CONSERVATION OF ARCHITECTURAL HERITAGE

TRACES OF HISTORY

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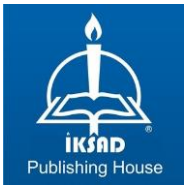

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PREFACE

All events throughout human history contributes to a cultural accumulation from a societal standpoint, revealing experiences that ultimately shape cultural heritage. This accumulation and these experiences together constitute cultural heritage, which serves as a crucial indicator of a community and its surrounding environment.

Heritage has existed throughout history, even if not explicitly termed as such; it has adapted to contemporary challenges and circumstances. Conservation has gained significance through destructions in the historical environment after the industrial revolution and the great destructions caused by world wars in these environments, the concept of conservation inherent in human nature has gained an important place on the world agenda as a policy. Since the beginning of the 20th century, international regulations, declarations, laws and agreements, have ensured that the concept of conservation is included in the fundamental rights and responsibilities of contemporary societies, although their scopes, perspectives and methods have changed.

Cultural heritage is the concrete indicators of material as tangible and immaterial as intangible aspects. The enrichment of cultural heritage and its transfer to new generations is possible through conscious cultural heritage conservation. The basic assumption regarding the concept of conservation revolves around identifying values that enhance with the cultural assets. These values are multidimensional, encompassing historical, cultural, aesthetic, social, symbolic, spiritual, educational, scientific, economic, and other aspects.

Conservation is a process to sustain and transfer cultural heritage to further generations as a trust that become a world policy with national and international agreements, laws, statutes and regulations since the last century and every step taken in this regard has been an indicator of modernization. The conservation of cultural heritage is a universal issue that many initiatives have been taken by world states. Transfer of this approach to further generations undoubtedly plays an important role in the success of actions aimed at conservation. However, it is not possible to continue the conservation action with only experts, who are important stakeholders in these steps, but also individuals should

be considered as the actors. This incorporation of individuals to the progression is a sustainable solution to contemporary challenges. Since the conservation of cultural heritage is a multidimensional task, it requires interdisciplinary and even transdisciplinary studies. Since the Venice Charter (1964), ICOMOS has recommended the use of all science and techniques that can help with conservation. Additionally, in 1995, the Council of the European Union issued a draft resolution on culture and multimedia. The principles published by ICOMOS look for the best resolutions according to the conditions of the day, encourage the use of current technologies in conservation. In other words, it is inevitable that the concept of conservation will keep pace with the changing, developing and transforming world. An additional objective of heritage studies should enhance the comprehension and interpretation of heritage beyond the conventional tangible and intangible implications associated within the framework of UNESCO.

An additional objective of architectural heritage studies should be to broaden the comprehension and interpretation of heritage beyond its typical tangible and intangible meanings as defined by UNESCO. In contemporary discourse, heritage is increasingly recognized for its significance in human development. Consequently, the safeguarding and application of heritage are viewed as vital forces that influence identity formation and foster peace. Therefore, the conservation and utilization of heritage must align with principles of sustainable development. This entails a collective and responsible engagement from all stakeholders involved in these efforts. Individuals and groups participating in the process can contribute to shaping the future with the role of heritage. Within this transformative process, architectural heritage studies also adopt an epistemological stance. Explicitly responding to the evolving realities faced by diverse populations globally are characterized as a critical discipline that formulates research questions and themes from an interdisciplinary or transdisciplinary perspective. The Mentioned approach involves situating epistemological inquiries within the context of global diversity, reflecting cultural variety through the methodologies of architectural heritage studies without becoming arbitrary. Ultimately, it aims to formulate future strategies for sustainable heritage management. Thus, the focus shifts from a mere abstract accumulation of knowledge to the deliberate development of

architectural heritage studies as a framework for promoting human development. In light of these insights and methodologies, recognizing the necessity of preserving the heritage inherited from previous generations and responding to contemporary challenges for the benefit of future generations, an academic book titled Conservation of Architectural Heritage has been planned.

Journal of Architectural Sciences and Applications (JASA) started its publication life in 2016. Since 2021, highly valuable e-books have been published and are being published under the editorship of JASA Editorial Board Members. In 2024, under the editorship of JASA Editorial Board Members and within the scope of the cooperation with IKSAD Publishing House, English language and refereed international e-book studies that will serve the field of architecture have been carried out. We set out with the book called 'Conservation of Architectural Heritage' with the aim of increasing awareness of cultural heritage, highlighting the importance of protection and conserve to create a concrete book in academic terms. There were many applications in the call for writing the book chapter. To publish, 39 of these applications were critically selected. Hereby, we wish to extend our sincere gratitude to all individuals and organizations who contributed to the completion of this book, including the authors, the chapter reviewers, IKSAD Publishing House, and Prof. Dr. Atila Gül, the General Coordinator of the Architectural Sciences book series.

In the face of this intense participation, it was decided to collect the 39 valuable studies accepted in two books. 19 of the valuable academic studies were published in the book titled **C**onservation of **A**rchitectural **H**eritage: **S**oul of **H**istory edited by Prof. Dr. Kağan Günçe and Assoc. Prof. Dr. Damla Mısırlısoy, and the other 20 were published in the book titled **C**onservation of **A**rchitectural **H**eritage: **T**races of **H**istory edited by Prof. Dr. Kağan Günçe and Prof. Dr. Atila Gül.

Books named **C**onservation of **A**rchitectural **H**eritage: **S**oul of **H**istory and **C**onservation of **A**rchitectural **H**eritage: **T**races of **H**istory address significant aspects of the discourse surrounding cultural heritage but do not aim to cover every conceivable issue within cultural heritage theory. Their primary objective is to clarify the concept of cultural heritage and its related ideas in order to address contemporary challenges. By presenting certain arguments

and categories, these texts assist readers in refining common notions. These categories serve as conceptual tools for navigating a complex reality. The main aim is to equip readers with new instruments for their intellectual knowledge, though it is important to note that these new conceptual tools do not necessarily need to replace existing ones. Additionally, the books may be beneficial for those who prefer to maintain their traditional paradigm; the reflections offered can help to keep this framework relevant and effective. Ideally, the arguments presented will inspire readers to reconsider established ideas or even to develop and strengthen their existing perspectives. Moreover, by exploring the varied meanings of the term cultural heritage and creating a more nuanced ontological classification, these studies challenges conventional views and provide a framework to better understand the theoretical and practical intricacies of this compelling concept. **C**onservation of **A**rchitectural **H**eritage: **S**oul of **H**istory and **C**onservation of **A**rchitectural **H**eritage: **T**races of **H**istory represent a stimulating and valuable addition to the existing literature, written in an engaging and accessible style for scholars, students, and heritage professionals alike.

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December 9, 2024

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Chapter 1

Design Issues in a Conservation Area: The Spirit of Demolishing and Rebuilding

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1. Introduction

In historical areas, it is important to keep pace with the speed of change and meet the requirements of the age in order to ensure the integrity of the past, present, and future, and to maintain continuity. However, new architectural design practices in areas embedded in the societal historical memory directly influence spatial continuity while also determining physical change. Therefore, in contemporary architectural interventions today, preserving historical and cultural identity, ensuring the sustainability of societal memory, and transmitting this memory to future generations are among the discussed topics.

Accumulated memories, events, cultural values, and other phenomena within societal memory create various points of reference on spaces and carry the common traces of values adopted by society. These spaces, constituting societal memory, are common places that house the memories and past of society, ensuring cultural sustainability. Termed 'Realms of Memory' in the book 'Les Lieux de Mémoire' by the French historian Pierre Nora, these shared spaces encompass any meanings and values related to society's past, awakening a sense of belonging in individuals and strengthening their connections with each other (Nora, 2006).

All objects that make up the physical environment, along with the habits, memories, and recollections defined through them, are essential elements of the memory of individuals and societies. A city, its squares, streets, and buildings form the spatial framework of social memory. The indispensable condition of social memory is that even if social groups are separated from the space, the spaces are symbolically reconstructed and kept alive (Assmann, 2001). While space hosts all social processes, relationships, and

production, society also shapes space (Hasgül & Turgut, 2018). For these reasons, preserving historical areas that constitute the social and cultural memory of individuals and carrying out new developments according to certain standards and rules are important for historical and cultural continuity. Here, the areas considered as social memory spaces are not only historical sites but also those produced in the recent past that bear the traces of the modern era. When examining architectural design practices carried out in environments that shape social memory, it is seen that new building designs, renovation projects, restoration, and similar applications are implemented. Various decisions and regulations regarding new construction in historical and conservation areas have been established in Türkiye just as in the rest of the world.

This study discusses the redesign process of a detached house in Istanbul 2nd Levent, one of Türkiye's first mass housing settlements, which has been declared a conservation area by the cultural and natural heritage authorities due to the values it holds from planning to individual building scale. The focus is on the relationship established with the site during the design process, the approach to the conservation area, the preservation of the archetype, and the forms of intervention.

2. Studies on the Conservation of Historical Environments Throughout the Historical Process

The first efforts to preserve historical environments began in the 19th century in Europe with the development of the concept of social and cultural identity, turning into an action carried out through scientific methods (Ahunbay, 2009). As a result of the Industrial Revolution, the migration from rural areas to cities led to urban overcrowding, resulting in

unhealthy living spaces in cities. Consequently, sensitivity towards the existing built environment in deteriorated urban centers began to increase. Additionally, the concept of urban transformation emerged in the 19th century to enable the restructuring of cities that had intensified in an unplanned and uncontrolled manner (Görgülü, 2009). Subsequently, urban renewal projects were developed in Europe to prevent physical deterioration in cities. In the second half of the 19th century, an urban renewal project was implemented by Haussmann in Paris, involving the demolition of unhealthy areas and the construction of wide boulevards, parks, and squares. The street layout of today's Paris city center is largely the result of Haussmann's renewal project.

After World War II, the rationalism movement, which was an influential architectural approach in Europe, played a significant role in the renewal of damaged city centers and the reconstruction of destroyed residential areas (Baytın, 1994). Between the 1950s and 1960s, approaches such as modernism, functionalism, and rationalism were influential in urban renewal and new construction, leading to the creation of urban environments disconnected from historical and cultural memory. Urban developments carried out with the modernist approach resulted in the deterioration of the existing historical fabric, bringing the concept of urban conservation to the forefront. In the urban conservation approach, it was adopted that buildings should be preserved not individually but together with their urban environments and as groups of structures.

As a result of these developments, the concept of a historical monument was expanded at the '2nd International Congress of Architects and Technicians of Historic Monuments' held in Venice in 1964, and the

concept of the historical environment was introduced for the first time with the Venice Charter (Tan & Arabacıoğlu, 2020, p. 205). Later, in 1965, ICOMOS (International Council on Monuments and Sites) was established in Warsaw, and efforts began to develop theories, methods of application, and scientific techniques related to the preservation of architectural heritage (Kaderli, 2014, p. 32).

On the other hand, important decisions regarding preservation were made at international meetings organized by UNESCO. The United Nations Educational, Scientific and Cultural Organization (UNESCO) aims to promote the identification, preservation, and conservation of cultural and natural heritage worldwide that is considered to be of outstanding value to humanity. This is embodied in an international agreement called the Convention Concerning the conservation of the World Cultural and Natural Heritage, adopted by UNESCO in 1972 (UNESCO World Heritage Convention, 2024). During the same period, the World Heritage List, which encompasses monuments and sites of universal value, ranging up to 20th-century architecture, began to be established. Accordingly, monuments, structures, and sites that meet the criteria were registered and made eligible for benefits from the World Heritage Fund (Ahunbay, 2009, p. 134).

In the early 1970s, the Council of Europe made several decisions focused on the conservation of European Architectural Heritage. At the third ICOMOS General Assembly in 1972, resolutions were adopted concerning the addition of new extensions to old buildings. The Amsterdam Declaration, announced as a result of the studies and meetings conducted throughout the year, defined fundamental principles such as the role of

planning in preservation, cultural inventory, and conservation (The Decleration of Amsterdam, 1975). The concept of integrated conservation emerged in the Amsterdam Declaration, marking the first time that architectural design in a historical environment was addressed. The declaration included the clause, 'Since today's new buildings will form the heritage of the future, efforts should be made to ensure high-quality contemporary architecture' (Ahunbay, 2009, p. 120). The year 1975 was declared the European Architectural Heritage Year. In the Nairobi Declaration published in 1976, the relationship between the historical environment and architectural design was defined, emphasizing harmony with the surrounding environment when designing in historical areas (UNESCO General Conference Nairobi, 1976). To prevent economic deterioration and the formation of slum areas in urban spaces in Europe, the Washington Charter was drafted by ICOMOS in 1987, addressing the preservation of historic towns and urban areas. The charter stated that new constructions in historical environments should respect the existing fabric and be compatible in terms of scale and plot size (Tan & Arabacıoğlu, 2020, p. 206).

By the 2000s, with the acceleration of changes in cities due to rapid urbanization, decisions were made regarding new interventions in areas with historical urban memory value. Additionally, a series of new tools were developed to enable a broader perspective on historic urban landscapes. These include the Vienna Memorandum (2005), the UNESCO Recommendation on the Historic Urban Landscape (2011), and the Valletta Principles for the Safeguarding and Management of Historic Cities and Urban Areas (2011) (Gül, 2024, p. 11). At the UNESCO

meeting held in 2005, the 'Criteria for the Implementation of the Convention Concerning the Conservation of the World Cultural and Natural Heritage' were listed, and it was mandated that management plans be created for World Heritage Sites (Convention on the Conservation and Promotion of the diversity of cultural expressions, 2005).

In the Valletta Principles, adopted at the 17th ICOMOS General Assembly in 2011, the subject of architectural design in historical environments was addressed under the headings of change and the built environment. It was emphasized that architectural interventions should respect the values and layers of the historical environment, and that new architecture should harmonize with spatial arrangements and traditional forms. When creating new designs, priority was given to avoiding the fragmentation of the urban fabric and space, and to maintaining compositional continuity that does not negatively impact the existing fabric, captures the spirit of the place, and allows for distinguishable creativity. It was argued that contemporary architectural elements designed in historical settings would contribute to the vitality and continuity of the city (Tan & Arabacıoğlu, 2020).

The process that began in Europe with the Venice Charter in 1964 focused on the concept of historical environments and subsequently on decisions and regulations regarding architectural design in historical areas, prioritizing the place-context relationship and historical and cultural continuity. In Türkiye, the necessary legal framework to protect historical environments as a whole was established in the 1970s. The developments in Europe were communicated to the Turkish public, and awareness of historical environment conservation increased through various scientific publications that conveyed the decisions made about historical areas in

Europe. In Türkiye, the Antiquities Law No. 1710 was enacted in 1973, and the Supreme Council of Real Estate Antiquities and Monuments, which later became the Conservation Board for Cultural and Natural Heritage, was established to make decisions regarding the preservation of historical cities. This Law No. 1710 took its place in history as the first law allowing for the preservation of the historical environment with its fabric integrity. The Antiquities Law was repealed in 1983 and replaced by Law No. 2863 on the Conservation of Cultural and Natural Properties. The term 'cultural properties' and specific definitions in the law were revised in 1987 and 2004 to align with international norms regarding historical areas (Ahunbay, 2009).

After 1980, the effects of globalization began to be felt in Türkiye, as well as in the rest of the world, leading to social, economic, and political changes that caused transformations in urbanization, particularly in housing production. With the enactment of Law No. 2685 on Mass Housing in 1984, the Mass Housing and Public Partnership Administration (TOKİ) was established. TOKİ, which underwent various legislative regulations until the 1999 earthquake, was reactivated to meet the housing needs following the earthquake. In the early 2000s, the concept of urban transformation was politically introduced, and especially in Istanbul, urban transformation projects initiated by the government began. In 2004 and 2005, various laws and regulations related to urban transformation were enacted, and municipalities became responsible for urban renewal and transformation issues.

In addition, in 2004, amendments were made to the Conservation Law No. 2863 with Law No. 5226 to strengthen the existing institutional structure

concerning the conservation of historical environments and to align the legal system with international standards. This amendment aimed to establish a protection policy, addressing concepts such as integrated protection, participation, environmental planning projects, sustainability, management plans, and area management found in international documents related to conservation. Additionally, values of originality and abstract values were included in the definition of cultural heritage. The Conservation-Oriented Zoning Plan was defined in the law, and efforts were made to address issues encountered during the preparation, approval, and implementation processes of the plan, allowing for the approval of plans by protection boards in the final stage. Furthermore, institutional arrangements were made to facilitate the applicability of conservation, and offices (KUDEB) were established within local governments to oversee practices in designated sites (Tan & Arabacıoğlu, 2020, p.209).

In 2013, the ICOMOS Türkiye Architectural Heritage Conservation Declaration emphasized that tangible and intangible cultural heritage contains 'historical-documentary, aesthetic-artistic, symbolic, social, economic, religious, and political values, serving as a symbol and proof of the identity and continuity of societies.' It was also suggested that in architectural protection, which is a part of cultural and environmental development, attention should be paid to the integrity of the heritage and the social and cultural context in which it exists (ICOMOS Türkiye Mimari Mirası Koruma Bildirgesi, 2013).

Throughout the historical process, starting with the Venice Charter, the decisions made in Europe regarding the of historical environments and new constructions in historical areas have been reflected in Türkiye,

leading to the introduction of international standards, particularly in the production of new buildings in cities with historical identities. Table 1 has been developed based on the study by Tan & Arabacıoğlu (2020), summarizing the efforts related to the conservation of historical environments.

Table 1. International and Turkish studies on historical environmental conservation

	International	Turkish
1964	Venice Charter	
1965	Establishment of ICOMOS	
1967		Adoption of ICOMOS Resolutions and the Venice Charter
1972	UNESCO-Convention for the Conservation of the World Cultural and Natural Heritage	Law on Public Improvement no. 1605
1973		Antiquities Law no.1710
1974		Establishment of ICOMOS Türkiye under the Turkish Ministry of Culture
1975	Amsterdam Declaration / European Year of Architectural Heritage / Integrated Conservation concept	
1976	Nairobi Declaration / The decision to be in harmony with the surroundings when designing in historical environments	
1982		The adoption of the Convention for the Conservation of the World Cultural and Natural Heritage by law no. 2658
1983		Law No. 2863 on the Conservation of Cultural and Natural Assets
1984		Mass Housing Law No. 2685, the establishment of TOKİ
1987	Washington Charter / historic towns and urban areas preservation decisions	
1989		Establishment of the Ministry of Culture
1992		ICOMOS Türkiye has become an autonomous organization
1994	Nara Certificate of Authenticity	
2004		Amendment of the conservation law numbered 2863 with the law numbered 5226
2005	UNESCO- Criteria for the implementation of the Convention for the Conservation of the World Cultural and Natural Heritage	Establishment of Conservation, Implementation and Control Offices (KUBED)
2011	Valetta Principles / Historic Urban Landscape Recommendations	
2013		ICOMOS Türkiye Architectural Heritage Conservation Declaration

3. Examples of Architectural Design Applications in Historic and Conservation Areas

As mentioned above, the preservation of historical environments, which are components of historical and cultural memory worldwide, and new interventions have been among the debated topics. For this reason, decisions have been made regarding how new buildings in historical areas should be, and various regulations have been issued. Ahunbay (2009) emphasizes that in new constructions on sites cleared due to the demolition of buildings or in undeveloped parts of the city within historical environments, respect should be shown for the scale of the existing fabric, and considerations such as land use, mass dimensions, color, material selection, and roof shape should be appropriate to the local area or region. In examining studies on new building designs in historical or conservation areas, the concepts of being respectful to and harmonious with the environment are prominent. When the historical process is analyzed, it is observed that there are differences in how designers interpret the concepts of harmony with or respect for the environment. Some designers approach environmental harmony as drawing from historical elements or creating forms that exhibit the characteristics of the existing historical fabric. Other designers argue that respect for or harmony with historical environments can also be achieved through contemporary technology and knowledge of form. This study will not focus on the approaches of various architects or designers, the dos and don'ts in historical environments, or design principles; instead, it will present some examples applied in areas with historical and urban significance worldwide, followed by an analysis of a renovation project designed by the authors in a conservation area.

One of the most striking examples of contemporary architectural design in historical areas in Europe is the glass pyramid designed by I.M. Pei in the courtyard of the historic Louvre Palace, which was opened to the public in 1989. At the time of its implementation, it faced criticism from professional authorities for allegedly contradicting the principles of new construction in historical environments. Today, however, it is considered a prime example of contemporary architecture in historical settings and has become one of the iconic structures of the city (Figure 1).

Figure 1. Louvre Glass Pyramid, I.M. Pei, 1989 (Lynch, 2016)

The steel-glass extension designed by Zaha Hadid over the historic Port House in Antwerp, Belgium, is one of the most striking examples in this field. The building repurposes the historic fire station as the administrative office of the port, and its appearance, perched atop the historic structure, draws significant attention (Figure 2).

Figure 2. Antwerp Port House, Zaha Hadid Architects, 2016
(arcdaily.com, 2016)

Another example of a contemporary addition to a historic site is the Military History Museum in Dresden, where a structure designed by Libeskind is integrated. The extension seems to penetrate the historic space, effectively influencing the massing and spatial organization (Figure 3).

Figure 3. Dresden's Military History Museum, Daniel Libeskind, 2011
(arcdaily.com, 2011)

In Singapore, the Space Asia Hub designed by WOHA is a project that renovates two old houses by restoring them and adding contemporary extensions. The design approach is based on highlighting the contrasts between old and new through the adaptive reuse of existing buildings. In the building complex, designed as a showroom, the transparent glass façade added in front of the existing old façade serves as a good example of the coexistence of old and new in preserved buildings (Figure 4).

Figure 4. Space Asia Hub, WOHA, 2011 Singapur (arcdaily.com, 2011b)

Apart from the ambitious and large-scale examples mentioned above, smaller-scale contemporary examples that are more in harmony with the architectural identity of the place are also being implemented in historical and conservation areas. One such example is the house renovation project by Atelier Atlántico in Spain. The architects describe their work as uncovering memory, culture, and material, akin to an archaeologist. The original house was renovated in the new project by considering the rural

context, with an approach that seeks traces of the past to envision how it will be lived in the future (Figure 5).

Figure 5. Mountain House, Atelier Atlantico (De Castro & Mora, 2024)

The 'Fondodevila Rehabilitation' project, designed by PLP Atelier in Ribeira Sacra, Spain, serves as a good example of renovation projects within a traditional setting. The project, an initiative of the municipal council, aims to combat rural depopulation and revitalize the local economy. The traditional houses were renovated while preserving the existing stone walls, and contemporary additions were made to create public spaces between the houses. Additionally, skylights were added to increase natural light, and green courtyards were created for the houses (Figure 6).

Figure 6. Fondodevila Rehabilitation, PLP Atelier (De Castro, 2024)

In Türkiye, there are also examples of contemporary new building applications in historical and conservation areas. Especially in designated heritage sites, regulations and principles related to protection are key factors influencing the design process of new projects. This study will provide a detailed account of the design process of a renovation project in Istanbul's 2nd Levent district, which has been declared a conservation area.

4. The Process of Transforming a Detached House into an Office Project

4.1 About District

Levent district gets its name from the 'Levent Farm,' which was located in the area during the 18th century Ottoman period. Until the 1940s, Levent remained an area of farms and gardens. The first residential development began in 1947 as part of a mass housing project by the Emlak Kredi Bank, designed by Prof. Dr. Kemal Ahmet Arü and Rebii Gorbon. Due to the demand for this settlement, 2nd and 3rd Levent residential areas were also built. The project was carried out in four phases: 1st, 2nd, 3rd, and 4th Levent districts. The first phase was completed in 1951, and the final phase, 4th Levent, was finished in 1958.

Levent district is one of the settlements in Istanbul where modern architecture and urban planning principles were first applied. Prof. Dr. Kemal Ahmet Arü closely followed new developments in architecture and urban scale during his travels to Europe and participation in urban planning meetings. He developed ideas for Turkish cities by studying the architectural and urban approaches in Europe (Sadıkoğlu & Özsoy, 2017). In the Levent district, one of the first examples of collective housing production has been created, characterized by extensive areas with gardens and social amenities. This project was meticulously designed with separate design considerations from the urban scale down to the housing unit scale (Güvenç & Işık, 1999). While the 1st, 2nd, and 3rd Levent districts feature low-rise and detached houses, the 4th Levent district has a mixed structure where apartments and detached houses are designed together. Additionally, open and closed social spaces, shopping centers, and sports areas serving the residents have been designed as a cohesive whole (Figure 7).

Although the settlement consists of a variety of building types, the design language employed at both the urban and architectural scales has ensured the preservation of the neighborhood character as a whole. The materials and details used in both interior and exterior spaces have created coherence among the masses. The residential interiors have been developed with a free-plan design approach.

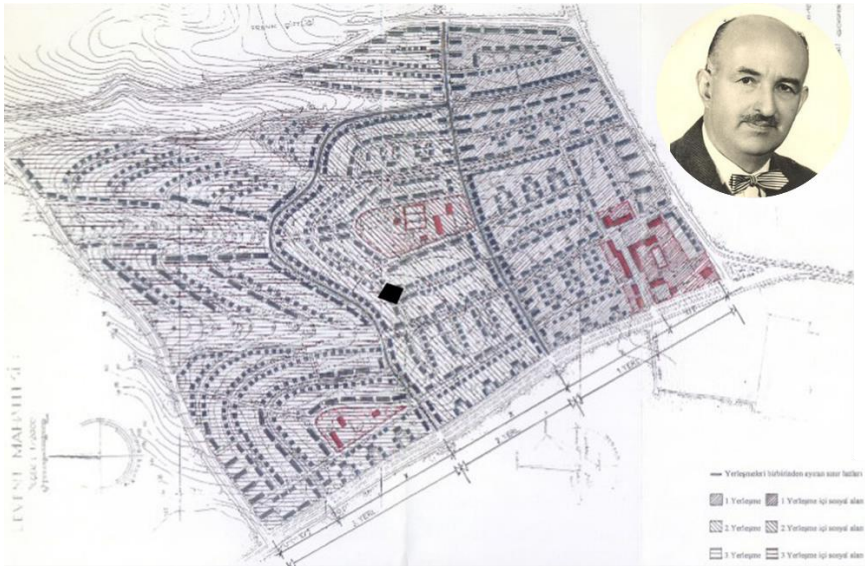

Figure 7. Levent Neighborhood Original Situation and K. A. Arü (archives.saltresearch.org, 2022)

Until the 1970s, the Levent neighborhood was primarily a residential area; however, informal settlements began to emerge in the vicinity, along with the construction of high-rise office buildings. As a result, the settlement, which consisted of low-rise apartments and single-family homes, started to change both physically and socially. After the 1980s, Levent began to lose its identity as a residential area, with garden homes increasingly being converted into offices and commercial spaces owned by various companies. Starting in 1990, the construction of various office towers increased in the area, transforming it into a center characterized by high-rise buildings.

4.2. Rebuilding The House as an Office

On May 13, 2008, the Istanbul 3rd Regional Board for the Conservation of Cultural and Natural Heritage issued decision number 3047, designating

the 1st, 2nd, 3rd, and 4th Levent neighborhoods as an urban site area. This decision placed the region under urban-scale conservation. The rationale for the site designation is summarized as follows:

'The area known as Levent Farm, where construction began in 1947, is one of the first planned housing projects in our country; it serves as a model in terms of planning structure and design. The conscious choice of a simple and unpretentious character in the architecture of the buildings is no longer found today. It continues to retain all its original qualities, and there is a risk of deterioration and loss of quality in the face of development in this part of the city...'

Following the designation of the Levent neighborhood as a site area, it is worth considering the question: 'What impact has the fact that the region is now one of Istanbul's most important business centers created?' Today, in 2nd Levent, the fabric consisting of single-family homes with gardens has strayed far from its original character, especially due to extensions added to the houses that resemble a form of parasitism, resulting in a kind of mutation (Figure 8). However, in this designated site area, particularly due to the earthquake risk and changing usage patterns, any reconstruction of these unregistered homes requires approval from the Istanbul 3rd Regional Board for the Conservation of Cultural Heritage. Although this situation may appear contradictory, it represents a form of preservation that has become almost normalized in Türkiye.

Figure 8. 2nd Levent Neighborhood Current Situation (photos from authors' archives)

In the new project to be undertaken in the 2nd Levent neighborhood of Beşiktaş district, it is essential to confront these realities while also demonstrating a sensitive approach to the reasons behind the designation of the neighborhood as a site area.

In this context, the design process of the project encompasses both the necessary legal permissions and approval processes as well as the conceptual development related to architectural design. A three-stage process has been followed in the formation of the project.

1. Determination of the original building typology related to the parcel.

2. Identification of interventions made to the original building typology.

3. Realization of the new design as a form of renovation while adhering to the original building typology.

After obtaining the necessary legal permits and approvals for the aforementioned phases, the building is opened for use. The following sections will briefly discuss the evaluations related to these phases.

1.Determination of the original building typology related to the parcel (dimensional relationships, building height, roof type, and façade characteristics). The building typology located on the parcel is defined as "Type I." The building for which the renovation project is being carried out is a two-story duplex with a garden. The architectural drawings of the original building typology are shown in Figure 9.

2. Identification of interventions made to the original building typology (detailed surveying). Over time, various additions have been made to the "Type I" detached house with a garden located on the parcel, both for functional reasons and due to increasing spatial requirements. Therefore, detailed surveys were conducted with two primary goals in mind: identifying the nature of these additions and ensuring the preservation of the existing plant life in the garden. The visual and architectural drawings related to the surveys conducted can be observed in detail in Figure 10.

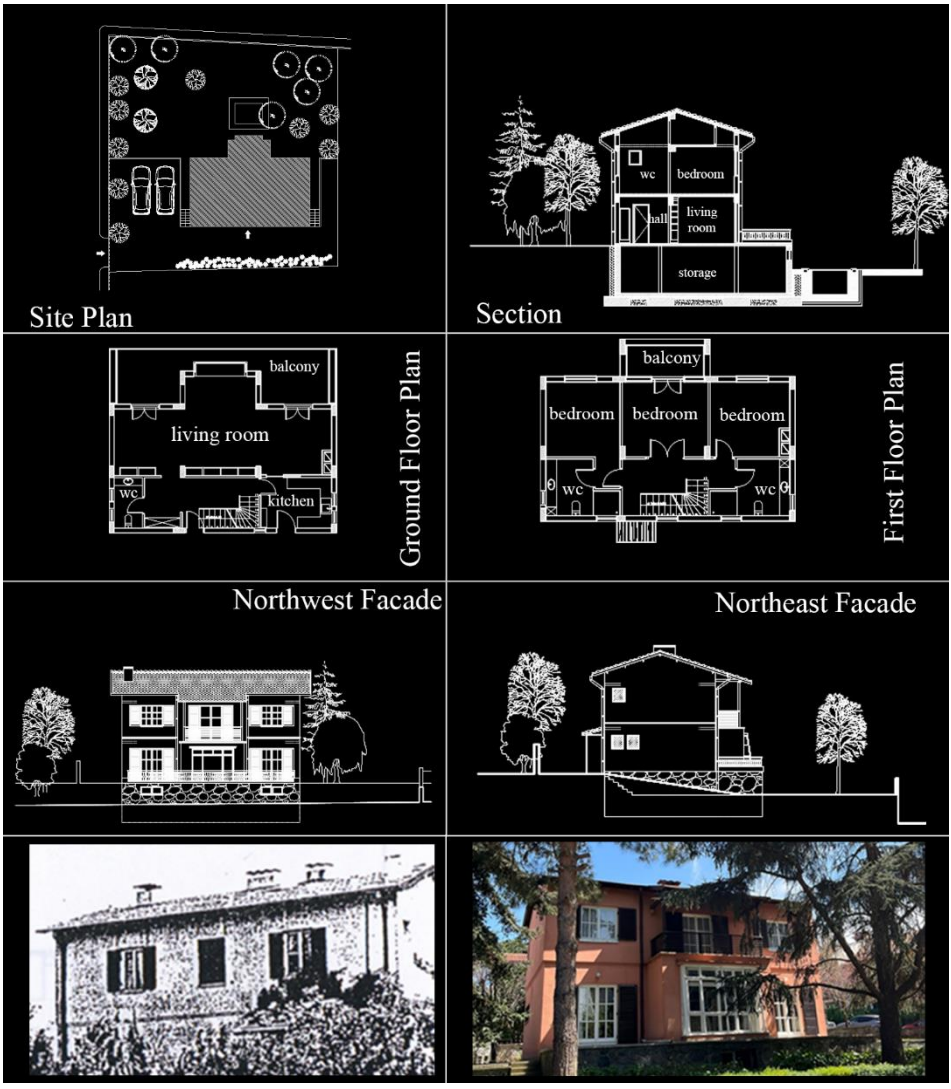

Figure 9. Original State of the House (prepared by the authors)

Figure 10. Information on the survey drawing of the house (prepared by the authors)

3.Implementing the new design as a form of renovation while adhering to the original building typology. In the Levent heritage area, the renovation of existing buildings is permissible as long as it complies with the building size, height, facade, and roof typology of the "Type I" houses originally designed as detached homes in the 2nd Levent district. However, the interior design can be re-planned to meet the intended use of the building. Hence, the architectural concept aims to develop the structure using contemporary preservation approaches without compromising its original identity.

The original position of the building on the parcel has been preserved, with dimensions of 6.80x12 meters and a height of 6.50 meters. The topographical data of the site were reinterpreted to enhance the existing basement arrangement.

The building mass remains unchanged, but the facade design has been revised by restoring the original wooden shutters to establish a connection between the past and the present. The original bay window on the ground floor has been converted into a balcony with a canopy at the first-floor level. This configuration continues along the front facade, creating a sheltered semi-open living space for the ground-floor terrace. An additional element has been introduced to the characteristic roof design, using different materials to offer the occupants distinct visual and spatial experiences. A similar arrangement is proposed for the entrance facade. The entrance porch has been redesigned as a transparent entry hall, which strengthens the interaction between the building's interior and exterior spaces while establishing a dialogue with the structure's original character (Figure 11).

Figure 11. Images of the redesign Project (prepared by the authors)

The original spatial organization of the building consisted of a detached house with a basement, ground floor, one upper floor, and an attic. In the redesign project intended for office use, the spatial organization—including the staircase element connected to the entrance hall—has been preserved (except for attic usage). The staircase has been reinterpreted as a defining element for the office layout. It is considered a key design feature that establishes the first impressions of the building and the company, beginning from this point (Figure 12).

In the redesign, the basement has been planned as an open office layout integrated with the garden, while the ground floor is organized into cellular spaces based on the company's hierarchical structure. The first floor has been entirely designated for executive offices. Regarding the interior design, the ceiling surface on the first floor has been reinterpreted, deviating from its original form. The goal was to emphasize the triangular form of the roof within the interior, adding a sense of height and creating a meaningful connection through the roof structure. Throughout the building, natural materials such as wood, glass, and aluminum, along with concrete grey tones, have been used in all interior spaces to maintain a cohesive aesthetic.

Figure 12. Images of the redesign Project (prepared by the authors)

As is well known, the Levent neighborhood has undergone significant changes since its establishment and is now situated at the heart of the city's main transportation corridors. Despite the numerous transformations in the area, the renewal project has aimed to preserve the original identity of the neighborhood as a residential settlement. Efforts have been made to maintain the characteristics that define Levent's unique architectural and urban heritage, ensuring that the area's historical essence is respected even amidst ongoing development and modernization.

5. Conclusion

Cultural and natural assets are considered the common heritage of all humanity. Preserving this heritage through contemporary approaches that address current living conditions and needs is crucial for maintaining urban identity, collective memory, and cultural continuity. Therefore, in the context of the evolution of the conservation approaches summarized above, Europe has witnessed innovative and creative architectural practices that are sensitive to various types of environments (historical, cultural, natural) and architectural heritage. These practices aim to balance the need for preservation with the demands of modern design, resulting in harmonious and forward-thinking solutions.

However, despite the establishment of necessary legal regulations for similar conservation strategies in Türkiye and the existence of protection historical and natural environments, cultural and natural assets are not being preserved as intended. Additionally, the design and implementation within the framework of conservation approaches often fall far short of the contemporary and creative examples seen in Europe. This shortfall is largely due to the attitudes of decision-making actors, which hinder the adoption of innovative practices in the field of heritage conservation.

The example presented here as a case study illustrates how conservative approaches are taken towards design issues, particularly within conservation areas in Türkiye, and highlights the challenges encountered in achieving the necessary design flexibility. This case study reflects the rigorous and often cumbersome processes involved in adapting contemporary design solutions while complying with conservation regulations.

The design team approached the project with a sensitive and innovative protection mindset following the demolition of the existing building. This approach not only preserved the original identity value of the structure but also established a design concept that reflects the period in which the building was reconstructed.

In conclusion, ensuring design flexibility in projects within conservation areas, while taking the sensitivities of the issue into account, will provide a fresh perspective on the cultural continuity of the physical environment. In this regard, it is essential to develop necessary policies to support innovative conservation and design approaches.

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Author Contribution and Conflict of Interest Declaration Information

All authors contributed equally to the article.

