the houses of God are made of stone, and the houses of mortals are made of wood. He also mentions that in Istanbul, which is a very congested residential area, fires broke out almost every night, only mosques surrounded by inns survive, so this city changes skin like a living being every four years (Le Corbusier, 2018).



**Figure 18:** 'Erzurumdan', Şefik Bursalı,(URL-16)



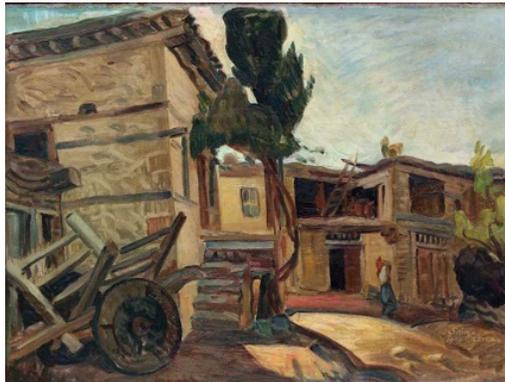
**Figure 19:** 'Erzurum' Photography (URL-17)



**Figure 20:** 'Market Place in Erzincan Kemah', Şeref Akdik, 1943 (URL-18)



**Figure 21:** 'Erzincan Kemah Photo (URL-19)



**Figure 22:** 'Beyşehir Bademli Village', Saim Özeren, (URL-20)

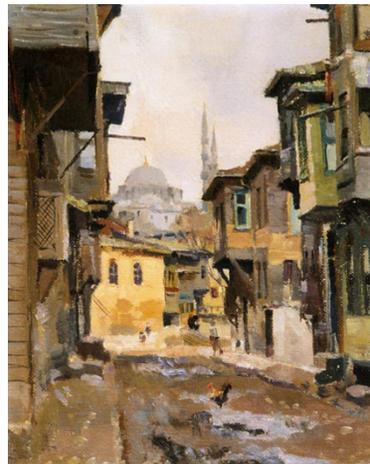
Istanbul has been the subject of many local and foreign pictures with its neighborhoods and houses. The art policies of the early years of the Republic were based on the art education given in People's Houses. When the art education of the people of the village in the community centers in the cities did not attract attention, the work was started on the sending of the artists. Every year ten painters were sent all over the country under the name of dormitory tours and the villagers were asked to make pictures. The state will cover the travel expenses, organize a competitive exhibition every year on October 29, and give a prize money to the winner (Keskin, 2012, p. 141-146). People living all over Anatolia, and another painter who attended Dormitory trips at homes is Şefik Bursalı, Saim Özeren, Şerif Akdik.

It was made by looking at the same point as the photograph in Figure 18-19. We see that Sefik Bursalı describes the single-storey buildings and historical buildings in his landscape with their formal features. In the composition of the historical clock tower and Kaleiçi Mosque, we see that the villagers move together with the herd of animals, and another group behind them is busy with something. In the photo, the intersection in the middle of the road is not in the picture. The absence of the big tree on the lower left of the picture indicates that the picture is older.

Figure 20 depicts an ordinary day in the bazaar where the historical fountain is located in the painting of Şerif Akdik's Pazar Yeri in Erzincan Kemah. Today, while the historical fountain in the bazaar stands where it is, the houses around it have completely changed.



**Figure 23:** 'Istanbul', Nimetullah Gerasim, 1964 (URL-21)



**Figure 24:** 'Street', Naci Kalmukoglu, (URL-22)



**Figure 25:** 'Kasımpaşa', İbrahim Safi, (URL-23)



**Figure 26:** 'Street of Bath', Ahmet Uzelli (URL-24)

The city life in Istanbul and its changing texture like a living organism and the cultural diversity it contains have always been the focus of attention of painters. The picture in Figure 23 belongs to Nimetullah Gerasim. Gerasim was born in Moscow in 1904 and came to Istanbul in 1956 after receiving training in Leningrad and Paris. He lived here until he went to Ankara in 1969. The artist, who painted the best examples of urban life in the neighborhoods of Istanbul between 1956-1969, died in Ankara in 1986.

In Figure 24 and Figure 25, we can see the street and neighborhood pictures of Naci Kalmukoğlu and İbrahim Safi. Kalmukoğlu, in Harkof' was born in 1896, and in 1920 emigrated to Turkey. The artist, who went in Berlin in 1928 with a state scholarship, opened his first personal exhibition in Istanbul in 1940. Many of his paintings have surfaced after his death (Naci Kalmukoğlu, 2021).

İbrahim Safi was born in Azerbaijan in 1898, after World War I In 1920, among the painters who migrated to Turkey. The artist, who studied in Moscow, also graduated from Sanay-i Nefise School in 1923 (İbrahim Safi, 2021).

In the paintings of Nimetullah Gerasim, Naci Kalmukoğlu and İbrahim Safi, the artists depicting the districts, houses and people of Istanbul between 1950 and 1970 in the clothes of the period produced very dynamic compositions with the use of color and touches.

Ahmet Uzelli was born in 1907, depicting one of the Istanbul districts where there are laundry hanging on the balcony and where the historical and new urban texture coexist. Not much information has been found about the artist who painted Istanbul in the Impressionist style. (Ahmet Uzelli, 2021)

## 4. Conclusion

In the last quarter of the 19th century, during the Ottoman period, Turkish painting took its final form with the changes made in education. Both in the Ottoman period and in the first years of the Republic, students who received art education were sent abroad with state scholarships, and the artists who returned in their countries were sent on country trips due to the cultural policies of the Republic period. These artists, who were sent to the public's feet, painted all over the country. These paintings, which are in the landscape type, reflect the Anatolian people, villages, daily life, mainly contain the theme of Istanbul and reflect the changing neighborhoods and residences of Istanbul today. Within the scope of this research, a short examination was made on the history of Turkish Painting, based on its examples of neighborhoods and dwellings. In Istanbul, which has a congested city view, it has been determined that the fondness of the people living in this city, where the wooden houses burned daily and the neighborhoods disappeared, are expressed in both travel books and pictures, and the paintings of foreign painters, who are not well known in Turkish Painting Art, are also included. While obtaining information about the houses and neighborhoods lived in the past through the Turkish Art of Painting, it has been observed that very valuable artists have been raised under very difficult conditions like nowadays.

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- (URL-12) Kuruçeşme, Tezkereci Osman Efendi Camii, Hikmet Onat, 1958 <https://twitter.com/oart7218/status/959853995866157056/photo/1> 18.04.2021 01:42:39
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- (URL-14) Tezkireci Osman Efendi Camii, <http://www.eskiistanbul.net/7383/tezkireci-osman-efendi-camii-ve-sunak> 18.04.2021 22:21:49
- (URL-15) Tezkireci Osman Efendi Camii, Erol Şaşmaz <http://turkiyenintarihieserleri.com/?oku=2880> 18.04.2021 22:27:48
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## CHAPTER XVI

# THE ROLE OF WOMEN ON ART AND ARCHITECTURE ABOUT THE PROCESS OF THE WESTERNIZATION IN OTTOMAN CULTURAL CONTEXT

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### 1. Introduction

In some sources, the westernization process of the Ottoman Empire start with *Tulip Era* (21 July 1718 – 28 September 1730) while some other resources mention that the Tanzimat Edict, which lasted from 1839 to 1876, and the Ottoman Reform Edict of 1856 also known as *Hatt-i Humayun*, the promise by the Ottoman Sultan made to all the subjects to treat them justly, irrespective of ethnic and social status, is the start of the westernization reform movement. In this study, it is considered that Westernization started in the 19th century despite some modernization movements being observed in the Tulip Era's 18th century Ottoman culture and art.

It is possible to talk about the recognition of the right of education for women foremost in determining the social and public status of the women in the Tanzimat Period. The publication of “*Maarif-i Umumiyyah* Act of 1869”

(General Education Act) (Burtan, Korkusuz and Çelik: 2011) which requires girls to be educated by law for the first time in the Ottoman Empire is among the education reforms that can be given as an example for the reform efforts to improve the status of women in the social hierarchy.

## 2. Background for The Presence of Women in Social Spaces

As it is not deemed appropriate for girls in maturity ages to be educated by male teachers, *Dar-ul Muallimah* (Teachers' College for Women) was established in 1870 to raise teachers for the primary and secondary schools that girls attended. After 1869, Vocational Schools for Girls were opened in Ruse (Ruscuk in Turkish for Little Ruse), Bulgaria and Istanbul in 1869 with a seven-year educational program. After 1886, its name was changed to "Industrial School for Girls." In 1913, it was named as the *Girls' Rushtiyah* with 6 yearlong educational curricula with the Elementary Education Order. These girls' schools spread all the way to the townships around the cities. In some city centers, the 5 year long Teachers' College for Women became operational based on the educational decree issued.

In 1913-1914 school year, the first high school for girls was opened with the name of Istanbul Inas (Girls) Sultani in Istanbul. In 1915, seminars for women were started in Istanbul University, also known as *Darulfunun*, for four days a week. In 1915, Turkish women started to attend classes along with male students at the Faculty of Literature at Istanbul University. (Gökçimen: 2008)

In the 21st century, Turkish women have the right to attend any school to which they prefer or qualifies the requirements expected by schools and also has the right to get educated in any field that they want. Elementary education is mandatory for both girls and boys. In the Tanzimat Period, among the developments that appear to increase the status of women in the social system and that centers on women, is the right to attend the Nursing School within the Medical School in 1843. There is also the ban on purchasing slaves and *Jariyahs* (women slaves) in 1856. In addition, there is also the publication of weekly *Tarakk-i Muhadderat* for women in 1869 (Yılmaz;2010) The widespread circulation of periodicals for women had a significant role in educating women who did not have access to formal education at the time. "Sefika Kurnaz found 13 different magazines published for women between 1868 and 1900." (Yumuşak Canbaz: 2009)

The opportunity to get an education and have an occupation made it possible to redefine the role of women in the society. In the 21st century, there are many periodicals published for women. “*The Brides’ Tax*, as required by Ottoman Law, ended with the *Tanzimat Reforms*.” (Yılmaz:2010) These advancements made it possible for women to get away from the paradox of earning husband and consuming wife and also allowed women to attain rights to establish a family and get education enabling women to have a social existence within the society.

### ***2.1 Women in Cultural and Artistic Fields of Work***

The novel of *Mrs. Fatma Aliya* (18620-1936) titled *Refet* presents an important perspective about the education of women. Written 26 years before *Calikusu* (The Scrub Fowl), *Refet* is the first novel to have a main women teacher character and story in a novel. (Yumuşak Canbaz: 2009) In this regard, *Refet* indicates that the journey of women to have an important place in society started in 1896. The women who started to have the right for education and a status in the society became the pioneers for future generations. The first female painter in the 2nd *Mesrutiyat* (the Constitutional) Period was *Mihri Mushfiq* who used her achieved high status to meet with the Ministry of Education at the time to ensure the opening of the School of Inas (Women) in 1914. *Mrs. Mushfiq* added value to the struggle of muslim and non-muslim Ottoman women coming after her to exist and contribute to the artistic and cultural life of society. She also became a pioneer for many women coming after her to reach new horizons.

The role of non-muslim women in Ottoman culture and life is more visible and their contributions started earlier than muslim women. In some fields, women’s services were offered for long periods of times by non-muslim women. “The movie hall services were operated by non-muslim women for long periods of time as the history of Turkish cinema sources suggest” (Öktem:2009)

*The School of Inas* merged with the *Sanayi’i Nafisah* (Fine Arts School), opened at the time of Sultan II. Abdulhamid in 1883 and was the first formal school in the Ottoman Empire to offer education in the field of art. The name of the school was changed to Mimar Sinan Fine Arts University after the republic was founded and still offers fine arts education as the only fine arts university in Turkey.

The culture of foundations and associations in society is important in defining the role of women within society. The first foundations had a goal to help the women who had no one to support them. After the 2nd Constitutional Era, the new foundations also had the goal to offer new opportunities for work and education while there were also associations to increase the cultural level of women in the society. All of these institutions emphasized the role of women in society.

On the other hand, the most important factor in the widespread presence of women in work life is war. Before Tanzimat Period, women only had the opportunity to be a teacher and childcare provider but afterwards, women's occupations started to have variety and the presence of women was observed in almost all the fields. The deserted positions in the public and state occupations due to the greater need for males in war fronts was filled by women in public and state services. For example, 121 employees out of 201 of the match factory in Istanbul in 1897 were women and children. (Yılmaz:2014)

## *2.2 Women in Work Life*

In light of the historical evidence covered above, it can be said that the period when women started to work as a paid employee is 1897 and thereafter. The opportunity to work at a government institution as a paid state employee was given to Ottoman women in the Tanzimat Period. As mentioned in the previous section, the muslim Turkish nurses who got their diploma in the presence of the Ottoman Sultan in 1845 started to serve at state hospitals. In the field of education, the Turkish women first started to serve in public education spaces with the graduation of female teachers from and working at *Dar-ul Muallimah*. After a while, women who became responsible in the administration of girls' schools started to work as educational inspectors in the 2nd Constitutional Era.

The employment of women in areas other than education and health sectors was after the Balkan Wars and the First World War. When the males went to the war fronts, the positions deserted by males were filled by females. In 1912, the Istanbul Police Administration Authority, determined that there was a need for female intelligence agents and permitted the female officers to serve in that capacity. In 1913, the Phone Company published notices in papers that there was a need for female phone center officers. Mrs. Bedra Othman who was one of the members of Association of Women's Rights Defence applied to become a phone officer. (Özger:2012)

When they were required to speak French and Greek, the first applications of Bedra Othman and her four other friends were not accepted. When this was critiqued by the publication of the *World of Women* and there was public pressure on the Phone Company, Bedra Othman and her friends were accepted for employment one year later.

A similar situation was experienced in the Ministry of Finance which called for women to serve and do the work of men who were called to serve in military mandatorily. The female applicants were evaluated and the ones who were successful in the tests started to work as officers in different branches of the Ministry. A registry was formed to record the work performance of the female officers. In the research studies of Özger, there are 36 different female public officers.

### ***2.3 Literature, Arts and Music and Westernization in the Ottoman Era***

In the 19th century, Ottoman writers interacted with Europe and translated many works from European languages and contributed to the literary field with many translated works. After the 19th century, male clothes starting with the 19th century, and female clothes starting with the mid-19th century were under the heavy influence of European fashion. (Görünür and Ögel:2006) In the 21st century, a similar change is seen. The clothes are not only congruent with religious norms but also westernized in terms of their look and are designed for highly visible and active conservative women to adapt into social and public life. The relationship established in between the existence and visibility of conservative women brought the necessity of the development of a clothing style that is congruent or will normalize or ease the existence of women in every space and platform. (Görünür and Ögel:2006)

Traditional arts along with other art forms showed development starting with the first part of the 18th century. In the developing cultural and artistic era of Ahmad III and Sadrazam Nevsehirli Damat Ibrahim Pasha, Levni who is an important artist emerged and brought a new and creative interpretation to the miniature work with his “Dancing Women.” (Ilden;2011) In the 21st century, the Classical Turkish Arts Foundation is successful in *Husnu Hat* (The Calligraphy), *Tazhib* (Gilding), *Ebru* (Turkish Marbling) Exhibits and traditional Turkish arts exhibits opened in Municipal Cultural Centers with the goal to sustain the existence of these art forms. However, in modern works of these traditional arts, there are no westernized interpretive approaches that Levni showed in miniature art form with a western interpretation in the 19th century.

In the Sultan Abdul Majid period, Naum Theatre was used as the Palace Theatre. In order to watch the operettas by Sultan Mahmood, one room of the Palace was converted into a stage. Dolmabahçe Palace Theatre opened in January 12, 1859 and was a formal public institution and had a sultan's lodge. The lodge of the wife of the Sultan was enclosed. The ceiling was covered with a poppy red color. It was furnished with XV Louis style. It had Madame Pompadour's glasses, sofas and carpets and the theatre hall is the same as that of the Royal Opera of Versailles. In addition, after the Opera House becomes operational, the plays performed in-house will be screened outside so that the play will be visible to watch from outside. The Opera House has futuristic, high-tech, and westernized details according to its time. The Palace Theatre constructed in the Sultan Abdul Majid period has western interior design details as far as 19th century architecture is considered. While the use of lodges in Dolmabahce Palace in the formal opening of Dolmabahce Palace Theatre, the first two scenes of Scaramouch Opera were played. (Öztürk Yılmaz:2007)

Sultan Selim III was the first emperor to be seriously interested in the western music. He consulted German, French, and Russian ambassadors in music as well as in many other fields of work. In addition, many western musical instruments such as the violin made their way into the Ottoman Palace even if the western music could not. (Solnon:2020)

The western music instruments, polyphonic chorus and new music understanding was brought into Ottomans by Mahmood II who abolished the Mehter Music Team along with the Guild of Janissaries, the symbol of Turkish Army in 1826. Instead of the Mehter Music Band, he established a western-oriented military music band and it was named *Mizika-i Humayun*. (Akgül Barış and Akgül: 2007) Despite austerity measures of Sultan Abd al Az'eez, this band maintained its operations and played monthly concerts for the Sultan and his associates. In a metropol such as Istanbul, a second Opera House is needed; however, transforming the building of an Opera House into a city symbol is the reflection of the western approach. The first Theatre Houses constructed in Istanbul reflect 19th century European theatre architecture and it was first implemented within the French Embassy in Istanbul. The wood building constructed in Pera for the Italian Theatre Company coming from Greece was the first theatre building and they were usually located in Pera and Galata districts. Hanim Sultan, the wife of Sultan Mahmood II, attended the play on July 29. (Öztürk Yılmaz:2007)

The Coffee Culture in Ottomans has an important place in social life that Hürrem Sultan has brought along as a phenomenon. Coffee Houses spread to the World originating from the *Kahvehane Culture* of Ottomans retracted to its roots in the 19th century with tobacco houses.

### 3. Architecture and Westernization in the Ottoman Era

The control and inspection of architecture and construction, the city architectural transformation projects, and the monument constructions are realized by the city Directorate of Architecture and Construction Affairs. The restoration of historical buildings and reuse is controlled by the Council of Monuments. The constructional works operating in a similar fashion to Europe represents an example to the westernization in architecture in the 21st century. This western approach started in the Tanzimat Period.