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Conservation of Architectural Heritage: Traces of History

Chapter 2

Philosophy of Fortification as Military Heritage: A Study of Fortifications in Cyprus

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1. Introduction

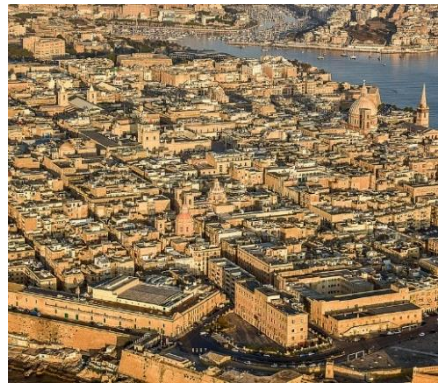
Throughout thousands of years of civilization history, human beings have built defensive structures with a variety of approaches to protect themselves and the community they belong to. Fortifications are crucial military structures built for the defence of a settlement. In addition to defending against attacks, the walls were built around residential areas to ensure the protection of the city's commercial areas and settlements, and control entrances and exits. Walls built around the settlements and castles since ancient times have been considered a symbol of wealth and power. Towers and bastions are built on the historic walls to increase defence and surveillance capability. When the historical walls examined, it is known that moats were dug on the exterior of the city walls in suitable locations to increase the defensive power of the city.

Unifier walls are seen as sources of safety, community, and completeness. From classical to post-medieval periods, towns were surrounded by walls that defines the rural and urban space. Walls of a house defines the borders of the space, similarly, city walls provide a sense of unity, and privacy (Figure 1). Walls symbolizes a separation between two opposite things, which can be seen as a physical conceptual tool for defining boundaries or isolation. Sennett states that, walls act for blocking the movement and they are urban structures, which defines the border of a city. (Atun & Doratlı, 2009; Sennett, 2004).

Historic walled cities and other significant heritage sites are encountering substantial challenges that may jeopardize their preservation for future generations. To ensure their survival amid the pressures of globalization and a general lack of awareness regarding their importance to national

identity and legacy, these sites necessitate meticulous institutional efforts for protection (Bagader, 2014; Boussaa, 2010).

Palmanova, Italy (Palmanova World Heritage Site, n.d.)



Valletta, Malta (Aerial view of Valletta, n.d.)

Figure 1. Fortification Examples from Around the World

Like many defensive structures, fortifications are also important milestones of cultural heritage. In the field of conservation, these structures are classified as military heritage. Military heritage needs to be preserved and transferred for further generations. The preservation of heritage structures through social awareness and with appropriate approaches ensures social and cultural sustainability. Defensive heritage structures, especially fortifications, tend to survive better and stronger than many historical structures because of their construction purposes. In addition, military heritage reflects the culture of the relevant community, the construction system and the history of the defensive system.

Due to its strategic location, the island of Cyprus, which experienced different civilizations and periods, has a rich military heritage. The importance and value of the island has increased with each new civilization. For this reason, special importance has been given to

defensive structures. Stronger, more robust and more strategic defensive structures have been built on the island throughout the history. One of the most important categories of defensive structures on the island is undoubtedly the city walls surrounding important cities. Nicosia, Famagusta and Kyrenia are three of the most important walled cities on the island. Since these cities experienced many attacks due to their importance, they were surrounded by walls and their cities were strengthened. The main aim of the research is to retrospectively present the history of the three walled cities from the past to the present, to reveal the importance and value of the walls, and also to evaluate, recommend and discuss what kind of initiatives needs to be taken for getting the value they deserve.

2. Material and Method

The island of Cyprus, which has hosted many civilizations, has always been in the public eye for about 10,000 years due to its strategic location (Löher, 1878, 2002; Smilden, 2007). The island has always faced many attacks throughout its history. In this respect, different military heritage buildings were built by each civilization on the island to protect it from its enemies. Defence heritage are crucial components of the architectural heritage of the island. This study focus on military heritage fortifications built to ensure the protection of cities and to control entrances and exits. The structures mentioned were built in the cities of Nicosia, Famagusta and Kyrenia.

The study was conducted under two main heading as literature study and field study. First, the history of the island and the attacks experienced on the island were thoroughly searched. Then, structures built for defensive

purposes were examined. The fortified cities among the defensive structures and the walls of these cities were discussed. Documents related to the fortified cities in Nicosia, Famagusta and Kyrenia and the city walls built in these cities were thoroughly searched. Also, fortified cities in the world and especially in Europe and academic studies on this subject were examined. Within the scope of academic studies, the international organizations involved in heritage conservation (UNESCO, ICOMOS, ICOFORT) and their approaches and recommendations for conservation of military heritage has been evaluated. A multi-dimensional literature review was conducted to find the number and locations of heritage sites. In parallel with the literature study, technical visits were made to these three fortified cities. Within the scope of technical visits, the current status of the defensive structures was observed and documented separately.

In the light of observations and documentations, the history of the three walled city from the past to the present has been presented retrospectively based on documents and sources with a holistic approach. While the changes and transformations that the fortified cities have gone through with each new period are mentioned, the importance and value of the walls are emphasized separately. Also, the issue of what kind of initiatives can be taken to preserve the three walled cities has been discussed. The evaluation and discussions were made in the light of ICOMOS 'Fortifications and Military Heritage', within the scope of the 2021 ICOMOS Annual General Assembly Resolution AGA 2021/10 of ICOFORT, the International Scientific Committee on Fortifications and Military Heritage, established by ICOMOS in 2005. As a result, the approaches of preservation of defensive heritage were discussed with a

holistic approach in the light of the preservation strategies of similar heritage structures in the world, and then, evaluations and recommendations were made regarding the future of military heritage.

3. Military Heritage within Conservation Issues

The aim of the cultural heritage conservation is preserving heritage values. At first, 'historic and aesthetic' significance of the cultural heritage is highlighted as heritage values as defined in early documents such as Athens Charter (1931) and Venice Charter (1964). But the understanding of heritage values has been transformed in time. The Washington Charter (1987) highlights that conservation plans should consider different factors such as archaeology, history, architecture, techniques, sociology, and economics. On the other hand, Burra Charter (1999), emphasize the critical importance of engaging local communities in the conservation process (Alatalu, Randla, Ingerpuu, & Haapsal, 2017).

Military heritage is one of the crucial components of architectural heritage. In 2005, ICOFORT (The International Scientific Committee on Fortifications and Military Heritage) was established by ICOMOS for working on studying, documenting conservation of military heritage (ICOFORT, 2005). Throughout history, people have constructed fortifications and strength the military heritage with detailed designs. Military structures act as important connection with the histories of various human settlements, nations, and regions. Creating awareness and honouring memories of affected communities may encourage new identities, strengthen relationship between people and their military heritage.

Fortifications were always crucial for the defence of communities and were integrated into their cultural landscapes throughout history. The methods of this integration gives us clues about the societies that built the fortifications. Historic fortifications have a variety of architectural forms, differing from simple to sophisticated structures built for both offense and defence (ICOMOS, 2021).

3.1. The Meaning of Fortifications and Military Heritage

According to ICOMOS-ICOFORT (ICOMOS, 2021), fortifications and military heritage includes structure built by a community for protection against attacks. Military heritage includes military engineering works, arsenals, harbours, military bases, and other facilities used for military operations, both offensive and defensive.

Military heritage involves and share values with other heritage sites, but also they have different characteristics, which needs detailed study, analysis, and preservation (ICOMOS, 2021).

3.2. The Meaning of Fortification as Military Heritage

Architecture and warfare have a strong relationship; in this respect, defensive architecture has evolved over time to direct various threats. 'Defensive architecture' term is generally used as synonym with 'fortification', which defined boundaries between internal and external spaces aiming to neutralize enemies (Denman, 2019).

Fortification has an image wall with towers that create separations between interior and exterior spaces. All architectural and engineering methods are fundamentally designed for defensive purposes. Fortifications conceptualized as a power mechanism that operates through a blend of obstructive control and enhanced surveillance (Bernes, 2013).

Fortification has different forms such as "geophysical" barriers at borders and ‘microphysical’ controls regulating movement within urban environments (Virilio, 1994). Fortification means creating barriers made from heavy, seemingly passive materials like stone, earth, concrete, and metal and creates boundaries between inside and outside. In this respect, it represents power of the related community (Brown, 2010).

Fortifications also symbolize the historical evolution of human settlements, regions, and nations. From prehistoric times to the present, fortifications have played a crucial role in the self-defence of communities. International organizations involved in conservation of cultural heritage publishes standards principles, guidelines and charters for the preservation of cultural heritage. The International Scientific Committee on Fortifications and Military Heritage (ICOFORT), a branch of ICOMOS, published a charter focused on the preservation of fortifications and military heritage between 2007 and 2021. The principles define the fundamental characteristics of fortifications and military heritage while emphasizing their significance (Cho, 2024; ICOFORT, 2005; ICOMOS, 2021).

4. Walled Cities Fortifications in Cyprus

Cyprus is the third largest island in the Mediterranean. It is located in the easternmost corner of the Mediterranean and is at the intersection of three continents (Europe, Asia and Africa) (Figure 2). The historical and cultural tradition of Cyprus is extremely rich and dates back to the 8 BC (Hill, 2010). Due to its strategic location, the island of Cyprus has always been subject to wars and has hosted different civilizations throughout its history (Löher, 1878; Smilden, 2007).

Figure 2. Location of the island of Cyprus in the World (Cyprus in the World, n.d.).

Since the compass had not yet been invented in ancient times, sea transportation was carried out by following the coasts. There was no open sea traffic. Cyprus has strategic location in-between three different continents as seen in Figure 2. Thus, it acted as a stepping stone between these continents throughout the history. Since it is close to the coast from different locations, it was possible to travel without the compass.

In this respect, it gained importance when sea voyages between Egypt, Phoenicia, Anatolia and the Aegean Sea began. It was a very suitable stopping point between these countries. In addition, the ports of Egypt, Phoenicia, the hinterlands of Antioch and İskenderun extended to Mesopotamia, Iran, India and China via the Red Sea, and caravan

transportation was carried out between these countries and the Mediterranean world and Europe for centuries in ancient times, which increased the geopolitical value of Cyprus. The strategic importance of the island increased even more with the opening of the Suez Canal and it still maintains this strategic importance today (De Lesseps, 2011).

In 1191, the Lusignan period of the island was started when the island was captured by Crusaders led by King Richard I of England. Then, Venetian rule of the island started in 1489 and ended with the Ottoman conquest in 1571 (Hill, 1948). In 1878, the Ottomans rent out the island to the British (Solsten, 1993). Between 1960-1960 the island was under British rule. The Republic of Cyprus established in 1960 ended British colonial rule on the island. The disagreement between Turkish Cypriots and Greek Cypriots between 1960-1974, ended with the Türkiye's intervention in 1974. The intervention caused the division of the island into two. As a result, Turkish Cypriots migrated to the north of the island and the Greek Cypriots migrated to the south of the island. The three fortified cities mentioned are located in the north of the island (Mısırlısoy & Günçe, 2023). Nicosia, Famagusta and Kyrenia are significant cities in the context of conflict on the island due to their location (Figure 3). Three cities a common characteristic since all of them is a fortified city surrounded by defensive walls. The following sections discuss the comprehensive details regarding the fortifications of these three walled cities. In this regard, the 'Historical Background' and 'Current Situations' of each of the three walled cities will be explained and evaluated separately.

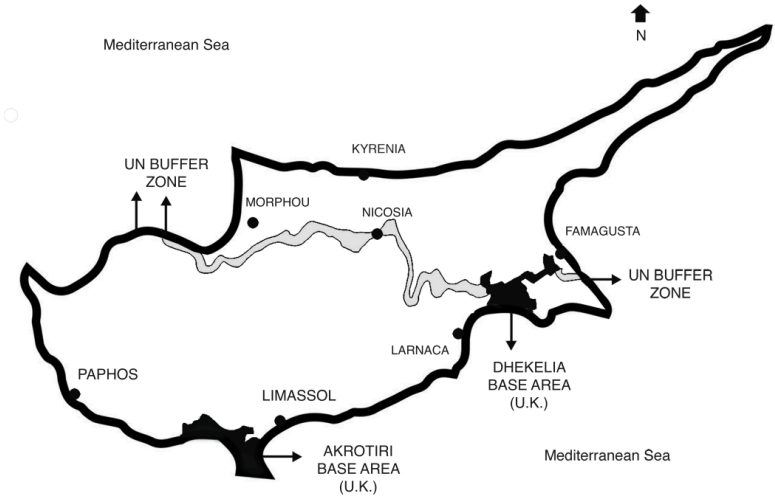


Figure 3. Location of Nicosia, Famagusta and Kyrenia (Source: Authors)

4.1. Nicosia Walled City Fortification

4.1.1. Historical Background

The walled city of Nicosia, situated in the center of the island, is recognized as Europe's last divided capital, having endured significant conflicts and divisions. The historic city is divided into two, with Turkish Cypriots in North Nicosia and Greek Cypriots in South Nicosia. Nicosia has been continuously inhabited since approximately 2500 BC, coinciding with the early Bronze Age when the initial settlers established themselves in the fertile Mesaoria plain.

The city has a remarkable past since it hosted several major civilizations throughout history. The walled city of Nicosia still has evidences of these civilisation in terms of cultural heritage (Figure 4).

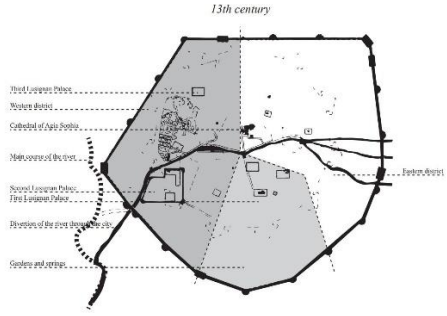
Date	Period	Settlement Situation
7000 – 3800 B.C.	Neolithic	Available
3800 – 2500 B.C.	Chalcolithic	Available
2500 – 1050 B.C.	Bronze	Available
1050 – 750 B.C.	Geometric	Unknown
750 - 475 B.C.	Archaic	Available
475 - 325 B.C.	Classical	Available
325 – 50 B.C.	Helenistic	Available
50 B.C. - 395	Roman	Available
395 – 1191	Byzantine	Available
1191 – 1192	Templar Knights	Available
1192 – 1489	Lusignan	Available
1489 – 1571	Venetian	Available
1571 – 1878	Ottoman	Available
1878 – 1960	British Colonial	Available

Figure 4. Settlement Situation of Nicosia within the Cyprus Chronology, Before 1960 (Hill, 1940; Karageorghis, 1982; Öznergiz, 2011).

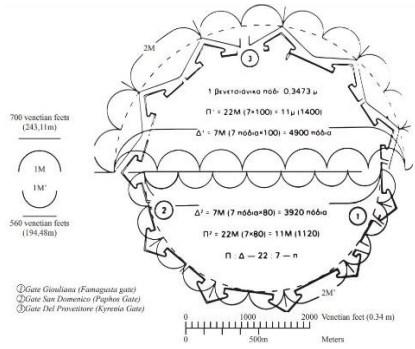
As defined above, Nicosia hosted many civilizations, which reflects the complex history of Cyprus. Nicosia has been the administrative centre of island since the 10th century. The fortifications that surround the city, were built by the Lusignans and later expanded by the Venetians.

Walled city of Nicosia is considered an example of an ideal Renaissance city due to the form of the walls and the urban life in it. Valletta in Malta and Palmanova in Italy can be other two examples to ideal Renaissance city. The first fortification in Nicosia was a castle constructed in 1211 during the Lusignan period. When the Venetian period of the island was started in 1489, the Venetian governors emphasized the need to fortify the city, but at first nothing was done to improve the fortifications (Keshishian, 1978; Piana, 2014; Nicosia Municipality, n.d.). This changed after the Siege of Malta in 1565, when fears of the expansion of the Ottoman Empire increased and many Christian states in the Mediterranean began to

strengthen their fortifications. The Venetians decided to build fortifications in 1567 and commissioned Italian military engineers Giulio Savorgnan and Francesco Barbaro to design it (Figure 5) (Keshishian, 1978; Piana, 2014; Nicosia Municipality, n.d.)



Nicosia city plan in Lusignan period (Ierides, 2017).



Nicosia city plan in Venetian period (Ierides, 2017).

Figure 5. Nicosia City Plan in Lusignan and Venetian Period.

The Venetian walls of Nicosia were undertaken and built as a work of art by the Venetian military engineer Guilio Savorgnan. The circular walls, which have a circumference of approximately 5 km, consist of 11 bastions. These bastions are named after the ten families who donated for the construction of the walls. The names of the 11 bastions are as follows: Sazli Bastion (Pedokataro), Bayraktar Bastion (Kostanza), Kara Ismail Bastion (D'Avilo), Değirmen Bastion (Tripoli), Kaytaz Bastion (Rokkas), Zahra Bastion (Mula), Cephane Bastion (Quirini), Musalla Bastion (Barbaro), Derviş Bastion (Loredano), Şevketli Bastion (Filatro) and Altun Bastion (Giraffa/Caraffa). Three gates, named Paphos Gate (Porta San Domenico), Famagusta Gate (Porta Guiliana) and Kyrenia Gate (Porta del

Proveditore), were opened into the city walls surrounded by a moat (Figure 6) (Bumbaru, Burke, Harrington, Petzet, Truscott & Ziesemer, 2003).

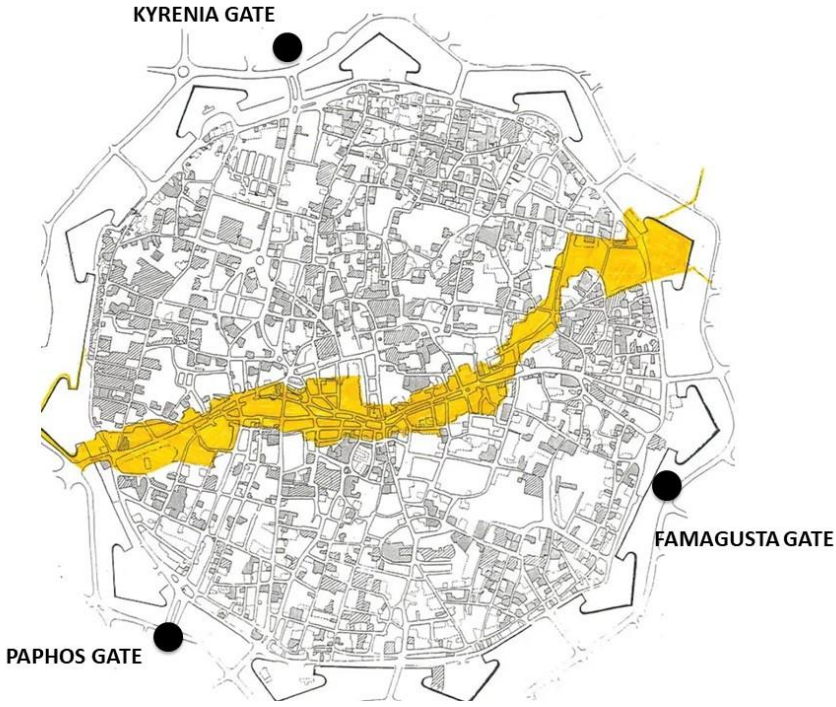


Figure 6. Walled City of Nicosia and its Gates. (Rehabilitation of Walled City, 2005; Re-drawn by Authors)

4.1.2. Current situation

In the mid-19th century, the city started to experience a revival. When the British period of Cyprus started in 1878, the city was still within the walls. An entrance was built near the Paphos Gate in 1879 for creating access to the other parts of the city. During the 20th century, more gates were opened within the walls and the city began to grow outside them. The walls managed to survive until today and they are among the well-preserved Renaissance walls in the eastern Mediterranean.

Nicosia is known as the last divided capital of Europe and the walled city of Nicosia is also divided into two as North and South (Günçe and Mısırlısoy, 2023). The division brought with it social, cultural, economic and political problems as well as physical problems in the historic city.

In the early 1990s, the Department of Antiquities (South & North) decided to start conservation works of the Venetian Walls in Nicosia. A systematic restoration plan began at the Paphos Gate, one of the three original entrances to the medieval town; however, the scale was too large and it was not easy to find the budget. Major conservation and restoration efforts began in 1996 after the funding application was approved by UNHCR.

On the other hand, it is crucial to remember that Nicosia is the only divided capital in Europe, and for 50 years, since 1974, no conservation work has been done in the buffer zone, which divides the Greek-Cypriot and Turkish-Cypriot sectors (Bumbaru, et al., 2003). On April 23, 2003, three crossing gates were opened in the buffer zone and crossings between Northern and Southern Cyprus began. Today, there are nine crossing gates in the buffer zone.

Before After

Figure 7. Following the Collapse of the Quirini (Cephane) Bastion of the Walls (North Cyprus), the financing for the Restoration was Provided by

The European Union and Its Implementation was Carried Out by the United Nations Development Programme (UNDP) (Lefkoşa Surları, n.d.).

Next to Paphos Gate, an urban public space has been redesigned, which includes a contemporary bridge aiming to connect new and old part of the city. Elefteria square is a public space designed by Zaha Hadid Architects between 2005-2021. The aim of the project is to create a square that will be the main gathering space of the city. The design of the public spaces focuses on creating connections that aims to unite the divided capital. Fortifications of the historic city, which built by Venetians, separates the city from the new development area. On the other hand, the 'Green Line' divides the city into two different communities (Elefteria Square, n.d.). So the main goal of the project was to connect new and old part of the city, to give a new life to the district and to take attention of different users back to the walled city (Figure 8). The design of Eleftheria Square enhances the topography of the moat by constructing an elevated bridge that aligns with the adjacent streets, thereby forging direct connections with the city's urban environment and establishing a new public square in the center of the capital. The moat has been reimagined as an urban park, with its fluid geometries shaped through the triangulation of the ancient fortifications' irregular forms. This approach creates focal points of "intensity" that delineate areas for seating, flowerbeds, and water features within the newly designed park.

a. Public space design (Photo: Authors, 2024)

b. Bridge connecting new and old Nicosia (Photo: Authors, 2024)

Figure 8a-b. Elefteria Square

4.2. Famagusta Walled City Fortification

4.2.1. Historical Background

Famagusta, which is located on the east coast of Cyprus, is a town surrounded by fortifications. It has a long and fascinating history and importance as a heritage place (World Monuments Fund, 2014). Throughout islands rich, unique and turbulent history many civilizations lived on the fortified city and they left traces related to their culture. The history of the city date back to the first century AD and the city includes different periods such as the Lusignan, the Venetian, the Ottoman and British (Önal et al. 1999).

Famagusta has one of the most fascinating medieval fortifications (Figure 9) that it is not possible to reproduced them again. The fortifications of Famagusta consist of a series of defensive walls and structures encircling the city in Northern Cyprus. Originally constructed by the Lusignan Kingdom of Cyprus in the 14th century, these walls were later redesigned by the Republic of Venice in the 15th and 16th centuries, prior to the Ottoman Empire's siege in 1571. The Famagusta fortifications endured an

11-month siege before the city ultimately surrendered to the Ottoman Empire in August 1571. (Haggard,1901; Hill, 2010). The fortifications, gates, moat, and religious buildings are the most significant element of Famagusta's built heritage (World Monuments Fund, 2014).

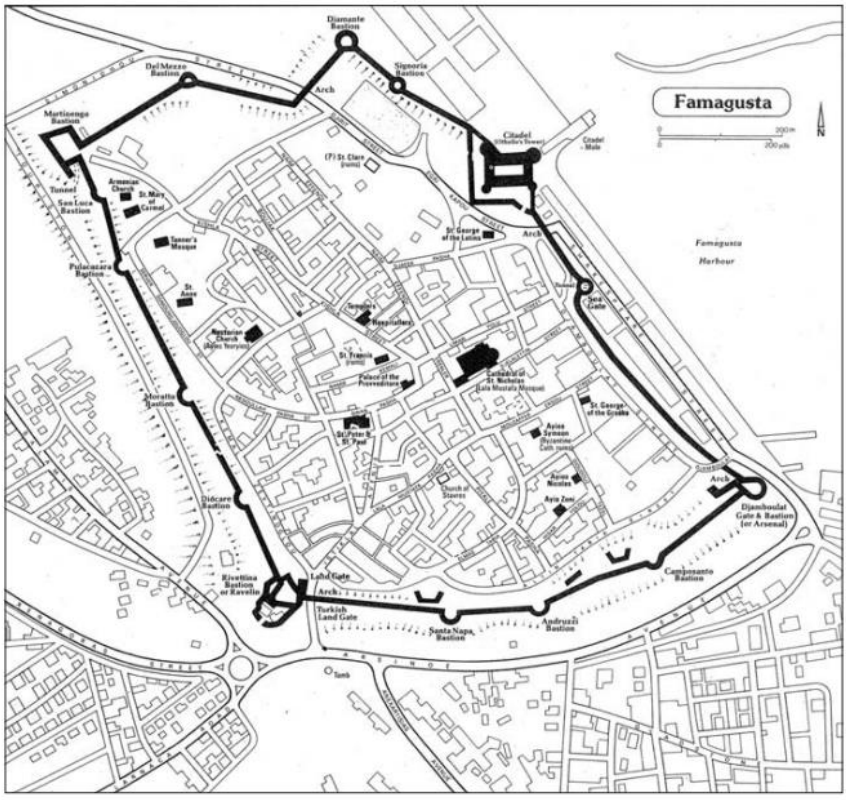


Figure 9. Map of Medieval Walled City of Famagusta from (Enlart, Trigraph Edition 1987) in (Langdale & Walsh, 2009)

The city has important remains of historical, architectural and cultural heritage. The Lala Mustafa Pasha Mosque (Saint Nicholas Cathedral) is one of the most important landmark of the fortified city, which is located in the middle of the city with a public space in front (Figure 10).

Figure 10. Lala Mustafa Paşa Mosque (Authors, 2024)

Othello Castle is another important monument which is built in Lusignan period and developed in Venetian period in the14th century. The castle features four circular towers, as well as a refectory and a dormitory built during the Lusignan period. The castle's courtyard holds cannonballs that were abandoned by both the Spaniards and the Ottomans, serving as remnants of its tumultuous history. The castle is part of the fortification system of the city. In this respect, it should be preserved as a crucial component of the military heritage of the island.

4.2.2. Current Situation

The historic core of the city has been enclosed by new urban development that differ from its traditional pattern. (Önal et al., 1999). The historic city

faces a number of problems and urgent threats. Due to the division, for a long time the historic city did not take the attention that it deserves. Many cultural heritage buildings have suffered neglect (Langdale & Walsh, 2009).

A holistic revitalization is desperately needed for the historic city. UNDP (United Nation Development Programme) in Cyprus and TCCH (Technical Committee on Cultural Heritage) has completed important conservation works in the historic city including preservation of Othello Castle (Figure 11), Ravelin Gate and Martinengo Bastion. However, the conservation works includes emergency measures, instead of full restoration works. These conservation works act like a catalyst and people started to buy or rent cultural heritage buildings located in historic core and preserve and reuse them by their efforts with different functions.

Figure 11. Othello Castle after conservation works (Authors, 2016)

Revitalization process of Walled City of Famagusta will not be possible without functional diversification. The historic city is losing its attraction due to physical, functional, and locational obsolescence. A functional restructuring of the economic base in the historic city is desperately needed (Doratlı et al., 2007).

The fortifications are enclosing the city but also separating it from the new development area of Famagusta. Utilizing walls by providing access and connection should be the first step of revitalization process of the city. The fortifications have different gates that provides access to the city such as Othello Tower, Sea Gate, Canbulat Gate, and near the Land Gate. On the other hand, connections should be created by respecting conservation and management guidelines. The main aim should be use of fortifications as a public space instead of a barrier (World Monuments Fund, 2014).

4.3. Kyrenia Walled City Fortification

4.3.1. Historical background

Kyrenia is a coastal city located in the northern part of Cyprus. The urban life in the city dates back to Hellenistic periods 58 B.C. Throughout the history, the city was under the rule of many different civilizations. It is still possible to observe evidences of these different periods as cultural heritage around the city. The historic part of the city was built around the harbour and is enclosed by carob warehouses that are reused with different functions today. The Kyrenia Castle is the most significant monument of the city and dates back to the Venetian period of the island. The urban pattern in the historic core of the city still keeps its spatial quality and local identity despite some inappropriate uses in some parts (Oktay, 2006).

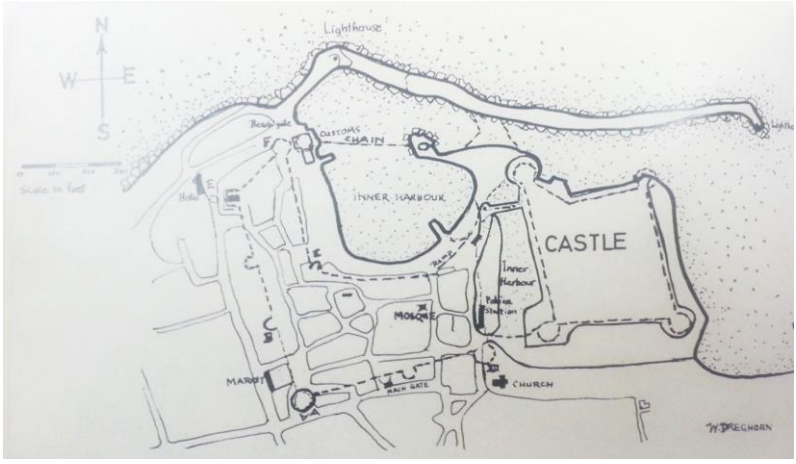
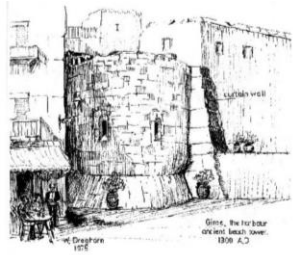


Figure 12. City Walls of Kyrenia as Laid Out by Lusignans in 13th century (National Archive, n.d.)

Liman Arkası (behind the harbour) district is located behind the historic harbour. The urban life of the city had started from this district. The district has unique spatial characteristics, which reflect the evidence of past periods. The most important characteristics of the district is its narrow streets and organic urban pattern. Generally, there are traditional houses that are built of stone. Traditional houses have an inner courtyard at the back, that has no interaction with the street (Mısırlısoy & Covarino, 2018). The city was surrounded by fortifications that was built in Lusignan period, Unfortunately, the fortifications do not exist today. The only remains from the walls are the three bastions of the fortifications, which are reused for different functions today (Mısırlısoy & Covarino, 2018). The name of these three towers are round tower, western tower and beach tower (Figure 13).

Round tower (Enlart, 1913)

Western tower (Enlart, 1913)



Beach tower (Dreghorn, 1977)

Figure 13. Only remains from city walls that managed to survive until today.

4.3.2. Current situation

Today, the historical core has started to lose the liveability and attractiveness due to physical, functional and image obsolescence. As a result, the district is no longer a residential zone. Local people have been moved to the new development areas and traditional houses have been reused as restaurants and cafes. Since it is located next to the harbour that is used for tourism purpose, the district has been transformed to an entertainment zone. The historic quarters have a tendency to adapt international standards rather than reflecting local image due to increasing number of café and restaurants (Oktay and Bala, 2015). The historic core is left hidden due to surrounding new developing districts and have lost its former attraction.

Figure 14. After revitalization of Historic Harbour in 2024 (Photo: Authors, 2024)

In 2023, Kyrenia Municipality started to revitalize the harbour. The area was desperately needed physical and functional improvements. As a part of the revitalization works, the infrastructural developments have been completed and floor covering material have been changed. The urban lighting of the historic district has been redesigned. The existing children playground and urban public space have been redesigned as a promenade. The project has been completed recently in 2024. It is believed these revitalization works will help promote the area and contribute to the economic growth of the city. However, the cultural continuity of the district should be sustained as an important cultural heritage.

5. Evaluation and Recommendations on Walled Cities Fortifications

As previously noted, fortifications and military heritage refer to any structures constructed by communities using either natural or artificial materials for the purpose of defending against attackers. While they share

values with other heritage sites and buildings, they also possess distinct characteristics that require thorough study, analysis, and preservation (ICOMOS, 2021).

The valuable fortifications of Nicosia, Famagusta and Kyrenia need to be conserved and transferred to further generations due to their significance as military heritage. The awareness of these three significant fortifications in Europe and the world needs to be increased and they need to receive the necessary attention they deserve.

Currently, walled towns are regarded as important examples of European heritage sites. However, in almost all of the studies conducted, these three historical walled cities on the island of Cyprus, which is a part of Europe, are not mentioned.

In historic towns and cities, community identities are frequently intertwined with existing physical structures; town walls serve not only as tangible monuments but also as significant concepts—powerful mental constructs essential to the complex self-perceptions of communities. Although these civic monuments outwardly convey a collective identity, they often embody more contentious and divisive aspects of heritage. From this standpoint, the heritage of Cyprus, as part of Europe, should be assessed within the same framework and be recognized for its intrinsic value.

The primary data comprises preliminary findings from the European Commission-funded INTERREGiiiC project, which investigates the key aspects of managing historic walled cities. It also includes the experiences of cities designated as UNESCO World Heritage Sites and those that are members of the Walled Cities Friendship Circle (WTFC). The analysis is

structured around the conceptual framework of the ‘jewel city’ model, which addresses the physical and cultural resources, as well as the conflicting legacies of historic walled cities in Europe. It further explores the challenges faced by their communities and stakeholders in the sensitive preservation and presentation of their historical fabric. Notably, the three walled cities on the island of Cyprus are not included in this discussion (Bruce & Creighton 2006; Evans, 2002).

As noted, the final draft intended for distribution to the ICOMOS membership, in preparation for its submission for approval at the 2021 Annual General Assembly, is titled "Principles Applicable to Fortifications and Military Heritage" and is organized under three main headings. These are, Theoretical and Methodological’, ‘Values’ and ‘Intervention Parameters’ (ICOMOS, 2021). In light of the retrospective information provided for all three walled city fortifications, the following evaluation criteria should be used.

Under the section titled ‘Theoretical and Methodological’, the subsequent aspects should be examined, evaluated and assessed for all three city wall fortification (ICOMOS, 2021):

- Historical evolution and spatial complexity of the military heritage should be searched deeper for three city fortifications.
- The external functional range extending beyond the physical limits should be analyzed for each of the three city wall fortifications.
- Data on the formal and functional features of the three city wall fortifications should be gathered and assessed.
- Considering that the three city fortifications are crucial components of the cultural identity and regulations of different

regions, countries, and areas, it is essential to exercise caution to prevent the promotion of dominant or exclusionary values.

- The three city fortifications can be "re-functioned" to serve new purposes that align with contemporary needs with proper respect for their historical significance. Although only a small part of the Kyrenia fortification remain standing, their reuse may also be considered.
- Academic inquiries and evaluations should be made for all three city fortifications.

Under the section titled ‘Value’, the subsequent aspects should be examined, evaluated and assessed for all three city fortifications (ICOMOS, 2021):

-Architectural, technical, territorial, geographical, strategic, human and anthropological, memory, identity and educational, historic, social and economic value of the military heritage should be discussed.

Under the section titled ‘Intervention Parameters’, the subsequent aspects should be examined, evaluated and assessed for all three-city wall fortification (ICOMOS, 2021):

- Preservation strategies should be done according to a Master Conservation Plan with the contribution of stakeholders.
- All interventions should be based on the holistic integration of the values of the site in relation to the defensive systems and surroundings.

As previously mentioned, the ICOMOS Scientific Committee on Fortifications and Military Heritage (ICOFORT) has presented its Guidelines on Fortifications and Military Heritage for this field. These

guidelines should be implemented for all three walled cities fortifications to facilitate their preservation and reuse. Digital tools, essential in today's context, should also be utilized across all the three cities. However, given that much of the fortification in Kyrenia is no longer exist, virtual representations should be more employed.

Considering that the fortifications consist of walls that create a significant separation between the new and old cities, the perimeter becomes particularly important. This area offers the potential for organizing cultural, social, sports, tourism, economic, and even political activities, which could help to integrate the experiences of being inside and outside the perimeter to some degree. All three historical cities are well-located for addressing these matters, and such actions should be taken. While Kyrenia no longer has a physical barrier, as it has largely been dismantled, the cultural, social, sports, tourism, economic, and even political activities can still be facilitated through virtual support.

6. Conclusion

City defenses exemplify a broader category of military heritage that encompasses structures ranging from castles and citadels to various types of boundary and frontier walls. In this context, the standing fortifications of Nicosia and Famagusta, along with the partially exist walls of Kyrenia, have undergone assessment and evaluation, leading to recommendations for their preservation.

In the realm of the international heritage industry, city walls are regarded as valuable assets, with organizations such as the Organization of World Heritage Cities and the Walled Towns Friendship Circle recognizing their significance as key attractions for heritage tourism. However, these walls

frequently conceal fragmented identities instead of conveying a cohesive narrative. The ideas presented here also apply to walled communities not included on the UNESCO World Heritage list. The ‘enclave heritage’ of marginalized groups, the varied identities symbolized by these walls, and their associations with contentious historical contexts present complex philosophical challenges for heritage management. The importance of city wall fortification and the identities they represent is fluid and can be reinterpreted depending on their management and presentation as military heritage. Agencies responsible for preserving these monuments face inherent difficulties in maintaining neutrality, as city walls exemplify living military heritage. Case studies of the fortifications in Nicosia, Famagusta, and Kyrenia highlight the complexities involved in applying the principle from the 1994 Nara Declaration, which asserts that ‘the military heritage of each is the cultural heritage of all.’ (Bruce, & Creighton, 2006; Creighton, 2007).