The Hassa Architects Office, the formal institution of the Empire, operated dependent on one of four major offices in the Ottoman Palace, also known as *Sehremin* (Office). “This institution which is different from the municipality services that we know of today functioned as a higher authority to provide the materials and supplies, to pay for laborers, to keep records and provide accounting services.” (Salbacak:2017) Later, when the 6th Directorate was established in Beyoglu, Istanbul, the works of this directorate evolved into modern municipal affairs over the decades.

“In the Ottoman Empire, all construction works such as new construction and restoration were handled by the Hassa Architects Office. It is not known certainly when it was founded. In the 21st century, there is no such institution.” (Salbacak:2017) While the higher authority is handled by the Ministry of Environment and City, the Architects’ Office has certain rights to contribute to and to direct construction into certain ways. While the Hassa Architects Office is quite similar to the Palace Architect Offices seen in the Western World, the formation of the Ministry of Environment and City and the Architects’ Office is congruent with the 21st century western approach in architecture and construction.

All of the woman Sultans ensured the production of many public places in the city of Istanbul, the development of architecture and the creation of art products through the foundations they established, by their personal and political efforts. For example, Hürrem Sultan and Nurbanu Sultan have been worked with

Mimar Sinan, Safiye Sultan has been started the construction of the New Mosque but could not complete, and the Çinili Mosque has been built by Kösem Sultan. (Taş:2014) Many historical buildings on the Eminönü coast has been made by Hatice Sultan. In addition to the sultans of the reign of women, members of the dynasty such as Nilüfer Hatun, Saliha Hatun, Ayşe Sultan, Haseki Gülnuş Valide Sultan, Ayşe Sîne-Perver Vâlide Sultan established various foundations and built many buildings such as mosques, public fountains, schools, madrasahs and almshouse. Not only the women of the dynasty, but also wealthy Anatolian civilian women such as Fatma Hanım, Münire Hanım, Şerife Hanım, Salih Kızı Fatma Hanım and Ayşe Hanım also established foundations in line with their financial means and contributed to the state.(Şahin and Kaya:2017) Considering that the establishment and functioning systems of these foundations are shaped according to the special requests and demands of women and that they are effective in their designs and that some of these foundations are still working, it is possible to say that women are independent and respected about architectural activities. The foundations built by these preferences are a manifestation of the freedom in revenue management and the property rights of Ottoman women from all walks of life.

#### **4. Housing and Westernization in the Ottoman Era**

Architecture is the most associated with society among all plastic arts. First of all, the architectural understanding that plays a role in shaping the cultural codes of the area and the cultural value of the society then transfers this to the future. Significant developments in architecture have been experienced by Sultan III. Ahmed in Tulip Age that has been given it's name to a westernization the period. The misfortune of the period was that many art and design objects, including furniture, were destroyed by the rebels after the Patrona Halil rebellion. Therefore, many western furniture such as beds, chairs, tables and armchairs started to be used frequently only after the transition from Topkapı Palace to Dolmabahçe Palace.

In westernization era, architecture and interior architecture of classical ottoman houses are directly related with religion which is one of the factors affecting the perception of the space. The houses of muslims do not have twin staircases from the street for the entrance door, only non-Muslims have this type. The presence of selamlıque section in the entrance of the house, the doorknobs

that are the sound alarm element on the outer door for determining the gender of the guests, the lack of figurative paintings or frescoes in the interior decoration, geometric forms of the ceiling are the interpretation of Islamic values. Although there is no common definition in general, in the basement there is a cellar, in the entrance there is a main entrance door and sometimes a garage door for horses. The first half floor is reached by staircases and selamlıque is the first space for greeting of the guests. After selamlıque, social spaces are composed until the second floor as living room, dining room, workroom etc. Second floor consist of bedrooms open to common space that is called sofa. The main material of the furniture's has been wood and adobe, local materials has also rarely used according to the area's geographical structure. For example, In Mardin because of the climatical conditions, main housing material is stone but in Kütahya wood and adobe has been used for housing. Houses except apartments has generally two floors, because of their masonry structures. As a flexible and multifunctional furniture, sedir has the characteristics of both a bed and a couch. There is a master bathroom in the built-in wardrobes in bedrooms. The fireplace or brazier in the room responds to both heating and cooking actions. (Yalçın;2019) In addition to the housing of public, there are also different building types that are loyal to the traditional plan with a larger base area and more artistic applications in terms of decoration as Mansion (Köşk) and Kasır (Pavillion) where the dignitaries of the city and the royal family members live.

Prens de Hesse was said that he saw the awesome Turkish house that is called as Mansion (Köşk), which is completely invented by Sultan. Lady Montague who is wife of a British Bureaucrat, mentioned that Ottoman women could be the freest women in the world, as dwelling decoration depends on the personal preferences of the lady owner. She also pointed out that in Ottoman housing architecture, that the interior spaces are personalized according to the character of the host, spatial seeking, subjective requests and needs. (Solnon:2020) This personalisation and fiction according to character are still among the foundations of interior architecture of current time.

With westernization, traditional dwellings have not been abandoned, only new housing typologies have been emerged. Waterside houses with boathouses, flats of apartments can be given as examples of westernization's modern housing typologies. The most radical change in the westernization process is that apartments in Galata and Pera have started to assume the role of housing. While these apartments were preferred by ambassadors and foreign merchants from

abroad, over time they also gained the admiration of the public. Pera has become the showcase of westernization, especially with the presence of shops, hotels and restaurants. Pera Palas Hotel The the accommodation place for passengers of Orient Express train was the first building to receive electricity after the Ottoman palace. The basic approach in these apartments is a local and concise style, which is called the ottoman baroque, which consists of the simplicity of the original baroque style. The late examples have similar details with Art Nouveau Apartments. Figurative facade decorations are also featured in some samples such as the Frej apartment. The flats have high and wide window openings, high ceilings and large base areas. The entrances of the flats are designed splendidly and staircases are shaped artistically.

Similarly, the westernization efforts can be seen in the gardens as landscape design during his period. Foreign gardeners were employed in the palace gardens. In this period, it is seen that there are some trees planted in symmetrical grass flower beds like French style. This is part of the garden that is partly away from the formal garden. In palace gardens, there are rarely found trees just like European Palace gardens. In 1720s, gardeners were brought from France with the support of the French ambassador. At the beginning of 19th century, French Architect Melling worked for Selim III's sister Hatice Sultan and landscaped the Palace in Beşiktaş with French garden impressions organized with geometrical roads and flower beds. This landscape became an example for many palace and mansion gardens. Hatice Sultan was worked with Melling and realized the landscaping of her palace's garden. French style landscaping is the fashion in gardening in westernization. (Solnon:2020)

## 5. Conclusion

As it's attempt to cover different areas of cultural and artistic life in the 19th century Ottoman Era and the modern days from the perspective of westernization, it is quite plausible to note that there are similar patterns observed adopted in terms of westernization. It appears that there is a strong tendency for modernization in some art forms while other art forms are quite slow in adapting any major and radical transformations towards westernization. The pace of westernization in any culture and art forms appears to have something to do with the social and political context of the era in which these changes are experienced. The challenges of the era in which these transformations likely occur decide the tone and strength of these changes in society.

The political climate and the social context in relation to the western society instigate changes in the society and the prevalent cultural and artistic forms observed in the western society force transformations through media on daily lives which covers personal interactions as well as social activities. Perhaps, the tendency to westernize was more urgent in the 19th century due to the observation that Ottoman Empire was taken back due to technological and industrial advances in the West. Nowadays, there is more nuanced approach to adaption of the Western culture, music, and art forms. There is also a serious attempt to preserve traditional cultural and artistic forms into future generations. This may not just be a westernization attempt but it may be an ongoing effort to modernize Turkish nation and society to keep up its development in order to sustain its existence and compete with the global world as well as to serve its citizens and provide better living standards.

A deeper study making use of larger data sources is needed to look into the role of women in these social transformations. This type of study is need to chart a course for the westernization efforts and to separate the westernization from the hegemony of the West on culture, media, technology and art. In this regard, it is worthwhile to investigate how the westernization efforts pay off to provide better living conditions to women, better cultural and artistic activities, better city and municipal services to improve life in general in social life both in the 19th century in the declining Ottoman Era. The westernization process is the most efficient developing period in housing design from the Ottoman Empire to the current time. Houses have reached contemporary world standards and different housing typologies have emerged in different regions and cities in line with the demands and needs. Although serious differences are observed between these residences, the cultural codes of the cities have been established in a correct and holistic manner.

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## CHAPTER XVII

# COMPARATIVE ANALYSIS OF THE FLINTSTONES AND THE JETSONS IN THE CONTEXT OF FICTIONAL SPACE

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### 1. ntroduction

**J**n its simplest definition, Fiction is composing the parts of an art work meaningfully. Fictional spaces; can be defined as spaces that experiencing by the five senses is impossible to under the conditions of the current period. Fictional spaces reach audiences' imaginations and open new horizons for them. Animation movies and series are the freest genre imaginable about fiction spaces. (Özdoğan:2015) The etymology of animation and related words depends on animare verb that means to revive something. (Wells:1998) The mission of the animation in broadcasting and cable television bazaar is providing the main connections between animation production and the brand image of the channel. (Stabile:2003) Prime-time animation began on ABC television with Flintstones in September 1960, thanks to Hanna-Barbera's animation studios, but animation programs have become an element of American popular culture since the 1930s. (Booker:2006) The efforts of

Walt Disney is an important factor about animation's popularity. (Borden and the others:2011) The Jetsons is the example of the utopian retro-futurism cartoon series and the Flintstone is the example of the utopian era drama cartoon series, but with their production techniques and design objects, it has enabled children of the 60s to become the creators of today. Utopianism is a better world ideology, criticized by Plato, More, Campanelli Huxley, and many other important philosophers. More T. (2015), Matter W.W (1975), Slodczyk J. (2016) The Flintstones was broadcasted in 1960, two years before The Jetsons, and it was black and white for the first 61 episodes. The Jetsons was broadcasted in 1962 and lasted for three seasons, 24 episodes; as the first color production of ABC Television. (Bye and the others:2007) (Creager: 2020) Although the Jetsons was created before it was broadcasted, it was canceled because of the lack of color televisions in the audience's homes. New episodes of The Jetsons were also broadcasted in 1985 and 1987. In its early episodes, The Jetsons was a sitcom for the children and families of the baby-boomer generation, then it got closer to being a science fiction cartoon with the rise of science fiction cinema in the 1980s.

## 2. Fictional character biography

(FCs) Fictional character is imaginary character that does not exist in real life or has different features than its real life counterpart in the fictional dynamics of a work of art, a game, or a theory. Fictional Character creates the re-knitting of a particular fiction by using fictional spaces. (Özdoğan:2015) FCs in all types of art fulfill basic physiological, sociological, psychological functions as desired by the designer and author. (Hoorn&Konijin:2003) The main characters of the Jetsons are the mother, Jane Jetson, who is a 33-year-old housewife; the father, George Jetson, who is a 40-year-old company employee who works as a digital index operator nine hours per week in spacely space rockets; the 15-year-old daughter, Judy Jetson, who is a high school student; a 6.5-year-old, Elroy Jetson, who is the youngest of the Jetson's family; the family's housemaid robot, Rosey; George's boss, Mr. Spacely, and his antagonist Spencer Cogswell; the building employee, Henry Orbit; the family's dog, Astro, and his pet alien feline-looking, Orbitty. Other recurring characters are the Spacely family, Judy's diary Didi, Miss Galaxy, who is the secretary of the Spacely company, and Montague Jetson as George's father. Although the characters' names etymologically refer to the

space age, there is no difference in the fiction of the relations according to the 60's American family. The main characters of the Flintstones are Flintstone and their neighbors' Rubble family. Fred's full name is Frederick Joseph Flintstone and Barney's original name is Bernard Matthew Rubble. Fred and Barney are two cave-men in their early 40's who work at a quarry. Wilma and Betty are their wives and they are modern housewives. Wilma and Fred's children Pebble Flintstone and pets are the dinosaur Dino. Rubbles family have an adopted son named Bam-bam.

### 3. Time of Fiction

In terms of time fiction, the Jetsons live 100 years after the time they were created, that is 2062, and the Flintstones live in B.C 10,000. In Jetsons, the lack of any protection around the walkways while wandering in any sky and the fact that in Flintstones home accidents never result in death or injury create the impression that the characters of both cartoons are immortal.

Flintstones and Jetsons are important fictional cartoon products of the Hanna-Barbera production in television history by their unique World and time fictions. Judy plans a swimming tour on earth. Elroy travels with his girlfriend to see the ruins of New York, this is indicating that the world is the scene of a post-apocalyptic scenario and an enormous demolition. When DC Comics handled The Jetsons as a comic story in recent years, the reason for this demolition was attributed to a meteorite, depicting Jane Jetson as an old Nasa officer and pointing out that not everyone could be survived in this tragedy. However, there is no explanation about the fate of the world in the original cartoon series created by Hanna-Barbera. Regarding the episode where Jetsons and Flintstones encounter, some critics argue that in the sky the upper class lives like the Jetsons, and the lower class lives like the Flintstones on earth. Actions such as the presence of televisions in Flintstones' home and Wilma's electronic home devices in their mechanical forms, bowling saloon, guitar, piano and other musical instruments in the concert area of the bedrock, celebration of special days such as Christmas are cited as examples of this criticism. However, there is no official explanation for this allegation. In Barney's Birthday episode, he gets two dinosaur years old or two hundred million years old, indicating that in the Flintstones time is moving differently from what is present.

## 4. Urban Planning

Utopian examples in the study of urban planning for centuries have enabled real cities to gain momentum in terms of design. (Slodczyk J.2016) The fictional space in Orbit City, where the Jetsons live, and Bedrock, where the Flintstones live are examples of World fiction as a whole. The Jetsons live in the sky as the world becomes uninhabitable. The Flintstones live in the land on earth. The urban planning of Bedrock as residential areas of the Flintstones is compact low rise but in Jetsons' it is open high rise. (Oke:2004) While the structures in Flintstones are single-storey, there are multi-storey structures resting on columns in Jetsons. However, all public spaces have been planned in both cities.

Jetsons live in a futuristic utopian city with advanced robotic machines, aliens, holograms and bizarre discoveries. The house where the Jetsons live has an is elliptical the form. Communication in the city of the future is provided with large-screen video systems. (Akkaya:2007) The Jetsons live in an orbiting city where the cantilevered structures float as apartments generally with three floors. There are Orbit High School where Judy takes her education, shopping mall and barber where Jane Jetsons visit often, Little Dipper School where Elroy Jetson takes his education, Spacely Space Rockets where George is one of its employees, park where Montague Jetson spends his free time with Astro Dog and Bowling Saloon for entertainment of the city dwellers. The Flintstones live in Bedrock where the one-floor stone buildings. In Bedrock there are a quarry where Barney and Fred works and a club that is named as the Loyal Order of Water Buffaloes where Barney and Fred are members, Drive-in Movie, Butcher, Bowling Saloon, Kitty's Place, Ice Cream Shop, Airport, Dress Maker, Hairdresser etc.

## 5. Architectural Style

In the Jetsons, the architectural styles refer to American Googie which is known as Populuxe and Doo Wop also. (Hasting: 2007) The Googie is an architectural style that was born in California and was reached to the top between 1954-1964, and it's terminology was developed by Professor Douglas Hall of Yale University. (Elliot: 2002) Googie as an American-originated style that first appeared in Hollywood and Drive-in services firstly. The streamlined modern style carries early details of this style that believe in mass production and circular pavilions. It mostly uses glass, steel, and plastic as main materials. The forms are related to abstract forms of rockets, jets, and orbits. The beginning of

nuclear power and the realization of space travel with Sputnik I of Russia are the political and social pushes of Googie. The initiators of this style is pronounced as John Lautner (Ann&Lange:1994) and Eldon Davis (Asim&Shree:2018) who are the architects of futurism.

Nordic architects such as Saarinen (Davidson&Biddle:2020), Jacobsen, (Thau& Vindum:1998) and Panton (Remmele:2021) has been influenced by Googie style. Twa Airport Terminal by Eero Saarinen (Hubregtse:2017), Googie Coffee Shop by John Lautner, Norms Restaurants by Armet Davis Newlove Architects, famous sign of Las Vegas (Scott:2007) by Betty Willis can be given as examples to this style. (Hess:1985) In Googie neon lights, organic and parabolic forms, atomic figures, star-shaped decorative elements and space-shaped architectural structures, upswept roofs, curvaceous furniture are drawn attention.

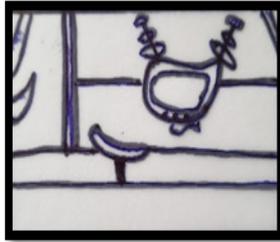
Punk is a 70's movement and a system of thought, whose main purpose is to allow as much freedom as possible that includes individualism. (Dylan:2003) Stone punk is a sub-genre of punk design and science fiction in cinema that carries the prehistoric details to the present ages with functional designs as a kind of interpretation with primitive materials. In The Flintstones stone punk design style can be seen with technological devices and furniture designed by primitive materials as a concept and in the buildings as an architectural approach.

## 6. Housing of the Jetsons and the Flintstones

Jetsons lives in a swanky apartment which is called skypad. In the Jetsons housing, there are three main entrances to the house. One is the front door of flat 104 open to the corridor of the apartment. Another one is an entrance from the garage with an automatic guillotine door controlled with a button. The last one is a transportation system that is provided by a transparent elevator with a navigation system. In the control panel of this elevator; there are nine buttons, such as public school, garage, market, bank, shop, and undefined ones. There is also a reject button that can be considered as a child safety lock. Flintstones live in a one floor self-contained stone house with a wooden door.

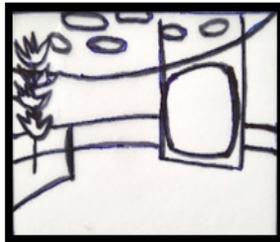
The smart home devices of today's early samples can be seen in The Jetsons. The devices on Jetsons are the futuristic technological dreams and needs of mankind for the future. Bill Gates, Elon Musk, Steve Jobs who have created the subconscious of the current technology and have narrowed the distance between technology and the users were the target group of Jetsons in

their childhood. While all televisions have tube in 60's the televisions are LCD that depends on liquid crystal technology in Jetsons. Jetsons special room like home theater, there is a curved television which is larger than today's largest one 105 inches Samsung UN105S9. There are too many flat screens for video call in different part of the home that some of them has bodies and some of them are wall mounted. Video call is possible in 2021 via applications as FaceTime, WhatsApp, Messenger and etc. from all internet accessible hardware devices.

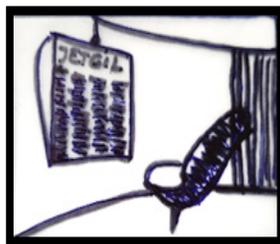


**Drawing 1:** Jane Jetson's flat screen for video calls

There is a flat screen sliding from the ceiling which Jane Jetson uses for daily training. In addition, it is possible to train with television and mobile phone applications nowadays. George reads online newspapers like current trends on the flat screen.



**Drawing 2:** Drawing of Jane Jetsons' flat screen for training



**Drawing 3:** George Jetsons' flat screen for reading newspaper

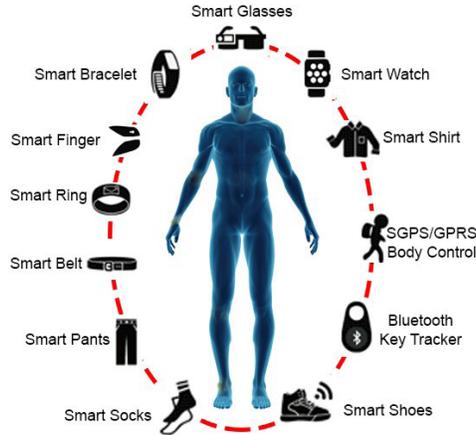
Washing-ironing and vacuuming are done with a control panel by Jane Jetson. A mechanical arm that comes out of the wall iron on the ironing board, the washing machine is connected to the ceiling and the floor that makes a variety of pressing. The vacuum cleaner acts on its own and sweeps the floor. IRobot company that is established by three members of MIT's AI laboratory in 1990, is released iRobot Roomba in 2002 as the same as Jetson's vacuum robot.



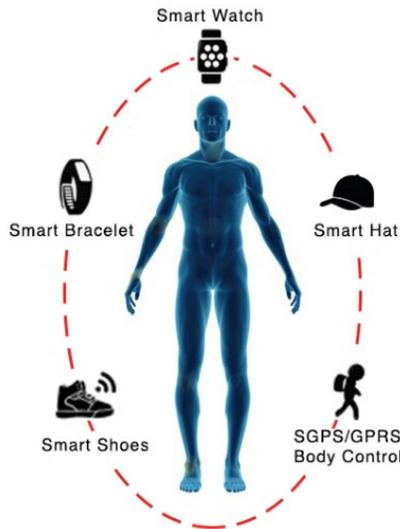
**Drawings 4-5:** The vacuum cleaner of Jane Jetson

Jane Jetson uses a clothes machine for folding, and now the robot that is named foldimate laundry machine that is a product of a Californian Company does the same. Judy's diary Didi is digital device. R.U.D.I which is George's personal computer at work works like SİRİ of Apple iPhone with a robotic help. Hologram technology is getting popular in recent years that can be observed in Jetsons in 60's. George's alarm clock is smart also that has voice user interface. Jetsons use smart watches with a voice assistant system like today's smart watches that earliest models are Samsung's SPH-WP10 in 1999 and Microsoft SPOT in 2004. Smart watches are one of examples of wearable technology that is a usage of smart body-worn devices. Another example is the Elroy's Jet Boots, which he uses to walk on walls and ceilings. Today, many wearable technology products are available, such as smart shoes produced by Xiami which is measured the efficiency of physical activities and designed by Gutierrez to teach dance with chip information technology. Elroy and Montague Jetson use hats with orbits as GPS system, in the animation this hats only worn by elderly persons and children. Jetpacks in the Jetsons is use to fly freely in the sky. Flying cars and Jetpacks are already existing but not for casual experiences. In 60's Jetpack testing was being done for military purposes. While drones are used for security and delivery in the Covid-19 era, Elroy is sent to school in an automatic hemisphere technological device such as a drone. George Jetson use tooth brush that is work form the bathroom mirror electronically arms like

electronic toothbrushes. It is an interesting experience to meet smart devices of today in Jetsons that is broadcast in 1962 when there are no personal computers, no tablets, no mobile phones, no video call, no internet.



**Picture 1:** Different types of wearable technology (Rodrigues J., and others: 2018)



**Picture 2:** Different types of wearable technology in Jetsons (Yalçın&Özdoğan:2021)

In Flintstones the working principles of the home devices depends on human intelligence. The power is provided by human or animals. The animal power and human power are the key words for modern devices to transform stone age in the animation. The Flintstones family's car is driven by human power. The taps and

armatures of the showers, sinks and garden hoses are controlled by mammoth's trunks. These are also used as vacuum cleaner. Garbage disposal is a dinosaur which eat the garbage. For the knitting, Wilma is used two prehistoric birds and control them with her directions. She makes up on her face with powder by rabbit tail. Jar openers are prehistoric animals that has big front teeth. Alarm clock works with a stone age woodpecker and washing machine is controlled by another prehistoric bird which uses its feet for washing clothes in a stone washtub. Both for households and garden works cutting works is made with animal's teeth.

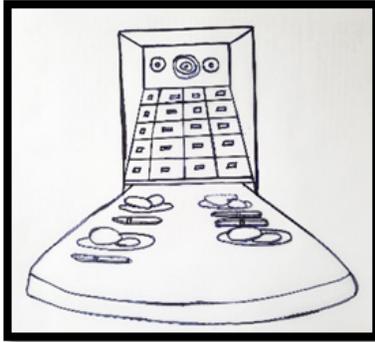
The design of the furniture especially armchairs and chairs in Jetson's house are like admixture of Nordic Architects such as Arne Jacobsen, Eero Saarinen and Verner Panton (Remmele:2021). It is possible to observe futuristic and innovative style that depends on Googie architectural movement is preferred for the whole furniture. Plexiglas, carbon fiber and polypropylene are used for the organic forms of the furniture that are related with aerodynamics and produced by foam molding techniques. Some of the chairs are floatable and also there are moving walkways inside the house to move from room to room. Between the rooms there are not exact boundaries just circular transparent panels are inside the house as separators. Lighting is provided by round-shape spots. Jetsons have a master bedroom but George's bed changes in every episode, because of his heavy sleep. The form and technological features of the beds are always shaped by waking up. In one example bed is in the form of a classical toaster controlled by Jane with the support of an ejector. When Jane turns the button of the ejector, the bed closes and throws George out like bread.



**Drawing 6:** Jetsons' Master Bedroom

When entering the house from the outside, disinfection is carried out by a machine on the traveller (moving walkway) in four stages as disrobe, shower,

spin-dry, uniform however, there is also a bathroom in the house. They have a dining room but for kitchen they use just a food serving machine that is called foodarackcycle. The foodarackcycle cooks the dish what the user wants to eat by software technology. In first episodes foodarackcycle works with card system like 60's, in late episodes it works with buttons. Respectful and intelligent robot Rosey can cook by herself with the consciousness of George's mother downloaded into Rosey's software.



**Drawing 7:** Foodarackcycle of the Jetsons in the later episodes

Foods are served on table from an emptiness of the foodarackcycle or from a hole in the table directly. Yegen says that the it is similar to vending machines of today and there are robots which has special abilities but not as intelligent as Rosey at the present. She also touches on smart video phones as innovative devices. (Yegen:2018)



**Drawing 8:** Rosey the Robot is cooking

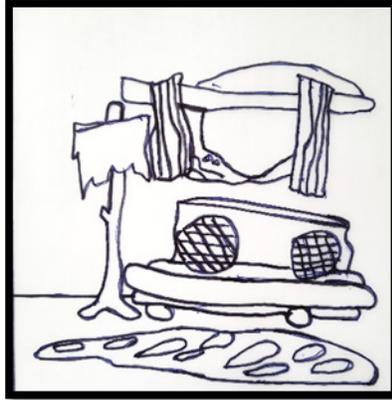
In 2021 in Japan Henn Na Hotel Group's all employees are robots. The Wardrobe of Jane Jetson, can be miniaturized down to the size of a hand bag that seems

like the clothes vacuuming system of today's. Judy Jetson has her own young room and Elroy Jetson has his own kids' rooms. Judy's room is in pink as late Goochie tones. She has a resting space in front of the window, a chair, round shape bed and some pillows. Elroy Jetson has a homework help computer and a radio that he can connect to the other planets in his orange to brown room. Jane Jetson uses a digital mirror to choose her dressing.



**Drawing 9:** of the digital mirror of Jane Jetson

In the Flintstones' housing there are kitchen, bedroom, bathroom and living room with a dining room. There are cabinets and shelves in the kitchen for storage. The sink works with prehistoric animal support. Dining room is organized with table and chairs. The bed and commodes are made of stone and the lampshades are made of animal skin and stone and there is a make-up desk in the bedroom. Chandeliers and telephone are made of seashells. In living room furnitures are made of stone as sitting group, coffee tables, an ottoman and a television but garden chairs are made of wood and stone. In the entrance hall there is a wooden clothes tree whose stand is made of horns and a huge and deep wardrobe for storage. The walls and furniture's cinematographic colors are from white to grey. The main architectural materials of the Flintstones are; stone, wood, horns and shells. The devices have mechanical structures that depends on prehistoric animals or primitive systems. The look of the decoration seems modern but the construction of furnitures are primitive also like masonry structure, tie-up systems, sewing and etc. The Windows are big holes on the walls and the hanging curtains and carpets are animal skin like stone age. The architectural style refers to mid-century modern mixed with stone punk. William Nicholson is built a real stone age house in USA inspired by the Flintstones.



**Drawing 10:** The Flintstones' Interior Housing

## 7. Conclusions

The Flintstones and the Jetsons are sit-com animations about the adventures and daily lives of middle-class American families. In both productions, utopian worlds are set up for the characters. There are no elements such as destruction or deprivation in both worlds and no chaotic behaviors such as violence. In the Jetsons, El Roy can talk to other planets through a radio system. This indicates that other planets are habitable and extraterrestrial life is existing. Jetsons' phone number is VENUS-1234 that can be the sign of where orbit city is. Judy travels to Acapulco so this vacation can be a kind of a space travel. In the Flintstones, Wilma comes from Arkanstone where is a reference to the state of Arkansas, USA. Both the Flintstones and the Jetsons are American, but while the Flintstones live in America on Earth, the Jetsons are live in space probably on Venus and they can make time and space travel. The paintings on the stone which is looked like Lascaux paintings is used for wall decoration in Flintstones housing. In Jetsons housing there are many abstract sculptures as modern art for decoration. Flintstones use the outer spaces more than inner spaces, garden is one of a backgrounds for scenes. Jetsons use inner space mostly their home as a background. There are urban furnitures such as benches and parks as public spaces in both orbit city and bedrock. Bowling and television are common entertainments for both of them like 60's mid-class American families. Judy send the lyrics which she has been written for Jetscreamer's song contest by a letter. There is also a mailbox at the door of Fred Flintstones' house. As a result, some local habits of the sixties are continued in the past and the future utopias.

The housing of Flintstones is similar to Mid-Century Modern and The housing of Jetsons is similar to American Googie as 60's styles. Flintstones' furniture production techniques are primitive, but those of Jetsons are futuristic mass productions. In housing Jetsons have been inspired many smart home devices of current age and Flintstones have been inspired stone punk design trend. But Jetsons and Flintstones both have a retro futuristic character also. Retro-futurism depends on a detailed visual design that is connection of the nostalgia and future (Jihong:2019) The Flintstones and the Jetsons started as a television series in the 1960s, but have become a phenomenon in the cartoon world with their extraordinary stories and fiction beyond their time. Although it seems that there are huge differences between the design products used in The Flintstones and The Jetsons, The Jetsons is a Space Age counterpart to The Flintstones.

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# CHAPTER XVIII

## INDOOR PLANTS: THEIR USE AND IMPORTANCE

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### 1. Introduction

Indoor plants are living organisms that exist in artificial spaces and create a connection between nature and architectural space in the societies of today where we stick to indoor spaces, and people need nature more. Indoor plants bear traces of the natural environment in artificially created spaces (Doğan, 2019) (Khabbazi, 2009). Various planting design elements are being explored today to create a connection with nature. The plant-oriented design in the interior does not only consist of potted plants in the interior. Planting in interior architecture also contains unique architectural features, including plant pools, terrariums, arboretums, vertical garden structures and winter garden (Figure-1).

Plant pools are a form of group made up of various plant species; in other words, they are plant gardens. Terrariums are aquarium-like habitats that replicate the natural world for reptiles, insects, and certain plant species. They are usually constructed of glass and plastic materials (URL-1). Arboretums are natural plant gardens where plant taxa with specifically labeled ages and origins

are positioned and displayed in appropriate areas for education, display, and protection (URL-2). Indoor vertical gardens also examine plant arrangements that combine several plants, but they are intricate arrangements that necessitate careful preparation (Başaran & Engin, 2017). Winter gardens are indoor gardens that offer climatic warmth for users without being influenced by external weather conditions. They are decorated with green texture and home comfort, as well as the necessary decoration materials, and can be used for a variety of activities such as sitting, relaxing, working, sleeping, having fun, preparing, and dining (Bartok, 2000).



**Figure 1:** Plant Pool, Terrarium, Arboretum and Vertical Garden Examples Are Seen From Left To Right Respectively (URL-3), (URL-4) (URL-5), (URL-6).

These design elements should be considered as an extension to and complement the interior design. It is necessary to provide the ecological conditions that plants need, decide the space's ecological conditions, and choose plants that are optimal for plants to sustain their vitality in the indoor environment. Furthermore, knowing the characteristics of plants and their relationships with the climate and other organisms is needed to design plants indoors. A sun-loving plant, for example, can be placed in the sun's direction, while a plant that dislikes the sun and needs shade can be placed in the shade of this plant. Indoor plants can be used for a long time if they are well projected. The arrangement should be

designed according to the light and temperature requirements of architectural space for the plants to grow and flourish indoors as in normal living conditions. The place of plants that would benefit from natural light should be determined during planning, and artificial lighting should be considered for areas where natural light is not possible. Besides that, indoor plants have various physical and psychological effects on both the organism and space.

Because indoor plants are part of the design, they can assist the design by performing different tasks in the interior. These functions can be grouped into three categories: Functional, aesthetic, and ecological.

Indoor plants, for example, may be used to divide a room, restrict the space (for example, Asplenium, Chamaerops, Cocos plants) to mask unwelcome objects in the space (for example, Asplenium, Chamaerops, Cocos plants), or provide privacy by using their color, smell, shape (for example, Abutilon, Acalypha, begonia plants) or measure (functional task). It is also possible to direct users depending on the location of the plants (For example, Agave, Asplenium, Chamaerops plants). Depending on the needs of the spaces, these plants also have aesthetic functions, such as keeping the space attractive and more characterful and making the working environment more appealing (Vermeulen, 1998). They can help the environment by filtering noise, collecting pollen, and improving air quality (Table-2).

The importance of indoor plants for space and the person is emphasized in this review, particularly in houses. The main objective of the study is to arrive at the fundamental qualities of planting designs, indoor planting techniques, and features, how they affect people and space, and establish a written source. This research focuses on the positive effects of indoor plants on human physical and psychological health.

Many studies have been conducted on the impact of indoor plants on the atmosphere of a space. However, there are not many studies on plant-oriented interior design. The study aims to support a limited number of research projects.

## **2. Indoor Plants**

The human connection to nature is disappearing day by day due to the rapid structuring that happens as a result of population growth. People spend most of their time indoors. On the other hand, city dwellers need both physical and psychological relations to nature from the past to the present (Ekici & Şişman, 2020).

With indoor plants and plant-oriented designs, the necessary relation with nature is provided. People in the city, who spend most of their time indoors, tried to create a calming atmosphere for themselves by using indoor plants, an extension of nature in the interior, to live a healthier existence (Ekici & Şişman, 2020).

Indoor plants should be an important part of the design and should support the space design. Indoor plants are defined as plants separated from their natural ecological habitats and artificially supplied in pots or different containers, live indoors in conditions similar to their natural growing and production environments, and have flowers, leaves, or both (Ulus, 1993) (Figure- 2).

Essentially, describing a plant as an indoor plant or an outdoor plant is not the correct approach. Since, depending on the growing conditions, the plants may be used indoors or outdoors. For example, a plant that grows naturally in the Mediterranean Region or is used in parks and gardens (for example, *Ficus elastica* - Rubber) may be used as an indoor plant in a pot or container in a different growing environment as Ankara. Bulbous bulbs, such as tulips and daffodils known as garden flowers, can be used indoors in a flowerpot arranged with pebbles (Doğan, 2019). It is important to discuss the living conditions of indoor plants to understand better plant usage in indoor spaces, especially in houses.



**Figure 2:** Plants Commonly Used in Housing Interiors Are Croton Plant, Prayer Flower, ZZ Plant and Living Room Palm, Respectively.

### **2.1 *Living Conditions of Indoor Plants***

The most significant and most crucial aspect of which plants can be included in the room is their ecological criteria. Soil, temperature, sun, and relative humidity are all ecological criteria for indoor plants.

The composition of the soil is one of the most significant influences in the growth of indoor plants. Since it includes air, water, organic matter, and various living creatures (various macro and microorganisms), the soil is extremely important (Bozkurt & Ulus, 2014).

Temperature is a climatic influence that affects the growth of plants and the frequency of certain physiological activities, as it is in all plants. The temperature has a smaller impact on photosynthesis than light (Table-1).

**Table 1:** Classification of Some Plants in Housing Interiors According to The Temperature Requirement (Bozkurt & Ulus, 2014) (Khabbazi, 2009)  
(The table was rearranged by the authors).

<b>High Temperature</b> <b>Winter; 16-20°/</b> <b>Summer;18-25°</b>	<b>Medium Temperature</b> <b>Winter; 8-15°/</b> <b>Summer;15-18°</b>	<b>Low Temperature</b> <b>Winter; 5-8°/</b> <b>Summer;15-20°</b>
Anthurium Andreanum Flamingo flower	Begonya Rex Rex Begonias	Aloe Arborescens Krantz aloe
Aphelandra Squarrosa Zebra plant	Chlorophytum Comosum Spider plant/ Airplane plant	Asparagus Plumosus Asparagus grass
Caladium Bicolor Elephant ear	Cyclamen Persicum Persian cyclamen	Asparagus Sprengeri Foxtail fern / Aspasagus fern
Codiaeum Variegatum Croton	Ficus Benjamina Benjamin fig	Bougainvillea Glabra Sanderiana Bougainvillea Ivy
Dieffenbacia Difenbahya	Ficus Lyrata Fiddle-leaf fig	Fatsia Japonica Japanese aralia/ paperplant
Guzmania Lingulata Scarlet star	Ficus Pumila Climbing fig,	Fuchsia Hybrida Fuchsia
Maranta Leuconeura Prayer plant	Monstera Delliciosa Swiss cheese plant	Helxine soloirolü Baby's tears
Vriesea Splendens Flaming sword	Nephrolepis Exaltata Sword fern/ Boston fern	
Phalaenopsis sp. Orchid	Primula Obconica Libre Magenta	

Plants, on the other hand, need a certain temperature to begin photosynthesis. Studies have shown that photosynthesis speeds up the fastest when it exceeds 30 degrees Celsius (Çepel, 1985). Temperature affects the respiration, water

requirements, and perspiration of the plants rather than photosynthesis (Bozkurt & Ulus, 2014).