In the context of this research, it can be observed that, as demonstrated by the city fortifications in Nicosia, Famagusta and Kyrenia, the primary challenges associated with city walls include their scale, their relationship to the urban environment, their role as barriers within the townscape, and the divisive tensions stemming from a military heritage that has been owned, utilized, and exploited by various groups over time. Each of these factors is crucial for the effective and considerate conservation of city walls, which can foster vibrant living spaces for residents, their surrounding communities, and even tourists who may view them as valuable examples of sustainable urban conservation.

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The article complies with national and international research and publication ethics. Ethics Committee approval was not required for the study.

Author Contribution and Conflict of Interest Declaration Information

All authors contributed equally to the article. There is no conflict of interest.

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Conservation of Architectural Heritage: Traces of History

Chapter 3

Photographing Interior Space: A Means to Observe and Preserve

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1. Introduction

Photography has always been not just a means to capture a moment that might be fleeting, but also a tool teaching one how to see, providing an education to the eye. This chapter is an invitation to emphasize the value photography in design and immerse in the power of the photography of interior space. The aim is to focus on two tracks; the first on the significance of photography in one's awareness of the particularities of their environment and secondly in terms of how photography is imperative in the protection and documentation of interior space through history, for educational and informational purposes at both the individual and communal scale. From photographing natural surroundings to interior space, several considerations are learned through the act of *choosing* to look at an entity, pointing a camera, and indicating an angle to convey the preferred message (Ackerman, 2002; Allen, 2003).

Much preparation goes into these stages, so it is important to see photography as not just a means of representation, but also a way of seeing. That is, a matter of input as well as output. Photography in architecture is developed as a field, but interiors less so, and it is time to claim the significance of a focus on interior space. This is due to several reasons related to ease of access, shorter lifespan of the space, privacy and security issues. Buildings and interiors are in constant renewal and flux, which becomes apparent especially if one compares a current image to one of many years ago (Pare, 1982; Ewing, 2017). However, photographing the exterior of a building is very dissimilar to the interior. Although the sensitivity needed may be alike, color, light, materials, and details may require a specific awareness of the field, scale, approach, and philosophy.

This is why there is a need to understand the interior from in to out, rather than out to in, beginning with the human body, providing as much information about a structure in a compact and direct way (Ames, 1972; Huppatz, 2010).

In this sense, in higher education of architecture and interior design, learning photography can be considered a significant educational tool, and has the potential to contribute to students' comprehensive understanding of space from the beginning stages. Taking this a step further, any understanding of space can add to the feeling of connection and belonging, which is critical for the preservation of architectural heritage.

Today, with smart phones, instant photography is at the fingertips of all. For everyone, but especially for youth, it is a common practice to capture daily events and share them continuously. Naturally, they achieve a sense of photographical angle, light, and depth, in depicting daily activities, however, a more strategic and formal approach to photographing space is necessary in capturing the main substance or concept of an interior, through a two-dimensional format. This requires an understanding of environmental dynamics, creativity, and perception to clearly represent the scenario within a space. This will further be a significant aspect of conveying ideas to others; for portfolio, client presentations, as well as historical documentation. Documentation and archiving is especially crucial for interior design, as interior space changes rapidly, and definitely faster than its enclosure, the building. Thus, at a certain point, a single photograph can alter historical understanding. Public and private, residential, hospitality, and commercial interiors, all have different requirements, and one may benefit from an understanding of which

components to highlight, from furniture to materials, through perspective and use of natural light, followed by an editing process that may further enhance the space.

Through spatial photographs at varying scales, nonetheless that focus on the interior, and depicting variations in scale, proportion, size, texture, and detail, this chapter discusses the significance of the habit and practice of interior design photography as a key aspect of understanding to see, connecting with, as well as archiving interior design work. It is believed that through this practice, young interior design students, educators, professionals, as well as decision makers may gain awareness about looking at as well as recording interior space for today and for the future.

Photography of interiors focuses on capturing the aesthetic value of interiors. It can be seen as both an approach and message, as well as being used to showcase interior projects for personal and collective records. This paper follows this methodology rather than a technical listing of photography rules of thumb.

2. Photography as a Means to Observe Interiors

Observing interiors is of key significance for an interior designer, but first one must achieve sensitivity to all surroundings and of all the environment as a whole. As John Berger has explicitly expressed in his seminal work, Ways of Seeing (1972), seeing precedes speaking. One is born into a world that one can see before even contemplating describing it. The design world is predominantly visual, and therefore an advanced understanding about capturing design through photography appears to be a significant asset in all designers.

2.1. Biophilic Affinities

Looking at nature is fascinating, and although human beings have an innate tendency to be drawn to aspects of nature, designers need to look and observe even closer as a source of knowledge of materials, organization, texture, and color among other traits. Noticing slight changes in the sky, textures of soil, colors of rocks and tree barks, are all potential sources of inspiration as well as being a guide (Figure 1).

Figure 1. A seashell and treebark as sources of knowledge and inspiration, photography by © (Hasırcı, 2023a)

Despite the natural attraction of human beings towards nature, as mentioned by Wilson (1984), an uneducated look at "nature" on its own is hardly sufficient for a designer, and the "nurture" aspect of the path to becoming a designer, involving ways to see may be an acquired taste for some. This enables understanding scale through smaller and larger objects and environments, and enhances the sensitivity in looking and seeing.

Details of buildings, often overlooked in architectural photography may be captured more precisely at the interior scale (See Figures 2 and 3). Interiors that are inspired by nature may tune in to that familiarity through the biophilic affinity human beings have for nature and organic expressions. When photographing impactful interiors, it is best to explore these expressions within the space from varying angles and to capture different atmospheric experiences through the photograph (Figure 4). This will enable a heightened sensitivity for design students over time, leading to increased awareness, connectedness, and documentation. This in turn, paves the way for sense of belongingness, responsibility, and preservation.

Figure 2. Interior components from experimental angles, Architect Santiago Calatrava, The City of Arts and Sciences, 1998, Valencia, photography by © (Hasırcı, 2022a)

Figure 3. Understanding depth and details relevant to interiors, Architect Santiago Calatrava, The City of Arts and Sciences, 1998, Valencia, photography by © (Hasırcı, 2022b)

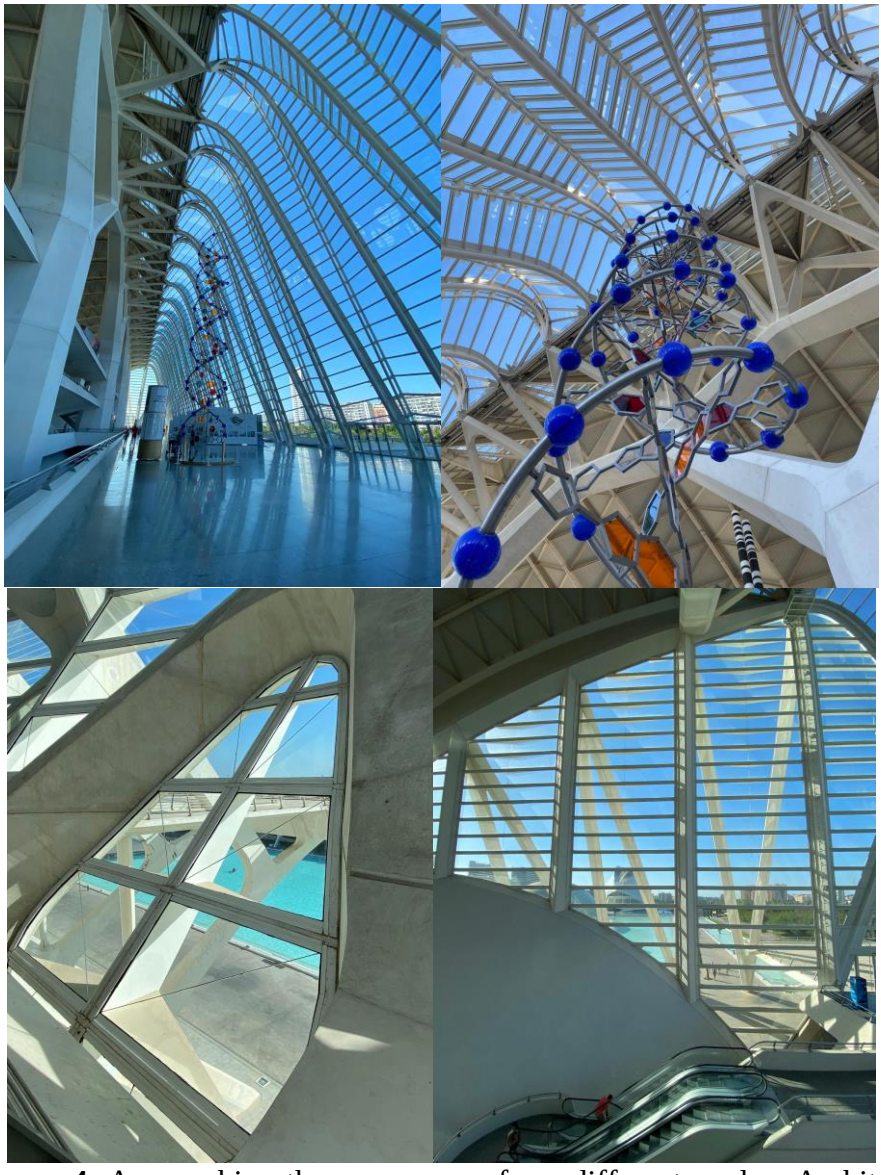

Figure 4. Approaching the same space from different angles, Architect Santiago Calatrava, The City of Arts and Sciences, 1998, Valencia photography by © (Hasırcı, 2022c)

2.2. Life Writing and Expression through Interior Photography

'Images play a major role in defining how we come to know architecture and interior spaces.' states The American Institute of Architects (ASMP, 2024), accentuating photography's pivotal role in understanding aspects of the built environment, such as, light, details, and texture (Lynch, 1987).

In the photograph, is a search for meaning (Barthes, 1977) and there is a close connection to history (Barthes, 1981), and understanding of atmosphere, sense, and self. An emphasis on the immediate environment necessitates a lens on the domestic as well. Interiors have the potential to reflect the self, collective history, memory, intricacies and relationships through the shaping of space, rituals, placement of furniture, tastes and lives of people. Determining the materiality of the daily and the domestic through objects and space, has a large role in life writing (Mezei, 2005; Simon, 2020; Patarin-Jossec, 2020) and has much to say about culture. Despite being short lived, and intricately intertwined with the interior space, life writing emerges as a contributing factor, as well as end result of spatial history.

Through capturing still images of interiors, the realistic atmosphere and feeling of a space is represented, for informational, archival and/or promotional reasons (Crary, 1990). Accuracy in terms of size and dimensions of a space is a characteristic that is aimed for, alongside an aesthetic appeal for the onlooker; perhaps distorting the image to appear slightly larger and with the proper relations of furniture that accentuate the image visually. This is a challenging feat and may require post processing to reach a visual quality that targets both the photograph and the interior. Images for portfolios, marketing and branding, private and public archival

purposes are the main reasons for photographs of interior space, all relevant for young designers. The end medium of the photograph is of crucial significance today with the multitude of media, and needs to be planned from the beginning, and framed, taken, and even marginally post processed with this consideration, emphasizing the essence of the interior. Both interior one-point perspective views as well as views towards the exterior are obliging in demonstrating the fundamentals of interior space, even if it is solely the floor, walls, and ceiling. At times, what is more expressive is exactly that void, the emptiness that catches the eye, and therefore, what appears to be "nothing to look at" becomes the object itself (Figure 5), opening and educating the novice eye to see and observe.

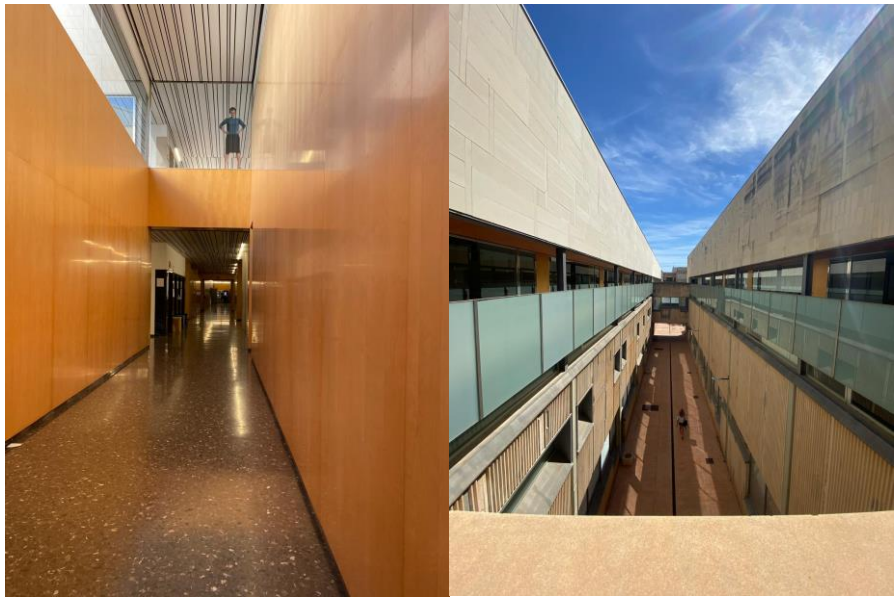

Figure 5. Fascinating angles, only depicting surfaces, Department of Architecture, University of Valencia, photography by © (Hasırcı, 2022d)

3. Photography as a Means to Preserve Interiors

Utilizing photography as a means to preserve is twofold, and is based on the previous step of learning to see, leading to a creation of awareness on spatial significance. This step is followed by, the need to preserve components and various aspects of buildings through photography. Successful examples of preservation involve the careful sensitivity of the smallest to the largest scale, with several educational notes one might carry to one's own projects (Lynch, 1987). Chronological assessments and layering techniques may be utilized, as well as development of new methodology through advancements of technology in the field, both effectiveness of cameras, and processing software (Figure 6).

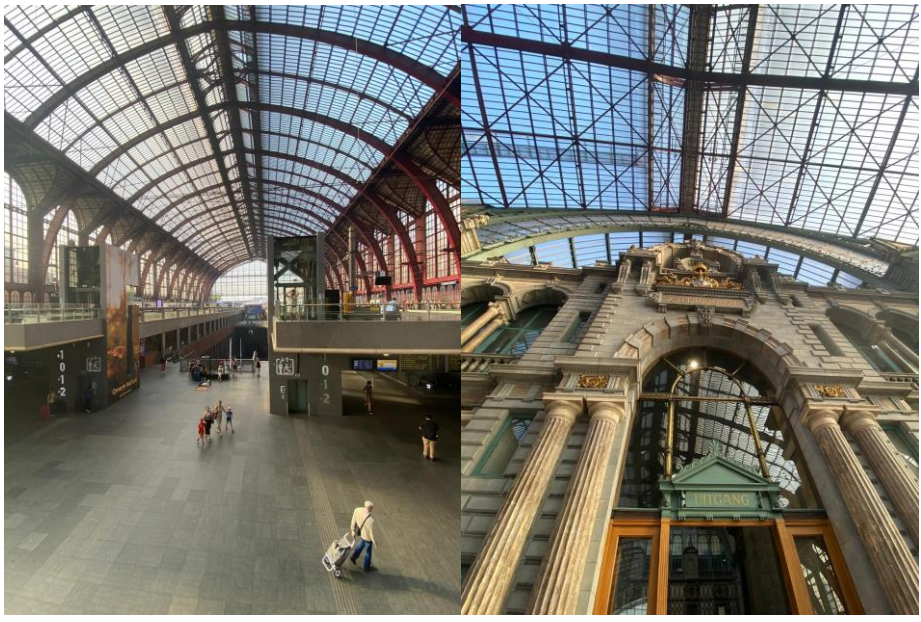

Figure 6. Antwerp Central Train Station (1905) is restored, combining the historic and novel, enabling a variety of interior vistas while keeping close ties to the exterior, photography by © (Hasırcı, 2023b)

3.1. Highlighting Interiors Throughout their Lives

Historical documentation of interiors is not as abundant as architectural counterparts due to shorter lives of interiors and privacy issues. Public interiors can be found more regularly but are still subject to fast-paced change. Archival studies utilize a variety of sources from film to paintings to fully comprehend the past lives of interior spaces.

Moreover, historical, pre-modern buildings can be recorded due to public awareness, however, there is scarcity in the modernist period, which puts its preservation in danger. Regarding the modern movement, Rebelo & Pombo (2022) as well as Higgott & Wray (2012) state that, the period led to photography surpassing documentation, being used in education, advertising, and an instrument in the design process. In this period, more than ever before, the public as well as design students learned about modern space through photography.

Today, as modern interiors are being restored and redesigned, awareness of how and why modern interiors are important need to be at the center of discussion, and photography is the major medium to enable this discourse. Especially in cultures where photography was not readily available, private archives, film, and oral history appears to be additional resources requiring excruciating detective work (Hasırcı & Tuna Ultav, 2020; Tuna Ultav, Hasırcı, Atmaca, 2024). State-of-the-art interior restoration projects such as the one of the Gulbenkian Foundation built in 1956 and undertaken years later through 1966-2000, captures a time and enables a trip through a modern experience, represent utmost sensitivity to interior aspects that one can continue to learn from (Hasırcı, 2024a) (Figure 7).

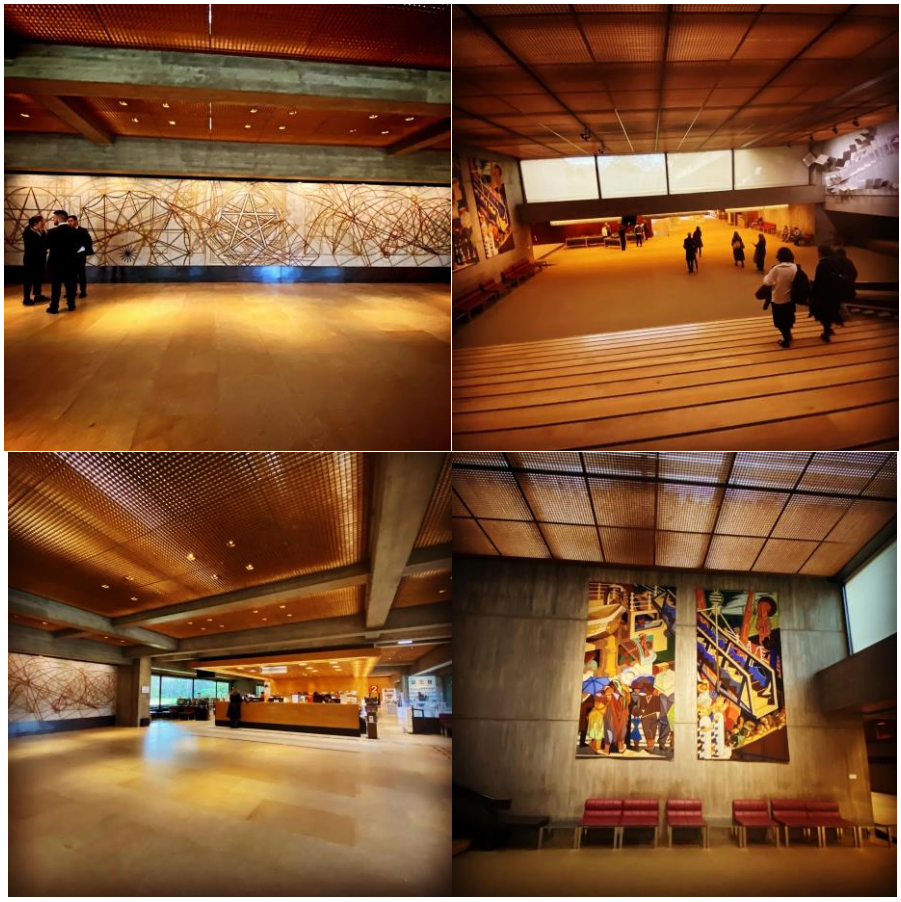

Figure 7. The Gulbenkian Foundation (Lisbon, 1956) is a successful restoration project, skillfully protecting material components at each scale of the interior, landscape, and architecture photography by © (Hasırcı, 2024b)

A successful example of a modern campus is Middle East Technical University (Ankara, 1961) by Behruz and Altuğ Çinici. An archivist himself, Behruz Çinici kept several of the documents, sketches, drawings, and photographs of the creation of the METU campus, in addition to keeping notes from his studentship of Clemens Holzmeister, the Austrian architect of significant governmental buildings in Ankara, including the

Grand National Assembly of Türkiye. This quality of Çinici enabled a closer look and better understanding of the history of the campus, alongside an apparent wish to engrave the history within the components of the campus at different scales, ranging from lighting equipment to whole buildings (Figure 8).

Figure 8. Middle East Technical University (Ankara, 1961) is an exemplary modern work of art at the campus scale, bringing sensitivity and biophilic design to inhabitants, seamlessly connecting the interior, landscape, and architecture, photography by © (Hasırcı, 2022e)

3.2. Concise Photographical Considerations

When capturing the essence of modern space, the right location and angle are key. Natural light is a significant element of the modern interior, therefore, if possible, it is wise to highlight this aspect.

Moreover, a smaller aperture enables a depth of field, that brings attention to the space in its entirety, making the minimal more remarkable. Smaller apertures create a longer depth of field and being creative with the angle

helps with accentuating original characteristics of the interior, specific to the interior design scale and level of care necessary.

Overexposing and increasing warmth and saturation enables the historic feeling of the space, also highlighting detail and texture. While doing this, a tripod may bring steadiness, eliminating blur and shakiness that can ruin an interior photograph. Most often than not, one may not have another chance at re-taking that photograph, and therefore, it is best to opt for getting a decent record the first time. Moving in or out of the shot to get the desired effect is significant, and one can never have too many shots to revisit in terms of the information each conveys. Avoiding lens flare eliminates undesirable light within the photograph. One needs to arrange the shot in a way to limit the unwanted light, and/or use lens hoods to control the beauty of the natural light in space.

Enabling objects or people to strategically take their place in the photo helps in creating a more realistic photograph, enriching the story. Oftentimes, throughout interior design education, students have been expected to draw a perspective from the eye level, which is meaningful to represent the human perspective. However, in photography, experimenting with angles often yields more information and excitement of space through the photographical medium. Moving in the space, laying down, crouching and shooting the ceiling, or achieving different angles from the top of a stairwell is often quite rewarding in this regard. Shadows produced by natural light can help to accentuate structure and texture within the space, all necessary for dramatic results. Therefore, it makes sense to revisit the same space at different times of the day to achieve changing results, if possible. When shooting at night, artificial light, candlelight, and

reflections become exceedingly important, and therefore, it is best to take several photographs, experimenting with what works for that particular shot.

Once the photographs have been taken and there are limitations in going back to the same interior, using software to make the best of the photograph for one's records is the only possible option. Luckily, several brands of software offer means to edit and bring the desired effect of the interior photo. Color enhancement through saturation, warmth, contrast and exposure, structure and sharpness, noise reduction, as well as vignette effects and filters are all possible today and can be mastered without much difficulty. Distorting perspectives may help in achieving more vivid and effective interior space photographs. One needs to find the most suitable effects for each interior and the desired outcome. In photographing furniture, for instance, at times, it may be possible to achieve dynamic and interesting results through perspective correction. This may enable the furniture to become a sculptural focal component of the interior, through slight manipulation of angles. One might also experiment with filters and with black and white photography at times when color is secondary to form. Adding sepia tones to black and white may create a more mellow or nostalgic effect. However, color is at the core of interior design, and preferring to work with it is often ideal (Figure 9).

Figure 9. Church and Museum of Fine Arts of Valencia, 1913, is an exemplary interior design restoration project, blending the old and new, providing several captivating interior vistas, photography by © (Hasırcı, 2022f)

Interior design photography may seem to appear challenging at first. However, choosing to look is the very beginning, and each look feeds into the next project, enriching both the photographs and the interior spaces an interior designer creates. A noteworthy skill that needs to be as vital to one's development as a designer, as sketching.

4. A Continuous Task for Interior Designers

Interior space photography is a key skill for designers to learn to see, observe particularities, understand, gain knowledge, and record a space and time in the environment. First, although artificial imagery is gaining prevalence in the field of interior design, a continuous recording of the environment and constant experimentation with a camera, lenses, as well as phones, trains the eye and brain to be always on the lookout for the next interesting detail, material, shadow, or texture. This enables continuous learning that transfers into the "visual library" of a designer –one that can be reached for and flipped through at will. With search tools on software for certain locations, textures, or objects, one can easily find photos for their own libraries that have connected with a time and place, as well as an atmosphere. These resources carry utmost value, especially compared to any artificial image that is limited in this manner.

Secondly, documentation of interior space is largely lacking around the world, due to difficulties in protecting and challenges to constant renewal of interior functions and aesthetic needs. However, with this lack of interior archives, not only are the material aspects of interiors lost, but also the traditions, practices, lifestyles, conducts of communication through space (Schellenberg, 1956; Bassnett, 2009).

Moreover, what is regarded as worthy to be protected is largely debated, with even major styles such as the modern movement that do not always gather the much-needed respect. This affects the public notion and value of interiors, as well as rules and regulations to preserve not just the interiors, but also specific components such as mobile and fixed furniture, lighting, and materials. Protecting historical buildings as museums, true to

their functions, or through the practice of adaptive reuse projects are both noteworthy and benefit from extensive visual and photographic documentation. Even well-known interiors can be revisited with a fresh viewpoint, bringing new aspects, perhaps even challenging existing opinions (Figures 10-14).

Figure 10. Historic or restored interiors utilized as museums provide spacious interiors conducive to achieve great angles. Restored historic interiors in Belgium and Türkiye, photography by © (Hasırcı, 2024c)

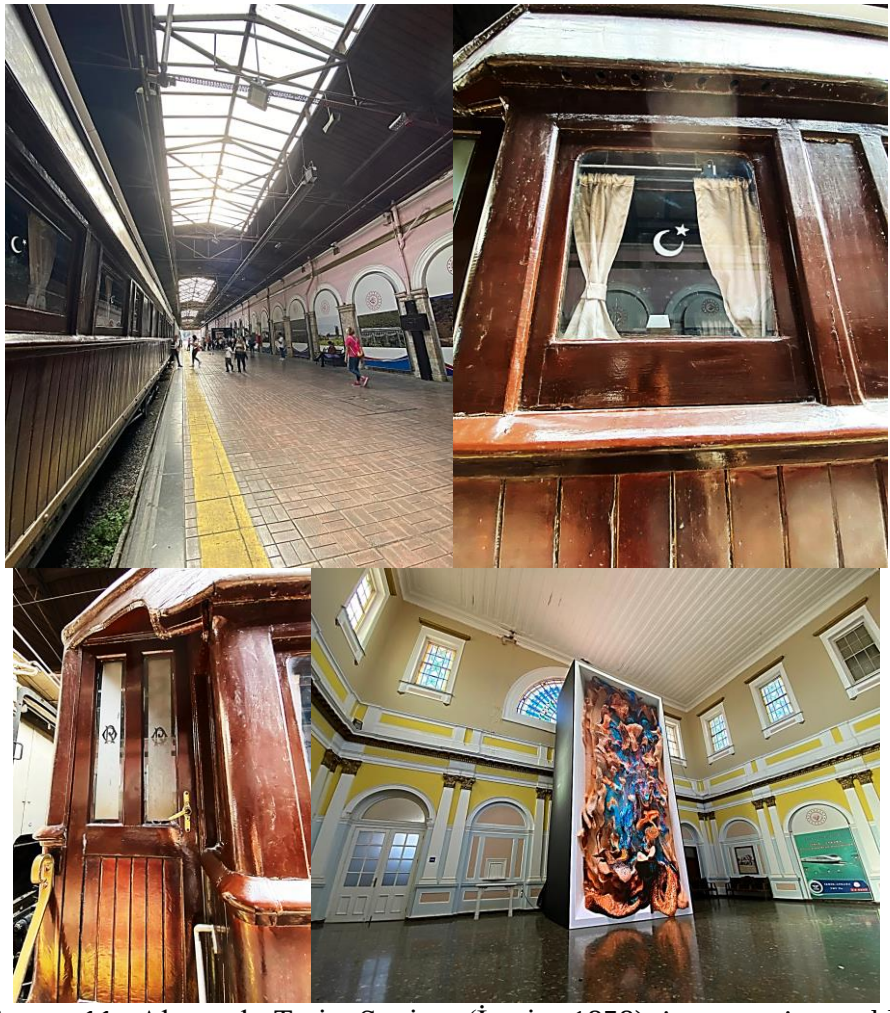

Figure 11. Alsancak Train Station (İzmir, 1858) is an active public interior, restored and reused through permanent and short-term exhibitions by prominent artists such as Refik Anadol. In-depth views as well as details provide important historic and stylistic information, photography by © (Hasırcı, 2022g)

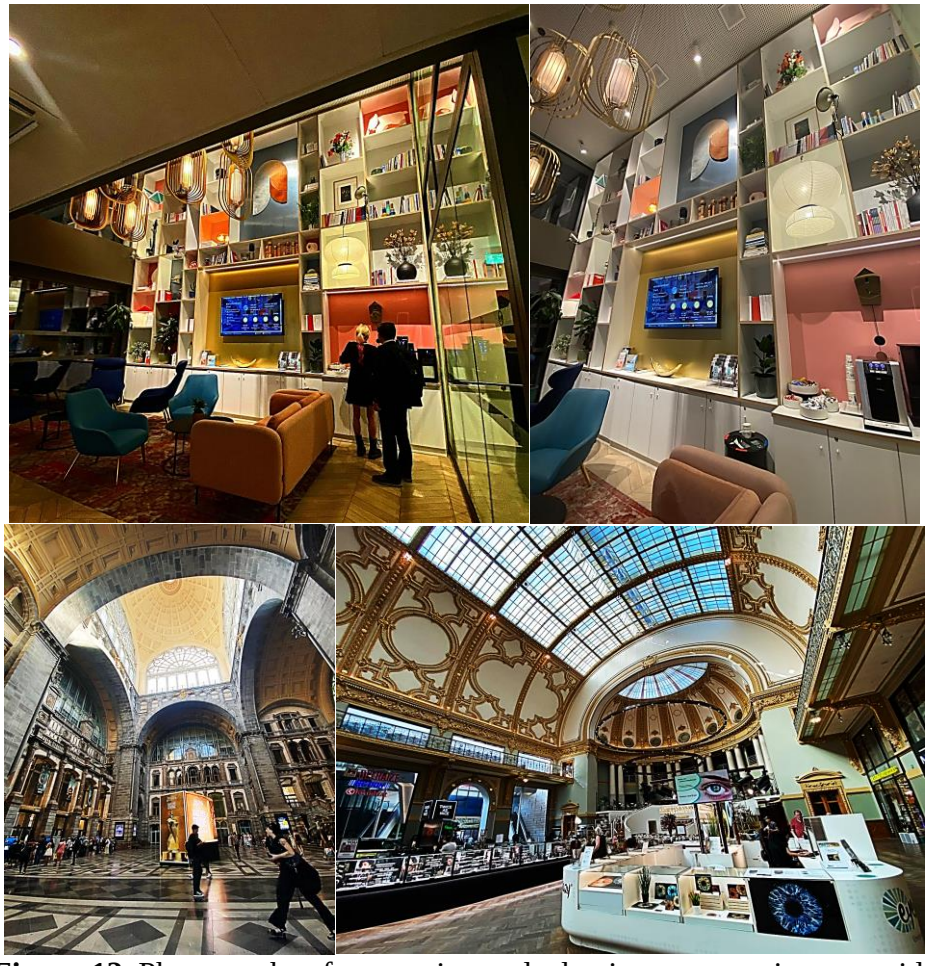

Figure 12. Photographs of restoration and adaptive reuse projects provide exquisite details, aesthetic wisdom, and construction knowledge. Hotel and shopping interiors, Belgium, photography by © (Hasırcı, 2023c)

Figure 13. Experimenting with a variety of viewpoints highlights aspects of the collaborative office building to stand out, Mechelen, photography by © (Hasırcı, 2023d)

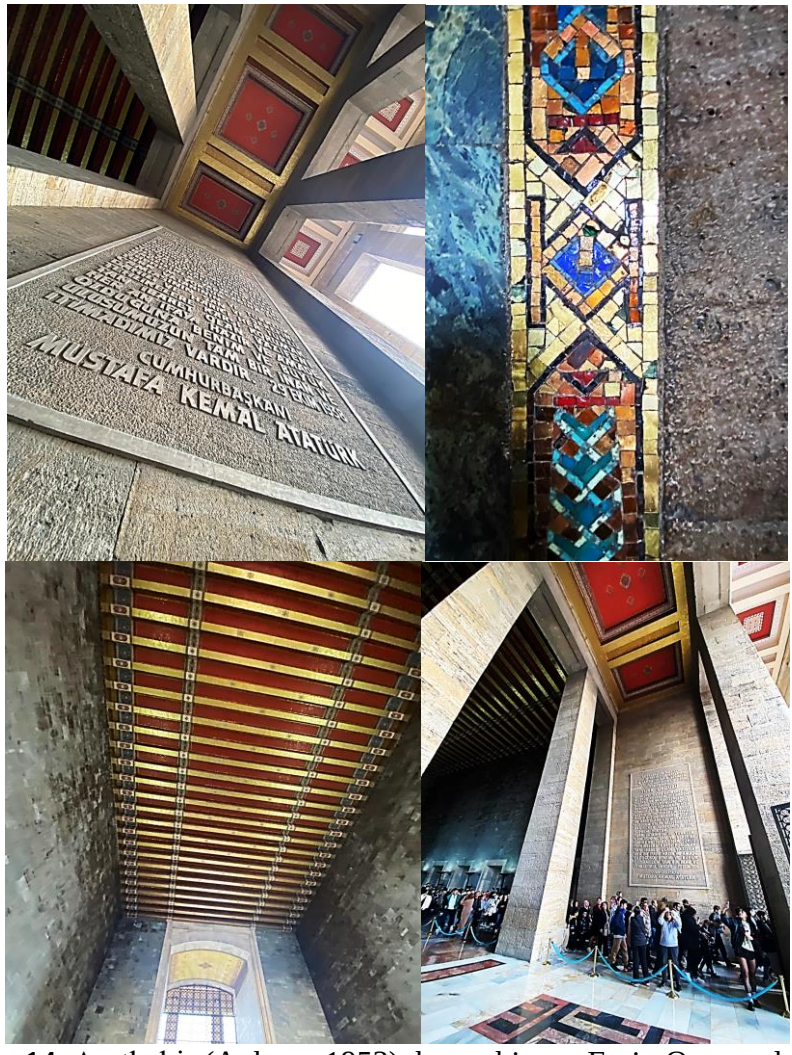

Figure 14. Anıtkabir (Ankara, 1953), by architects Emin Onat and Orhan Arda that was built as the final resting place for Mustafa Kemal Atatürk-the founder of the Turkish Republic, is an exquisite representation of the power of the nation through design and art, providing material details and allowing for imaginative angles in the interiors, photography by © (Hasırcı, 2023e)

5. Conclusion

Despite the vast advancement of artificial reproductions of environments as well as visual video representations of interior space, photography is a powerful and valid tool to record a slice of time in the history of interior space. These records may be the only way one might achieve a chance to observe and appreciate the tastes and approaches of the past, as well as social ways of life in these spaces. Choosing a proper location, selecting angle, color, noise reduction, highlighting details, material connections, and textures that are specific to the interior design scale, contribute to increasing sensitivity regarding space. This is believed to benefit interior designers and students in the two significant aspects of enhancing the understanding of the field today, with an incentive to document and archive interiors for the future.

Through this lifelong practice, one may gain lessons in awareness that can only be partially fulfilled in education. By restructuring educational goals and requirements, and development of methodology to support use of spatial photography, it is believed that spatial understanding may be increased, with enhanced connectedness to nature and environment.

Photography of interiors focuses on capturing the aesthetic value of interiors. It can be seen as both an approach and message, as well as being used to showcase interior projects for personal and collective records.

In conclusion, it is essential for interior designers to regard space as a fundamental part of nature, and then as an aspect of being a human being that needs shelter. Life writing is possible through this extensive search for understanding for the interior designer. Only then can one achieve to fully comprehend and depict the traces as well as the souls of interiors.

Acknowledgements and Information Note

All photographs in this chapter are taken by the author, Deniz Hasırcı, and need to be as credited according to the copyright regulations of the book. For permission, kindly contact the author.

Author Contribution and Conflict of Interest Declaration Information

There is no conflict of interest.

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Conservation of Architectural Heritage: Traces of History

Chapter 4

Evaluation of Architectural Housing Heritage in Terms of Energy Efficiency: A Case Study in Edirne, Türkiye

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1. Introduction

In every age, humankind has improved life and met the need for shelter by developing construction techniques. With the increasing awareness about global warming and climate change, self-sufficient and energy efficient buildings with a holistic approach in architectural design are at the forefront (Zengin &Yamaçlı, 2023). Türkiye has a rich culture of vernacular housing and architectural heritage. Many of these buildings were built with various local materials like stone, wood, and soil in different geographical regions. Environmental factors like climate and topography have also contributed to this variety. Traditional construction techniques were developed by trial and error. Overall, the planning of these vernacular houses takes into consideration user demands and the surrounding physical environment (Kırbaş & Hızlı 2016). Buildings constructed with conventional techniques meet the criteria for sustainable architecture. This is due to the ecological, recyclable materials they are built with. These buildings are usually adaptable to the topographic and climatic conditions and the landscape of their surroundings they can often be heated and cooled down without additional measures. These qualities provide potential design concepts for the construction of energy-efficient buildings in contemporary architecture (Yalaz & Dişli, 2024).