**Table 2:** Classification of Some Plants According to Their Ecological Demands (Başaran & Engin, 2017).

Plants	Design Features				Ecological Features							
	Light				Temperature (°C)			Humidity				
	A	B	C	DD	EE	FF	G	H	II	JJ	KK	LL
<b>Chlorophytum comosum</b> Spider plant	X	X						X		X		
<b>Chlorophytum lactum</b> Siam lily	X	X		X	X			X		X		
<b>Tradescantia zebrina</b> Wandering Jew	X			X	X		X					
<b>Epipremnum aureum</b> Ivy	X					X	X				X	
<b>Ficus macleilandii</b> Banana leaf fig		X		X	X		X			X		
<b>Schefflera arboricola</b> Dwarf umbrella tree	X	X		X	X			X			X	
<b>Syngonium podophyllum</b> Arrowhead plant		X				X	X			X		
<b>Aeschynanthus radicans</b> Lipstick plant,			X	X	X			X			X	
<b>Hoya carnosa Bella</b> Wax flower			X	X			X			X		
<b>Tillandsia cyanea</b> Pink quill		X	X		X		X			X		

<b>Rhoeo discolor</b> Boat lily	X			X			X			X	
<b>Zamia zamioculcas</b> ZZ plant		X			X		X			X	

A: Effective with leaf color, B: Effective with leaf form, C: Effective with flowers or sepals, D: Light, E: Semi shadow, F: Shadow, G: High (W:16-20/ S:18-25), H: Medium (W:8-15/ S:15-18), I: Low (W:5-8/ S:15-20), J: High >75% , K: Medium 60-75%, L: Low <60%

The majority of plants used indoors must be located in well-lit areas because the light inside is less than outdoors, even under trees. Plants can have different light requirements. During the growth phase, plants need more light, while during the resting phase, they need less (Maguire, 2019). In terms of their preference for light, indoor plants are classified as plants grown in sunny, light, semi-shade, and shade.

Plant respiration and assimilation are dependent on a consistent degree of relative humidity in the air (amount of water vapor). Every plant necessitates a certain level of relative humidity for life to occur. The optimal relative humidity for most indoor plants is between 60 and 70 percent (Yazgan M., 1990).

The ability of plants, where demand is increasing day by day in modern interior designs, to perform the functions expected from them depends on ecological factors. For this reason, indoor conditions for plants removed from their natural environment and transplanted to artificial environments should be improved from an ecological perspective (Ekici & Şişman, 2020). Indoor plants are often categorized into groups based on their color, shape, texture, and ecological needs (Table-2).

## ***2.2 The Effect of Daylight on the Planting Design in the Interior***

One of the most important elements in planting design is the planning of the light. Light is needed for plants to carry out their functions. Plants require light to photosynthesize, grow, and survive. Plant-oriented designs, which were not common in the past, have evolved due to technological advancements and the development of appropriate artificial lighting systems in interiors ( Zakurin & Shchennikova & Kamionkaya, 2020). As a result, artificial illumination helped address the problem of receiving sunshine, which is a big concern for indoor

plants. This situation increases the applicability of plant-oriented designs. As previously described, the light requirements of plants change during their developmental stages. The need of a plant for light is at different levels at different times. Plants need plenty of light during their development period, whereas less light during their resting period (İç Mekan Bitkileri, 2007).

When the plants are settling in, they should be placed in areas with the most natural light because plants need daylight to develop and grow indoors as in natural conditions. Therefore, when considering lighting, the part of the plant that will benefit from natural light should be calculated. Artificial lighting should be considered for places that do not receive natural light or have insufficient space. Although artificial light is similar to sunlight, it is not sufficient to use artificial light for the same amount of exposure for 4-5 hours of sunlight. Because to grow healthy plants, artificial lighting is required for 12-16 hours (Figure-3) (Ebcioğlu, 2002), (İç Mekan Bitkileri, 2007). However, the need for light varies according to the plants. It is necessary to pay attention to this situation while planning.



**Figure 3:** Indoor Plant Care with Artificial Lighting (URL-7).

As stated above, indoor types of plants can be divided into four categories based on their light requirements: Sunny, bright, semi-shade, and shade. Plants like to be in the sun are usually grown in south-facing windows or direct sunlight in the summer garden. However, light shading can be done in extremely sunny conditions. Plants grown in a bright environment are grown in areas that do not receive constant and direct sunshine. These plants should be placed just behind

the east or west windows. Plants that like semi-shade places should be kept in places with little or no sun. Plants grown in shady conditions should be kept in sun-free places and well-shaded parts of the greenhouse (Table-3) (Oral, 1991), (İç Mekan Bitkileri, 2007).

Plants respond to inadequate light by producing pale, dead leaves on stems thinner than normal and long shoots that face the sun. If this condition arises, the plants should be better illuminated. Furthermore, when plants that need much light are kept in the shade, the leaves yellow and shed. The absence of light is often reflected in the presence of lighter-than-normal leaves. Particular attention should be paid to selecting plant species in a planting design intended to be made indoors. Furthermore, the rate of receiving sunlight in the room should be measured. If this light does not satisfy the needs of the plant, artificial illumination should be used to supplement it.

**Table 3:** Some Indoor Plants According to Light Requests  
(Bozkurt & Ulus, 2014) (The table was rearranged by the authors.).

FULL LIGHT	MEDIUM LIGHT	LITTLE LIGHT
Ananas Bracteatus “Tricolor” Tricolor Red Pineapple	Aglonema “Marie” Chinese Evergreen	Adiantum Raddianum Delta maidenhair fern
Bougainvillea “Dania” Bougainvillea	Aspidistra Elatior Bar-room plant,	Aspidistra Elatior Milkway plant
Browallia Speciosa White Troll	Asplenium Nidus Fern	Aucuba Japonica Japanese laurel
Celosia Argentae “Plumosa” Plumed cockscomb	Begonia “Tiger Paws” Eyelash Begonia	Chamaedora Elegans Parlour palm
Chrysanthemum Índicum Indian chrysanthemum	Dracaena “Cincta “Bicolor” Dracaena	Duchesnea Índica Indian Strawberry
Cordyline Fruticosa “Kiwi” Cordyline Kiwi	Dracaena Marginata Madagascar Dragon Tree	Fittonia “Bianco Verde” Bianco Verde
Crasula Socialis Ivory towers	Fatsia Japonica Japanese aralia	Howea Forsteria Kentia palm
Dudleya Pulverulenta Chalk lettuce	Hedera Helix “California” California Ivy	Soleirolia Soleirolü Angel’s tears
Hoya Carnosa “Variegata” Wax plant	Monstera Deliciosa Swiss cheese plant	Selaginella Martensii Martens’s spike moss
Punica granatum var. Nana Dwarf Pomegranate	Philodendron “Medisa” Medisa	Philodendron Scandens Heartleaf philodendron

### 3. Indoor Planting

People, as previously said, spend the majority of their time indoors. As a result, indoor air quality is critical to human health (Demirarslan & Demirarslan, 2019). Planting designs are used to increase air quality. Indoor plants for use in planting designs should be chosen with caution. Every plant does not use in every interior. The basic needs of the plants must be met in the indoor setting. The indoor area should have enough natural light for the plants, enough humidity, and a comfortable temperature.

Indoor planting should be performed considering the compositions that the plants make with the room, furniture, and other plants. Plants to be used in indoor planting applications can vary depending on the user, room, and plant requirements.

Planting in an interior that is ideal for both the user and the plant is determined by the characteristics of space. First and foremost, spatial characteristics should be investigated. The purpose of the space (residence, rest, relaxation, etc.), duration and intensity of use, physical features (narrow, wide, large, etc.), and ecological conditions (sunbathing, heating, etc.) should all be considered (URL-8).

The plant must have certain characteristics to perform the expected work. First and foremost, the plant must be able to withstand a variety of unfavorable environments and changing environmental conditions. It can grow in pots and containers. It should all be of the color green. Plants with similar ecological demands can be used where ecological conditions are appropriate. The designer should be conscious of the needs of the plants, such as temperature, light, and humidity, and create appropriate conditions for that plant.

The type of plant used for planting designs is an important element in the design process and a dimension of the design. Vertical planting systems are very common in indoor planting design today, particularly in houses. Additionally, special design elements such as green wall plant paintings, ornamental plants, plant ponds, terrariums, arboretums and winter garden may be used to create plant-oriented designs (Figure-1,4,5).

The show of plant communities created by various plants such as ivy and succulents on a picture frame is known as “green wall plant painting” (Figure- 4). Ornamental plants are an indoor planting design element that almost everyone can easily obtain. With their texture and colors, pots and containers

chosen with plants play an important role in interior design (Figure-2). In the introduction of the article, the terms “plant pool,” “terrarium,” and “arboretum” are described. All of these structural features are a component of and supplement interior design in plant-oriented projects. Vertical planting systems are one of these design elements that need careful consideration.

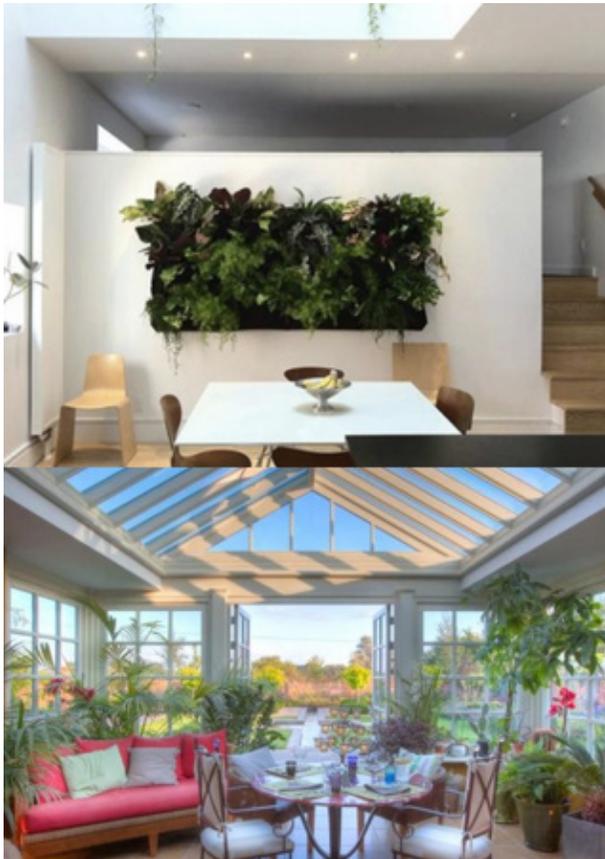


**Figure 4:** Green Wall Plant Paintings.

At first, vertical planting and vertical garden systems were most often found in outdoor areas. However, it is also seen in a variety of interior projects and residential spaces, in addition to outdoor spaces. Interior spaces are relaxing and desirable with these structures. However, since these systems are expensive, they are not always used in interior design. Vertical gardens are equipped with renewable plants using hydroponic garden concepts. Hydroponic process plants are used for this purpose. Growing plants in water with dissolved nutrients is known as the hydroponic method (Yazgan & Aliasghari, 2014). Compared to other planting designs, vertical garden systems are made up of three distinct parts: a metal base, a PVC layer, and a felt layer. The waterproofing is provided by the PVC sheet on the metal frame, which also provides heat and sound insulation. The felt is mold-resistant and makes for even water delivery. Plants in the shape of seeds or seedlings are carefully put in holes formed in the felt. This coating keeps the roots in place and allows for air circulation. Since the soil is used in the growing environments of the plants, the load is only 30 kg per m<sup>2</sup>. As a result, vertical gardens can be installed on any wall, regardless of its scale or weight (Yazgan & Aliasghari, 2014). Panel framework vertical gardens, green metal fence vertical gardens, and pot form vertical gardens are

three different vertical gardens. The compositions produced by the plants to be chosen must be carefully designed for the designs to be successful in vertical garden systems. At this stage, the ecological requirements of the plant species to be chosen should be considered (Figure-5).

Winter gardens are also a popular feature in today's houses, which are typically designed so that residents can enjoy the benefits of a greenhouse on days when the weather is cold. Depending on the location, winter gardens can be found next to the house or scattered around the yard. It can be made in a variety of shapes, including square, rectangular, angled, oval, and polygonal shapes that are visually consistent with the building's design. Aside from wood, aluminum, steel, and plastic-based elements, transparent or translucent materials such as glass, plexiglass, fiberglass, or polycarbonate are used in the design of winter gardens (Figure-5).



**Figure 5:** Using Vertical Garden in Housing Living Space and Winter Garden (URI-11).

## 4. Impacts of Indoor Plants on Human and Architectural Space

The scarcity of green spaces in daily life causes people to feel uneasy and unhappy. Green spaces in nature can be transferred to interior spaces with plant-oriented designs and applications. People who spend at least 8 hours of their daily lives in their homes, such as those who were socially isolated in their homes during the Covid-19 Pandemic, want to create a connection with nature by incorporating greenery into their living spaces. According to Chapman (1999), mothers spend 62 hours a week on household tasks, while fathers spend 23 hours per week. As a result, the amount of time spent in the house varies by gender and family role, and the desire for a connection to nature grows. Indoor plant-oriented designs change the environment and make people happy, similar to how they do in natural green spaces. Furthermore, research on the elderly suggests that having plants in the space makes them feel more peaceful (Arslan & Katipoğlu, 2011) (Arslan & Ekren, 2017). Interior spaces with plant-oriented designs have been shown to have beneficial impacts on people's physiology and psychology.

Plants are not just decorative items. Taking care of plants, taking care of them, and watering creates positive effects on individuals' health. Talking to them, observing changes over time involves indescribable emotions that are pleasing. Experts have also proved that these emotions positively affect human health both physiologically and psychologically (Han & Ruan, 2019).

Plants, especially in residential interiors, minimize negative emotions such as tension, frustration, and pain in people and provide peace and relaxation. It makes people happy. Indoor plants have been shown in studies to balance blood pressure (Ulrich, Simons, Fiorito, & Zelson, 1991) and improve concentration and attention skills (Ulrich, Simons, Fiorito, & Zelson, 1991) (Taylor, Kuo, & Sullivan, 2001).

Furthermore, indoor plants increase productivity in the workplace. Plants have a major effect on mood and fatigue assessment, especially for people working at home due to the Pandemic (Cengiz, Karaelmas, & Karakoç, 2019). Cengiz et al. (2019) also claimed that indoor plants cause feelings of relaxation, naturalness, affection, and pleasure in humans. Furthermore, it is claimed in the same work (2019) that research performed at the Norwegian University of Agriculture reveals that using plants indoors decreases the occurrence of

dry skin, colds, sore throats, and dry cough (Cengiz, Karaelmas, & Karakoç, 2019).

On the other hand, indoor plants are significant according to building biology, which is a science that investigates the impact of structures, interior spaces, and ecosystems on human health. Harmful gases such as benzene, formaldehyde, and trichloroethylene are released into the atmosphere from the furniture we use indoors. Benzene, in particular, is emitted by paint, plastic, and rubber products. When inhaled for a long period, it causes headaches, fatigue, nausea, palpitations, and eye cataracts. Formaldehyde is used in furniture manufactured from compressed wood chips, flooring, carpet sticky pieces, and some fabrics. It causes allergies and skin infections by damaging the mucous membranes in the eyes, nose, and mouth. It is the cause of asthma. Trichloroethylene is a chemical that can be used in paint, varnish, and glue. It harms the lungs. For these reasons, the use of synthetic products adversely affects indoor air quality. (Demirarslan & Başak, 2018). Plant-oriented designs indoors increase indoor air quality by cleaning the air indoors and provide spaciousness. As a result of two years of research conducted by NASA within the scope of “Clean Air Project” in 1989; Ribbon flower (*Chlorophytum*), Love Ladder Flower (*Kimberley Queen Fern*), Camel base plant (*Philodendron*), Chinese Evergreen, House ivy (*Scindapsus*), Chrysanthemum (*Chrysanthemum*), Peacock (*Spathiphyllum*), Dwarf Palm (*Dwarf Date Palm*), Sword Leaf Fern (*Boston Fern*), Bamboo Palm, Benjamin Flower (*Weeping Fig*), Anthurium Flower (*Flamingo Lily*), Lilyturf Grass (*Lilyturf*), Lady Palm (*Broadleaf Lady Palm*), Gerbera Plant (*Barberton Daisy*), Corn Stalked *Dracaena* (*Cornstalk Dracaena*), Varigated Snake Plant, Sister Blood Flower (*Red-Edged Dracaena*) are identified as indoor plants that clean the air the most (URL-9, 2019; Wolverton & Johnson et al., 1989).

Besides, indoor plants add an aesthetic feature to space. Flower and leaf color of the plant, elongation shape, position, size, harmony in compositions created with each other, and spaces are important in establishing aesthetic criteria in interior designs. Indoor plants add vitality to space with their aesthetic features and help the color balance in the space. Another factor that influences the interior design is the shape of indoor plants. In general, the natural form of a plant occurs in two ways: The original form of the plant, which is revealed by the hereditary characteristics, occurs with the effect of modifications or environmental conditions (Doğan, 2019). The texture of indoor plants is also a holistic feature that affects the design. Doğan stated in his work (2019) that the

texture effect created by indoor plants in the space expresses all the leaves of plants, their shape, size, color, the structure of the leaf surfaces, and the branches of plants. In short, plants are the identity of the interior.