Many studies have investigated the ecological approach of vernacular buildings and energy efficiency (Vissilia, 2009; Zhai & Previtali, 2010; Esin & Yüksek, 2010; Oikonomou & Bougiatioti, 2011; Yardımlı et al., 2018, Yang et al., 2022). Nguyen et al., (2011) investigated the vernacular housing designs and evaluated their effects on human comfort and health. Oikonomou & Bougiatioti (2011) presented the various aspects of the

traditional architecture in the town of Florina, northwestern Greece, and related them to environmental architecture. They performed thermal analysis calculations using Ecotect v5 software. Many other studies have investigated vernacular houses in different regions of Türkiye (Ulukavak Harputlugil & Çetintürk, 2005; Engin et al., 2007; Şerefhanoğlu Sözen & Gedík Zorer, 2007; Manioğlu & Yılmaz, 2008). For example, one study focused on the energy-saving design strategies employed in ancient housing in Mardin, Türkiye (Manioğlu & Yılmaz, 2008), while another analysed thermal comfort in vernacular Turkish houses (Ulukavak Harputlugil & Çetintürk, 2005). Ecotect, eQuest, IES-VE, DesignBuilder, OpenStudio, and EnergyPlus software packages are used in the analysis of the energy performance of buildings (Greenberg et al., 2013). Liu & Wang (2019), Hermawan et al. (2020), Sadat (2021), Aboud (2021) are used Ecotect in the analysis of the energy performance of buildings.

Turkey is in a mild temperate climatic zone, and Edirne displays temperate-humid climate characteristics. Edirne is at 26° 33′ East 41° 40′ North (Figure 1) (Wikipedia, 2024). The weather is temperate in summer and slightly cold in winter, with no extreme temperatures in either season. The rainiest months of the year are January, February, and June, while the driest months are July, August, and September (Göksu, 1999). The location of the city of Edirne in Türkiye is shown in Figure 2 (Google map, 2024).

Edirne is an important city with its cultural values and traditional architecture, which have endured to this day from the Ottoman Empire period. Traditional architecture examples in Edirne have sustainable design features, in terms of their construction systems. Their architectural

structures are in harmony with the climate and topography of the region, reflecting the traditional Turkish culture.

Figure 1. Edirne, indicated in red, is a northwest border city in Türkiye (Wikipedia, 2024)

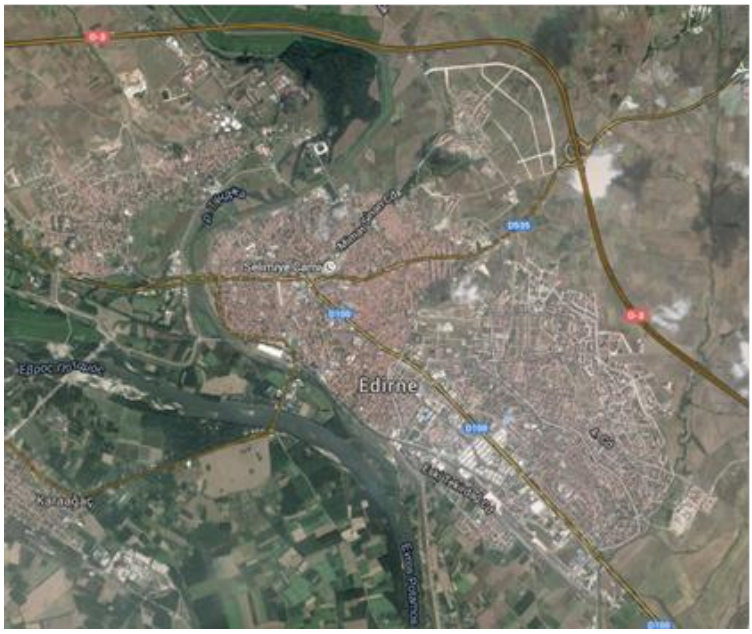


Figure 2. Satellite image of the city of Edirne (Google, 2024)

This study aimed to assess the energy consumption of civil architecture examples (Hafız Ağa Mansion, Aksaray Hotel, İlhan Koman House) in Edirne. These buildings are examples of vernacular housing built with wood-frame systems. The simulation software, Ecotect Analysis, was used to evaluate the buildings in terms of energy efficiency.

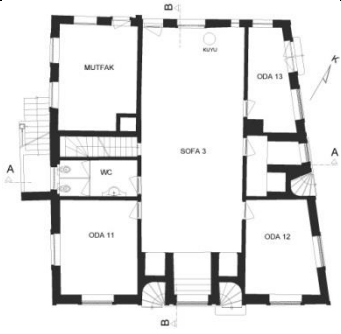
2. Material and Method

Within the study context, Hafız Ağa Mansion (A), Aksaray Hotel (B), and İlhan Koman House (C), examples of registered traditional civil structures in Edirne, were chosen for thermal analysis. These structures were built around the end of the 19th century with similar construction (with wood-frame) characteristics consisting of a basement and two typical floors. They located in three different areas of the city. The first step of the study was to establish the qualifications of the building in terms of planning, construction, and materials used (Edirne Municipality, 2011). The first of the buildings chosen to be reviewed was the Hafızağa Mansion, which is an example of registered civil architecture in the region. The structure consists of a basement, ground floor, and upper floor (Figure 3). It contains an interior hall, and the ground floor consists of a hall in the center of the building. The rooms are located around the hall and wooden stairs connect the levels. On the upper floor, there are also rooms located around a central hall. Service and toilet areas are located in the basement. The location of the building in the city, its view, plan, and cross-section are detailed in Figure 3. The building was used as the Edirne City History Museum after its restoration was completed. The building has been labelled here in as "A."

a) Street location

b) Front façade

c) Basement plan



d) Ground floor plan

e) First floor plan

f) A-A cross-section

Figure 3. (a) Street location, (b) front façade, (c, d, e) floor plans, and (f) cross-section of the Hafızağa Mansion (Building A)

The second building chosen for evaluation was the Aksaray Hotel, a registered civil architecture example built in the early 20th century. The building is a corner parcel and is semi-attached (Figure 4). The building consists of a half-basement, ground floor, and upper floor. The building was constructed with wooden-frame. The walls are wooden sheathing with blend-brick fillings. The flooring and outer surface of the building is wooden. The building has been labeled as "B."

The final building investigated in this study was İlhan Koman House. It is an example of a registered civil architecture building in the Kaleiçi district of the historical city center of Edirne. The location and front façade of the building is detailed in Figure 5. The building is composed of a ground and first floor, in addition to a basement. Its plan includes an interior hall; the walls of the basement are stone masonry, while the ground and first floors were built using a wooden frame-brick filling system. The walls are plastered with the lath-and-plaster technique. Ceilings are plastered with lime on laths, which are nailed to bonding timber.

The ground floor consists of a hall in the middle, the rooms are located around the hall, and wooden stairs lead to the first floor. There is also a hall on the first floor and rooms around it. There are storage rooms in the basement. The windows of the ground and first floors are straight, double cased, and groined with wooden doors. The doors of the building are wooden; the hall has double-wing doors, while the rooms have single doors.

The house was built as a clinic and underwent restorations in 2005. Today, it is used by the Cultural and Natural Heritage Preservation Board. This building is coded as "C" in remainder of the text.

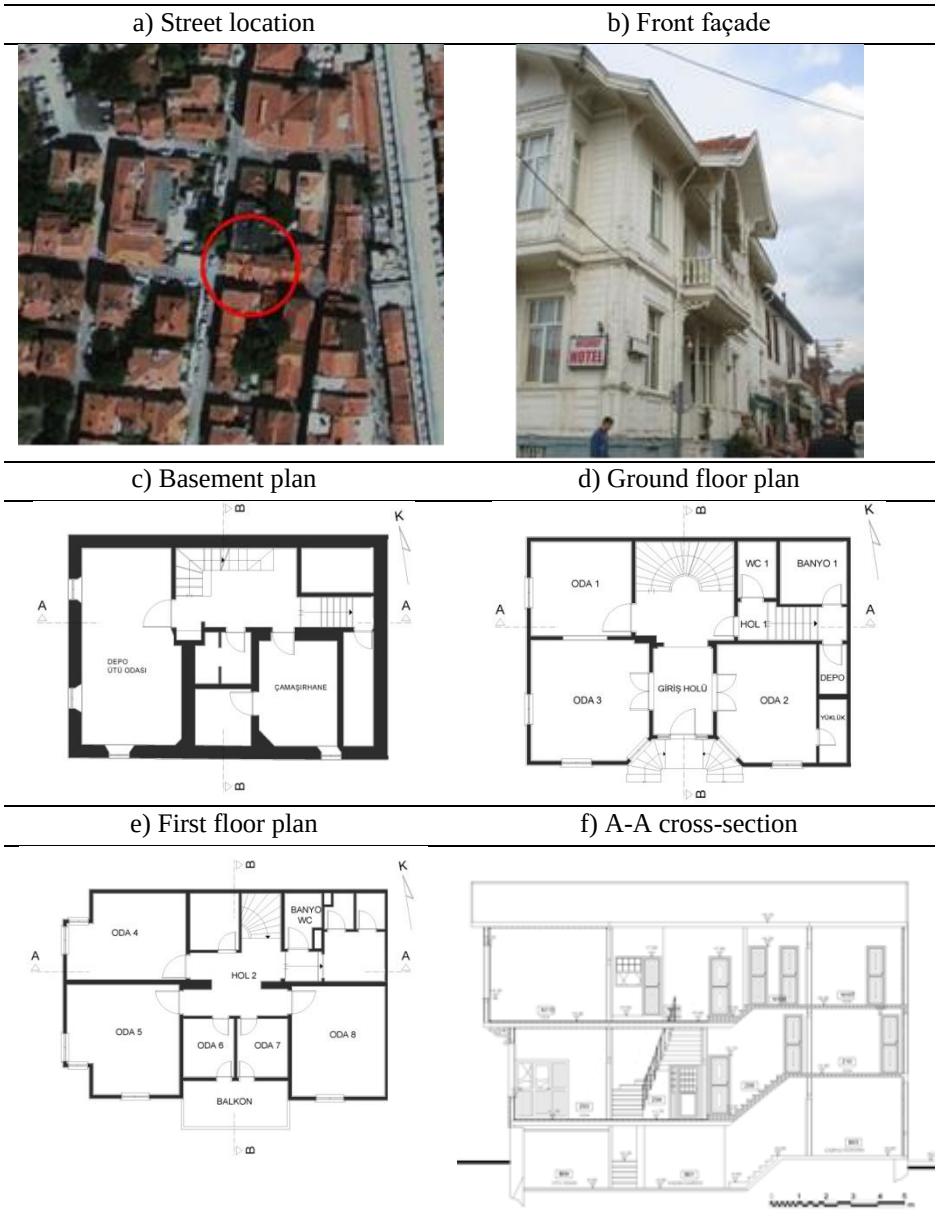


Figure 4. (a) Street location, (b) front façade, (c, d, e) floor plans, and (f) cross-section of the Aksaray Hotel (Building B)

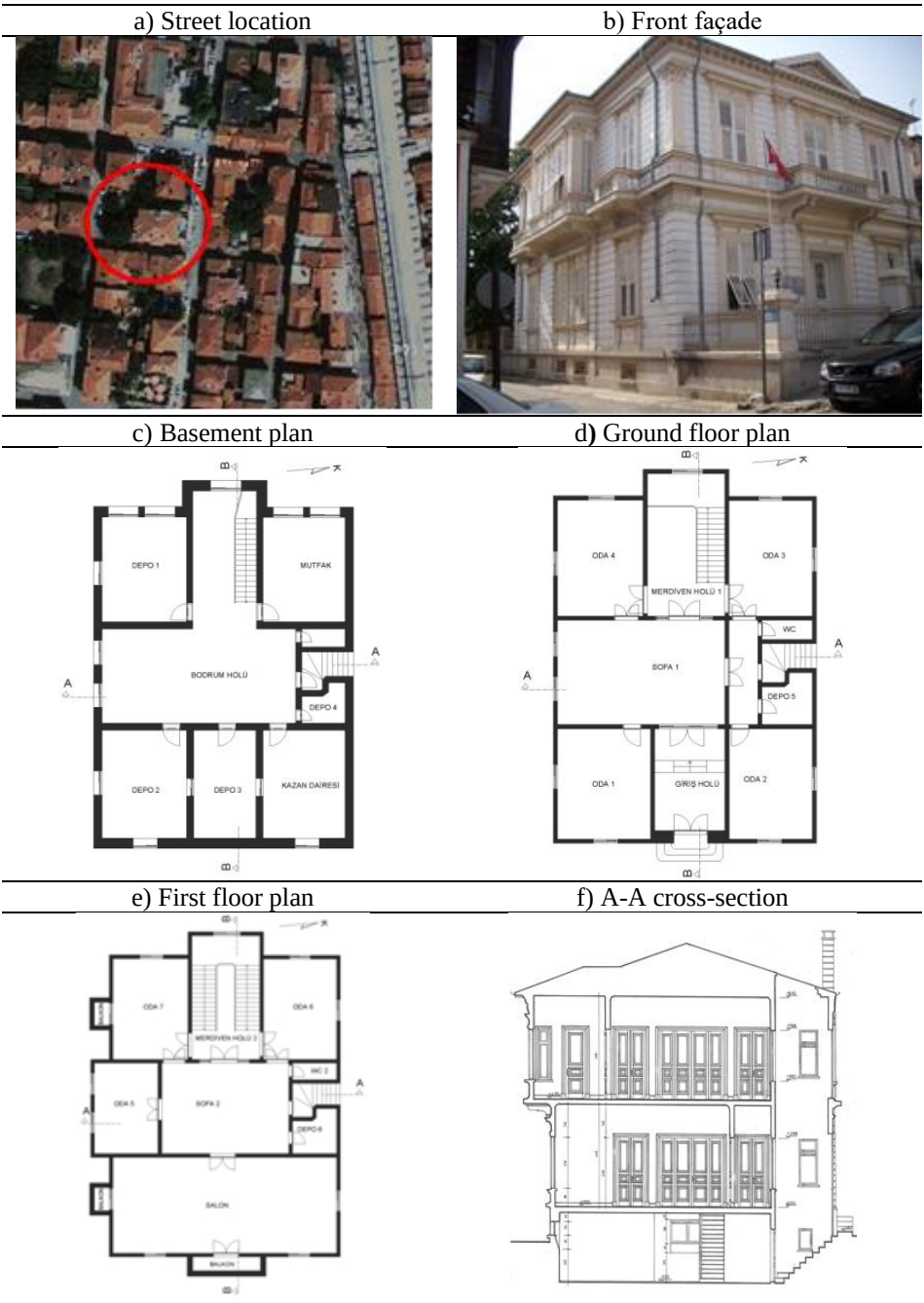


Figure 5. (a) Street location, (b) front façade, (c, d, e) floor plans, and (f) cross-section of İlhan Koman House (Building C)

The buildings selected for investigation are similar in terms of construction and materials. The characteristics of the structural elements of the buildings are detailed in Table 1.

Table 1. The Characteristics of the Structural Elements of the Buildings (Temur, 2011).

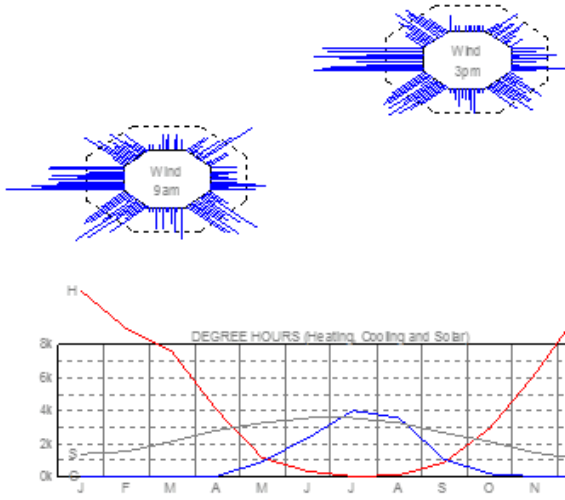
	Characteristics of building elements
BASEMENT	Walls: Stone + Blend Brick Floor Covering: Natural stone covering grounded on land Ceiling: Wooden facing
GROUND FLOOR	Exterior Walls: Lath-and-Plaster plastered, Wooden Frame-Blend Brick Filling Interior Walls: Lath-and-Plaster plastered, Wooden Frame-Blend Brick Filling Covering: Wooden Joist
FIRST FLOOR	Exterior Walls: Lath-and-Plaster plastered, Wooden Frame-Blend Brick Filling Interior Walls: Lath-and-Plaster plastered, Wooden Frame-Blend Brick Filling Covering: Wooden Joist Ceiling: Wooden facing
ROOF	Wooden-framed, pantile covered
WINDOWS	Basement and ground floor windows are straight, double-wing, and groined; first-floor window sashes are wooden
DOORS	Solid wood

3. Findings and Discussion

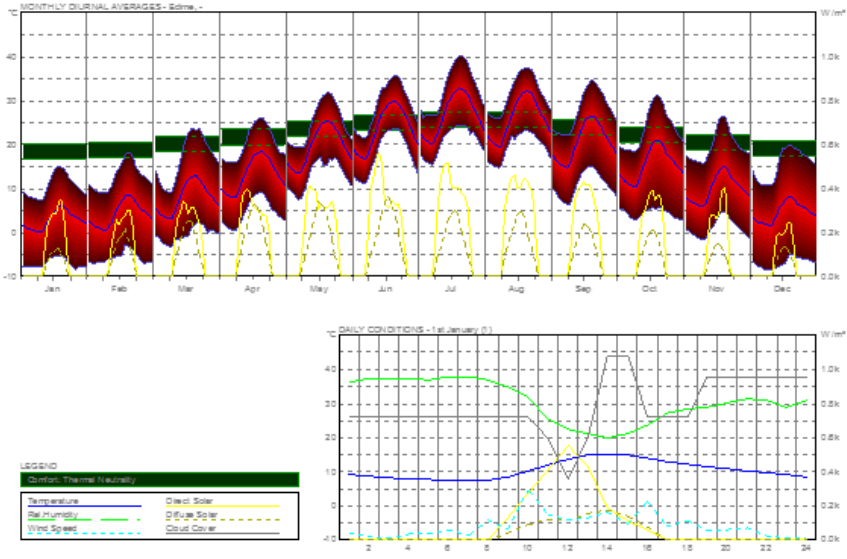
The energy performance of the buildings was analyzed using the Ecotect Analysis simulation software. Ecotect simulation software requires a three-dimensional model of the building to analyse energy performance. This model is produced within the drawing medium of the software itself, with the help of the survey drawings of the building. The thermal simulations of the buildings required the zoning, materials, and climate data (Figure 6). Figure 6(a) shows the annual heating and cooling periods.

The monthly comfort range is shown Figure 6(b); this range shows the changes in monthly adaptation to the climate. The maximum and minimum temperature changes for Edirne are also represented (Figure 6b) (Ecotect Wheather Tool, 2011). The Ecotect program uses the simple hourly method based on daily calculations. The three-dimensional models of the buildings are presented in Figure 7. The spaces used in the buildings can be classified by various thermal factors like the characteristics of heating and cooling systems, the activities in the spaces (rooms), user profiles, and the difference in the gains. Each group that displays similar characteristics is defined as a zone and each zone is defined as an independent unit about its distinctive characteristics in the calculation method. In this way, spaces are distinguished as thermal zones (Figure 8) (Temur, 2011).

Ecotect Analysis software demands hourly climatic data for thermal analysis. Climatic data for Edirne, which is in a temperate-humid climatic zone, was acquired from the climatic data software Meteonorm version 6.1.0.21. Using the software, a typical meteorological year data package was prepared. According to the long-term mean values, the coldest day in Edirne is January 12 and the lowest temperature is -8.1°C, while the hottest day is July 21 and the highest temperature is 38.3°C. Calculations in this study were conducted using a simple hourly method. Since the areas within the building differ from each other in terms of their directions and sizes, each separate area was considered a different zone (Figure 8).



(a)



(b)

Figure 6. (a) Heating and cooling periods; annual heating (red line) and cooling (blue line) periods and average wind speed at 9 a.m. and 3 p.m. (b) comfort climatic data for Edirne; comfort range for Edirne (green area) and the maximum and minimum temperatures (red areas) (Ecotect Wheather Tool, 2011).

Building A	Building B	Building C

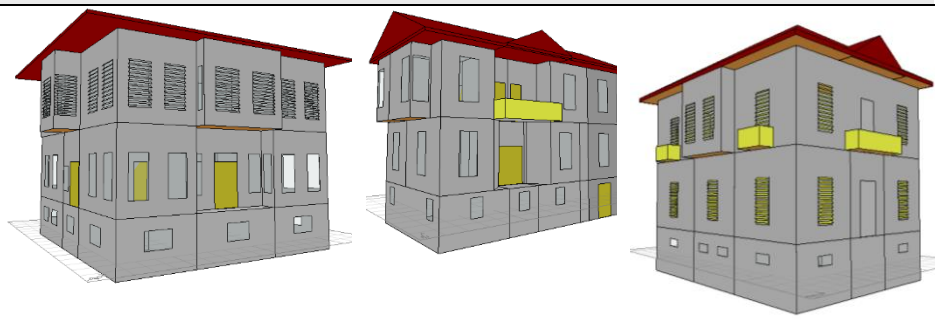


Figure 7. Three-dimensional model of the buildings (Temur, 2011)

Building A	Building B	Building C

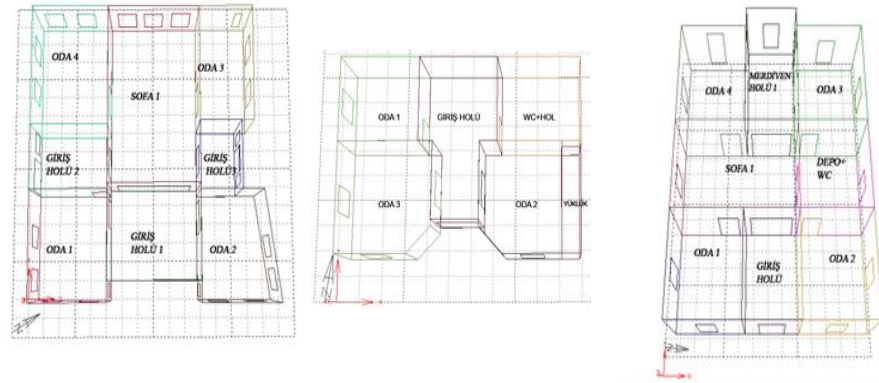


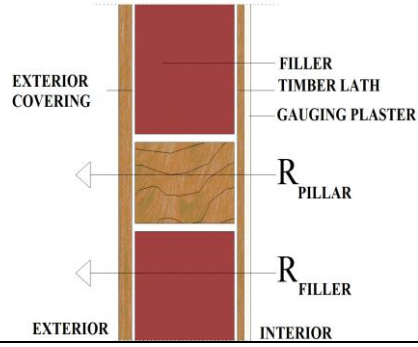
Figure 8. Spaces and thermal zones of buildings A, B, and C

The building examples chosen for analysis consisted of a basement and two typical floors. Cooling is achieved with natural ventilation; hence, the calculations were based only on the energy consumed for heating. Buildings A, B, and C have areas of 563.52 m^2, 219.11m^2, and 632.50 m^2, respectively. The construction materials of the buildings: thermo-physical properties, the thermal resistance and conductivity values are presented in Tables 3–7. The values for thermal conductivity (λ) and density (δ) were

taken from the Turkish Standard TS 825/Thermal Insulation Requirements for Buildings (TS 825, 2008).

Table 3. Thermo-physical properties of exterior walls

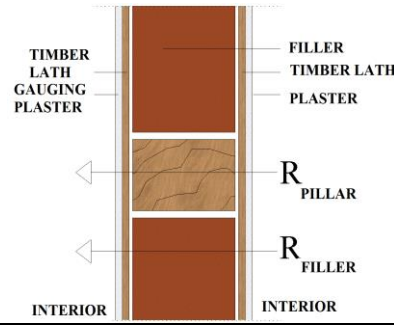
GROUND FLOOR / EXTERIOR WALL



	MATERIAL	Width **d** (mm)	Thermal Conductivity **λ** (W/mK)	Density **δ** (kg/m³)	Thermal Resistance **R** (m²K/W)	Thermal Transmittance **U** (W/m²K)
PILLAR	R_e / External surface resistance				0.04	0.07
	Timber covering	20	0.13	600	0.15	
	Timber-framed	150	0.13	600	1.15	
	Timber lath	10	0.13	600	0.08	
	Gauging plaster	10	0.70	1,400	0.01	
	R_i / Internal surface resistance				0.13	
	R / Total thermal resistance				1.56	
FILLER	R_e / External surface resistance				0.04	1.25
	Timber covering	20	0.13	600	0.15	
	Blend brick	150	0.50	1,200	0.30	
	Timber lath	10	0.13	600	0.08	
	Gauging plaster	10	0.70	1,400	0.01	
	R_i / Internal surface resistance				0.13	
	R/Total thermal resistance				0.71	
Thermal Transmittance / U value exterior walls						**1.32**

Table 4. Thermo-physical properties of interior walls

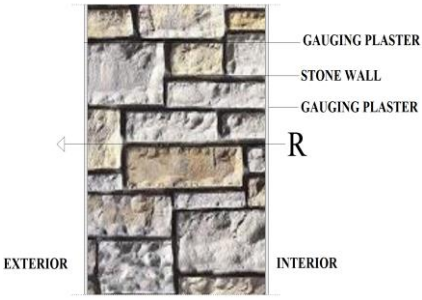
GROUND FLOOR (INTERIOR WALL)



	MATERIAL	Width **d** (mm)	Thermal Conductivity **λ** (W/mK)	Density **δ** (kg/m^3)	Thermal Resistance **R** (m²K/W)	Thermal Transmittance **U** (W/m²K)
PILLAR	R_e / External surface resistance				0.13	0.07
	Gauging plaster	10	0.70	1,400	0.01	
	Timber lath	10	0.13	600	0.08	
	Timber-framed	150	0.13	600	1.15	
	Timber lath	10	0.13	600	0.08	
	Gauging plaster	10	0.70	1,400	0.01	
	R_i / Internal surface resistance				0.13	
	R / Total thermal resistance				1.59	
FILLER	R_e / External surface resistance				0.13	1.20
	Gauging plaster	10	0.70	1,400	0.01	
	Timber lath	10	0.13	600	0.08	
	Blend brick	150	0.50	1,200	0.30	
	Timber lath	10	0.13	600	0.08	
	Gauging plaster	10	0.70	1,400	0.01	
	R_i / Internal surface resistance				0.13	
	R / Total thermal resistance				0.74	
Thermal transmittance / U value interior walls						**1.27**

Table 5. Thermo-physical properties of basement walls

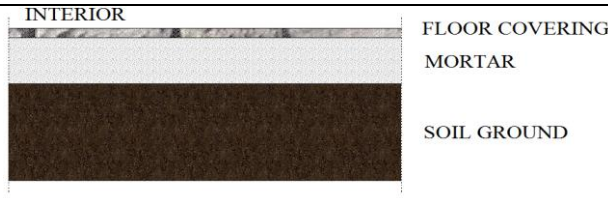
BASEMENT (WALLS)



MATERIAL	Width **d** (mm)	Thermal conductivity **λ** (W/mK)	Density **δ** (kg/m^3)	Thermal Resistance **R** (m²K/W)	Thermal Transmittance **U** (W/m²K)
R_e / External surface resistance				0.04	
Gauging plaster	10	0.70	1,400	0.01	
Natural stone	500	0.81	1,600	0.62	
Gauging plaster	10	0.70	1,400	0.01	**1.23**
R_i / Internal surface resistance				0.13	
R / Total thermal resistance				0.81	

Table 6. Thermo-physical properties of ground floor slab-on-grade flooring

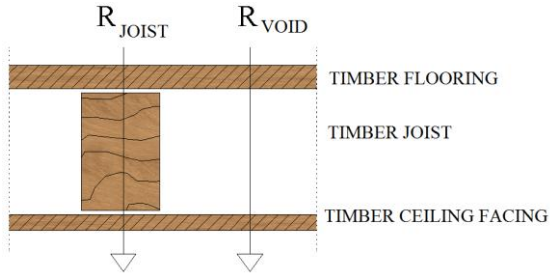
BASEMENT



MATERIAL	Width **d** (mm)	Thermal conductivity **λ** (W/mK)	Density **δ** (kg/m^3)	Thermal Resistance **R** (m²K/W)	Thermal Transmittance **U** (W/m²K)
R_e / External surface resistance				0.04	
Natural stone floor covering	20	0.81	1,600	0.02	
Mortar	100	0.70	1,400	0.14	**0.46**
Dirt surface	1,500	0.83	3,800	1.81	
R_i / Internal surface resistance				0.17	
R / Total thermal resistance				2.18	

Table 7. Thermo-physical properties of the flooring

GROUND FLOOR AND FIRST FLOOR



	MATERIAL	Width **d** (mm)	Thermal conductivity **λ** (W/mK)	Density **δ** (kg/m^3)	Thermal resistance **R** (m²K/W)	Thermal Transmittance **U** (W/m²K)
TIMBER JOIST	R_e / External surface resistance				0.13	
	Timber flooring	30	0.13	600	0.23	
	Timber joist	200	0.13	600	1.54	
	Timber ceiling facing	20	0.13	600	0.15	0.05
	R_i / Internal surface resistance				0.13	
	R / Total thermal resistance				2.18	
VOID	R_e / External surface resistance				0.13	
	Timber flooring	30	0.13	600	0.23	
	Air void	200	5.56	1.30	0.04	
	Timber ceiling facing	20	0.13	600	0.15	1.31
	R_i / Internal surface resistance				0.13	
	R / Total thermal resistance				0.68	
Thermal transmittance/U value flooring						**1.36**

When calculating the thermal conductivity of the walls of the buildings, which were constructed using a timber-framed system, the resistance of the pillars and filled parts were calculated separately. The total thermal transmittance (U) value was calculated by taking into consideration the ratio between the pillars.

The EN ISO 13790 Energy Performance of Buildings, Calculation of Energy Use for Space Heating, and Cooling standards divide the methods of the calculation of energy performance into three, which are the monthly or seasonal (static), simple hourly (semi-dynamic), and detailed hourly (dynamic) methods (EN ISO 13790, 2008). The Ecotect program uses the simple hourly (semi-dynamic) method based on daily calculations (Ulukavak Harputlugil & Çetintürk, 2005; Yaman & Gökçen, 2008).

Graphics for the hourly temperature of the spaces on the hottest and coldest days of the year, July 21 and January 12, respectively, were prepared based on annual average values using the Ecotect software. It was observed that on the coldest day when the temperature was between -2 and -8 °C, the temperature inside the building was around 1 and 2 °C without the application of a heating system (heater, stove, etc.). According to the long-term analysis, the temperature on the hottest day of the year varied between 22 and 38 °C in Edirne. It was found that the temperature inside the building on this day was between 27 and 30 °C (Temur, 2011).

The annual heating and cooling load were also calculated by taking into consideration the fact that energy is used only for heating and that cooling was achieved through natural ventilation. Using Ecotect, the total energy consumption for heating was analyzed for the buildings (Table 8–10).

Table 8. Heating and cooling load per meter square in the spaces of building A

ZONE	m^2	Heating load kWh/m^2	Cooling load kWh/m^2	ZONE	m^2	Heating load kWh/m^2	Cooling load kWh/m^2
ROOM 1	23.32	243.60	127.71	ROOM 7	23.85	222.89	98.43
ROOM 2	21.47	248.60	146.23	ROOM 8	7.92	195.50	88.52
ROOM 3	17.36	226.42	89.87	ROOM 9	18.29	208.45	79.95
ROOM 4	25.52	220.80	100.35	ROOM 10	26.84	205.77	86.20
HALL 1	45.58	135.64	51.97	HALL 2	57.24	130.24	34.20
ROOM 5	23.32	207.15	105.96	ENTRANCE HALL	24.38	135.06	71.80
ROOM 6	23.32	183.00	107.40				

Table 9. Heating and cooling load per meter square in the spaces of building B

ZONE	m^2	Heating load/ kWh/m^2	Cooling load/ kWh/m^2	ZONE	m^2	Heating load/ kWh/m^2	Cooling load/ kWh/m^2
ENTRANCE HALL	16.52	83.37	109.63	ROOM 5	15.45	181.00	121.21
ROOM 1	10.88	138.05	87.80	ROOM 6	3.78	85.88	108.02
ROOM 2	14.02	112.05	232.04	ROOM 7	4.62	86.25	119.80
ROOM 3	16.10	196.71	122.00	ROOM 8	13.70	93.47	107.09
ROOM 4	12.98	172.13	100.40				

The monthly and annual heating and cooling loads and window areas of the buildings are presented in Tables 11–13.

Table 10. Heating and cooling load per meter square in the spaces of building C

ZONE	m²	Heating load kWh/m²	Cooling load kWh/m²	ZONE	m²	Heating load kWh/m²	Cooling load kWh/m²
ROOM 1	24.75	186.5	82.76	ROOM 5	27	138.41	92.8
ROOM 2	24.75	222.96	76.64	ROOM 6	27	199.55	61.07
ROOM 3	27	239.16	71.07	ROOM 7	27	184.93	69.68
ROOM 4	27	215.72	76.27	LIVING ROOM	68.75	155.14	57.67
HALL 1	39.2	154.16	44.33	HALL 2	32.58	157.23	28.52
ENTRANCE HALL	19.25	103.78	46.6				

Table 11. Total and monthly heating loads of the buildings

	Heating load (kWh)		
	Building A	**Building B**	**Building C**
JANUARY	14,755.44	3,869.78	14,062.08
FEBRUARY	11,538.36	2,920.61	11,068.06
MARCH	8,883.79	2,035.05	8,539.62
APRIL	3,543.62	581.00	3,323.49
MAY	572.95	47.83	457.09
JUNE	97.73	8.36	78.84
JULY	9.96	6.70	11.66
AUGUST	20.04	6.70	17.63
SEPTEMBER	400.78	26.17	290.81
OCTOBER	2,540.36	346.49	2,201.68
NOVEMBER	7,068.47	1,412.44	6,516.58
DECEMBER	13,414.78	3,434.98	12,667.44
Total Load	62,846.28	14,696.09	59,234.97
Area	563.52 m²	219.11 m²	632.50 m²

As shown in Table 11, heat loss mostly takes place due to heat transfer and ventilation. It is possible that the reason for heat loss during transfer is the use of single glazing in the windows. Natural ventilation and infiltration through the cracks and fractures in the building envelope may also cause heat loss via adjacent unheated zones.

Table 12. Area of the windows for buildings A, B, and C

	Building A	**Building B**	**Building C**
Total South Window Area:	32.41 m^2 (5.8% floor area).	12.46 m^2 (5.7% floor area).	23.00 m^2 (3.6% floor area).
Total Window Area:	138.90 m^2 (24.6% floor area).	24.14 m^2 (11.0% floor area).	74.11 m^2 (11.7% floor area).
Total Building Area	563.52 m^2	219.11 m^2	632.50 m^2

Table 13. Annual thermal gains and losses of the buildings

	Building A		**Building B**		**Building C**	
Category	Loss	Gain	Loss	Gain	Loss	Gain
Conduction	51.4%	5.0%	36.1%	3.1%	36.5%	4.3%
Sol-Air combined effects of radiant energy and outside air temperature	0.0%	4.7%	0.0%	6.1%	0.0%	5.7%
Solar	0.0%	30.9%	0.0%	13.8%	0.0%	17.8%
Ventilation	44.3%	5.7%	33.3%	4.7%	50.0%	8.2%
Internal Gains	0.0%	49.7%	0.0%	65.8%	0.0%	56.2%
Transfer between zones	4.2%	4.0%	30.6%	6.5%	13.5%	7.8%

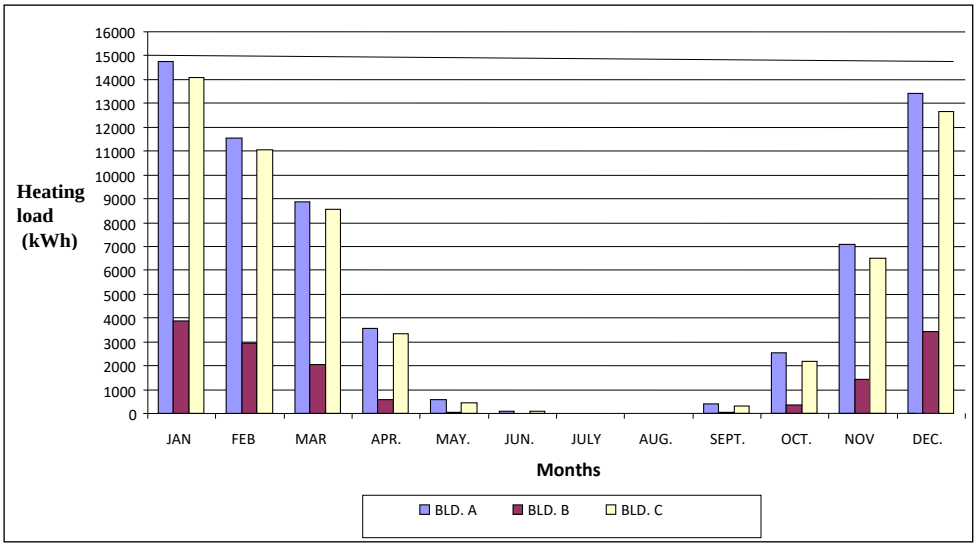


Figure 9. Monthly heating loads of buildings A, B, and C

The maximum energy consumption was observed in building A. When the energy consumption throughout the buildings (Figure 9) was reviewed, it was observed that the maximum heating energy consumption in all three buildings was in January, December, and February, consecutively.

When the total heating loads of the buildings were compared, the loads for buildings A, B, and C were found to be 62846.28, 14696.09, and 59234.97 kWh, respectively.

Although the construction area of building A is smaller than that of building C, the heating load of building A was higher since the size of the surfaces' losing energy is bigger. This difference may have also occurred due to the different locations of the buildings. Building A is located in a separate order, B is attached, and building C is also located in a separate plot. In building C, the outward facing surface area is smaller when compared to Building A.

The directions of the buildings were also important in determining the annual energy consumption and interior climatic comfort. Environmental features such as sun radiation intensity and local wind speeds vary with the direction. Obtaining different levels of sun radiation from different directions will vary the lighting opportunities, which will also lead to different levels of heat savings. Bigger window sizes on the sides optimize the sun radiation and wind effects in harmony with the traditional architecture in the region. These are advantageous in terms of lighting and sun heat gain and window profiles; windows with high U significantly increase heat loss.

Solar energy gains are reviewed at two levels namely opaque and transparent components. Since the window area of building A is higher, it experiences more sun heat gain than the other buildings.

When the climatic conditions in Edirne were evaluated, it was perceived that heat preservation of the buildings was a significant issue since the winters are relatively cold. The buildings were constructed in compact square forms close to squares, which have smaller heat-losing surface areas. It was also found that heat transfer was low since the U coefficient of the wooden frame system used in the buildings was low.

In Türkiye, it has been implemented since the Energy Efficiency Law No. 5627 (5627 Law, 2007) and the Energy Performance in Buildings Regulation (BEP, 2008). And buildings should have an Energy Performance Certificate. Energy Performance Certificate shows annual heating-cooling and other consumption values of the building.

Energy Performance Certificate is between A, B, C, D, E, F, G class. New buildings or buildings under construction should be designed and constructed to have a energy performance class of C at minimum. For existing buildings, there is no obligation of having minimum classification level of energy performance certificate (BEP, 2008).

Within the scope of the study, energy consumption and classification of buildings were created using the BEP-TR national calculation method. The preliminary calculation results of these buildings according to the energy performance regulation (BEP-TR) are given in Figure 10.

The energy performances of the buildings are close to each other. The buildings are in energy performance class D. Energy performance values are 107, 106, 107 respectively. These values were obtained with traditional materials without using any thermal insulation layer in the buildings. When the energy performance value drops below 100 (Ep), it will pass into the efficiency class required for new buildings (C class). For this purpose, it will be sufficient to take some precautions in the building elements.

Building A

Building B

Building C

Figure 10. Energy performance classification of buildings

4. Conclusion and Suggestions

It was concluded that vernacular buildings should be considered more often in terms of sustainability, particularly in regions like Edirne that have a large numbers of traditional architecture examples.

It was found that the U values of the materials chosen for the fillings and coatings of the timber-framed system were low, and the materials used in the structures were readily available within the region. Being a part of the traditional culture and a reflection of it, the buildings also stand out with their area organization, materials, and compound choices. This is due to the fact that they were built considering the environmental and climatic factors of the region.

In conclusion, it was observed that energy efficiency can be achieved without the use of insulation layers in structures built with conventional construction methods. This is owing to the construction techniques and the use of conventional materials and elements. Similar results were obtained in other studies (Özdemir & Ekici, 2020).

It is also important for our architectural heritage to preserve these buildings and pass them on to the future. These buildings are valuable examples for us in every aspect.

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Conservation of Architectural Heritage: Traces of History

Chapter 5

The Trends in Research on Architecture of the Republican ERA (2009-2023)

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1. Introduction

The political revolution of the modernization period began on 29 October 1923, resulting in changes across all aspects of life in Türkiye. (Kurak Açıcı & Yalçınkaya, 2019). There have been many novelties in education, economy, law, agriculture, and architecture since the establishment of the republic. The emergent administration and its transformations, which represent a Republican Era perspective, enabled the creation of novel architecture. Following that, architecture could represent a state's modernization in the context of administration, economics, and urbanization (Ergut, 2009). The changes and developments in architecture during the process of nationalization hold a significant place in architectural history in terms of elements that emerged from and reflect the conditions of the period. Public buildings representing the new state's power and spirit were constructed predominantly in the first decade of the Republic. This transformation, which began in the capital city of Türkiye, Ankara, has also been observed in other provinces over time. Before the 1950s, the focus was on the design of public buildings and single-family residences. In the following years, however, there was a shift towards designing other types of buildings, including residential complexes, hotels, factories, banks, shopping centres, office buildings and railway station (Elmalı Şen et al., 2014; Büyükçam & Yalçınkaya, 2022). In the Republic's early years, a hybrid architectural approach can be identified, using modern forms such as terraces, cantilevers, rounded corners, and continuous exterior cornices in conjunction with traditional materials, construction techniques, and principles of symmetry and proportion. During modernisation, simple volumes, unadorned surfaces, rounded

corners, and cantilevers became widely prevalent by the late 1930s (Bozdoğan, 2001). The importance given to state officials and authority was reflected in architectural forms using monumental-scale staircases, entrance axes, and entrance columns in state buildings (Yavuz, 1973). National identity had been established in architecture in the Republican era. The buildings representing the architectural thought of the Republican era embody a cultural heritage value owing to their historical significance and architectural style. The architectural reflections of this era, which hold a significant place in Turkish history, are structures that continue to hold a memory value today. Academic research on the architecture and architects of this period is conducted across various disciplines, such as architecture, literature, and history. A retrospective examination of architectural writings in the centenary year of the Republic is needed to assess the contemporary relevance of this period's architecture. This study performs a bibliometric analysis of article-type publications in the field of architecture in Türkiye over the past 15 years (2009-2023). It aims to illustrate the relationship between architectural production and societal dynamics in the centenary of the Republic through research on Republican-era architecture. In doing so, it analyses 20th-century Turkish architecture concerning the political, cultural, and social life of the period from today's perspective.

2. Material and Method

This study aims to conduct a bibliometric analysis of articles on Republican-era architecture published in the last 15 years in order to reveal how the topic was addressed within the scientific field. The bibliometric analysis in this study was performed using the VOSviewer program. The

analyses were obtained by scanning articles accessible through the database DergiPark, focusing on the intersection of the Republican Era and architecture. The choice of the DergiPark database for this study is due to its inclusion of significant academic peer-reviewed journals published in Türkiye and its focus on Republican-era writings in Turkish literature. The study includes articles containing the terms "Republican Era and Architecture, (Cumhuriyet Dönemi ve Mimarlık/Mimari "Republican Era and Building (Cumhuriyet Dönemi ve Yapı)" and "Republican Era and Space (Cumhuriyet Dönemi ve Mekan)" in their abstracts. A total of 148 articles published between 2009 and December 2023 were identified. After compiling all the articles, 76 were selected for the study after excluding those with coinciding or irrelevant content despite matching keywords in the abstract. These articles were analysed based on keywords, publication year, building types, and scope to identify prevalent trends and relationships related to the topic (Figure 1).

<table>
<tr><th>1st Step</th><th>2nd Step</th><th colspan="2">3rd Step</th></tr>
<tr><td>Literature review</td><td>Sample selection</td><td colspan="2">Data analysis</td></tr>
<tr><td>○ Republican Era

○ Architecture of The Republican Era</td><td>○ Selection of DergiPark database
○ Selection of articles using keywords

Republican Era and Architecture
Republican Era and Building

Republican Era and Space</td><td colspan="2">Bibliometric analyse

Performance analysis

Publication date

Journals</td><td>Content Analysis
Distribution of Buildings by Province
Distribution of Building Types
Scope of the Structures Covered in the Articles
Common Word Analysis</td></tr>
</table>

Figure 1. Structure of Study

3. Findings and Discussion

This section examines the articles based on their place of publication, journal, publication year, building types, keywords, and the distribution of structures by province and topics.

Publication Journal: In an examination of articles on Republican Era architecture published between 2009 and 2023 in the DergiPark database, the "Sanat Tarihi Dergisi" (Journal of Art History) stands out as the dominant publication core, constituting 10.25% of the total articles. Following closely behind is the "TÜBA-KED Türkiye Bilimler Akademisi Kültür Envanteri Dergisi" (TÜBA-KED Turkish Academy of Sciences Cultural Inventory Journal) with 6.41%, and the "Türkiye Araştırmaları Literatür Dergisi" (Journal of Turkish Studies Literature) with 3.84% (Table 1).

Table 1. Distribution of Articles Based on The Journals in Which They Were Published

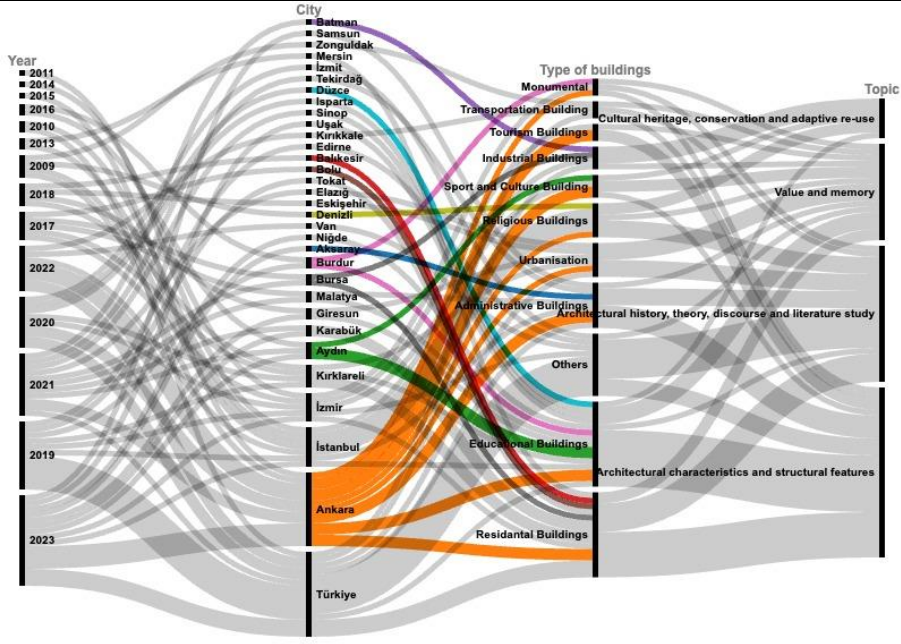
Journal name	Number of publication	%
Sanat Tarihi Dergisi (Journal of Art History)	8	10,52
TÜBA-KED Türkiye Bilimler Akademisi Kültür Envanteri Dergisi (TÜBA-KED Turkish Academy of Sciences Cultural Inventory Journal)	5	6,57
Türkiye Araştırmaları Literatür Dergisi (Journal of Turkish Studies Literature	3	3,94
Other journals	60	78,94

Year: Analysis of articles published between 2009 and 2023 shows a limited number of publications in the initial years, with a significant increase in article volume from 2015 onwards. This growth was particularly pronounced since 2019 (Table 2). This trend can be attributed to several factors, including evolving socio-economic and cultural

conditions, technological advancements, and the increasing need for the adaptive reuse of these building types. Additionally, the widespread demolition or threat of demolition facing many historic structures across the country is another significant factor that increased scholarly focus.

Table 2. Categorisation of articles regarding published years, provinces, building types, and topics in the Republican Era Architecture

Distribution of articles based on the publication years, cities, building typologies and context



Year	Number of articles	%
2009-2013	8	10,52
2014-2018	12	15,78
2019-2023	56	73,68
City of the building mentioned in article	Number of articles	%
Ankara	21	27,63
İstanbul	8	10,52

Kırklareli	5	6,57
Türkiye general	21	27,63
Other	21	27,63
Type of building	Number of articles	%
Residantal	16	21,05
Education	12	15,78
Others	10	13,15
Administrative	7	9,21
Industrial	7	9,21
Urbanisation	6	7,89
Religious	6	7,89
Sport and culture	4	5,26
Transportation	3	3,94
Tourism	3	3,94
Monumental	2	2,63
Topic	Number of articles	%
Architectural characteristics and structural features of the Republican Era buildings	25	32,88
Architectural history, theory, discourse and literature study on Republican Era buildings	17	22,36
Value and memory of Republican Era buildings	14	18,42
Cultural heritage, conservation and adaptive re-use of Republican Era buildings	10	13,15
Decorative features of Republican Era buildings	6	7,89
Structural systems and material in Republican Era buildings	4	5,26

Building Groups: It is observed that residential, educational, and administrative structures are discussed in terms of their architectural function. With the Republic introducing a new approach to education and increasing the number of schools, educational buildings also gained importance in that era. Similarly, with industrialisation, structures such as train stations and factories have become prevalent. Urban planning efforts also gained significance during the Republican period. Religious

buildings, sports and cultural facilities, transportation buildings, monuments, and tourism-related buildings are other types of architecture that are topics of articles. Most of the buildings studied in these articles are located in Ankara. The fact that the identity production of the new nation began in the capital city, Ankara, during the Republican Period impacted this situation (Table 2).

Topic: The buildings from the Republican Era are considered valuable as the heritage from that period. A review of the current literature reveals that some buildings are examined individually or as a group, while others are analysed at the urban scale or as structures designed by well-known architects. When examining the context in which these buildings are discussed in the literature, it is evident that the architectural character analyses, structural features, and original and contemporary architectural plans are predominantly studied. Some studies emphasise the cultural heritage value of these buildings and offer suggestions and evaluations for their adaptive reuse under preservation efforts, given that they still physically exist. Additionally, some studies approach these buildings within the scope of architectural history, theory, and discourse and discuss the relationship between the building and the city, its importance for urban fabric and period architecture, and its place in collective memory. Furthermore, a limited number of studies focus on the decorative features, construction systems, and materials of buildings (Table 2).

Studies on the Architectural Character and Structural Features of Republican Period Buildings: The articles conducted within this scope focus on examining the plan layouts and architectural features of the buildings, assessing their current conditions, and analysing plan typologies

(Table 3). When discussing the distribution of building groups under these titles, studies on educational buildings (Çetin & Kıran, 2019; Gürsoy, 2019; Sahtiyancı & Yıldız, 2020; Celemoğlu & Atıcı, 2021; Güneş & Kartal, 2022; Memiş & Belir, 2023; Özal, 2023; Şahin et al., 2023) stand out. Following these are studies on residential buildings (Azsöz, 2022; Onur, 2021; Bölükbaşı Ertürk & Karataş, 2020; Uçar, 2019; Mülayim, 2023; Paköz, 2020; Uzun & Talu, 2019; Uçar, 2021), examining building groups at an urban scale (Balcı, 2022; Çetin & Bingöl, 2019), and studies on public buildings (Kopuz, 2017; Akyürek & Ökten, 2020; Kolay & Yavuzyılmaz, 2022). Additionally, Alpagut (2010) analysed a traditional structure in "Atatürk Orman Çiftliği: Beer Factory Bathhouse," while Çerkez (2020) and Kalay & Bölükbaşı Ertürk (2023) focused on transportation buildings, and Ekim (2020) conducted an analysis on religious buildings.

Table 3. Studies on architectural characteristics and structural features in the Republican Era Architecture

No	References of article
1.	Akyürek, M. E. & Ökten, M. S. (2020). An examination about Zeyrek Social Security Institution Complex in the context of structure and construction system. *Istanbul Sabahattin Zaim University Journal of Institute of Science and Technology (IZUJIST*, 2(1), 27-37.
2.	Alpagut, L. (2010). Atatürk Orman Çiftliği'nde geleneksel bir yapı: Bira Fabrikası Hamamı. *Folklore&Literature*, 16(63), 29-52.
3.	Azsöz, G. P. (2022). Residential architecture of the Republican Period: A review of the Kirklareli Center Burhanettin and Mustafa Inci House. *The Journal of Kırklareli University School of Social Sciences*, 3(1), 50-75.
4.	Balcı, A. (2022). Architect Kemaleddin's First National Architectural period buildings in Edirne. *Akdeniz University Journal of the Institute of Social Sciences (AKSOS)*, (11), 167-206.

5. Onur, B. (2021). Dwelling typologies in Yenişehir, the modern neighborhood of industrial city, Karabük. *European Journal of Science and Technology*, (23), 666-677.
6. Çelemoğlu, Ş. & Atıcı, A. (2021). An example of Early Republic Era primary school structures: Malatya Gazi Primary School. *Anasay*, (15), 125-144.
7. Çerkez, M. (2020). Some determinations on Kırıkkale Train Station. *Çanakkale Onsekiz Mart Üniversitesi Uluslararası Sosyal Bilimler Dergisi*, 5(2), 231-258.
8. Çetin, S. & Kıran, G. (2019). Traces of Modern Architecture in the village institute. *Journal of Arts*, 2(3), 169-180
9. Çetin, Y. & Bingöl, E. (2019). An evaluation on four buildings of Early Republican Architecture in Erciş. *Iğdır Üniversitesi Sosyal Bilimler Dergisi*, (20), 123-146
10. Ekim, Z. E. (2020). Kandilli Mosque and the periodical changes. *Selçuk University Social Sciences Institute Journal (SUSBED)*, (43), 209-218
11. Bölükbaşı Ertürk, A. E. & Karataş, E. (2020). A research on the housing examples of the Early Republican Period in Safranbolu. *Journal Of Humanities and Tourism Research*, 10(2), 432-455.
12. Özal, G. (2023). Architecture for girls' education during the Modernization Period: Girls' Institutes. *Art-Sanat*, (19), 393-414.
13. Güneş, T. & Kartal, S. (2022). A morphological investigation of Early Republic Period primary school buildings in Sinop Boyabat district. *International Journal of Humanities and Art Researches*, 8(3), 214-228.
14. Gürsoy, E. (2019). Primary school building of the Early Republic Period in Uşak: Gazi Mustafa Kemal Primary School. *Electronic Journal of Social Sciences*, 18(69), 32-40.
15. Kalay, G. & Bölükbaşı Ertürk, A. E. (2023). Irmak – Zonguldak Railway Line: Architectural structuring between Karabük (İsmetpaşa) and Zonguldak. *Journal of Art History*, 32(1), 169-203.
16. Kolay, E. & Yavuzyılmaz, A. (2022). An example of the Republican Period bank buildings: The Central Bank of Republic of Türkiye Samsun Branch Building. *Journal of Art History*, 31(1), 483-505.
17. Kopuz, A. D. (2017). A modernist building sample, Corlu Municipality Palace. *Journal of Balikesir University Institute of Science and Technology*, 19(2), 200-213.
18. Uçar, M. (2019). From traditional housing to the house of the Republican Period in Tarsus: Transformation of housing architecture through two examples. *Sketch: Journal Of City and Regional Planning*, 1(01), 71-84.
19. Memiş, S. & Belir, Ö. (2023). The effects of the Republican Era modernization process on architecture: İzmit Community Center. *Planarch-Design and Planning Research*, 7(1), 43-50.

20.	Mülayim, A. (2023). Determination of facade characteristics of Kırklareli Houses between 1930-1950. *Faculty of Architecture of Kırklareli University*, 1(2), 147-159.
21.	Paköz, P. (2020). A house from the Early Republican Period in Kahramanmaraş: Çiftarslan House. *Architecture and Life*, 5(1), 57-69.
22.	Sahtiyancı, E. & Yıldız, N. B. (2020). An example of primary school buildings in Akçakoca, belongs to Early Republican Period: Orhan Gazi Primary School. *Journal of Art History*, 29(2), 589-603.
23.	Uzun, T. & Talu, E. G. (2019). Three examples of traditional housing architecture in Tokat: Mustafa Vasfi Süsoy Residence, Gazi Osman Paşa Residence, Cevdet Erek Residence. *Modular Journal*, 2(1), 12-45.
24.	Uçar, H. (2021). Balıkesir'de Erken Cumhuriyet Dönemi müstakil konut örneği İbrahim Cumalı Evi'nin mimari özellikleri. *Kırklareli University Journal of Engineering and Science*, 7(1), 34-56.
25.	Şahin, S., Sönmezer, Ş., Seçkin, S. & Aytaç, N. (2023). Education buildings in "First National Architecture" style in Fatih district-İstanbul. *Journal of Art History*, (32).

Studies on the Republican Era Architecture in the Context of Architectural History, Theory/Discourse, and Literature Review: In the literature, some studies are focusing on architectural theory/discourse (Düzenli, 2009; Sunbas, 2013; Ulubay, 2019; Karaibrahimoğlu & Demirkan, 2020; Demir, 2021; Güven, 2023; Mertyürek & Demirbaş, 2023). Additionally, several studies have conducted as literature reviews (Aytaç & Öğüt, 2015; Altınöz & İlker, 2017; Alpagut, 2018; Demirarslan, 2018; Sağlam et al., 2019; Çubukçu, 2021; Şahin, 2023), including those focused on historiography (Civelek, 2009; Akboy İlk, 2020) and architectural history conducted by Özdel (2010) (Table 4).

Table 4. Studies in the Context of Architectural History, Theory/Discourse, and Literature Review in the Republican Era Architecture

No	References of article
1.	Akboy İlk, S. (2020). Building the architectural narrative of the Topkapı Kara Ahmed Pasha Mosque complex in early republican Türkiye. *Yıllık: Annual of Istanbul Studies*, 2, 81-102.
2.	Alpagut, L. (2018). Post-Early Republican Period dwellings in Bolu: Breaks & continuities. *Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 27(1), 109-122.
3.	Altınöz, M., Özdemir, N. & Usta, İ. (2017). Study of working furniture in office area: Early Republican Period. *Journal of Advanced Technology Sciences*, 6(3), 1315-1327.
4.	Aytaç, A. & Öğüt, S. T. (2015). The change of modern bathroom in Türkiye: An evaluation through magazine advertisements. *Journal of Yaşar University*, 10(37), 6449-6464.
5.	Civelek, Y. (2009). Architecture, historiography and rationality: The question of the symbolic discourse based on form in Modern Turkish Architecture in the first half of the 20th century. *Türkiye Araştırmaları Literatür Dergisi* (13), 131-152.
6.	Çubukçu, E. (2021). The search for a national identity in Early Republican Period Architecture: Public buildings in Ankara. *The Journal of Cultural Studies*, (9), 359-378.
7.	Demir, E. G. (2021). Reading the Turkish House Pavilion through the text of the origins of national consciousness. *Architecture and Life*, 6(1), 157-164.
8.	Demirarslan, D. (2018). Interior design and its effects within the scope of integrated design in the works of Sedad Hakki Eldem. *The Journal of Kesit Academy*, (16), 32-56.
9.	Düzenli, H. İ. (2009). From physical construction to textual construction: History and the historiography of architecture in Türkiye. *Türkiye Araştırmaları Literatür Dergisi* (13), 11-50.
10.	Güven, İ. (2023). Reading Republican Period housing architecture in the capital city through Yakup Kadri Karaosmanoğlu's novel: Ankara. *Sanat ve Tasarım Dergisi*, (31), 25-37.
11.	Karaibrahimoğlu, S. & Demirkan, Ö. (2020). Peripheral witnesses of the Republican Modernization: Public building in the city of Giresun. *Journal of Art and Design*, 10(2), 278-297.
12.	Özdel, İ. (2010). Turkish architectural periodicals during the Republican Period, 1923-1980. *Çankaya University Journal of Humanities and Social Sciences*, 7(2), 517-550.
13.	Sağlam, A. İ., Öztürk, A. Ç. & Kaçar, A. D. (2019). Development of the public space in Türkiye. *Journal of Ata Planning art Design*, 3(1), 47-58.

14.	Sunbas, A. (2013). Reading Turkish Modernization on the case of Ankara Palas: “A window opens from East to West”. *Hacettepe University Journal of Economics and Administrative Sciences*, 31(1), 171-198.
15.	Ulubay, S. (2019). Turkish politics in the Early Republic Period "Modern nationalize" investigation of the effort. *Journal of Urban Academy*, 12(2), 387-396.
16.	Şahin, P. (2023). An investigation on the relationship between the image of women and modern housing in the magazines of the Early Republican Period. *Balıkesir University The Journal of Social Sciences Institute*, 26(49-1), 493-508.
17.	Mertyürek, S. & Demirbaş, G. U. (2023). Modern and traditional representation in mosque architecture: Analytic comparison of three mosques in Ankara, Türkiye. *GRID-Architecture Planning and Design Journal*, 6(2), 745-773.

Studies on Republican Era Buildings in the Context of Value and Memory: A significant portion of the studies were conducted at the urban or campus scale (Uludüz & Aycı, 2016; Özkurt, 2017; Karaibrahimoğlu & Demirkan, 2019; Sezer 2021; Yaşdağ, 2021; Sarışın & Akça, 2022). Gürkan (2022), in his article titled " Tracing the modern: Isparta People’s House Building as an example of lost Early Republican Architecture," and Aktuğ (2021) in " Continuation of painted decoration ornamental mosque tradition: Güzelyurt Tahtali Mosque in Denizli-Çameli," as well as Alpagut (2018) in " A productive architect and a modern building in Ankara: Bruno Taut and Atatürk High-School," and Kopuz and Tetik (2016) in " Traces of modern life in Thrace; Alpullu Sugar Factory and the Labour Houses," examined individual structures within this context. Additionally, Uçar (2014) and Özyıldıran (2021) focused on fountains and monuments, analysing period structures through the concepts of value and memory (Table 5).

Table 5. Studies on Republican Era Buildings in the Context of Value and Memory in Republican Era Architecture

No	References of article
1.	Gürkan, Ü. Ç. (2022). Tracing the modern: Isparta People's House Building as an example of lost Early Republican Architecture. *İdealkent,* 13(35), 97-137.
2.	Sarışın, Ş. & Akça, B. Ö. (2022). Investigation of urban identity-urban memory relationship in new buildings: The case of Elazig. *Journal of Urban Academy*, 15(DÜ 2. Uluslararası Mimarlık Sempozyumu Özel Sayısı), 168-194.
3.	Aktuğ, E. C. (2021). Continuation of painted decoration ornamental mosque tradition: Güzelyurt Tahtali Mosque in Denizli-Çameli. *Journal of Art History*, 30(1), 79-103.
4.	Sezer, Ö. (2021). Making of the modern village: an evaluation on the settlement policies in rural Türkiye in the Early Republican Period. *Turkish Academy of Sciences Journal of Cultural Inventory*, (24), 127-144.
5.	Özyıldıran, G. (2021). Monumental sculptures and architecture: Yavuz Görey's Burdur monuments. *Journal of Akdeniz Sanat*, 15(27), 39-62.
6.	Yaşdağ, M. (2021). Aydın Textile Campus as a memory place of the city: Architecture and life. *Adnan Menderes University Journal of Social Sciences Institute*, 8(1), 38-69.
7.	Karaibrahimoğlu, S. & Demirkan, Ö. (2019). Construction of physical space in historical projection; education structures from Ottoman to Republic Era in Giresun. *Journal of Modern Turkish History Studies*, 19(38), 99-133.
8.	Alpagut, L. (2018). A productive architect and a modern building in Ankara: Bruno Taut and Atatürk High-School. *Journal of Art History*, 27(1), 135-161.
9.	Sunay, S. (2018). A representative building of first national architectural style in Ankara: "Harita Umum Müdürlüğü". *Ankara University Journal of the Faculty of Languages and History-Geography*, 58(2), 1725-1750.
10.	Özkut, D. (2017). The traces of modern memory in Eskişehir. *Turkish Academy of Sciences Journal of Cultural Inventory*, (16), 35-66.
11.	Kopuz, A. D. & Tetik, T. (2016). Traces of modern life in Thrace: Alpullu Sugar Factory and the Labour Houses. *A+ Arch Design International Journal of Architecture and Design*, 2(3), 1-15.
12.	Uludağ, Z. & Aycı, H. (2016). Constitution of the collective memory on the impressive stage of modernity in Ankara in the Early Republican Period and the process of social amnesia. *İdealkent,* 7(20), 746-773.
13.	Uçar, H. (2014). Pasha Fountain on the road from Ödemiş to Bozdağ. *Journal of Art History*, 21(2), 10-21.
14.	İlyas, A. (2023). Railways in the transport of the nation-state to Anatolia. S*elçuk University Journal of Studies in Turcology*, (59 Cumhuriyet'in 100. Yılı özel sayısı), 55-74.

Studies on Cultural Heritage, Preservation, and Adaptive Reuse: Coşkun (2019) explored the practical challenges encountered in the preservation of buildings, while Dönmez (2019) examined the potential reuse of partially or fully decommissioned campuses and their possible impacts on their surrounding environment. Gürdağ and Duygu (2020) evaluated the restoration process and the interior space of the Ministry of Health Building in the Early Republican Era. In the context of adaptive reuse, Kuyrukçu and Kuyrukçu (2017) studied the reuse of Sait Bektimur House, and Tolacı et al. (2020) focused on the adaptive reuse of the Sait Bektimur House. On industrial heritage, Naycı and Bozkurt (2022) analysed the Batman and Ataş Refinery Facilities, while Tanyeli and İkiz (2009) studied the Bomonti Brewery. Yavuz and Uğurlu (2023) examined a swimming pool as architectural heritage and Korkmaz (2019) conducted a study on the Ankara 19 Mayıs Stadium. Sarı and Umar (2022) investigated the architectural features, preservation status, and the impact of public buildings on the transformation and development of the city (Table 6).

Table 6. Studies on Cultural Heritage, Preservation, and Adaptive Reuse in Republican Era Architecture

No	References of article
1.	Coşkun, B. S. (2019). Conservation issues of monumental buildings in Türkiye in practice, case study: Hagia Sophia Museum and Fatih Mosque in Istanbul. *Journal of Art History*, 28(1), 39-65.
2.	Dönmez, G. (2019). The impacts of workers' settlements and lodgement areas of the republican period on the city: the case of bursa. *Paradoks Ekonomi Sosyoloji ve Politika Dergisi*, 15(1), 55-66.
3.	Gürdağ, B. & Koca, D. (2020). An Analysis on the Ministry of Health Building in the Early Republican Era. *Journal of Art History*, 29(2), 399-423.
4.	Kuyrukçu, Z. & Kuyrukçu, E. Y. (2017). Reuse of Sait Bektimur House in the context of historical and cultural continuity. *Artium*, 5(2), 38-50.
5.	Naycı, N. & Bozkurt, T. (2022). Cultural heritage of oil industry in Türkiye: Batman and Ataş Refineries. *Turkish Academy of Sciences Journal of Cultural Inventory*, (26), 31-54.
6.	Sarı, F. Z. & Umar, N. (2023). Examination of late Ottoman and Early Republic Period public structures through the city of Malatya. *Art-Sanat*, (19), 415-445.
7.	Tanyeli, G. & İkiz, D. (2009). An industrial heritage case study in Istanbul: the Bomonti Brewery. *Turkish Academy of Sciences Journal of Cultural Inventory*, (7), 109-121.
8.	Tolacı, S. Ş., Gökarslan, A. B. & Köse, D. (2020). An example of conservation and re-use in Modern Turkish Architecture: Burdur Evening Art School. *Modular Journal*, 3(2), 129-162.
9.	Yavuz, E. & Uğurlu, E. (2023). Between the leisurescape and the healthscape: a swimming pool in the province. *Nevşehir Hacı Bektaş Veli University Journal of ISS*, 13(ihtisaslaşma), 92-107.
10.	Korkmaz, S. (2019). Heritage transfer in sports culture: the demolition example of Ankara 19 May Stadium. *Spormetre The Journal of Physical Education and Sport Sciences*, 17(3), 9-22.

Studies on the Decorative Features of Republican Period Buildings: Limited studies focus on decorative features of the Republican Era architecture. Bağbaşı (2019), in the article titled " Ankara's two pearls: II. TBMM Building and Ankara Palas," examined the architectural features and tile decorations of the II. TBMM Building and Ankara Palas. Arslan and Bağbaşı (2022), in their study " Tile usage in public buildings in

Aksaray Early Republican Period," explored the architectural features and tile decorations of buildings in Aksaray constructed in the period of First National Architectural style. Cingöz and Doğan (2023) focused on the use of ceramic murals in the Swissotel Grand Efes building, while Işıkhan (2023) and Koçak (2022) documented the historical tile panels and provided preservation recommendations. Kuru (2017) also highlighted the colourful stone decorations and their meanings in Anıtkabir (Table 7).

Table 7. Studies on the Decorative Features of Republican Period Buildings

No	References of article
1.	Arslan, A. S. & Bağbaşı, T. (2022). Tile usage in public buildings in Aksaray Early Republican Period. *Nevşehir Hacı Bektaş Veli University Journal of ISS*, 12(2), 885-908.
2.	Bağbaşı, T. (2019). Ankara's two pearls: II. TBMM Building and Ankara Palas. *Asya Studies*, 4(10), 108-121.
3.	Cingöz, A. & Doğan, R. K. (2023). In the use of ceramic board as a design element in space; Swissotel Grand Efes example. *Turkish Online Journal of Design Art and Communication*, 13(4), 878-899.
4.	Işıkhan, S. (2023). Documentation and conservation proposals of historical tile plates in the context of the building of Izmir State Theatre from the period of Turkish Republic. *International Social Sicience and Art Studies, 2(2), 117-132.*
5.	Koçak, E. K. (2022). Conservation proposal for Hobyar Masjid tiles. *Yedi*, (28), 141-151.
6.	Kuru, A. Ç. (2017). Coloured stone decorations in Anitkabir -an iconographic approach-. *Journal of Art History*, 26(1), 69-93.

Similarly, a few studies were conducted on the construction systems and materials used in Republican Period buildings (Table 8). Articles focusing on construction systems were authored by Ceylan (2013), Doğanay et al. (2023), and Kapar and Eyüpgiller (2011), while Gümüşer (2021) has written an article on materials (Table 8).

Table 8. Studies on structural system and material in the Republican Era Architecture

No	References of article
1.	Ceylan, M. A. (2013). Development of settlement in Vize-Kırklareli. *Marmara Geographical Review*, (23), 53-92.
2.	Doğanay, O. Köksal Muştu, B. & Bacak, K. (2023). Upper structure system in educational buildings in the National Architecture Period: The case of Etiler Primary School. *Journal of Art and Design Researches (STAR)*, 4(7), 239-254.
3.	Gümüşer, T. (2021). A survey on interior textiles at Izmir Atatürk House Museum. *Yedi*, (26), 61-73.
4.	Kapar, P. & Eyüpgiller, K. K. (2011). Reconstruction process of the Sümbüllü Bahçe Konağı and outbuildings. *Turkish Academy of Sciences Journal of Cultural Inventory*, (9).

Overall Assessment of the Scope of Publications Over the Years: Regarding the scope of all publications over the years, studies focusing on architectural history, theory/discourse, and literature have gained significant importance. Similarly, research has intensified on topics related to value and memory, as well as the architectural character and features of buildings (Figure 2).

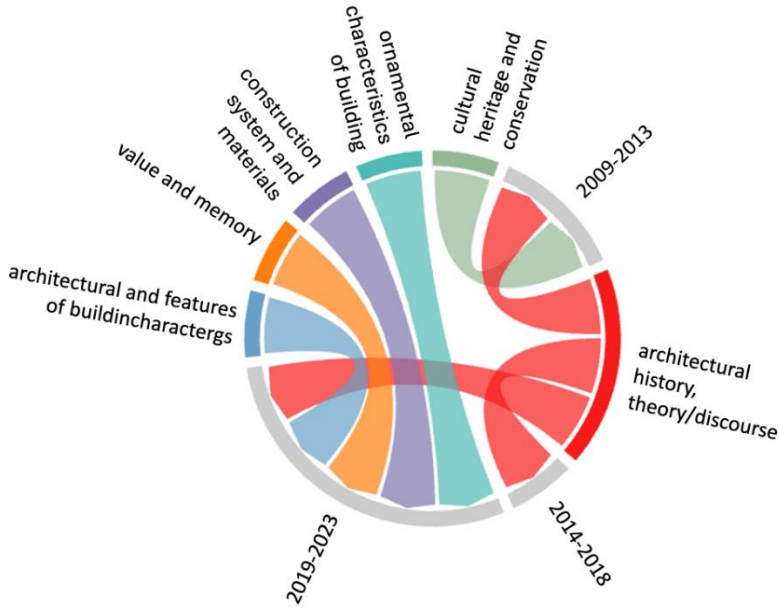


Figure 2. Studies Distributed by Years of Publishing

Keywords: The study includes a shared keyword analysis. This analysis examines the relationships between words and their topic distributions, providing a holistic view of the articles. A total of 286 keywords were extracted from the articles. By focusing on keywords that appeared at least twice, a cloud of 38 words was created. The word cloud highlights the frequency of keyword usage through different colours and sizes. The major word cloud represents the most frequently repeated keyword. Lines between the word clouds indicate the relationships between keywords. The most frequently occurring keyword in the articles is "Early Republican Period," with other prominent keywords including "Architecture," "Educational Buildings," "Ankara," "Republican Period," and "Modern Architecture" (Figure 3).