**Figure 6:** Aesthetic use of indoor plants in the house (URL-12), (URL-13).



**Figure 7:** Aesthetic use of indoor plants in the house (URL-14).

Indoor plants not only enrich the aesthetics of the room but also perform a variety of functions in the interior. These functions are carried out based on the structural properties of the plants. Ivy plants, for example, Purple Bunch (Wisteria spp.)

and Forest Ivy (*Hedera Helix*) can be used as a separator between two spaces and can provide a screen effect in the room. Ivy-like plant species, such as these plant samples, can be used in places where there are waiting areas, such as offices, lobbies, and particularly residences, to wrap and divide those spaces and shape the borders of that place. Tall plants like the Madagascar dragon tree (*Dracena Marginata*) and the Areca palm (*Dypsis lutescens*) aid in orientation.

The placement of indoor plants in the correct position provides a focal point in the space. It also has implications like making the place definition and adjusting the occupancy and space balance in the space. Taller plants are preferred to build the focus effect in space. Plants help orient and establish an attention impact in this manner. By filling the empty spaces in the interior, indoor plants help to make sense. Plants that are bulkier and taller are better for this. Large-scale plants, including walking ferns (*Asplenium*) and dwarf palm (*Chamaerops*) species, regulate the empty- fully balance in the space by filling empty spaces (Sezen, Aytatlı, Ağrılı, & Patan, 2014). The design will be strengthened by providing visual balance in the arrangement of plants in the room and working on contrast and harmony in subjects like color, texture, scale, and shape (Seçkin, 2003). Indoor plants can be the main element of the design or can be used as decorative accessories. A rhythm is created in the interior design in the compositions to be created by using the differences in the sizes of indoor plants and the energy of the space increases. With the naturalness given by the plants, it enables the environment to be preferred indoors. Indoor plants must be well placed in the room, and the space must satisfy the ecological needs of the plants. Otherwise, the wrong light or no light due to its location and the lack of adaptation to the temperature of the space cause the plants to be short-lived.

Indoor plants perform certain ecological functions as well. They have ecological functions such as noise reduction, dust control, and, as previously mentioned, improved air quality. Photosynthesis produces moisture vapor, which is secreted from indoor plants. The majority of the water they absorb is released as steam. As a result, indoor plants can help meet the moisture requirements of interior spaces.

Indoor plants should be considered and supported as a design element in all indoor spaces, not only in houses. As previously said, scientific evidence indicates that having plants in houses has many advantages. On the other hand, green plants were once frowned upon in residential interior design, especially in sleeping areas. Today, however, other scientific opinions contend the contrary.

Unfortunately, until recently, the belief that the nighttime emission of carbon dioxide from the plants is harmful to human health was just a wrong thought. This information, however, is both unreliable and baseless. Scientists point out that even the largest houseplants release carbon dioxide overnight at most as much as a mosquito. Camping and sleeping in the forest would be dangerous if it were not otherwise. However, contrary to this misunderstood prejudice, plants increase sleep hygiene as they have a relaxing and healing effect in bedrooms. Areca plants, for example, are a great way to purify the air in a room. According to researchers, having an areca plant in one's room is very important for people who suffer from colds and sinus issues because it humidifies the air. Aloe vera is a very good plant when it comes to cleansing the air. The reason is that the air continues to release oxygen during the night and remove benzene and formaldehyde. Sail Flower helps to sleep comfortably by cleansing the air by 60%. The ribbon flower can remove 90% of toxins from the air. Benjamin provides maximum air quality by cleaning substances such as formaldehyde, benzene, and trichloroethylene found in the air, furniture, and carpet (URL-10, 2017).

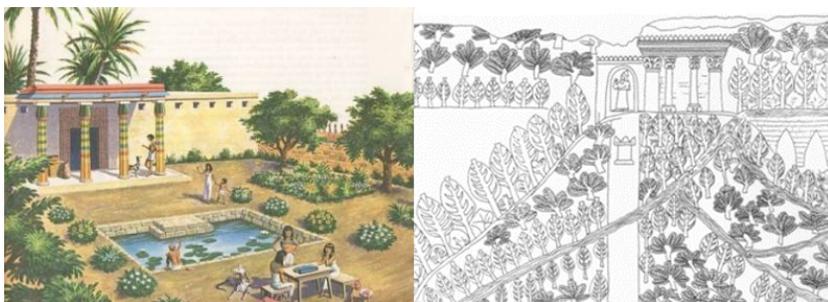
Furthermore, in issues such as biophilic design and design according to Feng-Shui, a Far Eastern theory that explores the beneficial effects of reflecting natural elements to the interior environment, it is possible to suggest the effects of the use of plants in interior architecture on people's psychological and physical health.



**Figure 8:** Plants in the house (URL-11).

## 5. Indoor Plants and Decoration in Housing Spaces in the Historical Period

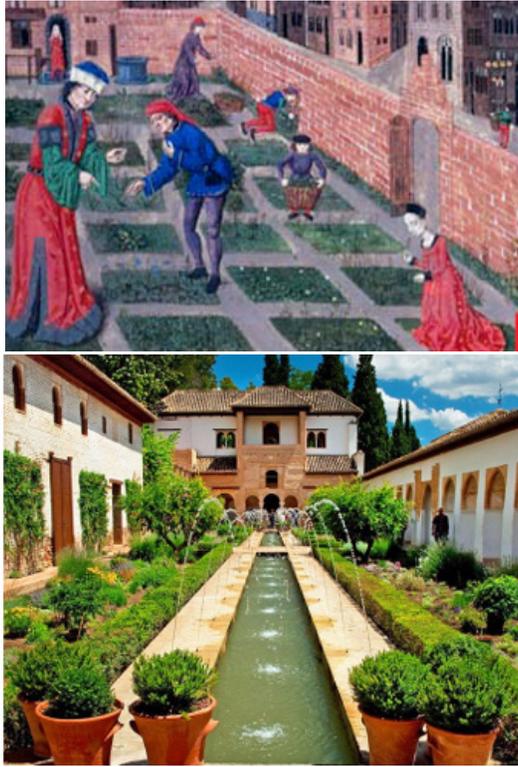
The Hanging Gardens of Babylon are said to be the first known indoor planting pattern in history (Figure-9). Ornamental and fruit plants were grown in decorative pots by the ancient Egyptians and Sumerians. Clay pots were used by the ancient Greeks and Romans to grow laurels and other fruit trees. Garden landscaping was also planned with ornamental ponds in the gardens of the houses in ancient Egypt and Rome (Figure-9). Potted plants were cultivated in ancient China. Bonsai, on the other hand, has been practiced in Japan since ancient times (Figure-10). Throughout the Middle Ages, ornamental gardening was popular in monastic courtyards, castles, and some palaces (Figure 11). The gardens of EL Hamra Palace, for example, are known for their exceptional beauty. In medieval kitchens, vegetables like cabbage, onions, and garlic were also grown in containers (Camilleri& Kaplan, 2020).



**Figure 9:** Landscape Layout in the Garden of a House in Ancient Egypt on the Left and, A Hanging Garden Descends from A Wall Relief on the Right, 669- 631 BCE, British Museum (URL-15), (Bowe, 2015).



**Figure 10:** Bonsai in Japan Interiors (URL-16).



**Figure 11:** A Medieval Monastery Courtyard and Alhambra Palace Garden (URL-17), (URL-18).

During the Renaissance, exotic flowers from Asia Minor and the East Indies were brought to Europe by Italian, French, and Dutch merchants, and these flowers were used as décor in the houses of the rich and noble. Ottoman tulips were the unavoidable living decor of European halls during the Baroque era (Figure- 12). Flower tables were a part of salons/ living rooms in houses at the start of the bourgeois era in the late 18th century (Figure- 13). Exotic and hardy foliage plants were fashionable in the nineteenth century because they tolerated the gloomy and relaxed atmosphere of a Victorian home (Horwood, 2020). Plants also occupied a prominent position in front of the windows or large pots (Figure 14,15). Besides, it was around this period that winter gardens first appeared and spread, thanks to the influence of Crystal Palace (Figure-16). Aside from the plants, the interior is decorated to look like a forest, especially on the walls with plant patterns and decors in the 18th and 19th centuries (Figure-17). Plant forms are used not only in the interior of art movements, especially Art Nouveau, but also in all crafted objects. Art has been used to feed people's

need for nature. Wide floor-to-ceiling windows offered a smooth transition from the interior to the garden and architectural changes in the early twentieth century, and the advent of modern glass-making techniques allowed the use of larger windows and thereby increased lighting in living rooms.



**Figure 12:** Flowers in a Vase in a Baroque Interior, Jan van den Hecke, 1652 (URL-19, 2020).



**Figure 13:** An Interior Painting in 1783 by Francis Torond. At Left, A Woman is Depicted Watering a Stage of Plants (URL-20).



**Figure 14:** “Reading by The Window” by Charles James Lewis (1830-1892) (URL-21).



**Figure 15:** Large Drawing-room in the Mikhailovsky Palace, St Petersburg by Luigi Premazzi in 1848 (URL-22).



**Figure 16:** A Winter Garden of a House in 19th Century and Reception Hall in a House (URL-23) (URL-24).

There was a change in attitudes toward houseplants at the turn of the twentieth century. Plant-infested interiors seemed very old-fashioned after World War I when modern life invaded the house. People began to live in apartment-style housing in cities in the 1950s. As a result, the number of houses with gardens has declined. Indoor plants have become more common as a result of this. On the other hand, certain architectural trends, such as modernism, projected that the use of plants in the interior would decrease. However, some architects such as Frank Lloyd Wright have included plants in their residential designs. In this respect, Wright's Cedar Rock House is an excellent example (Figure- 18). The relationship of people with nature in the architectural space has come to the fore again in the 2000s, within the context of green architecture and biophilic design, and the importance of using plants in the interior has fluctuated in recent years. However, as technology advances, planting options have expanded, and its use in houses has become more common, especially in vertical garden systems and winter gardens.



**Figure 17:** The Baroque Frescoes with Exotic Animals and Plants, Jungles and Native People Created by Johann W. Bergl (URL-25).



**Figure 18:** The Living Room of the Cedar Rock House  
Designed by Frank Lloyd Wright (URL-26).

## 6. Conclusion

Humans are inextricably linked to the natural world. As a result, incorporating nature into the interior helps people form relationships with space and experience a sense of belonging. Most of the people's lives are spent indoors. Health and comfort offered by interior spaces are effective on individuals. In interior designs, indoor plants add aesthetic, functional, physical, and ecological features to space. They have functional benefits such as emphasizing, directing, limiting the space by using plants in the right position and aesthetic with leaf and flower colors, and ecological benefits by increasing the air quality of the interior. Plants often provide a place's identification. These benefits should be supported by interior design.

It has been stated that plants are very important, especially in the interior design of houses. When using plants in residential interior design, it is necessary to know the characteristics of plants and the ecological conditions they need. Otherwise, the designs made may cause negative effects in terms of aesthetics and ecology due to the plants' short life. Plant-oriented designs in the interior provide physiological and psychological benefits to individuals. Research done so far has proven this situation.

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## CHAPTER XIX

# A STUDY ON PLANNING METHODS FOR SUSTAINABLE WATERFRONT: THE CASE OF ATAKOY (ISTANBUL)

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### 1. Introduction

The coastal cities around the world are a point of attraction by visitors, residents of the city and other activities. One of the most common topics in the design and planning of urban areas is creating a waterfront in the urban area. According to Balmergy and Rasheed (2016), about 20% of the total globe covers the coastal areas, and a large percentage of the total population globally lives in the larger cities located in them (Barmelgy, Rasheed, 2016). Due to the dense population in such cities with about 40%, the coastal zone is considered the main point that focuses on services to society (Monterfalcone, Bianchi, 2007).

The case of Ataköy in Istanbul is one of the many cases in which consequences have arisen as a result of the coastal area and its architectural planning. Its strategy for planning and modeling coastal areas is very similar to the strategies of cities around the world. One of those is using residential, cultural and commercial projects to turn open coastal areas into new housing

units in order to become attractive and be part of a network of global cities around the world. Despite the opened waterfront in Ataköy that has been built in 1990's, which takes an advantage of natural areas and has a green zone, the new aim is to create a new residential district on the coast itself with less green areas and more buildings. In addition to the overall structure of the urban environment, this act will also affect the human emotional state, because in such newly designed coastal areas for residential buildings, it identifies these places as very "attractive" items in the building and the new residential environment.

The Ataköy district of Istanbul is located in a characteristic place that has the features of both the tourist and residential areas of Istanbul. This settlement is located in the central zone of the European part of the city, and lies near the sea shore. It is surrounded by green areas and is open to the Marmara Sea, and for that purpose it is defined by its scenography as an oasis in the middle of a densely populated metropolitan city.

As a strategy for creating a new urban concept on a coast, Ataköy's current waterfront scheme may be defined as traditional urban waterfront model from twentieth century. This classic shore model has been widely used before, in order to attract large capital investments in the built environment. Old traditional scheme was focused on a single purpose. Ataköy's new waterfront model is the opposite of the traditional one and aims to create a new waterfront concept in front of an older waterfront. The new concept of new coastline modeling consists of flexibility and hybrid use of areas with various functions such as residential buildings with various forms of ownership and size, available parks and natural amenities, integrated with retail and business premises, and supported by community and cultural institutions. The diversity in the composition of the new model seems to provide all the functions and appears as a new urban image that is supposedly for the benefit of the residents. However, the research done in this study shows that this new model of planning and designing the area in Ataköy, is only a reproduction of the existing setting, and not a re-solving of the problem of urban inequality in this district. Furthermore, this paper shows that the diversity of forms and functions of the buildings on the new shore inhibits the growth of opposition and controversial practices, and contrasts with the existing residential part of Ataköy.

As part of the design of sustainable coastal zones, in this case in Ataköy, this paper is based on the study of planning methods and the factors that influence them in the planning process. To this end, the first basic method is to explore and analyze the comprehensive concept of sustainable residential areas, and then to study

them through several characteristic examples of cities around the world such as Barcelona, Cardiff, Genoa. The next method is to single out the common features that define the term sustainable residential buildings and to analyze them in detail.

The research in this study has been made by examining theoretical background, literature review and a visiting and analyzing the targeted location. The data will be analyzed by examining the criteria for modeling a new coastal urban area, urban and architectural conditions, detailed sketches, division of residential areas according to architectural and spatial characteristics, connection between the shore and buildings and a proposal for a residential model designed according to the conditions for coastal planning in urban areas.

## **2. Defining Coastal Cities**

The term “coast” may be defined in many ways in accordance with the field that its being analyzed. From a geographical perspective, the term coast defines a dynamic place in which land and sea are correlated, as a result of the occurrence of winds, tides, waves and currents. Such phenomena not only erode the coastline, they also expand it with sedimentary layers. Coastal zones are of great importance because a large part of the global population lives in such areas.

Utilizing the benefits offered by the oceans such as food supply, extensive prospect and refuge, domination and control over the location and a source of transportation, are the main reasons why the humans throughout history to this day have settled in coastal areas. However, the reality is inevitable that the more people settle in coastal cities, the more such places break away from the natural environment, even though they need a local ecosystem. In today’s world, social and economic forces pose a threat to coastal areas. The rapid growth of the population, the technology development, and the stressful lifestyle of the people are particularly pronounced and intense in such areas. In addition to the problems mentioned above, coastal areas are popular destinations for tourist use, in addition to residential ones.

### ***2.1 Characteristics of Coastal Cities***

Coastal urbanization can be analyzed through two different aspects. The first aspect focuses on the intensive use of land for civil engineering, while the other aspect documents the population density in the area (Papatheocari, 2007). The main difference between them is their economic performance.

According to Papatheocari (2007), the main features of coastal cities that can be noted include:

- Various tourist services
- Street settings that are related to the shape of the land and the surrounding natural processes and features
- Direct connection to the coast and a wide range of uses related to the coast end
- Favorable conditions for green areas, beaches and promenades on the coast
- A series of smaller suburbs and suburban centers that surround the city center
- Convenience for a range of categories and types of residential buildings
- Advantage of the range of different heights of buildings from low to high.

## *2.2 Coastal Management and Urban Planning*

According to Papatheocari D., (2007), coastal management and urban planning are acting in different contexts without a common ground for an integrated perspective of coastal cities. Environmental issues that define the coastal ecosystem are often neglected in the urban planning process. This results in conflicts over land use and environmental investments. The purpose of the urban coast is to provide a healthy and quality environment for residents, and to avoid problems such as:

- Destruction and reduction of coastal characteristic resources that define the city
- Negative impact on water quality
- Reduced conditions for new urban infrastructure
- Reduced number of public spaces
- Increased impact on the privatization of open spaces
- Lack of integrated planning

## **3. Principles of Waterfront Residential Estates: Case Study: Ataköy (İstanbul)**

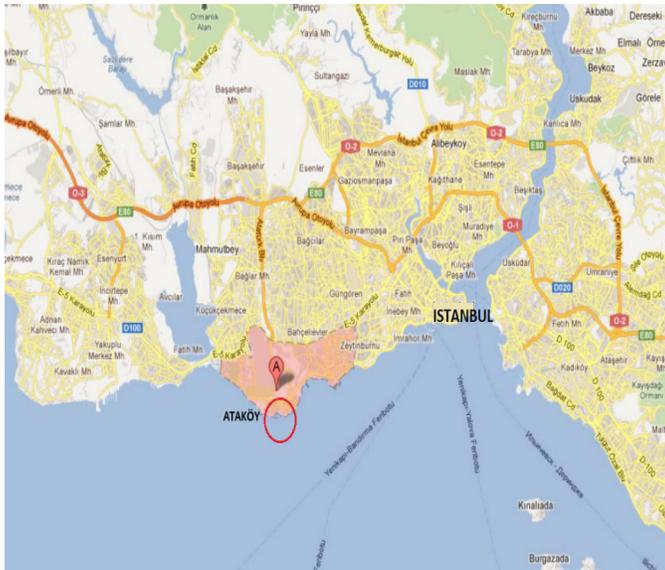
Due to high growth rates, coastal cities are characterized by becoming places for new projects. Coastal places are always in high demand as a property because of its advantages which makes them quite expensive and even unattainable. For this purpose, people try their best to protect property near the shores (Pawlukiewicz M, Gupta P.K.,

Koelbel C, 2007). This need to protect valuable property is one of the biggest causes and threats to the coast, such as stabilizing property using such practices.

As a result of this research, in order to protect the habitat and the public open space, and to provide easy access for everyone, nine principles can be stated that define the idea of common values of property on the coast. The main goal is to protect the environment and to establish harmony with its advantages and needs, and not to adapt it only according to our will. Taking into consideration the natural characteristics and processes of the land on the shores and other places in general, one can easily come to a conclusion as to whether the place is suitable for construction or not. Today's decisions about coastal use must be for the benefit of future generations.

The principles outlined below are designed to protect the environment and ecosystem, to enrich the economy, and to serve as a guide for decision makers, citizens of society, civil servants, urban planners and developers, and all others who play a role in build a community.

The goal is also to create and model quality new shores, or remodel existing ones, for easy access and use of information on complex land use problems. They are shown as a result from the research that has been made before as a comparison between the old and new waterfront of Ataköy (İstanbul) (Fig.1,2,3) in many spheres (Table-1). Also, a part of the research takes four other cities from other countries as examples for comparison with the case of Ataköy in İstanbul (Table-2,3).



**Figure 1:** The Map of Istanbul and Ataköy (URL-1).



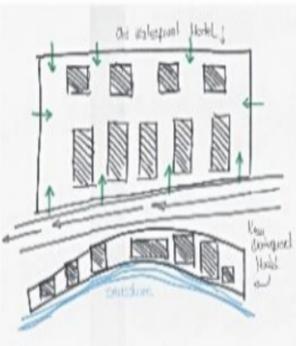
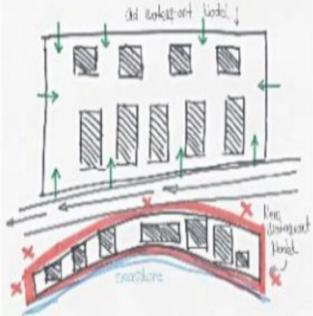
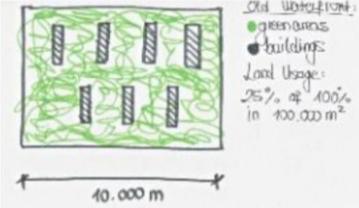
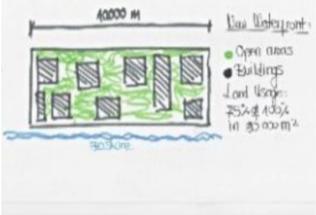
**Figure 2:** The General View of Ataköy Coast (URL-2).



**Figure 3:** The General View of Ataköy Coast (URL-3).

**Table 1:** Table of Analyzes Made in Old and New Waterfront Projects in Ataköy (Istanbul)

	<b>Old Waterfront</b>	<b>New Waterfront</b>
Time frame in which model is dominant	1990s-2010s	2012-today

Initiated by	Initiated by State	Initiated by Private Investors
Costs	High	Low
Focus	Unitary- Infrastructure such as transportation, power, water	Flexibility and Diversity- many uses, many building types
Ideology	Progress, Development	Competative City, Neoliberal Urbanizm
Connection with the Public	Strong Connection 	Low Connection 
Land Usage Level	25% Built Area (100.000m <sup>2</sup> ) 	75% Built Area (30.000 m <sup>2</sup> ) 
Coordination with Other Projects Nearby	YES	NO

	Distanced from the Coast (300 meters)	Edge of the Coast (40 meters)
Location/ Settlement		
Green Areas (Per 100.000m <sup>2</sup> )	<p>75% Green Areas</p>	<p>10% Green Areas</p>
Physical Appearance	<p>Monolithic Modern Similar Style of All Structures, Extended via Connectivity</p>	<p>Temporary Architecture</p>

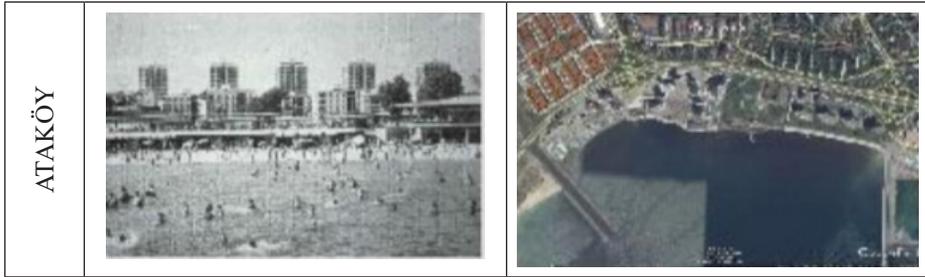
**Table 2:** Table of Analyzes Made in Different Waterfront Projects in Other Cities and Ataköy (Istanbul)

	Barcelona	Cardiff	Genoa	Toronto	Ataköy
Connection with the Coast	Yes	Yes	Yes	No	No

Maintenance	Yes	Yes	Yes	No	No
Time frame in which model is dominant	1870-Today	1860-Today	1700s-Today	1990s-Today	1990s-Today
Land Usage Level	Middle	High	High	High	High
Green Areas	Not Enough	Enough	Not Enough	Enough	Not Enough

**Table 3:** Table of Analyzes Made in Different Waterfront Projects in Other Cities and Ataköy (Istanbul)

	The Waterfront in the History	The Waterfront Today
BARCELONA		
CARDIFF		
GEONA		
TORONTO		



Finally, as a result to the researched strategies and theory, the principles of modeling and planning a new urban area as a waterfront offered in this study are listed below:

1. Considering the City's Historical Identity
  2. Focusing on the Unitary Functions in Residential Districts Near Waterfronts.
  3. Considering Old Blocks in Creating a New Waterfront
  4. Ecological Use of the Land
  5. Opened and Easily Accessible Waterfront Model
  6. Cooperation Between Public and Private Interest
  7. Long-Term Vision of a Waterfront Model
  8. Developing a Sustainable Waterfront Model Step by Step
  9. Enabling Collective Use of the Waterfront Area
- 
1. Considering the City's Historical Identity - The coastal areas in the city are symbolized by the urban culture of that area, the value and history of the water in the city. The waterfronts are also a symbol of the time frame depending on the model that is dominant. The urban coastline and the evidence in it are important historical heritage that should be preserved. This heritage needs to be embedded in the newly developed city to create a city identity.
  2. Focusing on the unitary functions in residential districts near waterfronts - The residential part of the city should be and unitary and flexible in addition of a good infrastructure and transportation. Although diversity of different functions of many buildings must not be located in residential blocks. Reproduction or remodeling of coastal zones should be done from a long-term perspective and constantly promoted regardless of economic or administrative conditions.

3. Considering Old Blocks in Creating a New Waterfront - If old shores that used to be factory properties are no longer used, it is more efficient to plan new residential, administrative, or catering facilities than to build new artificial shores in the wrong place. The ideology of the waterfront must be in a progress.
4. Ecological Use of the Land - Coastal zones should be designed to meet the environmental question. To this end, the use of natural resources (water), reduction of energy consumption, and the planning of a zone that will not cause harm to the environment as a release of harmful substances is of significant value.
5. Opened and Easily Accessible Waterfront Model - Coastal zones with residential buildings should be open to the public and meet the requirements for recreational and health activities. They should also not be isolated, and be a mixture of different structures with different functions, and strive for inclusion and connection with other parts of the city.
6. Cooperation Between Public and Private Interest - All remodeling and planning processes of the coastal zones should be performed in private and public cooperation as a whole.
7. Long-Term Vision of a Waterfront Model - The process of modeling and planning coastal zones should be played by the ability of development companies to have a long-term vision, to collaborate with investors and government offices, and to strive for sustainable development from environmental, economic and social perspectives.
8. Developing a Sustainable Waterfront Model Step by Step - Whether it is a residential building or a port, coastal development should be developed step by step with sufficient time in order to create a sustainable coastline.
9. Enabling Collective Use of the Waterfront Area - The distance between the coast and the Residential District must exist in a way that coast side area will provide its basic function and activities that are usually required, such as recreational parks, walking paths, fishing shores etc. This area must not be occupied by one block, but being open for public and have a general use.

#### **4. Conclusion**

Ataköy Waterfront in Istanbul is one of the most representative coastal areas with a tendency to develop. In this article, the whole planning process taking

into consideration the surrounding coastal conditions, was analyzed based on previously researched literature and site visits. This study explores the redevelopment of the coastline in Ataköy, where analyzes and research have been made on sustainable coastal housing structures. For that purpose, cases of successful and unsuccessful application have been found. In particular, it aims to clarify the basic data and principles for modeling and planning of coastal residential properties that will be adapted to the surrounding built environment, and to examine the entire planning process as well as to clarify controversies about wrong and correct design strategies. According to the analysis of the coast in Ataköy, several principles have been proposed that should be the basis when designing this part of the coast.

In this context, the principles and methods for planning sustainable coastal areas were examined and defined. Then, an analysis was made by comparing several coasts of other cities with the coast of Ataköy, and the characteristics of the coast of Ataköy in the old and new form were also analyzed. The findings are as follows: The idea of coastal zones was redefined according to the analysis and surveys of the coast. The Ataköy coastal zone is not only a place that connects the city and nature, but also a historical place that is neglected. Furthermore, the remodeling of this zone, no matter how attractive it may seem, does not correlate with the residential buildings in the immediate vicinity. Also the previous end of the shore is supplemented with sand to get a larger area, and is not open to the public. A coastal area in urban zone means providing a quality places that are accessible for the public and not only the people who live in this district. These areas must be modeled on some methods and principles. Otherwise, the environment and ecosystem will be destroyed, there will be no improvement of the urban landscape, and there will be no favorable conditions for the comfort and health of the inhabitants.

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# CHAPTER XX

## CAPTURING “GENIUS LOCI” IN SEATING FURNITURE

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### 1. Introduction

The approach to the space as a design object entails the analysis of not only the physical spaces, but also the “place” which includes the social space based on historical, economic, political, social, psychological, perceptual, experiential, and visual strata. According to Ching, space surrounds the human being, and emerges with the boundaries defined by all its physical and perceptual properties. The concept of space, by definition, does not have a form, but it could be redefined by its limitability and transformability by its formal elements. Thus, “space” is brought into existence in architecture. Ching defined it as “a three-dimensional space in which objects exist and events take place with a relative position and direction” in the lexicon section of the book “Architecture, Form, Space and Order” (Ching, 2002). Since the 1960s, the similarity of the terms “place” and “space” in daily spoken language, and the insufficiency in explaining their descriptions have been discussed. During this period, Norberg-Schulz introduced the “Genius

Loci" (spirit of the place) and "Sense of Place" concepts. The common ideas in the discussions of the period included that the concept of space in spatial design should not be approached only as a physical entity but should include the design concerns about the experiences and emotions in a "place." The acceptance of the idea that every space is not a "place" and "place" has multiple meanings that are quite different from the meaning of the space, especially in phenomenology and human geography, should be prioritized in the context of architecture, design and urban research. The revelation of this difference and the expansion of spatial reading to comprehend the "place" were important to understand everyday life and ethno-cultural and traditional differences, and to acquire an insider knowledge on individual and collective behavior patterns, as well as the physical space.

The spaces discussed in the Landscape Architecture discipline are open spaces. One of the most effective elements in the transformation of open spaces into "places" is the furniture. Furniture elements in various quantities and qualities facilitate personal and social life, allow interpersonal communications, assign functional and aesthetical meaning to the space, define and complement the space. Thus, they are significant not only due to their functionality, but also their reanimation and transformative effects on spaces (Güney et al., 1996; Düzenli et al., 2017a; Alpak et al., 2019a). As the furniture elements designed and customized within a space organize the space, they should also introduce a system for the furniture areas in the spaces. The design process, which starts with the concept of furnishing the space, should be completed by ensuring the integrity between space, activity, and furniture and help transform the space into a place. Today, seating furniture became a part of individuals' lives and is the most commonly used furniture type. Thus, it is important for landscape architecture students to learn the most common furniture, namely the design of seating units in urban open spaces (Düzenli et al., 2018; Alpak et al., 2019b). The sitting activity could take place on the ground plane or on a furniture that provide a height. Seating furniture should be designed based on spatial data, functions and purposes (Keegan, 1962; Alpak et al., 2020). Thus, it should help establish a relationship between the space and the place.

In Landscape Architecture education, students are expected to produce systematic, original designs that are compatible with the environment, because landscape architects should think on a multidimensional plane (Özkan et al., 2016; Yılmaz et al., 2016; Düzenli et al., 2017b; Yılmaz et al., 2019; Tarakçı, Eren et al. 2018a). Furniture design education is also a part of this creative process and its aims to teach original furniture design that could help transform the space into a place with an adequate scale and form for the activity. Thus, students should analyze several cases during the design of seating furniture. In Karadeniz Technical University (KTU), Department of Landscape Architecture, theoretical and practical studio courses are conducted based on master-apprentice relationship and are very important in improving the design and creativity skills of the students. Thus, the furniture design course is an important course. In the study, the impact of the seating furniture produced in the “Furniture Design” course that aims the construction of original and creative furniture design on the transformation of space into a place in landscape architecture education. In this context, the 3D drawings of seating furniture developed in the Furniture Design course, which aims the design of ergonomic and original accessories in the Department of Landscape Architecture, were analyzed. In the next section, the concept of “spirit of the place” will be discussed for in depth comprehension of the transformation of the space into a place by furniture.

## 2. Genius Loci

The “genius loci” concept is employed in several disciplines. The concept is described with different definitions in each discipline and analyzed with a different perspective. A geographer could approach the concept based on the interaction between a topography and the world at large (Tuan, 1974), a psychologist could associate the state of human mood and the location (Gibson, 1986), and an anthropologist could establish a correlation between the social environment and culture (Low, 1992). However, a “place” is required to understand the spirit of the place in all approaches (Süvari, 2015).

“Spirit of the Place (Genius Loci)” was introduced to the architectural and planning disciplines by the works authored by Norberg-Schulz (1980,

1988) on the relationship between human and building. The “Spirit of the Place” emerges from the organic connection and the interaction between space and place. As an architectural approach, it aims to provide an option for modern urban spaces disconnected from nature. The “Spirit of the Place” is considered as the hidden power underlying the culture, traditional architecture and environmental conditions in a place (Bala et al. 2016). The “spirit of the place” allowed the analysis of spatial characteristics and the discovery of the atmospheric characteristics of the space. Beyond the placement in a physical framework based on “being in a place”, which is the precondition of a meaningful existence, humans begin to own the properties of the place and develop a sense of belonging by ending her or his groundlessness on earth. In addition to individual differences, the similarities and partnerships humans develop in the society as social beings also support the act of “residency” (Norberg-Schulz, 1993; Güzelkahraman, 2019).

The perception of the place only as a physical location is not considered accurate in design (Güzelci et al., 2012). Philosophers proposed various definitions for the place:

- According to Schulz (1979), architecture is the visualization of the spirit of the place. Schulz considered meaning, identity and history as important values in the comprehension of the spirit of the place.
- Aristotle (1997) claimed that the place has the power to hold things together and irrelevant objects are lost.
- Husserl (1962) focused on the concept of kinesthetic, that is, place dependent on motion. In this approach, experience became an active part of the place.
- Lefebvre (1991) defined space as a social reality and set of relationships.
- Place is a structure that shapes our lifestyles by providing opportunities and reflects our social ideals (Kolb, 1990).

In the early 1960s, architectures started to glorify various concepts associated with the place such as “place”, “sense of place”, “genius loci”. In design literature, the concept of “place” became popular for a period when it was recognized that the built environment had subjective and experiential effects on individuals. However, it was not clear where the concept of “place” stood and its significance in the field of design

today (Tuncer, 2009). Even though the sense of place includes the concept of emotion, it combines the senses and cognitive realms due to the personal and social attributes of the place and humans (Deutsch & Goulias, 2009).

Social and cultural geographer Tim Cresswell (2004) argued that the concept of “place” is both simple and complex. It is simple because everybody talks about “place”, knowing or not knowing its meaning. Several people mention “place” often without being aware of its content. In fact, “place” is a word known to everyone one way or another and reflects several common meanings. On the other hand, an in-depth analysis of the philosophical meaning of this word requires the neglect of somehow accurate but inadequate meaning. Thus, it is a bit complicated. In fact, Cresswell aimed to address this complex structure of “place”, the concept of “place,” and its central significance in geography and daily life. Cresswell provided examples of the colloquial use of “place.” For example, in “Would you like to come around to my place?” “my place” evokes privacy and belonging. Cresswell also mentioned in his examples that “place” evokes a geographical region, a city, or a position in the social hierarchy or the order of objects. But actually “place” could be found everywhere (Gürkaş and Barkul, 2012).

“Place” is the space with which individuals associate, touch and connect one way or another, it is a meaningful location (Cresswell, 2004). While Cresswell stated in his work that “place” refers to something other than a physicality, location, or soil, he defined “place” with relation to space and location. Cresswell could not yet detach the “place” from the space. Later, when he made a distinction between space and place, Cresswell argued that space is a more abstract concept when compared to the place. He stated that the space is an “outer space” or “spaces of geometry”, it includes a space and a volume: “places are the spaces in between”. After all, space is considered as a meaningless field, unlike the place. Space becomes a place when people assign meanings to spaces and they somehow relate to and touch the space. Although this basic distinction was the approach observed in human geography in the 1970s, it was also similar to the idea of “social space or socially produced space” (Lefebvre, 1991), where space assumed the same role as the concept of place.

According to Semra Aydınli (2003), Norberg-Schulz explained the concept of the "genius loci" and the dynamics that transform space into "place" with the tension between contrasting concepts, leading to a new debate on Heidegger's influence on architecture and enriching the architectural inquiry with multi-layered structures of meaning. "Initially, Edward Relph distinguished "place" from the area or region in "Place and Placelessness" (1976). In fact, although the concept of place was recognized before Relph, the distinction was not clarified. "Place" became an approach that emphasizes subjectivity and experience for human geographers. Unlike the regional and American cultural geography traditionalists, the human geographers drew on European philosophy, which focused on phenomenology and existentialism. "Place" is adopted as a philosophical approach and a state of existence in the world.

Another geographer who developed this new approach to "place" was Yi-Fu Tuan. Tuan emphasized the concept of "place" in "Topophilia" (1974) and "Space and Place" (1977) and improved the meaning by comparing place with space. Tuan introduced the term "topophilia" (love of place), which is used to mean the emotional bond between the individual and place. Relph, on the other hand, approached "place" from a distinctly more philosophical perspective and associated it with phenomenology. Relph (1976) stated that we grasp places with our practical/action-based knowledge. According to Relph, individuals' desire to protect their places from the alien, the avoidance of strangers and production of nostalgic narratives about the places they left clearly demonstrated the secret about the existence within the relationship between the place and the human.