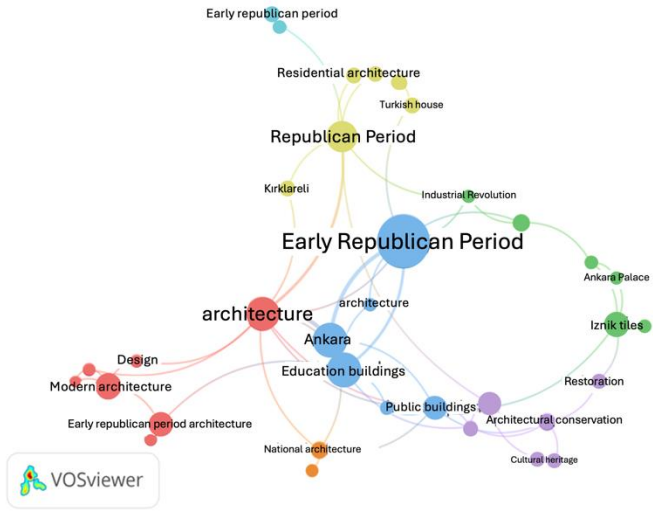


Figure 3. Shared Word Analysis of Articles

Chronological Analysis of Shared Keywords: When the usage of shared keywords in the articles is sorted chronologically, it is observed that before 2016, keywords such as "National Architecture," "Cultural," and "Architectural History" were highlighted. From 2020 onwards, there has been an increased usage of keywords, including "Early Republican Period," "Educational Buildings," "National Architecture," "Railways," and "Public Buildings" (Figure 4).

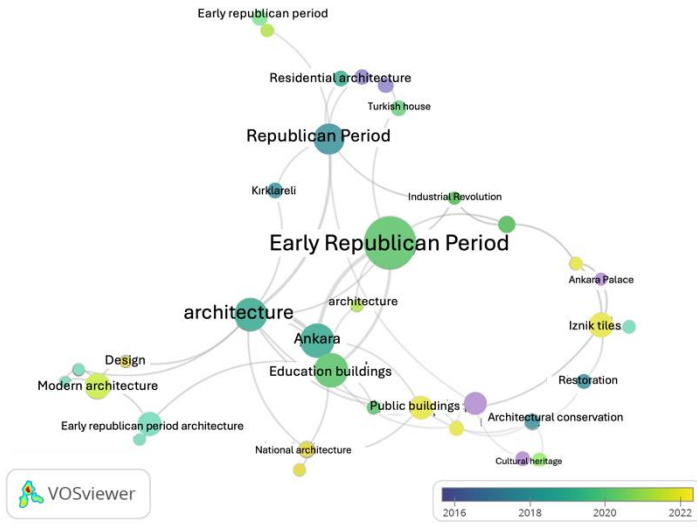


Figure 4. Chronological Shared Word Analysis of Articles

4. Conclusions

The Republic of Türkiye's new approach was adopted in both architectural theory and practice. This new approach aimed at creating a distinctive style while introducing new building types to Türkiye. The Republican ideology's new political, economic, and educational system increased the significance of particular building types.

This bibliographic study examined how Republican Period buildings are represented in current literature. In this study, 76 articles published between 2009 and 2023 from the DergiPark database were examined. Performance analysis was performed based on the publication years and journals of the articles, and content analysis was conducted on the locations of the buildings, the types of buildings, and the context in which these buildings were addressed.

Upon evaluating the obtained data:

- Analysing the distribution of articles over the years shows that while the number of publications has occasionally decreased since 2015, there has been a generally upward trend. The growing emphasis on heritage buildings in recent years, the increased number of researchers, and the greater focus on archival work have all contributed to this rise. The notable increase in the number of publications in 2023 can be attributed to the centenary of the Republic, which likely made it a significant focus for academic studies.
- A review of the journals in which the articles were published reveals a broad range of journals. Among them, the *Sanat Tarihi Dergisi*, *TÜBA-KED Türkiye Bilimler Akademisi Kültür Envanteri Dergisi*, and *Türkiye Araştırmaları Literatür Dergisi* have published a significant portion of the articles included in this study. This distribution is related to the journals' focus on specific historical periods, architectural analyses, or theoretical studies, aligning with their aims and scopes.
- Many buildings discussed in the examined articles are in Türkiye's capital, Ankara. This is consistent with the fact that constructing the Republic's new national identity began in Ankara and served as an example for other cities, leading to an intensity of significant buildings in the capital.
- The articles predominantly address residential and educational buildings. The transition to a new state administration during the Republican Period led to the development of a new architectural style. The emergence of new professions and the increased

importance of urban life also contributed to the demand for residential buildings due to civil migration from rural areas to cities. Residential buildings reflecting the influences of the new architectural period were constructed. Changes and advancements in the education system also impacted the architecture of educational buildings. Many of these structures continue to function today, making them significant both as cultural heritage and for studying interventions they have undergone over time.

- The analysed articles cover a range of aspects, including architectural character, building features, architectural history, theory/discourse and literature review, value and memory, cultural heritage, preservation and adaptive reuse, decorative features, construction systems, and materials. Research in the literature primarily focuses on the architectural characteristics and building features of Republican Era buildings. Within this scope, educational buildings, residential buildings, urban-scale structures, public buildings, transportation buildings, and religious structures were studied. The current use of educational buildings highlights the value of researching how the importance placed on education during the Republican Era was reflected in architecture. Residential buildings were examined to identify and document typologies and modifications made over time within specific settlements.
- Studies focusing on the Republican Era in architectural history, theory/discourse, and literature reviews aim to trace a historical development process or interpret it through a new architectural

style. These studies seek to uncover how the traces of the new nation-building discourse are reflected in architecture.

- Another prominent focus of the articles is the examination of Republican Period architecture through the lenses of value and memory. Investigating the economic and socio-cultural data of the period in architecture also addresses how these buildings are remembered. Some studies in the literature highlight the significance and impact of these structures on the city, economy, and culture.
- Buildings from the period that have survived to the present day continue to be adaptively re-used. They are preserved as cultural heritage and passed on to future generations. Adaptive reuse is one of the most effective methods for preserving these structures. Accordingly, the articles have addressed proposals for reusing these buildings, preservation issues, and restoration processes.
- The articles also address decorative features, construction systems, and building material usage. They discuss specific elements such as ceramics, stone decorations, and textile applications used in the Republican Era architecture. Additionally, articles covered construction components specific to certain settlements, the reconstruction process, and roofing systems.
- A review of the articles reveals that concepts such as the Early Republican Period, educational buildings, architectural history, Ankara, restoration, and architectural preservation are prevalent. The focus on Ankara as the capital, and thus a central point for new architecture, explains why these concepts appear frequently in the

literature. There is a strong connection between the importance placed on education during the Republican Period and the presence of educational buildings in the literature. According to studies, preserving buildings as cultural assets and transferring them to future generations is crucial for cultural sustainability.

From all these studies, it is possible to conclude that the buildings from the Republican Period are significant representatives of the architectural heritage of that period. They contain information about the period and can serve as tools for understanding it, highlighting their importance for maintaining collective memory. It is crucial to continue addressing Republican Era architecture from multiple perspectives to raise awareness about the importance of preservation and foster a sense of preservation awareness.

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Author Contribution and Conflict of Interest Declaration Information

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Conservation of Architectural Heritage: Traces of History

Chapter 6

Architectural and Cultural Heritage Values: Trabzon Historical Khans

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1. Introduction

The geography of Anatolia has been a region ruled by many civilizations throughout history, resulting in frequent changes of control. Since ancient times, it has held a strategic position as a crossroads of important trade routes. The nations that possessed this land placed great importance on road construction to connect with other nations (Gürhan, 2013). Roads facilitated the interaction of various cultures, religions, and nations. This situation attracted the interest of numerous civilizations in the region. As a result of these interactions, transportation networks were continuously developed and renewed. Particularly during the Ottoman Empire, significant trade routes and transportation networks were constructed, taking into account the geographical structure of the region. The development of roads and the expansion of trade networks in Anatolia created a necessity for accommodation and resting points for both the populace and merchants, leading to the establishment of khans, and in cities, different names such as inns, bedestans, bazaars, or arastas along the routes (Üstünes, Durmuşlar & Sarıyıldız, 2018). In Ottoman Turkish, the term "han" was often used synonymously with the Persian-origin word "kervansaray" in many contexts. Archive documents reveal that these two terms were used interchangeably for similar structural types. This situation highlights the lack of a distinct separation between the terms han and kervansaray in the Ottoman world, emphasizing terminological ambiguity (Yaşar, 2023). This ambiguity indicates that it was not entirely clear what was referred to as "khan" or " caravanserais" in the language of the period. Unlike ribats and caravanserais, hans were constructed in proximity to city centers or within bazaars (İbrahimgil & Akyol, 2023). In many Ottoman

cities, there existed a 'region of hans' where multiple hans were situated around a large bedestan in the commercial center known as the bazaar. The bazaar, comprising bedestans and hans that developed as the core of the city during the Ottoman period, lost its significance in modern urbanization efforts during the Republic period, with commercial centers shifting to newly formed urban centers (Çakır, Altınöz & Özüduru, 2019). This study evaluates Alaca Han, Taş Han, and Vakıf Han located in the Ortahisar district of Trabzon in terms of their functional and structural aspects.

1.1. Khans in Turkish Culture

Khans hold significant importance in Turkish culture, both economically and socially. Trade carav khans anserais, which can engage in the buying and selling of goods and services, emerged as a necessity of urban life (Şabudak, 2014). The term " khans" refers to the trade structures built to accommodate travelers, rest caravans, and store goods until they are delivered to their owners (Özkan Özbek, 2018). Caravanserais and khans are masonry or wooden buildings used in the past for the accommodation of travelers, featuring rooms, courtyards, storerooms, and stables. These structures were positioned at regular intervals along routes that connected distant places and provided for all the needs of travelers. Typically, both people and animals were housed within the same space in these facilities (Özyılmaz, Dağtekin & Payaslı Oğuz, 2007). Particularly, khans built along the Silk Road significantly contributed to the development of trade by offering safe accommodation for merchants and travelers.

Khans have served as centers not only for trade but also for social and cultural interaction. During their stays at khans, merchants and travelers

had the opportunity to meet people from different cultures and exchange information. As a symbol of Turkish hospitality, khans strengthened social bonds by providing food and accommodation for their guests. However, over time, due to changing economic, social, and technological conditions, they have lost their former significance. The khans that have fallen out of use have begun to lose their original architectural features and historical value within the urban fabric due to physiological deterioration, misuse, and inappropriate additions (Hakyemez & Gönül, 2014).

1.2. Khans as Cultural Heritage Values

Cultural heritage reflects the way of life in a given country and the creative characteristics of its people. Cultural uniqueness, along with artistic and scientific achievements, forms a part of humanity's shared heritage and contributes to cultural accumulation (Avcı & Memişoğlu, 2016; Kurak Açıcı & Konakoğlu, 2018, p. 670). Embedded within the historical fabric, cultural heritage, despite its diversity, contributes to a deep-rooted cultural accumulation (Kurak Açıcı & Temur, 2023). Especially within the architectural context and historical narrative, immovable cultural heritage that withstands the test of time holds a significant place in the collective memory of cities. One such structure is the khans, which, along with its historical values, constitutes an essential part of our cultural heritage. By attracting the interest of tourists, khans contribute to the region's economy. Additionally, they serve as important sites for those seeking to gain knowledge about past lifestyles and trade relations. As a part of social memory, khans play a crucial role in transmitting memories of the past to future generations.

Historical structures, being one of the most vital elements of urban configuration, enhance a city's potential to attract tourists and provide economic benefits (Kervankiran, 2014; Biber & İslamoğlu, 2023). These structures, which are important components of our cultural heritage, must be protected against degradation from natural and environmental factors. Such protection should consider a balance of usage and should also be evaluated within the context of tourism (Karakaş & Karakaş, 2015). Thus, both our cultural heritage will be preserved, and contributions to tourism will be possible. One way to protect cultural heritage is through adaptive reuse, which allows khans to maintain their functionality up to the present day. Through adaptive reuse, buildings can retain their historical and architectural values while being utilized for a new purpose that benefits society. This approach enables the preservation of the structures and contributes sustainably to the economy and the environment.

Structures in cities, in addition to being architectural products, serve as indicators of the processes the city has undergone, as well as its socio-cultural and economic structure (Yalçınkaya & Bal, 2019). To ensure the sustainable preservation and continuation of cultural heritage structures, particularly those with significant cultural value, it is necessary to enhance their visibility and usability (Faiz Büyükçam & Eyüboğlu, 2023). Particularly for cultural heritage sites, it is essential to enhance their visibility and accessibility to ensure their sustainable preservation and vitality. The visitation of these cultural assets by tourists and local communities can facilitate their utilization as income-generating resources. After restoration, enhancing the attractiveness of cultural assets and conducting promotional activities can increase the usability of cultural

heritage. However, an economic model solely based on tourism may not be sustainable. Therefore, it is crucial to ensure that cultural assets are embraced by broader segments of society. Increasing local community participation and interest can play a significant role in how cultural assets benefit society. Encouraging the use of these assets in education, art, and cultural activities can enhance the visibility of cultural heritage values.

2. Development of Khans

2.1. Historical Process

During the Ottoman period, bazaars were the center of commercial life and the heart of cities. These bazaars, along with khans, constituted an essential part of the economic fabric of the city. However, with the advent of modern urbanization in the Republic period, these historical commercial centers gradually lost their significance. As new city centers emerged, commercial activities shifted to these new areas, and the old bazaars and khans began to play a less central role.

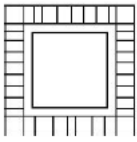
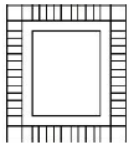
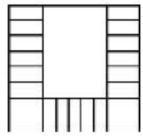
The development of railway and road transportation facilitated faster and more secure trade and travel. The improved services offered by modern hotels and accommodation facilities diminished the competitiveness of khans. The processes of urban development and modernization have led to the demolition or repurposing of many historical structures; inappropriate additions and alterations made during this process have resulted in the loss of the original architectural features of the khans.

Today, khans are utilized not only as centers of commerce and accommodation but also as educational centers, restaurants, and storage facilities.

2.2. Architectural Formation

Khans are typically constructed as single-centered structures that are square or nearly square in shape, featuring arcades, courtyards, and two stories. They have been shaped primarily according to the needs of merchants rather than aesthetic considerations. The upper floors of khans are generally used for accommodation, while the ground floors contain units such as warehouses, stables, camel enclosures, and workshops (Gürhan, 2013). The architecture of khans combines functionality with aesthetics, and stone craftsmanship and decorative elements are particularly common in khans from the Seljuk and Ottoman periods (Hakyemez & Gönül, 2014). The typology of khans plans can be classified into three groups: square, rectangular, and U-shaped (Table 1).

Table 1. Plan Typology of Khans (Halı & Özen Yavuz, 2019)

Square Plan Khan Type	Rectangular Plan Khan Type	U-Shaped Khan Type
		

In Central Asian khans architecture, a centralized plan structure with an inward-looking courtyard is primarily utilized. The general form of the plan can be square, rectangular, or circular, and this principle hasremained consistent throughout the later Seljuk and Ottoman periods (Özyılmaz, Dağtekin & Payaslı Oğuz, 2007).

During the Anatolian Seljuk period, khans were widely used as social institutions. Their architectural styles and functions bear similarities to

those of the Ottoman period. However, Ottoman architecture is distinguished by its ability to reflect activities taking place within the buildings outwardly. The primary material used in monumental architecture of the Seljuk period was stone, with brick, wood, and adobe being the next most commonly used materials. Most of the accommodation structures were made of stone, while wooden materials were utilized in beams and lintels within the walls. Brick was employed in walls and vaults. All khans have flat roofs covered with earth, and the main element of the roofing system is the barrel vault. The two-shell wall masonry technique using rubble infill was employed, with wall thicknesses ranging from 60 to 240 cm (Özyılmaz, Dağtekin & Payaslı Oğuz, 2007).

In Ottoman architecture, the classical city khan typology typically consists of a courtyard in the center, surrounded by porticoes, and rooms located behind the porticoes, usually constructed with stone materials. Alongside this classical scheme, different spatial solutions were occasionally implemented (Kuban, 2021 as cited in İbrahimgil & Akyol, 2023). Khans stand out as aesthetic structures reflecting the stone craftsmanship and decorative arts of the period. These buildings, which provided secure accommodation and fulfilled basic needs, were also used as administrative centers during certain periods. Khans where administrative functions such as tax collection and trade regulation were carried out became significant parts of political life (Özyılmaz, Dağtekin & Payaslı Oğuz, 2007).

Ottoman khans consist of units with different characteristics to meet specific functions. City khans assumed accommodation and trade functions, while road khans were generally used for lodging and animal shelter. In khans, particularly in the upper-floor rooms, merchants,

travelers, officials, and even ambassadors resided (Eyice, 1970; Özyılmaz, Dağtekin & Payaslı Oğuz, 2007).

From the 19th century onward, especially during the late periods of the Ottoman Empire, the dynamics of trade and urban life began to change. This shift led to the construction of smaller market khans in market centers alongside traditional khan structures. During this period, modernization in trade and changes in the economic structure caused alterations in the needs of trade centers. Large and extensive traditional khans began to struggle to adapt to the increasing volume of trade and the diversity of trade activities, prompting local governments to seek more efficient use of commercial areas as land values in cities rose (İbrahimgil & Akyol, 2023).

It can be stated that the architectural features of khans and inns have been shaped in the following ways:

- Stone, brick, and wood materials were used in their construction.
- Many khans have multiple entrance doors.
- They are generally two stories tall, although there are structures with more than two stories.
- Windows that open outward are incorporated into the design.
- They can consist of a single structure or multiple structures (Özyılmaz, Dağtekin & Payaslı Oğuz, 2007).

3. Material and Method

3.1. Methodology

In Trabzon province, khans have historically been used for commercial purposes. While some of these khans have survived to the present day, many others have either been demolished or are no longer in use. This study identifies the khans located in the Ortahisar district of Trabzon, focusing on three that continue to serve commercial functions: Alacahan, Taşhan, and Vakıfhan. These selected khans from the Çarşı neighborhood are examined for their functional and structural changes, assessing the similarities among them. The research employs qualitative methods involving document analysis, as well as quantitative methods through observation and analysis. The study consists of five steps:

Step One: A document analysis is conducted regarding the architectural structures of khans, the history of Trabzon province, its commercial life, and the khans located in Trabzon.

Step Two: The khans to be examined have been identified, and the architectural projects of Alaca Han, Taş Han, and Vakıf Han have been obtained from the lecture notes provided during Beyza Kuru's undergraduate education in Interior Restoration Course.

Step Three: A field study is conducted in the Çarşı neighborhood of Trabzon, where these three khans are examined on-site and photographed.

Step Four: Sketches are made on the plan and elevation drawings of the khans to determine their structural similarities. Spatial similarities are analyzed based on the plan layouts, while door and window similarities, as well as the presence of solid and void spaces on the façades, are compared through photographs of the interiors.

Step Five: A general conclusion is reached by analyzing the historical information and functional transformations of the khans using data obtained from the literature.

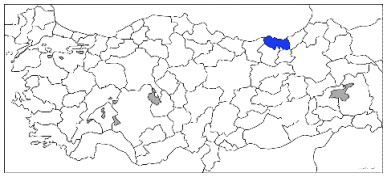
3.2. Research Area

Trabzon, a city that has hosted numerous civilizations, boasts a rich history. Its geopolitical position and connection to trade routes enhance the city's significance. Products originating from Central Asia reached as far as Europe, and the Trabzon port was linked to historical caravan routes. The city's trade areas and khans were strategically located near the port.

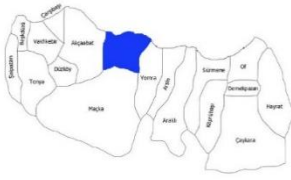
Throughout history, Trabzon has served as an important center for commerce and culture, resulting in the establishment of numerous khans in the city. These khans, primarily constructed during the Ottoman period, contributed significantly to the region's economic activities. They served not only as trading venues but also as essential centers for accommodation and social interaction. Typically built from wood and stone, these structures reflect the architectural characteristics of the Ottoman period. Research has not definitively determined the total number of khans built in Trabzon during the Ottoman era. However, according to the 1873 Trabzon Province Yearbook, there were 33 khans recorded in the city center at that time. Of these historical khans, only the locations of ten have been identified, while names and limited information have been retrieved for only seven of the remaining twenty-three. The locations and names of the remaining sixteen khans remain unknown (Engin, 2002).

These khans, equipped with inner courtyards, accommodation rooms, and shops for trading, constituted a vital part of the city's economic and social life. Trabzon's khans are also regarded as an integral component of the

cultural heritage. These structures bear the traces of past trade and social life, attracting the interest of visitors today. They serve as essential resources for understanding the city's history and culture and hold significant value for the preservation and continuity of local identity. In the Ortahisar district of Trabzon, there are numerous khans in various locations, including Suluhan, Alacahan, Taşhan, Vakıfhan, and Sabırhan. This study focuses on Alacahan, Taşhan, and Vakıfhan (Figur**e** 1).



Trabzon



Ortahisar

Khans

Figure 1. Map of Trabzon Khans

3.3. Alacahan

Alacahan is a significant structure that enriches the historical and cultural heritage of Trabzon, originally built to accommodate merchants and travelers engaged in trade. Historically, the khans has also served as a lodging, storage, residence, and for military purposes. With its architecture that carries traces of the past, Alacahan offers visitors a time travel experience, shedding light on Trabzon's history. Today, this structure is regarded as one of the city's important tourist and cultural sites due to its

historical and architectural significance; it is utilized as a course center, sales area, and café under the auspices of the Public Education Center.

Located along a main road and adjacent to commercial spaces, Alacahan serves as a crucial center for cultural and educational activities, placing it at the heart of both historical and commercial vibrancy. Although the exact construction year of this building, which embodies the characteristics of Ottoman khan architecture, is unknown, it is believed to have been built in the 18th century (Engin, 2002). The façade of the structure features repeating windows; the windows on the second and third floors are arranged in a regular sequence, while those on the ground floor appear more irregular. The entrance to the building is located on the west façade. Despite the metallic entrance door being somewhat overshadowed by the additions made to the façade, it continues to stand out as a prominent architectural element.

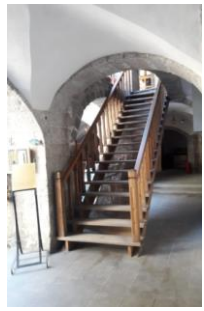
Over time, Alacahan has acquired its current appearance through various repairs and modifications. The name of the khan derives from the mottled color of its walls. The structure, which once featured stone stairs, has been restored with wooden stairs in recent years (Engin, 2002). The water well located on the ground floor has been covered with a wall (Engin, 2002). Due to a fire, the original door, windows, railings, and other elements have not survived to the present day (Figur**e** 2).

Courtyard Room Stairs Facade

Figure 2. Historical photos of Alacahan (Kültür Portali, 2024)

Currently, the doors and windows of the rooms are made of wood. Alacahan is a three-story building with a rectangular floor plan and a central courtyard. Surrounding the courtyard are rooms and storage areas. These small rooms feature windows opening onto the arcade next to the door. The interior spaces of the structure are characterized by an arrangement of repeated small volumes. Some modifications made in the functional layout necessitated adaptations to the structural system. The railings in the building, which preserve the stone texture, are made of metal. Additionally, the walls in the arcade section are white, and stone materials are used for the window and door frames. An addition has been made to the eastern facade of the structure (Figur**e** 3).






Courtyard Room Stairs Arcade

Figure 3. Current photos of Alacahan (Kuru, 2024)

3.4. Taşhan

One of the significant structures that enriches the historical texture of Trabzon and carries traces of the past is Taşhan, which was built in the 15th century during the Ottoman Empire by Trabzon Governor İskender Paşa. Taşhan was constructed primarily for accommodation and trade purposes along the trade routes. During the Ottoman period, the city was located at a point where commerce thrived, making Taşhan an essential center for merchants and travelers. Additionally, there are designated areas in the courtyard for the resting of horses and camels. The building's location was strategically important due to its proximity to the ports where trade was conducted.

Today, Taş Han is utilized for commercial purposes, functioning as a tailor shop, repair shop, storage area, and tea house. Visitors can trace the marks of the past while exploring this ancient structure, gaining valuable insights into the city’s trading history. Taşhan is situated on a secondary road. The building, which exhibits the characteristics of Ottoman-era khan architecture, was constructed between 1531 and 1533 (Engin, 2002).

Regarding its architectural features, the building's windows are arranged irregularly and are quite small in size. The entrance is located on the northern facade. Although the entrance door is designed with metal wings set within a stone arch, it does not stand out prominently from an architectural perspective. Over time, Taşhan has undergone various restorations, and the sections of the arcade facing the courtyard have been enclosed with metal construction and glass (Engin, 2002). The original concrete staircases are still in use. Taşhan is constructed from cut stone and rubble stone, and the roof is covered with tiles (Figur**e** 4).

Courtyard (Moda Muzayede, 2024)

Room (Engin, H.E., 2002)

Stairs (Engin, H.E., 2002)

Facade (Engin, H.E., 2002)

Figure 4. Historical photos of Taşhan

Currently, the doors and windows of the rooms are made of wood. Taş Han is a two-story structure with a square plan and a courtyard. Typically, Taşhans were built surrounded by rooms around a large courtyard, and the Taşhan in Trabzon exhibits these characteristic features. The high-ceilinged rooms provide spacious areas where merchants could store their goods and accommodate themselves. In the original plan, the doors of the rooms opened onto the arcade; however, since the arcade area has been enclosed today, the doors now open into the courtyard.

The interior spaces of the building are characterized by an arrangement of repeated small volumes. Upon entering the courtyard, there is no arcade; instead, a restored appearance is clearly visible with a black metal frame and glass forming an arch shape amidst the brown-toned stones. There are no stairs in the courtyard, as the staircases remain within the interiors of the shops (Figur**e** 5).

Courtyard Room Stairs Arcade

Figure 5. Current Photos of Taşhan (Kuru, 2024)

3.5. Vakıfhan

Vakıfhan, a significant center for trade and accommodation in the city's history, was built in 1781 during the Ottoman Empire by a philanthropist named Hacı Yahya (Engin, 2002). Located at a point where trade was vibrant, this khan served as a hub for merchants to store their goods, find lodging, and conduct business, especially along trade routes. Typically, Vakıfhan features rooms and storage spaces arranged around a large central courtyard, often highlighted by a water well or fountain in its center. The rooms surrounding the courtyard were used for storing trade items and for accommodation.

As one of the important tourist sites in the city, Vakıfhan is currently utilized for commercial purposes, housing a shoemaker, broom maker,

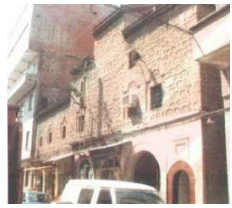
barber, and storage facilities. Strategically located along the main road, it stands next to various trading venues, positioning it at the heart of both historical and commercial activity. This characteristic allows the structure to maintain its historical trade functions to this day.

Architecturally, the facade of the building exhibits irregularly arranged windows, with some in rectangular shapes and others in arch forms. Some rooms lack windows entirely. Due to the presence of numerous shops on the northern and southern facades, there is no main entrance. Vakıfhan has undergone various restorations over time and is currently used as shops and a barbershop. As a result, the roof has been enclosed. Continuing to exist as an important remnant of Trabzon's history and trade legacy, Vakıfhan is a vital part of the city's cultural heritage. The walls of the rooms facing the courtyard have been demolished to integrate them into the courtyard, and the original staircase has been replaced with new metal-supported staircases (Engin, H.E., 2002). The windows and glass have been rebuilt (Figur**e** 6).

Courtyard (Engin, H.E., 2002)

Room (Engin, H.E., 2002)

Stairs (Engin, H.E., 2002)



Facade (Engin, H.E., 2002)

Figure 6. Historical photos of Vakıfhan

Vakıfhan is a stone structure that has been divided into different areas by internal walls. The interior of the han does not feature any doors. This

building is a three-story, courtyard-style structure with a rectangular plan. The rooms of the building are arranged around the courtyard, and there is no symmetrical harmony between the rooms. This irregularity adds a unique characteristic to the architectural nature of the structure while also reflecting the flexibility in design during that period. An extension has been made to the northern facade of the building (Figur**e** 7).

Courtyard Room Stairs Arcade

Figure 7. Current Photos of Vakıfhan (Kuru, 2024)

4. Findings and Discussion

4.1. General Structure Analysis of the Khans

When examining the construction years of the three historic hans located in the Çarşı neighborhood of Trabzon, it is evident that they were built in different centuries. The lack of sufficient information regarding Alacahan hinders comparative analysis. However, all three hans exhibit architectural features characteristic of the Ottoman period. While Taşhan was constructed by a prominent figure in the political landscape of the time, Vakıfhan was built by a philanthropic individual from the local community. Alacahan and Vakıfhan are three stories tall, whereas Taşhan consists of two stories. All three hans include a courtyard. Historically, these hans were utilized for accommodation, trade, and storage purposes;

however, today, Alacahan has begun to function as an educational center (Table 2).

Table 2. Historical Developments of the Hans

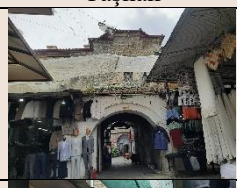
Khans	Alacahan	Taşhan	Vakıfhan
Year of Construction	Unknown	1531-1533	1781
Century	(Considered as 18th century)	16th century	18th century
Commissioning Person	Unknown	Trabzon Governor İskender Pasha	A benefactor named Hacı Yahya
Period	Ottoman Period	Ottoman Period	Ottoman Period
Architectural Type	Three-story courtyard khan	Two-story courtyard khan	Three-story courtyard khan
Plan Type	Rectangular	Square	Rectangular
Number of Stories	3	2	3
Previous Function	Accommodation, trade, storage	Accommodation, trade	Accommodation, trade, storage
Current Function	Educational center	Trade	Trade

4.1.1. Facade Characteristics of the Khans

The relationships of solid and void in the façades of windows and doors have been observed. The entrance façades and side façades of the structures have been examined. Analyzing the entrance orientations in the projects of these buildings, it has been determined that Alacahan has its entrance on the eastern façade, Taşhan on the northern façade, and Vakıfhan on the southern façade. The entrance door on the front façade of Alacahan is arched; although the windows appear to be of similar dimensions, they are actually of different sizes and arranged in an irregular order. The entrance door of Taşhan has been accentuated by the roof, making it particularly striking. However, its windows are relatively small and positioned disproportionately; there is also no symmetrical

arrangement observed in the windows aligned with the entrance door. Vakıfhan does not have a main entrance door, as the façade where the entrance door would be located contains three shops, each with a different entrance. When examining the entrance façades of the three khans, it is evident that there is a lack of architectural consideration in the placement of the windows. An extension has been made to the front façade of Alacahan, while the front façade of Taşhan is obscured due to a covering on the road. The front façade of Vakıfhan is open, but the shops located on the ground floor disrupt the surface of the façade. On the side façade of Alacahan, the windows on the second and third floors are arranged symmetrically, while the windows on the ground floor exhibit an irregular layout. The rear entrance door lacks emphasis. The windows on the side façade of Taşhan are quite small and arranged in a disordered manner. Due to coverings located along the road, the side façade is not fully visible. In the case of Vakıfhan, there are insufficient windows; the existing windows are also small in size and arranged in an unsystematic manner. The effect of the façade void makes the rear entrance door stand out with a more pronounced emphasis. While both Alacahan and Vakıfhan have rear doors, Taşhan does not possess a rear entrance (Table 3).

Table 3. Facade Views of the Khans (Kuru, 2024)

Khans	Alacahan	Taşhan	Vakıfhan
Front Facade View			
Side Facade View			
Entrance Door			–
Back Door		–	

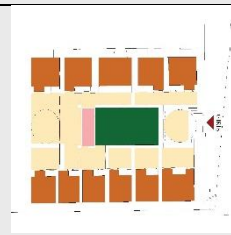
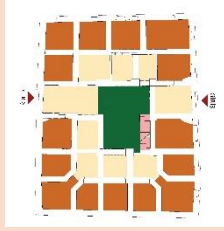
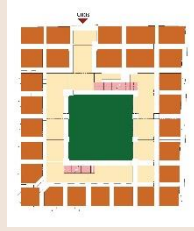
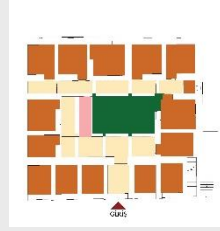
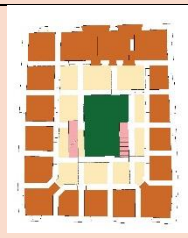
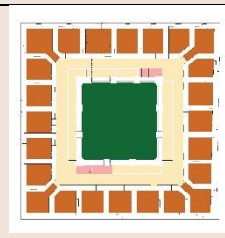
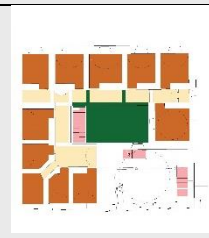
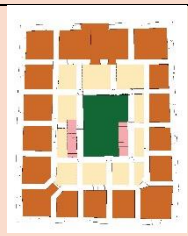
4.1.2. Evaluation of the Khans Plans

Upon examining the plan of Alacahan, it is observed that it features a courtyard plan type consisting of three levels: the ground floor, first floor, and second floor. The plan is rectangular in shape. Access to the building is through doors located on the eastern and western façades at the ground level, with the main entrance door situated on the eastern façade. The rooms vary in form and size. There are arcades surrounding the courtyard, along with rooms that encircle the arcade. The rooms open into the arcaded area. In the case of Taşhan, the plan reveals a courtyard plan type

consisting of two levels: the ground floor and first floor. The plan is square in shape. Entry to the building is made via a door located on the northern façade at the ground level. The rooms are almost identical in form and size. Similar to Alacahan, there are arcades surrounding the courtyard and rooms that encircle the arcade. After restoration, the rooms of Taşhan open into the courtyard rather than the arcade. The plan of Vakıfhan consists of a courtyard plan type with three levels: the basement, ground floor, and first floor. The plan is rectangular. Due to the sloping terrain, access to the building is available from both the basement and ground floors. The entrance to the basement is from the eastern façade, while entry to the ground floor is from the southern façade. The rooms vary in form and size, and as with the previous examples, there are arcades surrounding the courtyard and rooms that encircle the arcade, with the rooms opening into the arcaded area (Table 4).

When examining the plans of the three khans, it is evident that each has a courtyard surrounded by small rooms. Over time, due to a decline in trade or changing trade routes, these structures have served different functions. The khans may have been used for storage, production, or various commercial purposes. These changes appear to have been made without significantly altering the original plans, which is important for understanding the historical layers of these structures.

Table 4. Organizational Structure of Khans Plans (Kuru, 2019)

Khans	Alacahan	Taşhan	Vakıfhan
Plans – Basement Level	–	–	
Plans – Ground Floor			
Plans – First Floor			
Plans – Second Floor		–	–
Legend	Room, Courtyard	Stairs, Arcade	

4. Conclusion and Suggestions

Khans represent a building tradition that has developed from Central Asia through the Seljuk and Ottoman architecture in Anatolia. Ottoman khans occupy a significant place as the accommodation and trade structures of their time, combining architectural features with social, economic, and cultural functions. These structures serve not only as centers for trade and lodging but also as vital hubs for social life (Kaçan Erdoğan, 2021; Halı & Özen Yavuz, 2019).

Today, khans are increasingly being utilized for tourism purposes. This manner of use often alters the original function and character of the buildings. All these factors contribute to the historical value of khans within the urban fabric being diminished. Given their cultural heritage value, appropriate restoration and conservation efforts can revitalize these structures, allowing them to be regarded as part of the historical fabric.

Social and cultural sustainability involves creating strategies that aim to protect human health, comfort, and cultural values. The architectural identity of the Khan Region, along with its geographical characteristics and social context, constitutes an essential part of urban memory, and preserving these features is vital for the continuity of urban identity (Özkan Özbek, 2018).

As a resource for sustainable cultural tourism, the preservation of cultural heritage values is of paramount importance. Within the scope of sustaining cultural heritage, there is a need for the refunctioning of buildings or ensuring their functional sustainability. It is crucial to transmit the historical value of these structures to present and future generations, benefiting both the city and its inhabitants. This study examines the

historical khans located in the center of Trabzon, focusing on their uses and architectural features from the past to the present.

- Currently, all three khans are used for commercial purposes. Alacahan distinguishes itself from the other two khans by also serving as an educational center.
- In terms of plan type, Alacahan and Vakıfhan have rectangular plans, while Taşhan features a square plan.
- Alacahan and Vakıfhan possess two entrance doors, whereas Taşhan has a single entrance.
- According to the plan schema, all three khans include a courtyard, surrounded by circulation areas and rooms.
- It is known that all three khans were built during the Ottoman period.
- Alacahan and Vakıfhan are three stories tall, while Taşhan has two stories.
- The main entrance door of Alacahan and Taşhan has been preserved, while Vakıfhan lacks a main entrance door.