Certau (1984), on the other hand, associated the space and place with action, and argued that space existed only with action, and place was a space where actions took place. Based on these definitions, it was argued that place and space are separate concepts. It was determined that place created a unique identity based on natural and artificial elements and shaped the space.

Petzet summarized the topic by emphasizing the "spirit of the place" "between the intangible and tangible.". The spirit of the place was described as between the tangible "place" and intangible "spirit" (Petzet, 2008). With the distinction of the spaces that people are associated with and other spaces with similar design values and the transformation of the

space into a place, the space becomes a potential that is open to occupancy due to the distinguishing tendency (Seamon, 1993). In addition to physical and mental experiences, Altman and Low argued that the environment and culture of human beings were strong factors in the development of spatial harmony. The concept of space refers to the analysis of a whole that becomes meaningful within the framework of personal, social, and cultural relations (Altman & Low, 1992).

Since it was considered that the concept of the spirit of the place was associated with the relationship between humans and the physical environment, it could be suggested that the definition of the concept was not ignored and developed by environmental psychologists. According to Steele (1981), the spirit of the place entails the human emotion created by the character of a place, and the adoption of this emotion as the description of their identity by the people residing in that place. Schulz (1979) explained the definition of the identity of place by humans through identification with that place and introducing themselves as “I am a New Yorker.” Gibson (1986), emphasized the nature of human perception as a feature of the built, artificial, and natural environment, which promotes action in the affordance approach, and stated this feature originated in the physical character (height, horizontal, vertical effect) of the environments. It could be suggested that the physical character of each element designed in the built environment evokes a sense of action in human beings (Suvari, 2015). In environmental psychology, it was suggested that the spirit of the place could be perceived as the effect of the physical character of the environment on human beings. This supported the idea that all environmental elements and factors affected space and place. Thus, the furniture, especially seating furniture, influence open spaces and the sense of place in these spaces. In the next section, the concept of furniture in landscape architecture and the relationship between furniture and the spirit of the place are discussed.

### **3. The Concept of Furniture in Landscape Architecture and Capturing the Genius loci in Furniture Design**

In any space, elements that are placed to meet the needs of the occupants such as comfort, information, circulation control, protection and entertainment are

called "Furniture Elements". In other words, the landscape elements that are placed in general or private occupancy areas such as streets, roads, boulevards and squares for recreational purposes, that are the indicators of comfort and environmental quality, that support and strengthen basic functions such as seating, shelter, protection, enclosure, transportation, information, lighting, communication, description, game and sports, and that facilitate social and individual life and liked by the occupants are called furniture elements (Düzenli et al., 2017b; Kurdoğlu et al., 2018).

In human-made spaces, the environment includes products created by humans that assign a meaning to the space and transforms the space into a place. The character of such an environment is defined by the objects, shapes, textures and colors in that place. Every object that exists in the space plays a key role in supporting or hindering the existing identity of that space. Thus, every object included in the space should serve the common language and provide integrity in proportion to its quality that supports the spatial functions. The common language could be explained as the lack of a conflict between the product and the aesthetic values of the space and the qualification of the product serve the soul of that place (Güneş, 2005; Aksu, 2012; Düzenli et al., 2017b; Tarakçı Eren et al., 2018b). The furniture elements should be compatible with the location, size and meaning of the space, in addition to reflecting the character of the environment, and they should assist the occupants to adopt the space by providing psychological comfort (Yücel, 2006; Bayraktar et al., 2008; Alpak and Düzenli, 2020; Düzenli et al., 2019). Today, seating furniture became a part of daily life and are among the most common type of furniture. Thus, it is important for landscape architecture students to learn the design of the most common furniture in urban open spaces, namely the seating units. Seating furniture should be designed based on spatial data, function and purpose (Keegan, 1962; Düzenli et al., 2018). Mehta (2014) described seating furniture as a physical character that contributes to the sense of comfort in urban open spaces and an important factor that leads to active public spaces. In Oslo, old seating furniture were replaced with new ones in 1998 and the seating capacity was more than doubled (+ 129%). The analyses conducted before and after the renovation in 1998 and 2000 demonstrated that the restoration doubled the number of residents in the area (+ 122%). Simply put, doubling the seating furniture means doubling the seating occupancy (Gehl, 2010; Gehl and Svarre 2013). Simões Aelbrecht (2016) determined that the edges converted into seating furniture provide

passive and active social encounters through sitting and watching people. Hadavi et al. (2015) reported that people preferred the photographs of urban open spaces with seating furniture and the related classifications demonstrated an overlap of social activity and seating furniture photographs. They determined that preferred seating promoted socialization unlike isolated seating (Mumcu et al., 2017). In other words, seating furniture is effective in transforming the spaces into places. Seating and related activities are important for the success of urban spaces. Because it is possible for people to stop for a certain period of time and participate in other activities in spaces where seating facilities are available. Studies demonstrated that the most crowded public spaces are those with better seating accommodations, people sit wherever seating facilities are available, leading to more elective and social activities and liveliness in these spaces. Thus, the spirit of the place is achieved in these spaces.

The seating furniture elements, which are addressed within a certain order and became a spatial element and integrated with their environment, are one of the most important objects that contribute to the development of spatial identity through the common language they establish. Therefore, certain approaches that would allow the furniture elements to become design products and to establish correct associations with each other and the space should be adopted (Bayraktar et al., 2008). Symbolic features, psychological effects, material, texture and color elements, accessories, promotional elements, natural balance and similar psychological and biological elements and properties that provide peace and happiness would improve the spatial quality and help the transfer of spaces into places (Ocakçı, 2012).

The design of furniture adequate for the occupant needs is an integral part of the design of living spaces that create a sense of place (Jordan & Green, 1999; Prudhomme et al., 2003,). Because design is not only a physical but also a psycho-social process that includes the occupant preferences and needs (Clarkson et al., 2004, Siu 2007; Düzenli et al., 2017c). Thus, it is necessary to design furniture that reflect the spatial identity with an appropriate size and form that fulfill occupant needs. In the design, the form and function of the furniture should be in harmony with the space, while being original and creative, and most importantly, it should serve as a tool that transforms the space into a place. Thus, the “spirit of the place” could be captured through the furniture (seating furniture) in urban open spaces. In the next section, the seating furniture designs produced in an elective course, namely the furniture design course at Karadeniz Technical University, Department of Landscape Architecture, are discussed.

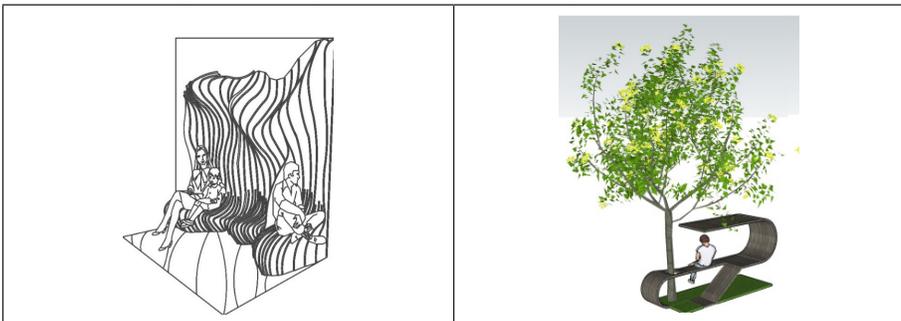
#### 4. The Findings Obtained in the Furniture Design Course

In the study, the 3D drawings submitted by the students were analyzed based on scale, form and spirit of the place. The material of the present study included the seating furniture designed by the students in the "Furniture Design" course during the 2020-2021 academic year fall term in KTU Department of Landscape Architecture. Landscape architects aim to design adequate spaces that meet the needs and desires of individuals. The design objectives in landscape architecture discipline is to produce both functional and creative designs. Thus, the course objective includes the design of original furniture in the correct size and form, with correct material for the selected activity by the students. In other words, in the course, students would initially learn the objectives, types, dimensions, spatial setup, etc. of furniture elements. Then, the similar furniture elements developed elsewhere are analyzed in detail based on the relationship between the space and the furniture.

In the later stages of the course, 44 students who attend the course should comprehend the design of a three-dimensional furniture for seating activity in and adequate size and with an original form. The educational approach aims to develop formal and functional integrity. Students are expected to interpret the selected seating activity in the correct size and form and design an original seating furniture and present a 3D model. The education process was conducted, and the models were submitted online.

In the first stage, students decided on the form they will adopt in their designs after examining the abstract-concrete furniture examples in the literature. Thus, they selected the original character for their work. At this stage, the students begin to transfer the ideas inspired by the literature into their drawings. During the 6 weeks, the drawings developed based on the criticism provided by the professor. At the end, students achieved extraordinary, creative and ergonomic products. The final creative original 3D seating unit drawings and visuals were submitted (Figure 1).

**Figure 1:** Samples of submitted seating units in the course





The following student drawings were analyzed based on scale, form and spirit of the place:

## Student Work 1

KARADENİZ TEKNİK ÜNİVERSİTESİ ORMAN FAKÜLTESİ  
PEYZAJ MİMARLIĞI BÖLÜMÜ 2020-2021 GÜZ YARIYILI  
DONATI DERSİ

FİNAL PAFTASI DOC. DR. TUĞBA DÜZENLİ

İlk olarak Çin'in Wuhan bölgesinde, 2019 yılı Aralık ayının başında görülen korona virüs solunum yolu enfeksiyonuna neden olan ve insandan insana geçebilen bulaşıcı bir virüstür. Küresel bir sorun haline gelmiş olan korona virüsten kurtulmanın en kolay 3 yolu "TMM" yani temizlik, maske ve mesafedir.

Tasarladığımız bu donatıda mesafe konusunu düşünerek oturma aralıklarını sosyal mesafe olarak belirlenen 1,5 metrelik fiziksel mesafenin korunması ve temasın azaltılmasını ele alarak tasarladık. Buna uygun olarak oturma birimleri arasında paravan şeklindeki biçimler ekleyerek mesafe kuramını en yüksek düzeyde tutmaya çalıştık.

395449 ALPEREN ÖKSÜZ



Scale: Seats 4-5  
individuals with a space  
between them  
Form: Organic curved  
lines

The student designed a creative seating furniture with organic curved lines that allows 4-5 people to sit, compatible with the ground cover, and integrated with an aesthetic texture. Student designed the furniture for the common occupancy area in the single residence landscaping project in the Environmental Design Project course. The space was for sitting and resting with organic lines and curved upholstery. Thus, the furniture was compatible with the space both in terms of form and function. It was suggested that it would help the space to acquire a sense of place and capture the genius loci.

## Student Work 2



Scale: Adequate to sit 10-12 individuals with a space between them

Form: organic curved lines

In the work, the student designed an organic undergrowth seating furniture that seats 10-12 individuals on both sides and allows them to lie down and play games. The space where the furniture is placed is an urban

park with a wide grass surface. The student designed a furniture that was compatible with the activities and integrated with the space. Thus, it could be suggested that it would lead to a sense of place and capture the spirit of the place.

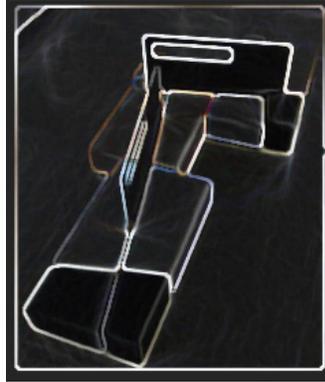
### Student Work 3



Scale: Seats 10-12 individuals  
with a space between them  
Form: organic arching lines

The student designed an undergrowth seating furniture with organic lines with arcs that seats 10-12 individuals and allows them to lie down and play games. The furniture was intended for an urban courtyard occupied extensively by children. Its form was compatible with the wide grass surface in the space. Furthermore, it was a mobile furniture suitable for the active nature of the children and allowed play activities. Thus, it could be suggested that it would lead to a sense of place and capture the spirit of the place.

## Student Work 4



Scale: Seats 5-6 individuals with a space between them

Form: Corner rectangular lines

The student designed an ordinary but aesthetic seating furniture that seated 5-6 people on both sides and formed by fractured-rectangular lines. This furniture was intended for waiting area in a public building garden. It was associated with both the waiting activity and the official institution form. Since it was designed for a formal space, a regular form was preferred. Thus, it could be suggested that it would lead to a sense of place and capture the spirit of the place.

## Student Work 5



Scale: Seats 10-16 individuals with a space between them

Form: Angular pentagon

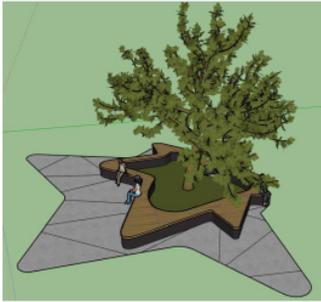
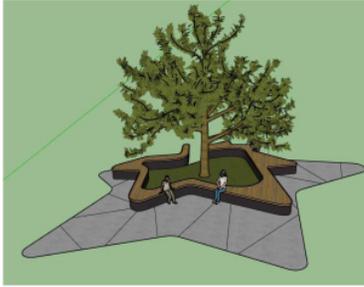
The student designed an undergrowth creative seating furniture with fractured pentagonal lines that seats 10-16 individuals and allows them to lie down, integrating an aesthetic pot element between the seats. Since it was intended for an urban square, calligraphic plants, sculptures and seating spaces were integrated in harmony with the space. Thus, it could be suggested that it would lead to a sense of place and capture the spirit of the place.

## Student Work 6

KARADENİZ TEKNİK ÜNİVERSİTESİ ORMAN FAKÜLTESİ  
PEYZAJ MİMARLIĞI BÖLÜMÜ 2020-2021 GÜZ YARIYIL  
DONATI DERSİ

FINAL PAFTASI

DOÇ. DR. TUĞBA DÜZENLİ



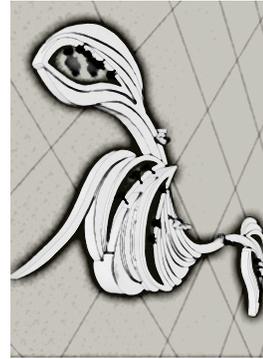
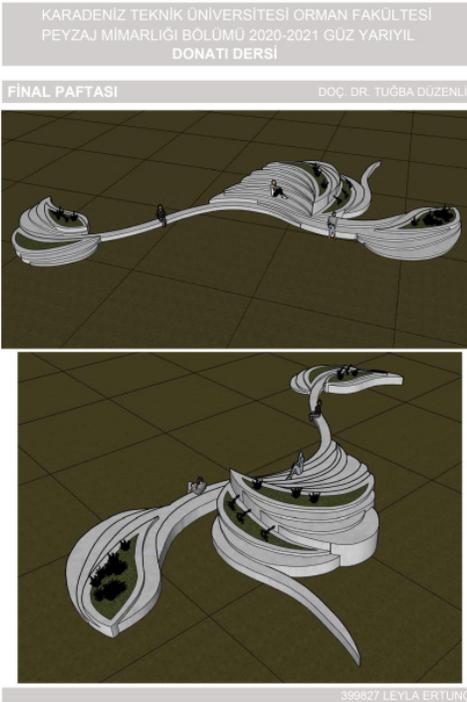
399827 LEYLA ERTÜNC



Scale: Seats 10-16 individuals  
with a space between them  
Form: Beveled triangular lines

The student designed a creative undergrowth seating furniture with beveled triangular lines that seats 10-16 individuals, and allows them to lie down and play games, and is compatible with the ground cover. Since the furniture was intended for an urban park, it was compatible with the contours of the space and its several purposes and functions. Thus, it could be suggested that it would lead to a sense of place and capture the spirit of the place.

## Student Work 7



Scale: Seats 15-20 individuals  
with a space between them

Form: Organic curved arches

The student designed a creative seating furniture with organic curved arches that seats 15-20 individuals and allows them to lie down, play games, and sightsee. It was designed to serve functions such as sculpture, pot, and sitting were integrated in harmony with the space since it was intended for an urban square. Thus, it could be suggested that it would lead to a sense of place and capture the spirit of the place.

The design of furniture consistent with the needs of the occupants is a part of creating alive and functional spaces that reflect the “spirit of the place” (Jordan and Green, 1999; Siu, 2005; Siu, 2009; Prudhomme et al., 2003,). Because, design is not only a physical process but also a psychosocial process that includes the preferences and needs of the occupants (Clarkson et al., 2004, Siu 2007; Düzenli et al., 2017b). Thus, the designed furniture should reflect the spatial identity, and most importantly, mediate the transformation of the space into a place, be in the appropriate size and form that meet the needs of the occupants. The form and function of the furniture should be in harmony with the space,

and it should be original and creative. The review of the student drawings demonstrated that the students adopted different approaches to form, employed fractured, straight, organic lines, designed furniture in various scales that seated 2-3 individuals or bigger groups, and some designed creative products, while others adopted an ordinary approach. It was also observed that certain designs were modern, and others were traditional since they aimed to adapt to the characteristics of the space and to assist the transformation of the space into a place.

## 5. Conclusion and Recommendations

Human existence does not lead to a natural ownership of a place, but one creates one's own space (Pretty, 2003). Physical space provides a sense of belonging for the individual through natural or artificial elements, and due to this sense, individuals create personal awareness about their place of residences (Enachea & Craciun, 2013). The spirit of the place represents a state of mind, emotions and actions organized by human society. Schulz (1985) defined this concept as all tangible objects with color, texture, and form that lead to the formation of an environmental character. According to Relph (1976), the spirit of the place includes all types of subjective properties such as geographical location, meaning, order, mystery and closure. From an abstract perspective, it is the need to define one's environment and to be in an identifiable place (Şentürk and Gülersoy, 2019). Spatial organizations, which are forms created for individual needs, are not only constructed to be watched from a distance, but to be lived in. Spatial elements are perceived and experienced by all senses and emotions (Rasmussen, 2010; Usta, 2019). Furniture elements are among the primary spatial elements. The furniture should create a system for the spatial furniture areas as they are designed and customized within the space to organize the space. The design process, which starts with the concept of furnishing the space, should be completed by ensuring the integrity between the space, activity, and furniture to capture the "spirit of the place" through the furniture.

In the present study, the final products of the furniture design course, which aims to construct functional and aesthetic seating furniture and contribute to the transformation of the space into a place, were analyzed.

- Students designed seating furniture in different forms, sizes and creativity levels.
- They attempted to design both functional and aesthetic seating furniture.
- The adopted educational approach improved the creativity of design students and helped them design aesthetic and functional furniture.
- As the design approach of the students improved, the approach helped to promote the training of environmental designers with an awareness to design seating furniture that which aim to capture the "spirit of the place" in harmony with the spatial identity suitable for the needs of the occupants.