The evaluation indicates that the khans located in the center of Trabzon continue to maintain their historical fabric. Ensuring the continuity of the historical environment, particularly through proper refunctioning and functional sustainability observed in immovable cultural heritage, imbues the cultural heritage with meaning in its surrounding context, carrying it into the future. These structures, embodying cultural accumulation, conservation, and preservation concepts, are living documents of the city's history, transmitting knowledge from the past to the future.

Acknowledgements and Information Note

The article complies with national and international research and publication ethics.

Ethics Committee approval was not required for the study.

Author Contribution and Conflict of Interest Declaration Information

All authors contributed equally to the article. There is no conflict of interest.

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Reuse of Inns as a Conservation Approach: An Evaluation Through Student Projects

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1. Introduction

Conservation, in its simplest definition, is the continuity of the current state of an object or asset. At the core of the concept of conservation is an emphasis on making the object/asset sustainable. Historical buildings are structures that were built to meet the needs of the period in which they were built. The basic principle in preserving historical buildings and ensuring sustainability is the continued use of those buildings. However, some of the historical buildings, which were designed according to the needs and functional requirements of the period in which they were built, become idle when they cannot meet the changing life dynamics and social needs over time. To preserve and sustain these structures whose original functions have lost their validity, their reuse with different functions is on the agenda.

Reuse, which forms the basis of today's contemporary restoration approach and is accepted as the best way to preserve buildings while keeping them alive, is an important strategy that ensures the preservation of cultural heritage while keeping it alive (Plevoets & Van Cleempoel, 2012). Reuse is the creation of new usage opportunities that include interventions that will meet the spatial requirements and meet the needs of a new function, aiming to preserve the architectural, aesthetic, social, and cultural values of buildings that have become obsolete because they have lost their original function (Engin & Lüleci, 2019).

Historical inns are among the historical buildings that have lost their original function today. Inn buildings, which have an important place among Seljuk and Ottoman civil architectural works, are accommodation structures in cities. However, there are also inns reserved for craftsmen

where certain products are produced and marketed. These structures, used by craftsmen, merchants, and travelers, were built especially in areas where commercial activities were carried out, close to the bazaar. The inns, which consist of porches surrounding a courtyard and cells lined up behind it, have stables, storage, and shops on the lower floors and rooms where guests stay on the upper floors. The reuse of inn buildings located in historical city centers, which have lost their original function today, is on the agenda in order to preserve and revive them.

This study examines the features of historical inns worth preserving, their architectural character, and their function relationship. Its aim is to reveal the issues that should be considered in the context of structure-function harmony in the selection of functions in the reuse projects of historical inns.

This study examines the issues that need to be considered in reusing three inns (Taşhan, Alacahan, Gönhan) located in the historical city center of Trabzon province to preserve their original features and keep them alive. In this context, the re-use proposals produced for Trabzon inns within the scope of the Interior Restoration course of the KTU Interior Architecture Department are examined in terms of their suitability for the structures' spatial characteristics.

1.1 Reuse in the Preservation of Historical Buildings

Continuing the existence of the historical context is possible through conservation. In historical buildings, conservation means continuing the functional use of the building. For this reason, either the continuation of its original functions or its reuse with a different function comes to the fore. Especially the buildings that are unused and become idle because

they have lost their original function, and when they are deprived of regular maintenance and repair, they are destroyed in a very short time due to natural conditions, profit anxiety, vandalism, and many other factors. In these conditions, reusing structures as a dimension of conservation is seen as an important solution (Köksal, 2005). Reusing deteriorating structures for various purposes through evaluation is an aspect of conservation. (Altınoluk, 1998). Burden (2004) defines reuse as making them meet new needs as a result of adaptation.

As a contemporary conservation approach, the restoration of historical buildings that have fallen out of use to society with different functions both ensures the continuation of the existence of structures with cultural heritage value and helps the historical values that establish a connection between society and its past come to life again (Engin & Lüleci, 2019). For this reason, the reuse of historical buildings that have left important traces in the city's memory for public service purposes plays an important role in ensuring cultural continuity (Güner, 2017; İslamoğlu, 2018; Aydın & Şahin, 2018).

Adaptive reuse is a fundamental strategy in sustainable design and conservation and offers numerous environmental, cultural, and economic benefits (Daramola, 2024). Reusing existing buildings or spaces for new functions while preserving their architectural, historical, or cultural significance contributes to the preservation of cultural heritage as well as the conservation of resources (Arfa et al., 2022).

Although re-using is a conservation approach, it is inevitable to make some physical arrangements in the structure in order to use historical buildings that need to be preserved with new functions. Therefore, when

choosing a function for re-use, it is important that the original structure is suitable for the new function, and therefore, the functions that require the least intervention are determined (İslamoğlu, 2021). Some factors need to be considered to choose the most appropriate function for the historical building and avoid functions that may cause deterioration and destruction of the structure.

In the reuse of historical buildings, Altınoluk (1998) lists the factors affecting the selection of function as the spatial formation of the building, the volumetric dimensions of the building, the functional relations structure of the building, and the location of the building. Madran & Özgönül (2011) define the two main points to determine the reuse potential of the building as physical (environmental and structural) and socio-cultural inputs. Yaldız & Asatekin (2016) emphasize that when choosing a function and making interventions, the architectural styles, plan schemes, spatial features, construction techniques, and surroundings of the buildings should be considered as a whole. In this case, the ideal solution is to reuse the building with a function that is close to its original function or by the scheme of the original function.

2. Material and Method

Reuse is a conservation approach that provides continuity by providing new functions to historical structures that have lost their original functions and allowing them to take their place in contemporary life through correct interventions. In this study, which aims to reveal the importance of function selection in the protection and reuse of historical buildings, the compliance of reuse student project proposals produced within the scope of the Interior Restoration course of the KTU Interior

Architecture Department with the original characteristics of historical buildings is examined. In this context, the points to be considered in selecting the appropriate function for the spatial characteristics of the inn structures are revealed in the sample of three inn structures (Taşhan, Alacahan, Gönhan) located in the historical city center of Trabzon province.

This study consists of two main steps. The first step is the preparation of project suggestions for the reuse of the inns. In developing suggestions for the reuse of the inns, a 6-step process consisting of collecting and examining information, analyzing the inns, determining function suggestions, determining the needs program, matching the inns with suitable functions, and preparing re-using projects was followed. In the second step, the prepared project suggestions were examined in the context of historical structure-function harmony, spatial layout, facade characteristics, structure, and material properties (Figure 1).

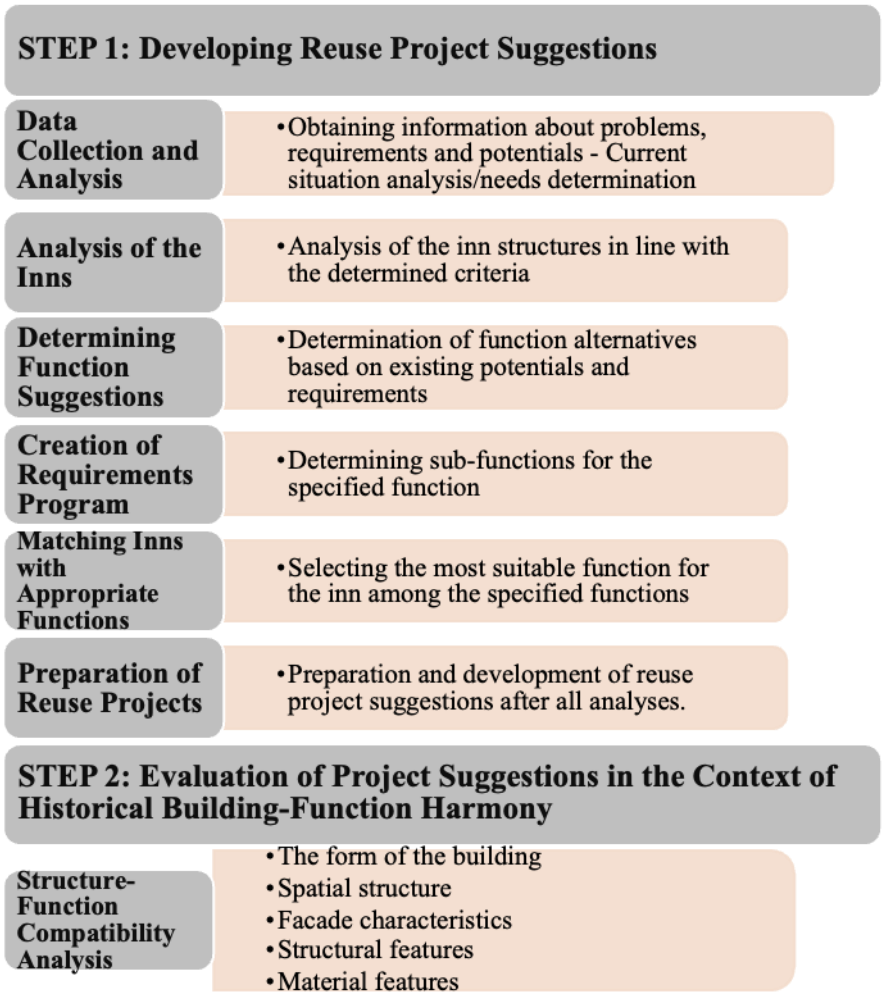


Figure 1. Steps of the study

The following process was designed by the authors to develop reuse project proposals.

- **Data Collection and Analysis**

At this stage, written and verbal sources were accessed, users and experts were interviewed, observations were made, and as a result, information was obtained regarding the values, potentials, and problems of the inn

buildings. According to the results obtained, criteria for re-using were determined.

- **Analysis of the Inns**

This stage is obtaining general information about the inns, their location within the city, plan type, carrier system, plan typologies, materials, and construction systems, which are examined in detail.

- **Determining Function Suggestions**

At this stage, function suggestions were determined to protect the city center's inns and develop their current potential. In determining the functions, attention was paid to the fact that the inns in the city had functions that were in line with contemporary needs and were in line with the criteria of being worth protecting. In line with these principles, the study took into consideration the new functions for the reuse of historical inn structures, their compatibility with the spatial structure related to the original function of the structure, their compatibility with the existing functions in the historical texture, the attraction potential of the function, its impact on the tourism potential of the city, and the potential of the functions to eliminate deficiencies in the region.

Based on the evaluations of the existing features of the buildings, considering the criteria mentioned above, the function alternatives were determined as museum and sales units, with an approach focusing on the historical-cultural riches, local production, and natural resources that constitute the city's tourism potential.

Museum function: Using historical buildings as museums is an important and widespread practice in terms of preserving, exhibiting, and transferring cultural heritage to society. These buildings increase cultural

awareness with both their own architectural and historical values and the collections they contain. The fact that museum buildings are public buildings allows them to be accessible to everyone. For these reasons, the study suggests the museum function to collect, protect, promote, and exhibit cultural, historical, artistic, and natural works, documents, and objects belonging to the region, highlighting the regional identity. The museums are specialized under the titles of Trabzon Liberation Museum, Fishing Museum, and Toy Museum.

Sales function: Reusing historical structures with a sales function is important in terms of preserving cultural heritage and creating economic value. These structures, especially in historical city centers, become attractive to locals and tourists. The use of historical structures with a sales function is usually seen in boutique stores, antique dealers, galleries, handicraft shops, or venues specialized in gastronomy. In this study, local product sales function where local products of the region will be introduced and served and where sales services will also be provided; a jewelery bazaar where information will be obtained about the production processes of handicrafts belonging to the region and where these products can be sold; and an antique market are among the determined functions.

- **Creation of Requirements Program**

Creating a requirements program for the specified function is an essential step in defining a project's basic requirements and goals. The requirements program determines the direction of the design and is important in terms of the harmony of the specified function with the space. While determining the functional requirements, the sub-functions

required by the primary function, sub-action areas, and the spatial requirements of these spaces or action areas are revealed. The user profile and number are also taken into consideration when determining the requirements program. From this perspective, defining the requirements program is an important step in reusing the historical structure with appropriate functions.

- **Matching Inns with Appropriate Functions**

After determining the specified function and the sub-functions that will meet that function, the aim was to match it with the most appropriate function/functions to preserve the structure's original value. Care was taken to match it with the function/functions that would require the least intervention to the structure.

Some criteria have been determined to match the structures with appropriate functions with minimum intervention by paying attention to the balance of protection and use. These criteria are basically the environmental features and structural features of the inns. Within the scope of environmental features, attention has been paid to criteria such as the location of the inns within the city, their relations with each other and other structures, accessibility, and parking facilities. Within the scope of structural features of the inns, mass, space, facade, structure, and material features have been evaluated.

As a result of all the analyses, it was decided to reuse Vakıfhan as the Trabzon Liberation Museum and Jewelery Bazaar, Taşhan as a local product sales and antique market, and Alacahan as a fishing museum and toy museum.

- **Preparation of Reuse Projects**

At this stage, reuse project suggestions for historical inn buildings that cannot be used in their original function have been developed for the function determined within the scope of the study. First, reuse project suggestions have been prepared by determining the sub-functions, action areas, relations of action areas with each other, and circulation areas for the determined function, and by creating function diagrams by conducting spot studies.

2.1. Historical Inn Buildings of Trabzon

Three inn structures located in the historical region of the Ortahisar district of Trabzon were selected as the study area (Figure 2).

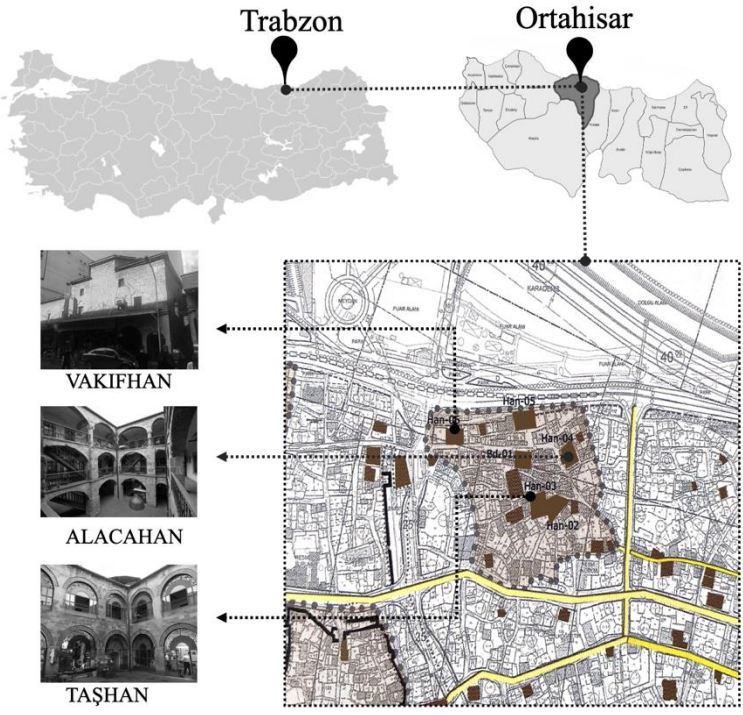
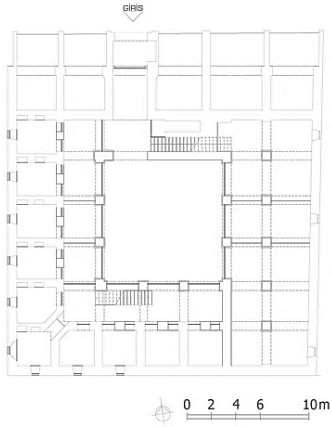
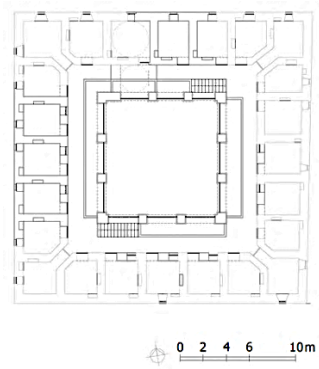
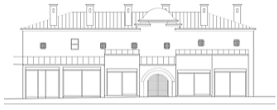
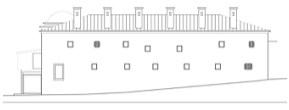
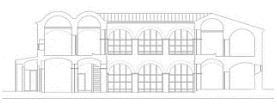


Figure 2. Inn buildings selected within the scope of the study

- **Taşhan**

Taşhan, stated in different sources to have been built by Trabzon Governor İskender Paşa between 1531-33, does not have an inscription. Taşhan is a beautiful example of two-story city inns with courtyards from the Ottoman period. The inn's entrance, which has a plan close to a square, is on the north side. On the ground floor, to the left of the entrance, on the east side, there is a place called the develik, and on the south and west sides, there are ten rooms lined up behind the corridor bordered by a portico. One of the stairs leading to the upper floor of the inn is to the left of the entrance, and the other is under the southern portico. On the upper floor, rooms are arranged behind the porticos surrounding the courtyard. The upper floor plan is symmetrical and has twenty-four rooms in total, one in each corner and five rooms between the corner rooms on each side. Most of the rooms have niches and a stove. The room above the entrance hall of the inn and the hall in front of this room are covered with a dome made of brick. The rooms and the shops facing the outside on the north side are covered with barrel vaults, and the arcades are covered with cross vaults. The arcade arches and dome are made of brick, and the arcade piers, walls, stairs, and flooring are made of stone. While the walls are made of rough stone, the courtyard facade, the courtyard floor, the piers on which the arcade arches sit, and the stairs are made of cut stone (Karpuz, 1990; Yüksel, 1991; Engin, 2002).

Table 1. Taşhan drawings (Engin, 2002) and photographs (Karadeniz Kültür Envanteri, 2024)

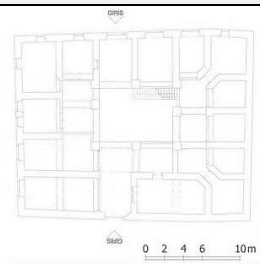
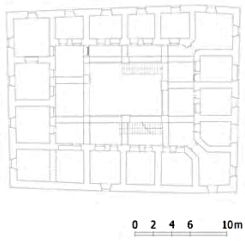
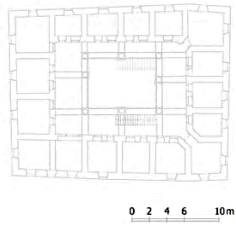
TAŞHAN	
Technical Plans	
Ground floor	1st Floor
	
Facades	Section
 	
Photos	
 	

- **Alacahan**

There is no definitive document on who built it and when it was built, but it is thought to have been built in the 18th century with the nearby Alaca Hammam. Alacahan is a three-story courtyarded inn with a rectangular

plan close to a square. The inn has two entrances on the east and west sides. There are five rooms on the ground floor to the left of the entrance and eight rooms on the right that open onto the porches surrounding the courtyard. The inn's first floor is accessed from the south-east corner of the courtyard, and the second floor is accessed from the stone stairs on the south-west side. The plan scheme of the first and second floors is the same, and sixteen rooms on each floor open onto the porches. The rooms in the inn are different in size and shape. The rooms have windows that open onto the outside and the courtyard. The columns carrying the arches in the porches are square-sectioned on the ground and first floors, and round-sectioned on the second floor. These columns are connected with oval and flat arches. In Alacahan, the upper covering system of the entrance hall, porches, and rooms on the ground floor is a barrel vault. Except for the rooms in the northeast and southeast corners on the first and second floors, other rooms and porches are covered with cross vaults (Karpuz, 1990; Yüksel, 1991; Engin, 2002).

Table 2. Alacahan drawings (Engin, 2002) and photographs (Karadeniz Kültür Envanteri, 2024)

ALACAHAN		
Technical Plans		
Ground floor	1st Floor	2nd Floor
		
Facades		Section
		
Photos		
		

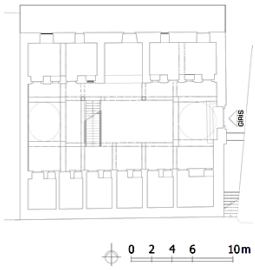
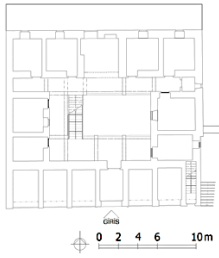
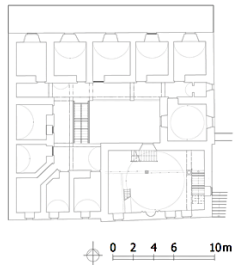
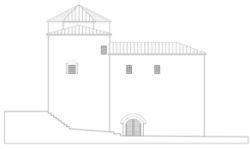
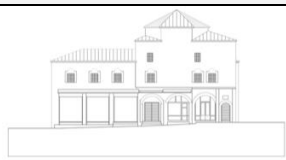
- **Vakıfhan**

According to the inscription on the fountain of the mosque in the southeastern part of the Vakıfhan, it was built together with the small mosque in the southeastern corner by a philanthropist named Hacı Yahya in 1196 H. and 1781 A.D. The building, referred to as Gön Han or Attar Han in old sources, is an example of a three-story courtyard inn of Ottoman urban inn architecture. The rectangular, three-story inn has two

entrances. The main entrance is on the first floor on the south side. The ground floor entrance is on the east side. The inn's plan has porches surrounding the courtyard and rooms lined up behind it. On the ground floor, two rooms are lined up along the north, and six rooms are lined up along the south side of the rectangular courtyard. There is an iwan between the rooms on the ground and first floors on the north facade, opening onto the courtyard. The staircase, located initially under the portico to the left of the entrance, was moved to the west of the open courtyard after restoration. There are three shops on the left and one on the right of the entrance on the first floor. There is also a fountain and the entrance to the mosque on the east corner of this facade. The room layout on the first floor facing north is the same as on the ground floor, with two rooms on the east and west sides. The second floor also has rooms opening onto a corridor surrounded by porches. There are eleven rooms on this floor: five along the north side, five on the southwest corner, and one on the east side. There is a prayer room in the southeast corner of this floor.

The inn’s walls are made of roughly cut stone, and the square-section columns and arches carrying the arches between the arcades are made of cut stone. The rooms in the middle of the east and west facades on the first floor and the room on the east facade on the second floor are covered with domes, while the other rooms and arcades are covered with barrel vaults (Ballance,1965; Karpuz, 1990; Yüksel, 1991; Engin, 2002).

Table 3. Vakıfhan drawings (Engin, 2002) and photographs (belongs to the author)

VAKIFHAN		
Technical Plans		
Basement Floor	Ground floor	1st Floor
		
Facades		Section
		
Photos		
		

3. Findings and Discussion

In this section, reuse project suggestions prepared for the functions of the local product sales and antique market suggested for Taşhan, the fishing museum and toy museum suggested for Alacahan, and the Trabzon liberation museum and jewelery bazaar suggested for Vakıfhan are evaluated. In the evaluations, the form of the building, spatial layout,

facade characteristics, structure, and material properties, which are the items specified in the method section, are discussed. The tables (Tables 5-6-7) to which the evaluations are referenced were arranged by the authors using plans, sections, and renderings from student projects produced within the scope of the course.

The needs program for reusing Taşhan as a local product sales area has been determined as a restaurant, seating areas, sales units, offices, and technical units.

On the ground floor, the original camel section of the inn was preserved and used as a kitchen and cafe, while the four volumes on the west and south sides of the courtyard were combined in two and used as a wet area and sales unit. The other volumes were also preserved in their original form and designed as a sales unit, warehouse, and tea house. On this floor, the independent units on the north-facing side of the inn (the two volumes to the right of the entrance and the three volumes to the left) were combined and used as a street-related cafe.

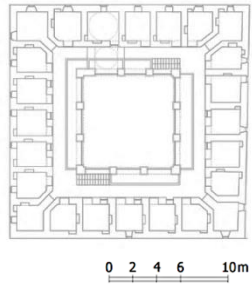
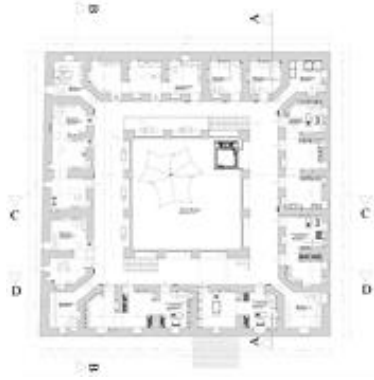
The inn's first floor is organized as sales units for local products (hazelnuts, tea, cheese, oil, corn flour, etc.), warehouses, administrative units, and wet areas. The courtyard section of the building, which is preserved as an open space in its original form, was used as a transition rest area. The volumes in the corners were preserved in their current form, and the spaces between them were organized by combining two or three adjacent volumes according to the spatial size required for their function.

The existing stairs were preserved in their original position and material, and an elevator was added to the gallery space. The porches surrounding

the courtyard on the ground and upper floors were closed with glass cases. The heating and ventilation system was solved in metal boxes suspended from the ceiling with steel wires in the corridor surrounded by porches on both floors and in the cafeteria in the develik section. The lighting selected was in line with the functions of the spaces and was positioned by hanging it on the vault top cover. In line with the philosophy of contrast in the design, a shade element designed as a suspended tension structure was included in the courtyard section reserved for sitting and resting. The original stone flooring in the courtyard was preserved, and the floors in all other units were covered with ceramic material.

The inn’s central courtyard and square plan layout have been preserved. Except for glazing the porches overlooking the courtyard in accordance with functional requirements, the façade characteristics have not been changed. Except for a few volumes combined on the first floor, the inn's original spatial layout has been preserved (Table 4).

Table 4. Taşhan Local Product Sales function information

TAŞHAN – LOCAL PRODUCT SALES
Technical Plans
 
Colored Plans
 
Colored Sections
  
Renders
  

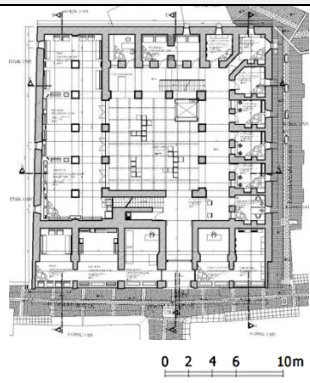
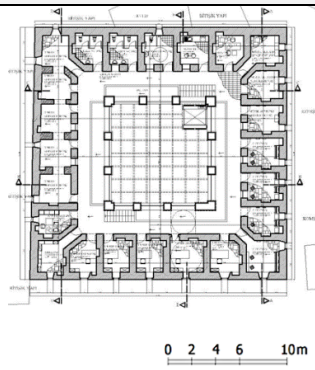
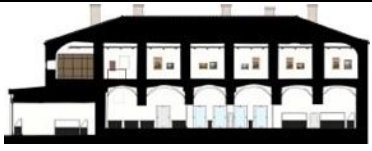
The program of needs for the reuse of Taşhan as an antique market has been determined as reception, exhibition areas, sales units, second-hand bookstores, repair units, and office technical units.

The inn's ground floor is designed entirely for sales and exhibition purposes. In the camel section, there are exhibition units for carpets, clothing, agriculture, and hunting, and in the independent units connected to the street on the north side of the inn, for carpets, porcelain, musical instruments, and second-hand booksellers. In this layout, the original plan scheme of the building on the ground floor is completely preserved.

All the volumes facing north on the first floor were used for repair, other units, wet areas, and office units, and the other units were used for exhibition and sales functions. In this layout, only the walls between the four volumes used as exhibition areas on the east wing of the inn had passages sufficient to provide circulation. The flooring material of the courtyard was preserved as original, and the top was covered with steel glass construction as a functional necessity. The floors in all other units in the building are covered with limestone. While the original staircase was preserved to provide vertical circulation, an elevator was added to the gallery space. Wrought iron railings were added between the porches surrounding the courtyard on the upper floor, while the lower floor was left entirely open. Lighting was provided by spotlights made of steel construction in the sales and exhibition units, and wall-mounted wall lamps in the corridors surrounding the gallery. Since the height of the steel-glass construction covering the courtyard is less than the height of the hipped roof of the inn, no intervention affected the mass perception of the inn. Except for the wrought iron railings added to the porticoes

overlooking the courtyard, no intervention was made on the exterior of the building and it was preserved in its original form (Table 5).

Table 5. Taşhan Antique Market function information

TAŞHAN – ANTIQUE MARKET
Technical Plans
 
Colored Plans
 
Colored Sections
 
Renders



The program of needs for reusing Alacahan as a fishing museum has been determined as reception, sales unit, restaurant, exhibition areas, management unit, staff room, and technical units.

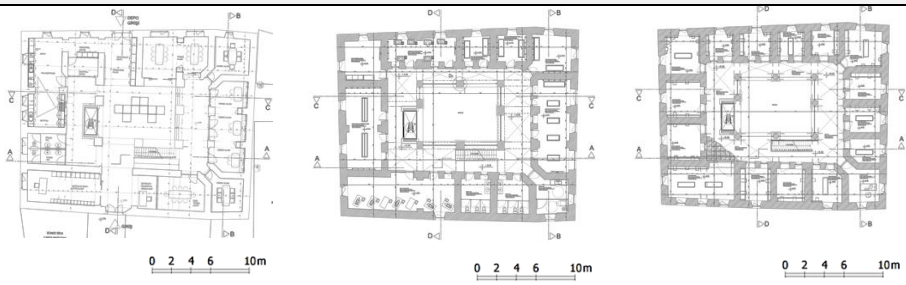
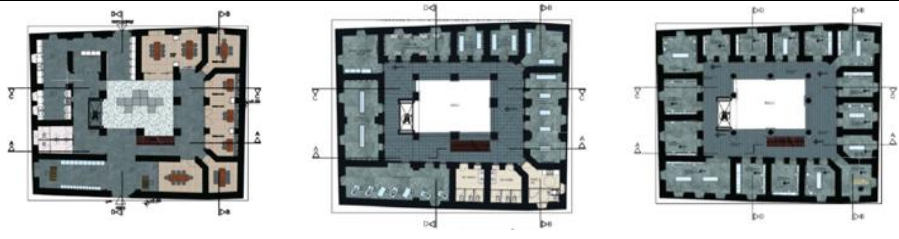
On the ground floor of the inn, there is a reception area to the right of the entrance, and a souvenir sales unit to the left. The other volumes on the ground floor are arranged to serve the restaurant entirely. In this arrangement, the three volumes on the south wall of the inn and the two volumes leaning against the east wall are combined to serve as a dining area, while the volumes in the north-east corner are arranged to serve as staff room, kitchen and cleaning depot functions by opening passages that will provide circulation between them.

On the inn's first floor, there is a ship model room, a map and virtual reality room, a nautical clothing room, and units where fishing products and archaeological remains are exhibited. While the exhibition units are arranged, adjacent volumes in the units where models, maps, clothing, and archaeological remains are exhibited are combined to form a single space.

On the inn's second floor, the original plan scheme was preserved, and the existing spaces were arranged as exhibition and management units. The location of the stairs was preserved, and the existing staircase, which was not original, was renewed with a wooden and steel structure. Steel

railings made of the same material as the stairs were placed on the porches surrounding the courtyard. Spotlights designed in relation to the exhibition areas in the lighting system of the building were mounted on the steel construction hanging from the ceiling. Circular chandeliers hanging from the ceiling in relation to the upper cover were used in the circulation areas. The original stone flooring in the courtyard was preserved, and the floor coverings in the exhibition units were covered with ceramic material. The courtyard used as a transition area was covered with a steel glass construction. In this intervention, care was taken to ensure that the steel cover did not exceed the height of the roof. Thus, the inn's original facade characteristics and façade design were preserved (Table 6).

Table 6. Alacahan Fishing Museum function information

ALACAHAN – FISHING MUSEUM
Technical Plans

Colored Plans


Colored Sections

Renders

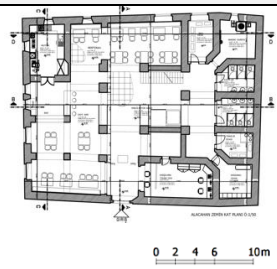
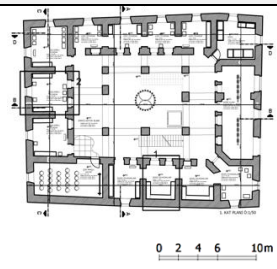
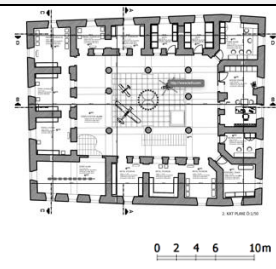
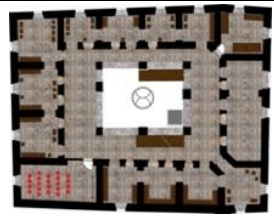
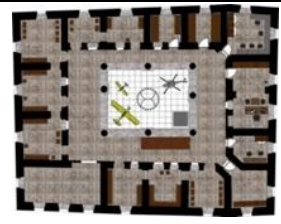
In the reuse of Alacahan as a toy museum, the program needs to include a sales unit, café/bar, restaurant, exhibition areas, a multi-purpose hall, an executive room, a staff room, and technical units. The inn, organized as a toy museum, has been arranged as a reception, toilet, personnel, storage, etc., by preserving the original spaces on the ground floor of the inn on the right side of the entrance. The entrance on the east side of the inn has been closed, and the spaces on the left side of the entrance have been combined and arranged as a cafe/bar and restaurant. In this arrangement, the volume on the north-east corner of the inn has been preserved and used as a kitchen.

The space in the northwest corner of the inn's first floor was preserved in its current state and arranged as a multi-purpose area. The other spaces on this floor were used entirely as toy display areas. In this arrangement, to ensure circulation between the display areas, transitional spaces were created between the three spaces on the north side, the four spaces on the

east side, the three spaces on the south side, and the three spaces on the west, thus ensuring common use of the spaces.

On the second floor of the inn, in addition to the exhibition units, there are toy repair, administrative units, staff rooms, and storage areas. In this arrangement, spaces were opened for passage to provide circulation between the three spaces on the north facade and the two spaces on the east facade allocated for local toys. The three volumes allocated for the exhibition of metal toys on the west facade were also combined with the opened passage openings. Two volumes on the south facade were combined and arranged as a management unit. In this arrangement, the courtyard was covered with a steel-glass construction and toys were hung on this construction and used for display purposes. The installations related to the heating, ventilation, and lighting systems were passed through rectangular metal boxes on all floors. Wall sconces or ceiling-hung lighting were used as lighting elements on all floors depending on the requirements of the spaces' functions. Ceramic material was chosen as the floor covering material in the spaces, and the separation between circulation areas and spaces was planned using different patterns. The porches on the ground floor were left entirely open, and the continuation of the stair railings, whose location was preserved and whose material was changed, was applied on the upper floors (Table 7).

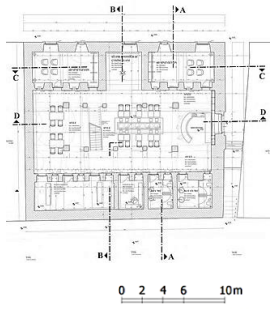
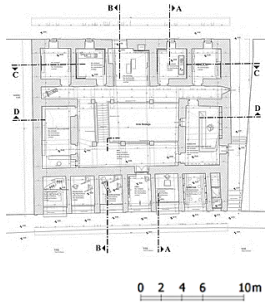
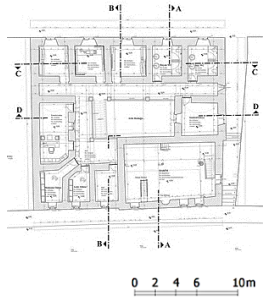
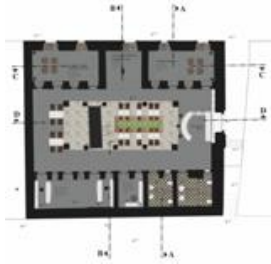
Table 7. Alacahan Toy Museum function information

ALACAHAN – TOY MUSEUM
Technical Plans
  
Colored Plans
  
Colored Sections
  
Renders
  

In the reuse of Vakıfhan as the Trabzon Liberation Museum, the needs program meeting unit, souvenir sales, exhibition areas, cafe-bar, executive room, technical units were determined. In the basement floor,

there is a photoshoot area in the iwan section of the building, a cafe/bar in the courtyard section, and cinevision, ticket sales and wet areas in the volumes on both sides. In the ground floor plan, there are entrance, reception, souvenir sales, and display units in the independent volumes on the south side of the inn. The first-floor plan includes support and technical units such as exhibition, administrative, archives, and material rooms. In the reuse suggestion, the original plan scheme of the inn was preserved, and all units were planned considering the existing space potential. To preserve the spatial integrity of the inn, the independent units facing the north facade were evaluated as showcases introducing the products exhibited in the museum. In this context, the original plan scheme of the inn structure, which is one of the criteria worth preserving, has been adhered to, and the existing façade characteristics have been preserved. In order to provide the spatial comfort conditions required by the new function, the courtyard has been covered with steel and glass construction. Lighting and heating/ventilation installations have been resolved in circular section metal boxes, preserving the perception of the original vault cover of the structure. The existing non-original artificial stone floors were covered with epoxy material. The original plaster and paint of the walls were preserved. The display units were planned as wall-mounted panels, platforms rising from the ground, and independent mobile units. The existing non-original staircase and gallery railings were renewed as steel construction. The steel glass construction covering the courtyard was designed not to exceed the roof height (Table 8).