Depending on the interests of the students and based on the other courses on the same topic, the space-furniture-place relationship and the types of furniture that would be designed could be increased. Thus, the designer-student could design creative furniture that are suitable for spatial activities and the selected space, could meet the needs of the occupants and transform the space into a place.

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## CHAPTER XXI

# RE-EVALUATION OF SOLUTIONS FOR PUBLIC HEALTH AND LIFE QUALITY IN THE DESIGN PROCESSES WITH THE COVID-19 PANDEMIC

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### 1. Introduction

Throughout history, besides natural disasters such as earthquakes, fires, and floods, another important cause of human deaths has been outbreaks. The outbreaks that spread rapidly in a short time and caused the death of millions of people created deep wounds in societies (Yılmaz, 2017). Today, epidemic diseases continue to spread under different names and affect the social, economic, and lifestyles of countries. The current outbreak, which started in Wuhan, China in 2019 and was declared a “Pandemic” by the World Health Organization (WHO) in March 2020, spread rapidly all over the world with the effect of globalization (WHO, 2020). With the pandemic, there have been unprecedented changes in mobility, economic activity, and associated environmental footprint (Muhammad, Long, & Salman, 2020). Worldwide measures have been taken to reduce the spread of the COVID-19 outbreak and protect public health. The most important of these measures resulted in the restriction of collective mobility and the confinement of half of the world’s population at homes (Musselwhite, Avineri, & Susilo, 2020; Venter, Barton,

Gundersen, Figari, & Nowell, 2020). This situation shows that in order to protect public health, it is necessary to deal with the subject in many fields together with the field of medicine. Architecture and urban planning disciplines are also pioneering disciplines that need to come up with solutions for pandemics and public health. The fact that the increase in the number of cases could not be prevented despite the measures taken, especially in densely populated regions, revealed the necessity of re-evaluating the relationship between city/architecture and health. Hygiene and social distance are considered to be the most important factors in preventing the spread of the pandemic, which is said to have a very high transmission rate. However, it is not possible to maintain social distance and to implement measures in unhealthy environments caused by unplanned urbanization. According to the statistics of the European Commission, about 35 percent of urban housing in Europe consists of small houses, poorly equipped kitchens, little living and storage space, little natural lighting, and no ventilation, and this rate is increasing. In addition, it is getting increasingly difficult to access public spaces from these houses (Alcocer & Martella, 2020). In the face of the current crisis, these settlements are painfully without a solution. These problems continue to increase in many densely populated cities of the world. For this reason, solutions that prioritize public health and quality of life should be brought to the agenda in the planning/design process of cities in terms of potential disasters or epidemics. This solution process should be shaped within the framework of a sustainable understanding that does not hinder the development of cities and at the same time protects the environment. In this context, new ideas about architecture and urban designs during the COVID-19 pandemic in our country and in the world have been investigated in this study. The measures taken in the process and the new spaces created have been discussed in terms of protecting human health and being prepared for new disasters. These measures will play an important role in protecting human health during the new normalization process or the return to the old normal.

## **2. New Requirements in Housing Designs**

The COVID-19 crisis has shed light on the process of rethinking health and quality of life issues. To be healthy is to live under good conditions as a physical, mental, and social being, and the whole environment plays an active role in a person's mental and physical health. Housing is one of the most important

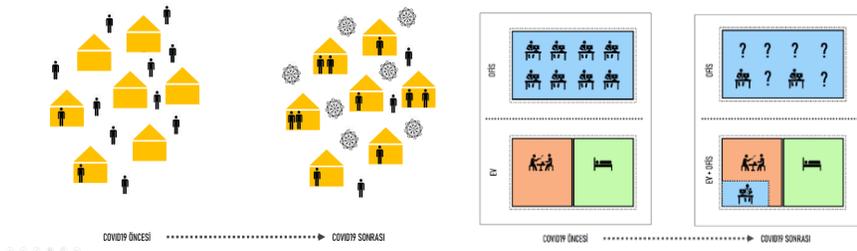
parts of this environment. This is because housing and health are both essential for human well-being (Curtis, Corman, Noonan, & Reichman, 2010). Studies show that the spread of infectious diseases and the rate of disability and mental health disorders are higher in individuals living under poor housing conditions (Britten, 1942). For this reason, the experience of staying home for a long time during the pandemic and not knowing how long this will continue have had an important effect on the choice of housing. It has even been observed that the interior and exterior space preferences and expectations have changed in housing choices (Francke & Korevaar, 2021). While the demand for flats with limited open spaces has decreased in the process, safe and prestigious sites or detached residences with rich open green areas separated from the problems of the city have started to be preferred more (Pfefferbaum & North, 2020). The obligation to stay at home for a long time has revealed how much outdoor spaces are needed such as balconies, terraces, and gardens, even if they are small (Fig. 1a,b).



**Figure 1:** *a) Children sunbathing in an apartment with a small balcony and no playground (Bingöl-Turkey) b) Children in quarantine in apartments with a shared garden (Aksaray-Turkey)*

Those who live in the city but have secondary housing in areas where the population is not dense have rapidly moved to these houses, and the demand for this type of housing has increased. Ranscombe (2020) argues that this mobility from busy cities to rural areas poses a great risk for rural areas, and that systematic approaches should be developed in rural areas as well as in urban areas to fight against the pandemic (Ranscombe, 2020).

Those who continue to stay in their homes in the busy urban life have tried to adapt to the process by making spatial changes for the new lifestyle. People have made rearrangements to find a new public dimension in their living space by literally opening their living spaces to the outside. In many of his drawings from the 1930s, Heath Robinson emphasized the various potential urban relationships in modern buildings and that human beings live collectively (Alcocer & Martella, 2020). It seems that the pandemic reinforced this theory. In the process, people also needed spaces where they could perform many functions at the same time, along with the changes they made in their homes towards opening up. Başdoğan (2020) expresses this situation with some visual expressions by saying, “*In the globalization process, the obligation to spend a long time at home and work from home has led to the home being seen beyond the function of accommodation.*”



**Figure 2:** Changes in residential and interior use during the COVID-19 pandemic (Başdoğan, 2020)

Alcocer and Martella (2021) state that as people started to work from home during the process, external, public spaces and personal and private spaces combined to occupy the same space and time. As a result of working from home, people have made various arrangements in interior spaces. A space in the residence has started to be used as an area that has different functions such as daily life, work, and sports activities. In addition, the necessity of paying more attention to the disinfection in the houses required the consideration of solutions that prevent the spread of the virus in the cleaning habits and the use of materials and spaces. During the pandemic, healthy housing needs have frequently been discussed. Some of the basic principles of healthy housing are presented in Table 1, according to the American Public Health Association Housing Hygiene committee (Table 1) (Housing, 1941).

**Table 1:** *Some of the basic principles that the American Public Health Association Housing Hygiene committee has set for healthy housing (Housing, 1941).*

<b>Fundamental physiological needs</b>	<b>Fundamental Psychological needs</b>	<b>Protection Against Contagion</b>
Thermal environment that will ensure the heat balance of the human body	Provision of adequate privacy for the individual	Provision of a water supply of safe sanitary quality, available to the dwelling
Atmospheric conditions with appropriate chemical purity	Provision of opportunities for normal family life	Protection of the water supply system against pollution within the dwelling
Ensuring sufficient and direct sunlight	Provision of opportunities for normal community life	Provision of toilet facilities of such a character as to minimize the danger of transmitting disease
Protection against excessive noise and radiation	Provision of facilities which make possible the performance of the tasks of the household without undue physical and mental fatigue	Protection against sewage contamination of the interior surfaces of the dwelling
Provision of adequate artificial illumination and avoidance of glare	Provision of facilities for maintenance of cleanliness of the dwelling and of the person	Avoidance of insanitary conditions in the vicinity of the dwelling
Provision of adequate space for exercise and for the play of children	Concordance with prevailing social standards of the local community	Exclusion of vermin which may play a part in the transmission of disease Provision of facilities for keeping milk and food undecomposed Provision of sufficient space in sleeping-rooms to minimize the danger of contact infection

Considering these principles, in house designs will make a significant contribution to creating healthy living spaces. The fact that we spend most of our lives in the

building during the pandemic has brought about re-evaluation of the issues of how much daylight the houses receive, how natural ventilation can be provided, and the relations of the spaces with each other. In order to be prepared for future epidemics, including the global pandemic we are currently experiencing, the analyses of epidemics and the criteria developed for this in the historical process are enlightening and guiding for architects and city planners. Sennett (1992) argues that epidemics experienced in the past have encouraged taking steps to improve the living conditions of cities and housing and motivated designers (Sennett, 1992). Considering that epidemic diseases spread faster, especially in regions where lower income groups live, it is extremely important to develop projects that will apply healthy housing principles in these regions (Curtis et al., 2010). Creating healthy living spaces depends on the correct design of outdoor designs and access to public spaces as well as the interior of the residences. Arrangement of green space designs in accordance with the needs and use of the public will be a guide for new spatial designs.

### **3. Need for Green Space**

Type-II diabetes, heart diseases, obesity, etc. are some of the common diseases in areas where there are no green spaces (Rice, Butts, Miller, & Shenoj, 2010). This is often due to inadequate green space planning, as well as neglect or lack of knowledge about the need for green spaces and receiving sunlight. It has been argued that the lack of green spaces has increased deaths during epidemics throughout history, and some planners have argued that epidemics will be prevented by designing green park areas in cities. Olmsted, who emphasized the importance of open spaces as they provide access to fresh air and sun in his articles and made the first definition of planned urban green spaces, was one of the pioneers of these designs. Olmsted started his Central Park design with Calvert Vaux after the second cholera epidemic in New York (Zaitzevsky, 1982). Olmsted, who lost his first child to cholera, designed more than a hundred urban parks (Klei 2020). Studies show that there is a positive relationship between individuals' access to green spaces and their health and fitness levels (Brownson, Baker, Housemann, Brennan, & Bacak, 2001; Cohen et al., 2006; Wolch, Byrne, & Newell, 2014). Venter et al. (2020) emphasized that social distance can be maintained more easily in large, open green spaces, and that small urban green areas are important places especially for children, elderly, and those with limited mobility (Venter et al., 2020).

The main measures taken to prevent the spread of COVID-19, which emerged in December 2019, were quarantine and isolation. While these measures are necessary to prevent the spread of the disease and protect the population, their negative impact on human health and well-being cannot be denied. While the quarantine process has limited people's access to services and facilities outside of their personal space, it has also limited their usual physical activities. This has made green spaces more important than ever for outdoor activities (Geary et al., 2021). However, it has been observed that there is no equal distribution of green spaces among individuals and communities in many countries. While those living near green areas can fully benefit from the green spaces, many people have suffered from the lack of green spaces within walking distance around their place of residence. This pandemic has brought to our attention the effects of social inequality on public health and revealed social and economic differences in quality of life. The fact that people living in low-income areas in many parts of the world have been prohibited from leaving their homes and had limited or no access to green areas will continue to be a major problem during or after the pandemic. For this reason, it is necessary to develop policies to create more green areas that can be accessed within walking distance from the houses in these neighbourhoods (Ahmadpoor & Shahab, 2021). This kind of proximity is especially important for the elderly, the children, and people with disabilities. Communities that prioritize green spaces while creating cities and residences are in better conditions in terms of physical and mental health. Considering the relationship between health and the principles discussed by Perry (1929) in the neighbourhood model, it can be stated that a well-planned environment contributes to the physical, social, and mental health of the inhabitants by providing opportunities for physical activities. Increasing pedestrian mobility in the city for both transportation and recreation purposes can be realized with certain planning and designing decisions such as mixed land use, strong street system, appropriate settlement density, safe green areas, and accessible public spaces. At this point, the walking distance of 400 meters specified by Perry for an ideal neighbourhood is considered to be a 20-minute walking distance today. Providing users with the opportunity to carry out various public activities within 20 minutes by bicycle or on foot is also important in order to create a healthier city and a healthier community (Perry, 1929; Turan & Ayataç, 2020). In addition to interaction with the green and the nature, parks are urban spaces that create a sense of community, where individuals come together to establish

social communication and participate in urban life (Koca & Tural). The need for contact with the nature has started to be discussed with every new epidemic (Fig. 3). For this reason, it is necessary to develop various urban green space use strategies (cleaning and hygiene procedures, green areas accessible by social distance, etc.) (Kluge et al., 2020), and to increase the practices on green space availability and quality, instead of completely shutting down the public green areas in the city.



*Figure 3: Green areas that have been used actively during the pandemic (a-Bingöl, b-Gaziantep)*

With the COVID-19 pandemic, various green space designs are being developed that take into account the social distance in economically more developed regions. For example, the labyrinth-like park designed by Prech in Austria aims to allow people to use open spaces without contacting each other (Fig. 4a). With this goal, in order to ensure safe physical distance, 30 circles that are 2.4 meters in

diameter arranged symmetrically in rows have been painted on the ground of the park by park workers (Ravenscroft, 2020). During the pandemic, arrangements that take social distance into account have also been made in existing parks. For example, the public Domino Park along the East River in Brooklyn is one of them (Fig. 4b). Social distance limits have been specified with white circles on the grass of the park (Cogley, 2020).



**Figure 4:** *a) Precht designs Parc de la Distance for outdoor social distancing (Ravenscroft, 2020)*  
*b) Domino Park's staff came up with the design of the circles (Cogley, 2020)*

With the change of urban dynamics during the pandemic, it has become a necessity to act according to personal distance rules in public squares, streets, and parks. With the limited human density and reduced interaction with the social environment, new designs are being developed by observing the rules of social distance at different scales from the design of the urban reinforcement element to the landscape design, from any spatial architectural design to urban planning. The need for open urban spaces to be intertwined with nature and social environment, as well as the importance of bringing people together, has started to increase (Koca & Tural). The pandemic can be a compensation period to reconsider the proximity and quality of green spaces that have a significant impact on the physical and mental health of individuals and communities. Planning and designing arrangements that will increase green spaces in urban settings in order to reduce health-related problems have recently gained attention. Access to green spaces has been identified as a necessary component of healthy urban life, and such spaces have proven to have positive effects on the health and well-being of individuals and communities.

Studies show that there is a positive relationship between increasing health problems and lack of green space in urban environments. For this reason, we hope to increase the interaction of people with nature near their residence and to raise green space awareness for future urban planning and designs. In addition to the new city plans to be made, it is also very important to work towards eliminating the existing green space shortage in cities. This will increase the general health of societies and improve living standards. In the new world to be created after the pandemic, designers should give priority to green space in their plans and designs. Studies aimed at increasing the quality of urban life, which are carried out to eliminate the problems experienced during the pandemic, include social, cultural, and political elements and processes. Therefore, urban transformation, which is one of the important elements of improving quality of life, is defined as a very comprehensive vision and action that provides solution to urban problems and improves the economic, physical, social, and environmental conditions of a region undergoing change.

#### **4. Conclusion and Recommendations**

The COVID-19 outbreak caused by the new type of coronavirus (SARS-CoV-2), which was first reported in December 2019 and spread all over the world from Wuhan, China, has been a real threat to societies today, as an urbanization without a strategy prevails, with the existence of public areas that were created without a vision. In this study, the needs of people in their living spaces and the need for green spaces in cities in the process of fighting against epidemic diseases have been revealed by examining the literature and making observations in some of the cities of Turkey (Gaziantep, Aksaray, Bingöl). Findings obtained in the study can be summarized as follows:

- During the process, the experience of working from home has increased, and various arrangements have been made in the interiors of the houses to increase efficiency. There have been new demands regarding the number of rooms or opportunities to work independently. However, it has been observed that the expectations for flexible spaces that can transform according to need and that can have different functions in the same spaces have increased.
- In dense city centres, interest in terraces, balconies, and small common gardens that we did not care about nor used before the COVID-19 pandemic has increased, and outdoor spaces have begun to be prioritized in housing preferences.

- The process of spending most of the time at home has brought about the question of the physical conditions regarding indoor airflow, humidity, noise control, heat and daylight, and it has been observed that new expectations have emerged for physical environmental control in housing demands.
- Producing surfaces with material where viruses and bacteria cannot live, the development of details that can provide cleaning in surface compositions, and the consideration of solutions that prevent the spread of the virus in space use have been required.
- During the process, there has been a great increase in the use of secondary housing that is far from city centres.
- The issue of self-sufficient houses has started to be discussed more.
- It has been observed that there are some researchers who emphasize that travel restrictions and quarantine requirements reduced traffic and air pollution in cities, and there are also (Litman, 2020) optimistic approaches that argue that this process has contributed to protecting the nature.
- There has been an increase in walking, cycling, and using green spaces as a result of the curfews imposed.
- It has been observed that social distance can be maintained more easily in wide, open green areas, and small urban green areas are important places especially for children, the elderly, and those with limited mobility.
- With the pandemic, the importance of renewing the way we perceive, design, and use “healthy spaces” has been understood.

The COVID-19 pandemic is a reminder of the negative consequences of humanity’s constant intervention in nature. In this process, there will be an opportunity for a sustainable future if economic recovery programs are implemented, and efforts to protect nature and to combat climate change are made (Rosenbloom & Markard, 2020). Considering the dimensions of humanity and technology today, all disciplines should create solutions by establishing relationships with each other in fighting against the epidemic and infectious diseases. In this context, architecture has a special importance as one of the disciplines that directly affect human life. Making a visionary design for the future will be possible with comprehensive, sustainable, and informed work on infectious and epidemic diseases. During this period of the COVID-19 pandemic, it is necessary to examine and transform the existing architectural structure stock and to construct the program for possible future infectious and epidemic disasters,

as a product of “interdisciplinary cooperation,” in multi-dimensional aspects. Studies should be made regarding the importance of natural air conditioning and ventilation indoors. However, in closed spaces that do not have this opportunity, the airflow must be organized correctly, the filters of ventilation systems must be changed frequently, and ventilation ducts must be cleaned frequently. Urban green spaces should be considered not only in terms of public health and as social investment, but also as a chance to re-balance our relationship with nature to protect ourselves against future pandemics (Rosenbloom & Markard, 2020). By investing in urban public green spaces, additional benefits (creating jobs and food, promoting biodiversity, reducing urban heat, carbon sequestration) can be achieved. Realizing these benefits requires an emphasis in the balance of decision-making to protect, develop, and provide more suitable green spaces designed with local communities.

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