Table 8. Vakıfhan Trabzon Liberation Museum function information

VAKIFHAN – TRABZON LIBERATION MUSEUM
Technical Plans
  
Colored Plans
  
Colored Sections
  
Renders
  

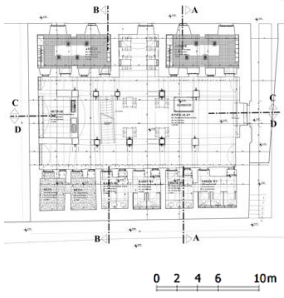
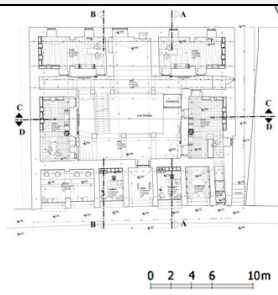
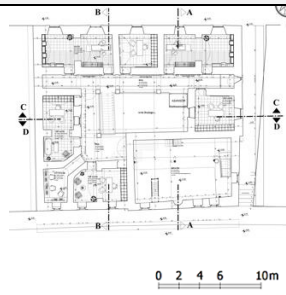
The program of needs for the reuse of Vakıfhan as a jewelery bazaar has been determined as sales units, repair units, workshops, flexible (working food and beverage) areas, and technical units.

On the basement floor, the courtyard and the iwan opening to the courtyard are designed for multi-purpose use such as kitchen, dining, and working. The volumes on both sides of the iwan are designed as workshops, and the six volumes on the other side are designed as storage areas and wet areas. Two of the six volumes are designed as storage, two as women's toilets, and two as men's toilets. Since the spaces were not large enough, transition spaces were opened to connect the volumes for each function.

The volumes around the gallery on the ground floor were arranged as sales units, and due to insufficient space sizes, adjacent volumes were combined and used. The wall was not completely removed in these combinations, but traces were left to show its location. Two independent units on the south-facing facade of the inn were combined and arranged as currency sales offices, while the other two were arranged as units where jewelry was repaired. On the first floor, there are specialized sales units. The four sales units here are arranged by combining them with the adjacent volume. As on the ground floor, care was taken to leave the necessary traces of the removed wall in these combinations. Due to the new function assigned to the courtyard, the courtyard is covered with steel and glass construction. The heating and ventilation system is solved in rectangular metal boxes. The lightings are designed as light elements suspended with steel wires in a way that is related to the spatial organization, and the lightings in the domed spaces are designed with

formal features that will support the form of the dome. The floors are covered with ceramics and laminated parquet in some sections, and the walls are preserved in their current state of plaster and paint. All furniture and equipment in the sales units are independent and not mounted on the wall or floor in any way. The existing non-original staircase was replaced with a steel staircase, and an elevator was added to the point where it will be connected to the gallery. The steel glass construction covering the courtyard was designed not to exceed the roof height (Table 9).

Table 9. Vakıfhan Jewelery Bazaar function information

VAKIFHAN – JEWELERY BAZAAR		
Technical Plans		
		
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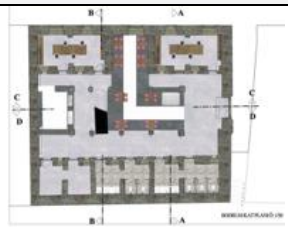	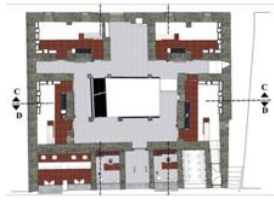	
Colored Sections		



Renders



4. Conclusion and Suggestions

While developing the project suggestions, attention was paid to avoiding any intervention that would damage the structure, preserving all original architectural elements, decorations, and materials, planning all interventions with contemporary technology and materials, paying attention to the distinction between old and new, and with the principle of reversibility.

The inn structures' mass form and exterior characteristics have been preserved in their original form. In the selection of functions, arrangements have been made in a way that will not harm the repetitive volumetric spatial structure in the original plan scheme of the inns. Care has been taken to make arrangements that will require the least intervention, considering the existing space sizes and the space sizes needed for the new function. However, since the existing inn structures have very small space dimensions, units serving functions such as exhibition and sales were used by combining adjacent volumes. Here, the original plan scheme was tried to be preserved by leaving certain traces

without removing the walls completely and creating only transition openings. Architectural structural elements such as doors, windows, and stairs in the inn structures were preserved in their original locations and dimensions.

When evaluating the spatial configuration factor in structure-function harmony, attention should be paid to correctly matching the existing space sizes/potential of the structure with the space size needs of the newly proposed function. For this reason, the most critical issue to consider when creating new spaces is seeking solutions that take advantage of the structure's spatial possibilities without affecting the structural system.

In cases where the existing spaces do not meet the necessary needs, when there is a need for spatial unification and division, care should be taken to maintain the readability of the original plan scheme. In this context, when creating a gap in the original wall element in spatial unification, care should be taken to leave traces, and when making spatial divisions, care should be taken to make the newly added divider with contemporary materials in a way that can be distinguished from the original structure. These new additions made with contemporary materials are also compatible with contemporary restoration principles and have the potential to be reversible.

Since the spaces to be opened to connect two separate spaces will affect the structural system, care should be taken to avoid making such interventions, especially on the ground floors. In cases of necessity, the dimensions of these openings should be at a minimum level.

In reuse, attention should be paid to preserving the original architectural elements in their current state as much as possible. Care should be taken to include architectural elements that are not used for their original functions in the design with different functions.

There should be harmony between the circulation of the structure and the circulation of the new function to be given. Otherwise, an inoperable function scheme may cause disconnections and discomfort. In this sense, courtyards and surrounding porches in inn structures provide ease of use while providing circulation between spaces. However, in functions where circulation within the space is important, such as museum functions, when the volumetric dimensions of the space are taken into consideration, and the exhibition setup is made by the space, reuse is possible with minimal intervention. In particular, as a requirement of universal design principles in all public buildings, necessary solutions should be produced in vertical circulation for disabled access. In inn buildings, it is possible to solve the problem with minimal intervention in the plan scheme by adding elevators to the courtyard for disabled access.

To provide the comfort conditions needed in the courtyards and arcaded corridors opening to the courtyards of inns, care should be taken to ensure that transparent elements are not spoiled in the original characteristics of the inn and that the elements to be added to close the courtyard are designed in a way that will not create a new load on the structure.

Preserving and repairing the existing mechanical system of historical buildings is essential for providing comfort. If the existing system does not meet the need, the newly proposed mechanical system should be

designed to not harm the structural or interior features of the building. The grills or vents to be used in these solutions should be included in the design, considering the interior design of the new arrangements.

Materials are also among the original features of historical buildings that are worth preserving. Preserving original materials that have survived to the present day without undergoing any changes in the historical process should be a priority. When material changes are required for the newly proposed function, new materials that can be dismantled if desired should be used within the framework of the principle of reversibility.

To summarize, the basic principle in reuse is to preserve the existing as much as possible, and the interventions that must be made must be reversible and distinguishable from the original structure.

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The article complies with national and international research and publication ethics.

Ethics Committee approval was not required for the study.

Author Contribution and Conflict of Interest Declaration Information

All authors contributed equally to the article. There is no conflict of interest.

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Conservation of Architectural Heritage: Traces of History

Chapter 8

Examining the Facade Design in the Traditional Architecture of the Cappadocia Region Through Çavuşin Houses

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1. Introduction

The Cappadocia Region is an area that stands out in the world as an important cultural heritage, specialised with its traditional settlements shaped by different factors. The region's central location in Anatolia, its easily shaped rocky areas and its wide range of material possibilities have been an important factor in hosting different civilisations throughout history. The geo-morphological and topographical development of the region called Cappadocia has created rich living spaces with different functions for millennia by taking advantage of the easy processing and chipping of soft rocks called tuff. Today, in the region, which is an intensive tourism region as well as an active daily life, it is becoming more and more difficult to preserve the original condition of the buildings despite all protection measures.

Within this area, there are many settlements that differ topographically but have similarities in construction techniques, materials and living culture. After Turkey signed the UNESCO World Heritage Convention in 1985, Cappadocia and Goreme Historical National Park Cappadocia Region was inscribed on the World Heritage List on 06 December 1985 with the qualification of "both cultural and natural heritage" (Görmez, 2002). The province of Nevşehir, the largest settlement centre of the region, and Avanos district centre are outside the borders of the World Heritage Site. However, a part of the territory belonging to Avanos district centre is within the National Park. Ürgüp district centre, Göreme, Uçhisar, Ortahisar towns and Çavuşin, Aktepe (Zelve) villages are within the borders of both Göreme National Park and World Heritage Site. (UNESCO, 2009).

Çavuşin, one of these settlements, is a village of Avanos district and is also located within the borders of Göreme National Park. The date of settlement is thought to be 56 AD, when Christianity began to spread in the region (Umar, 1998). Çavuşin Village, one of the important settlements reflecting the natural and architectural characteristics of the region, is one of the oldest settlements in Cappadocia. Located on the Göreme-Avanos Road, the village is 2 km away from Göreme. The borders of the village constitute important tourism regions such as Kızılçukur Valley, Güllüdere Valley, Meskendir Valley, Zindanönü Valley, Kılıçlar Valley, Fairy Chimney Valley and Ak Valley.

It was decided to relocate 44 families who were exposed to the rock fall hazard in Çavuşin Village in 1963 to Harmanlar in the same region. (Çakırbaş, 2022; BCA, 30.18.1-2-168-3-18). In 1964, as a result of the examination carried out by the ministries, it was decided to declare Çavuşin Village as an area subject to disaster according to Article 2 of Law No. 7269 (Çakırbaş, 2022; BCA, 30.18.1-2-181-67-18).

Since the traditional settlement is mostly abandoned and the village people have moved to new houses in the region, the alternative of "preservation with its own user and original function", which is one of the basic principles of conservation, is becoming more and more difficult for these buildings. For this reason, within the scope of the study, the traditional houses that have survived to the present day in their original form have been examined and the conservation problems that cause damage to the historical pattern in the region have been examined, and different function alternatives have been proposed in order to evaluate these buildings in

order to form a basis for future restoration works and to include Çavuşin in the tourism activities in the region in a healthier way.

2. Çavuşin Traditional Settlement Pattern

The Christian communities that settled in Anatolia initially sought refuge in hidden valleys to avoid the wrath of the polytheistic Roman beliefs. Since the volcanic lands of Cappadocia were not suitable for agriculture to a large extent, the fact that it was not seen as a settlement area by the people caused it to gain importance as a hiding place and to be evaluated advantageously by Christian communities who wanted to spend their time in worship. The fact that the region became a religious centre became evident with the construction of rock-carved monasteries and churches such as the Church of John the Baptist and Çavuşin Church, as well as underground cities (Thierry, 1963).

The dwellings, churches, monks' cells, etc. carved into the fairy chimneys and rocks create the image of a rock-carved city built on the slope of the valley for Çavuşin. The carving and expansion of the space according to the needs provided a flexible growth for the architecture of the region. The dwellings, which were initially created by carving a single floor for the needs of a nuclear family, were enlarged as the family expanded, creating an organic and unlimited growth dynamic (Tuncel, 1998).

Çavuşin, which was used as a settlement centre by different civilisations in the following periods, has become one of the dynamic indicators of this organic growth with the transformation and expansion of the first settlement units. This rocky region called "Old Çavuşin", which is called "Old Çavuşin" (Figure 1, 2), which is visited by tourists and plays an active role in the promotion of the region, where Vadiler Street, where traditional

houses with architecturally characteristic features are densely located, is located in the centre, was severely damaged in the 1960s due to landslides and rock falls. Due to the damage to the traditional houses with the natural disasters, the unusable condition of some of them, the excessive maintenance and repair costs, the inability of local governments to provide the necessary support, the lack of awareness of local and central government incentives for conservation, and the inability of some buildings to meet today's living standards, there has been a tendency to migrate intensively from the Old Çavuşin region or to move to less costly structures. The people settled in an area called "Yeni Çavuşin", which is topographically flatter than other areas. The old and new settlements are separated from each other, and the historical patern is mostly concentrated on the valley slope, while the new buildings are concentrated on the flat area (Figure 3).

Figure 1, 2. Old Çavuşin village (Aktaş, 2019)

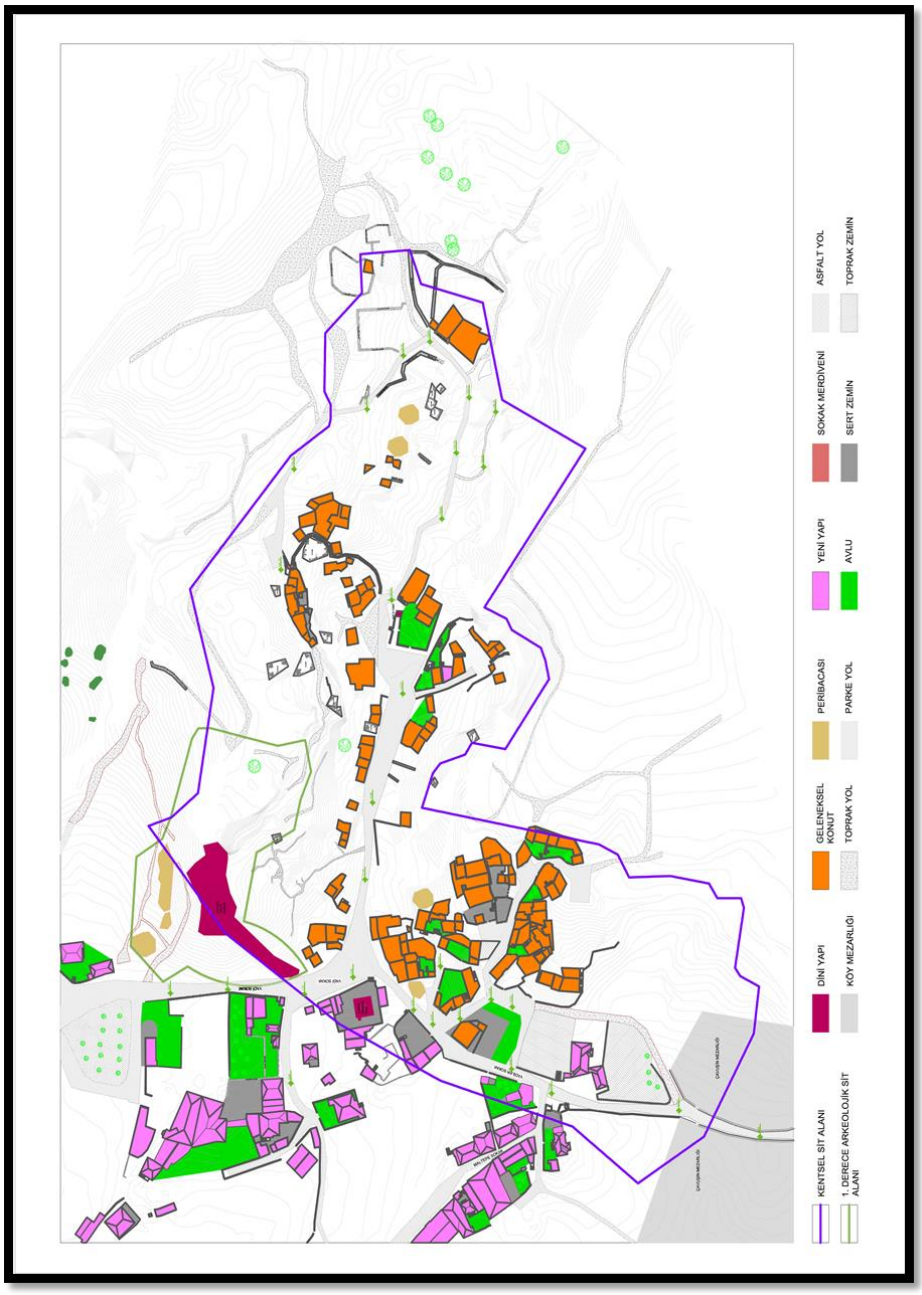


Figure 3. Çavuşin settlement pattern (Aktaş, 2019)

"Çavuşin Church", located within the borders of Çavuşin village, can be shown as an example of landmark because it is located at the entrance of the village and because it is a high building. Similarly, the Church of St. John the Baptist, which is located in the village and can be reached from the square via Vadiler Street, is another landmark because it is located at the centre of the village at a height that dominates the village. The village mosque in the square in the centre of the village is also one of the important religious buildings that are actively used today. There are four registered monumental buildings in the area, namely Upper Çavuşin Mosque, Kaya Mosque, Church of St John the Baptist and Çavuşin Church.

The old urban pattern formed on a very sloping area overlaps with the organic settlement texture. For this reason, there is no smooth street axis in the Old Çavuşin area due to the necessity to comply with the topography. Depending on the topography of the land, the streets are sometimes straight, sometimes sloping and stairs. Based on the organic form of the Old Çavuşin region, the roads, which reflect the characteristic features of the area to a great extent, narrow and widen in places according to the shape of the building and the parcel. In this area, the main artery of which is Vadiler Street, there are buildings located on the street border. These buildings, which are generally two-storeyed, are made of cut stone and there are windows in pairs on the facade facing the street. In the old settlement area, it is seen that there are generally unpaved roads but the main axis is covered with cobblestones (Figure 4, 5). The road to the cemetery of Çavuşin is covered with asphalt unlike other roads. Although the intensity of movement on the streets within the village is low, there is an intensity of movement in the Old Çavuşin area with local and foreign

visitors. Except for the main street in the village, the other streets are narrow and open to squares such as mosques and village cafes. The elements limiting the streets are generally the garden walls of the buildings. The buildings with gardens located in small parcels have a direct connection with the street through the courtyard. The buildings are generally two storeys and separated from the street façade by the courtyard wall.

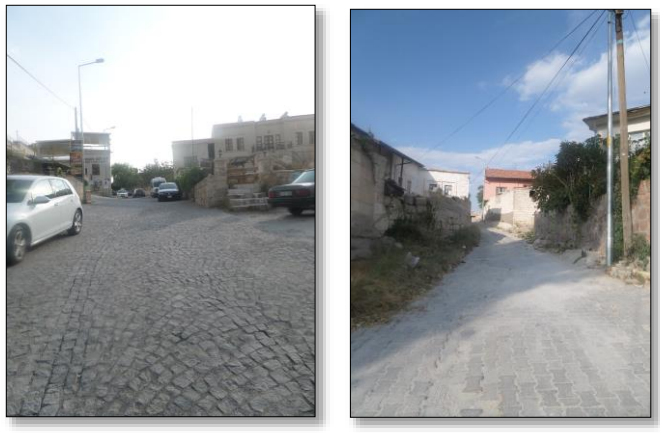


Figure 4, 5. Çavuşin Streets (Aktaş, 2019)

When the New Çavuşin region is examined as a residential area today, it is seen that the traditional architectural features in the Old Çavuşin region are not present in the new settlement area (Figure 6). Although two-storey buildings are built similar to the buildings in the Old Çavuşin region, façade designs, plan types and physical characteristics of the buildings do not carry the characteristic features of the old buildings. In contrast to the organic texture, it is a neighbourhood where detached houses with proper parcel separation have become widespread, commercial units such as handicrafts and pottery are located, and although the buildings are

reinforced concrete or masonry, the characteristic features of the old buildings have been abandoned. In the newly formed settlement unit, there are houses that are generally included in the masonry building group. The masonry buildings in the new Çavuşin neighbourhood are generally single or two-storey. The buildings are generally located in the courtyard. The relationship of the houses with the street is generally provided by the garden wall and gate, and sometimes by the facade of the house adjacent to the street. The sizes of the houses vary according to the needs of the users.

Figure 6. New Çavuşin region (Aktaş, 2019

3. Traditional Çavuşin Houses

The fact that the region is covered with easily workable and durable tuffs has enabled rock-carved settlements built in conical formations called "fairy chimneys" and formed by natural factors over time, on valley slopes and at different elevations, horizontally and vertically developed underground. In addition to the rock-carved dwellings built depending on the geological structure of the region, masonry dwellings were also built

from tuff, which is a local material, for reasons such as the fact that tuff is soft when it is extracted from the quarry, easy to process and hardens over time after processing and is a very durable material (Binan, 1994). These properties of the tuffs, which constitute the raw material of rock-carved structures, which are architectural products without architects, have enabled rich spaces to be obtained with the structural freedom brought about by the self-support of the rock structure. This rock-carved settlement tradition has met the shelter and shelter needs of many civilisations throughout history. With the provision of security and the expansion of families, the first examples of the local architecture of the region emerged by adding masonry units to the single-storey rock-carved unit, which is the simplest village dwelling.

The transition from rock-carved dwellings to masonry system stone dwellings, which are characteristic of the Cappadocia region, was intensively realised in the 19th century (Binan, 1994). It is seen that the construction date of the majority of the traditional houses examined in Çavuşin is the 19th century and partly the beginning of the 20th century. The first dwellings were built and developed on the valley slope at the foot of large volcanic tuff rocks by taking advantage of the topographic structure (Figure 7). Open-ended dwellings, which fulfil the need for shelter, can be expanded horizontally and vertically in line with the need.

Figure 7. First settlements in the region (Aktaş, 2019)

When the traditional dwellings in the Çavuşin region are compared with the other masonry buildings in the Cappadocia region; although there are some differences in plan design and decoration features, they show similarities in terms of construction systems, material use, mass design and building elements. When the traditional dwellings in Çavuşin are analysed, it is seen that a plan typology cannot be established in rock-carved dwellings and rock-carved sections of mixed dwellings. Rock-carved dwellings were formed around tuff rock. The rooms are connected to each other by tunnels, corridors and stairs. For this reason, rock-carved dwellings, which have open-ended and reproducible features, vary in size according to user needs.

In masonry and mixed houses, two elements that affect the plan type come to the fore. These elements are the courtyard and the sof. The basic units that shape the distribution of interior space are rooms and sofas. When the sofa, which provides distribution to other rooms and is also used as a living unit, is analysed on the basis of the classification developed by Eldem, it

varies according to whether it is open or closed, and whether it is formed next to or in the middle of the rooms (Eldem, 1968). For this reason, within the scope of the study, two types of classification were made in traditional Çavuşin houses, sofa-oriented and courtyard-oriented in terms of plan fiction.

3.1. Sofa Oriented Classification

The plan schemes of the traditional Çavuşin houses are shaped as without sofas, with outer sofas and with inner sofas. There is no house with a central sofa plan scheme.

Houses without sofas are, in their simplest form, single-space houses. Here the house consists of only one room. As the number of rooms increases, one or two wings are added to the house. In other words, other surfaces of the courtyard are also surrounded by the house. The transition between rooms in the plan type without sofas is provided from the courtyard. In some examples, this transition is made with an iwan. (Eldem, 1968). The courtyard on the ground floor serves as a sofa in the few buildings in Çavuşin, which are designed with a plan scheme without a sofa (Figure 8, 9). The centre of the house is the open courtyard. Both floors of the buildings consisting of ground and first floors consist of a single room. On the facades of the buildings facing the road, there is usually a single window on the ground floor, while the windows on the upper floor are in pairs. Entrance to the upper floor is provided by a stone staircase from the courtyard from the side or rear facade of the building.

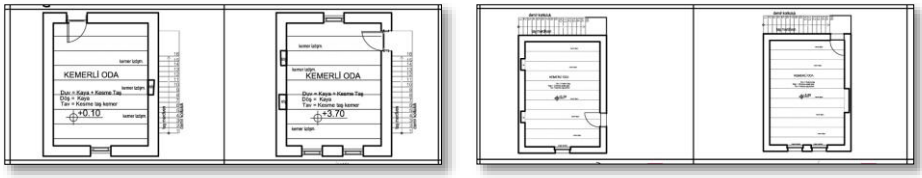


Figure 8, 9. Houses without sofas on Vadiler Street, Block 7, Parcel 8 and Parcel 2088 (Aktaş & Kozlu, 2024)

Houses with outer sofas are the first stage of the sofas. Sofa can be open on three sides or open on two sides according to the room arrangement. In this plan type, the rooms are connected to each other with the help of the sofa. The sofa, which is a common space that provides the relationship between the rooms, emerged at this stage. It is a free plan type (Sözen & Eruzun, 2001). The few buildings in Çavuşin, which were designed with an outer sofa, were designed as two storeys, the ground floor and the first floor (Figure 10). On the ground floor, there are service spaces consisting of arched and rock rooms. When the rock staircase leads to the upper floor, there is an arched room with access from the outer hall and rooms connected to a hall opening to the outer hall. There are double window groups on the facade of the arched room facing the view. In some buildings, there are arches between columns and columns in the outer hall. Various decorations were made on the arches and column heads, resulting in rich facades.

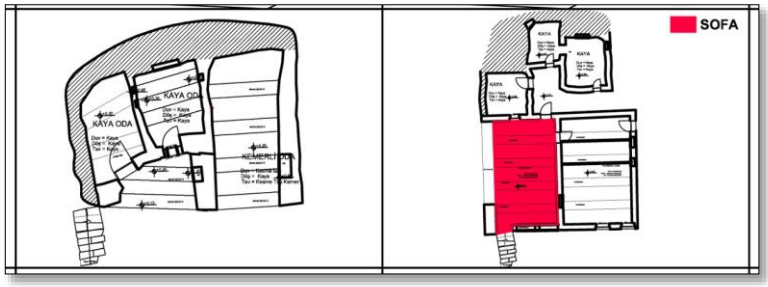
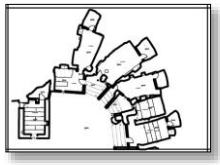
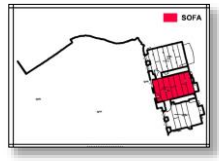
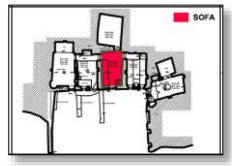
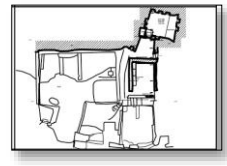
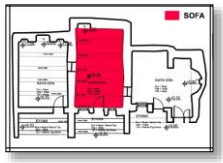
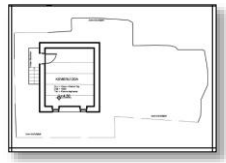
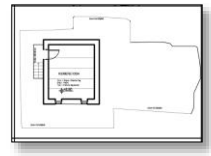
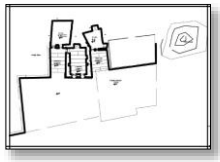


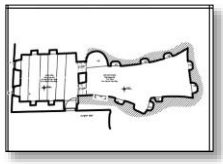
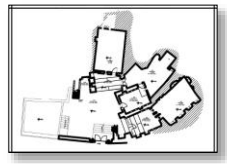
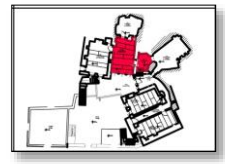
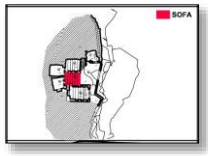
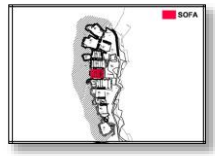
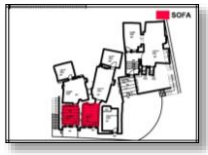
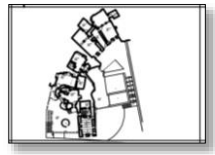
Figure 10. The building with an exterior room on the Vadiler Street 2019 parcel (Aktaş & Kozlu, 2024)

The second stage of the plan development, the buildings with inner sofas, is formed by enclosing the two sides of the sofa with rows of rooms. Sometimes iwan, side sofas or stair sofas were added in the inner sofa plan and the sofa space was expanded (Eldem, 1968; Günay, 1998). The plan type with inner sofas is the most common group among Çavuşin houses. In some buildings, while a more organic and free plan design is observed on the ground floor in connection with the development scheme of the rock-carved spaces, the plan scheme with a sofa shows itself on the upper floors. In some of the buildings, the plan with inner sofas was also applied on the ground floor. The design of these buildings, which are characterised as interior sofas, also shows changes in the context of the sofa-room-rock-carved space design. For example, in the buildings coded G01 and G03, there are two arched rooms to the right and left of the sofa. In the building coded G02, access to the rock rooms is provided from both sides and back of the hall. Three units are reached from the inner hall on the upper floor of the building coded G05. The sofa spaces on the last level of the building coded G14 provide access to the rock rooms. In the ground floor of the building coded G16 and consisting of two floors, it is a housing type with

a transition from the courtyard to the hall and divided into four space units from the hall. On the upper floor, it provides the transition to the two units on the right and left of the hall, but there are spaces added to the sides of the two units due to the ability to expand according to the need in rock-carved structures. In the buildings coded G17 and G18, unlike the other buildings, the sofa unit is located on the ground floor (Table 1).

Table 1. Plan schemes of examples of houses with interior sofas (Aktaş & Kozlu, 2024)

Building Code	**Ground Floor Plan Scheme**	**1st Floor Plan Scheme**	**2nd Floor Plan Scheme**
G01 (Vadiler Street)			
G02 (Vadiler Street)			
G03 (Vadiler Street)			
G05 (Vadiler Street)			

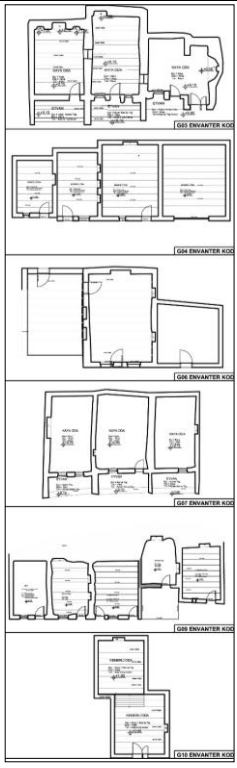
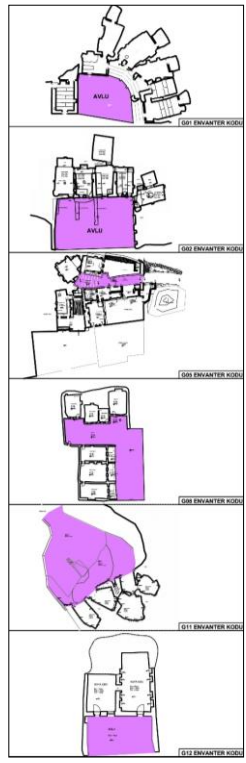
G14 (Vadiler Street)			
G16 (Vadiler Street)			
G18 (Vadiler Street)			

3.2. Courtyard Orientated Classification

In Çavuşin traditional houses, both courtyard and courtyard-less houses are observed. In the buildings without courtyards, the entrance to the building is provided directly from the street. In the courtyard plan type, the entrance from the street to the courtyard and from the courtyard to the building is provided. In these buildings, the entrance part of the courtyard to the building is paved with stone, while the rest of the courtyard may be earthen, and there are also courtyard types with a completely earthen floor. Pfeifer and Brauneck categorised courtyards according to their location (Pfeifer & Brauneck, 2008). Accordingly, courtyard types are classified as one-sided, two-sided, three-sided and four-sided according to the facade of the building facing the courtyard. Although the courtyard plan type is very common in the masonry buildings in Çavuşin houses, no two-sided,

three-sided or four-sided courtyards were found in the examined buildings. In all buildings, the courtyard was designed as one-sided (Table 2).

Table 2. Examples of Çavuşin houses with courtyards or one-sided courtyards (Aktaş & Kozlu, 2024)

Examples of houses without courtyard	**Examples of courtyard house**
	

4. Deterioration and Causes in Historical Buildings and Region

The causes of damages in historical buildings are analysed in two groups as internal and external causes. The problems arising from the building's own characteristics, location, initial design and materials are called internal causes, while the problems caused by natural factors and people

that the building has faced over time are called external causes. (D'Ossat, 1972; Ahunbay, 2019).

Among the internal causes, which are defined as damages caused by the location of the building, ground properties, material and design errors used in construction, poor workmanship and faulty repairs in the past periods, the most common damages in Çavuşin are the damages caused by the location and ground properties of the building. As a disadvantage of the geological structure of the region, cracks and crevices in the rock structure are reflected on the superstructure. The fact that the majority of the buildings are constructed with rock-carved spaces or positioned on the bedrock causes all movements in the rocks to manifest themselves as cracks in the building walls (Figure 11, 12).

Figure 11. Crack in the facade wall, **Figure 12.** Crack in the vault of Çavusin Church (Aktaş, 2019)

The external causes, which are defined as long-term natural factors, natural disasters, biological factors and damages caused by humans, are all observed in the buildings in the traditional texture of Çavuşin. The water flowing along the slope surface erodes the weak tuff layer, resulting in the suspension of the block above the eroded part and its fall due to the tension

cracks formed after a while. The water that descends from the façade or eaves with precipitation or rises from the ground with capillarity moves inside the structure with the help of the discontinuities of the rock and causes an increase in moisture in the interior compartments. Especially in unused and abandoned buildings, the physico-mechanical properties change and the deterioration process accelerates due to the lack of prevention of moisture and water (Bilgili, 2014) (Figure 13).

Figure 13. Effect of water and humidity on structural deterioration (Aktaş, 2019)

The cause of some deterioration in buildings is the unconscious repairs made to eliminate the aging process. Again, some temporary repairs cause more damage as they cover the main source of the problem. Another cause of deterioration is the loss of the originality of the building or the space by assuming different functions other than the current function of a part or all of the dwelling. Most of the repairs and additions were made without using local materials and original construction techniques. Along with these unqualified repairs, extensive interventions such as adding floors, adding

new space units, combining rooms and structures also affect the original building. This situation, which is encountered especially after restoration works, is the most damaging interventions to the original structure (Figure 14).

Figure 14. An example of a repair not in keeping with the local material (Aktaş, 2019)

Especially in the periods when reinforced concrete buildings emerged and the perspective on comfort conditions changed, the process of wear and tear of the historical pattern in the region accelerated. Due to the natural disasters in the region and the abandonment of rock-carved and masonry houses, the demand for traditional buildings in the region has decreased. Modern dwellings that have the comfort conditions of today and have places such as WC, bathroom and kitchen have become the most admired and preferred dwellings for the inhabitants. Some historical buildings have been converted into hotels and restaurants in line with the development of tourism (Figure 15). In these functional transformations, the inability to use the buildings correctly according to their original spatial purposes has

caused formal and structural deterioration in the whole building or in its spaces. Deterioration at the spatial scale has generally occurred in connection with the change of life-comfort schemes depending on the developing living conditions and requirements. In line with the changing requirements, apart from the deterioration caused by the removal of some elements within the space or the addition of new elements, there are also deterioration caused by the change of the original use of the space, in the form of a change in the spatial fiction and organisation logic. Changing the existing plan layout by adding new spaces to the dwelling or demolishing them leads to the deterioration of the principles that constitute the objective characteristics of the dwelling in terms of form, such as spatial configuration and organisational logic (Binan, 1994).

Figure 15. A dwelling converted into a hotel (Aktaş, 2019)

At the beginning of the conservation problems arising from social life is the migration from village to city due to changing living conditions with

modernisation. In this process, production decreased due to the decrease in agriculture and animal husbandry, and reasons such as the large size of the surrounding provinces, inaccessibility to services such as education and health caused the population in the village to decrease rapidly. Today, migration out of the city has slowed down with the increase in tourism activities in the region and thus the increase in job opportunities.

Conservation awareness of the users of the settlement is another issue that should be emphasised. In addition to the lack of continuous maintenance of the buildings due to abandonment, it is an important problem that the maintenance and repairs made by the users are not suitable for local materials. At this point, although the fact that the buildings are not registered brings about unqualified interventions, the inadequate awareness of the users that their buildings are cultural assets in need of protection is a more dominant problem.

Changes in the special lifestyles of local communities and the abandonment of traditional uses and functions can have negative impacts on historic towns and urban areas. If the nature of these changes is not taken into consideration, it may lead to the migration of the inhabitants to another place; thus, the cultural traditions of the abandoned place may disappear, and its identity and character may be lost. This may result in the transformation of historic towns and urban areas into a place that is not suitable for the daily life of the local people, but only for tourism and holidays (ICOMOS, 2011). In recent years, the intensification of tourism activities in the region and the increase in the number of visitors have created diversity in the factors threatening the protected areas. As stated in the Declaration of ICOMOS marking the 50th anniversary of the Universal

Declaration of Human Rights, human communities have the right to have authentic testimony of cultural heritage respected as an expression of their cultural identity (ICOMOS, 1998). This intensity in the Cappadocia region, which is one of the most visited tourism regions in the world, causes changes in cultural identity. The change in these areas, which are shaped and evaluated mainly with the concern of rent, damages the right of present and future generations to perceive the region in its original form. On the other hand, tourism not only diversifies the threat factors but also emerges as a driving force for the maintenance, repair and protection of cultural assets. However, the flow of visitors in the region reaches a level that threatens cultural and natural assets and has a corrosive effect.

The uncontrolled entry and exit of visitors to rock-carved places, for example, the fact that there is no attendant in the Church of St John the Baptist, the lack of visitor control, the destruction caused by illegal constructions (Figure 16), the abandonment of these illegal structures after a while, and the lack of any kind of supervision are extremely damaging to cultural and natural assets. Another threat factor is that cultural assets are abandoned and unclaimed and exposed to vandalism. The frescoes in the churches have been damaged by scraping with pointed tools, the walls of the abandoned buildings have been damaged with writings (Figure 17) and building materials have been stolen.

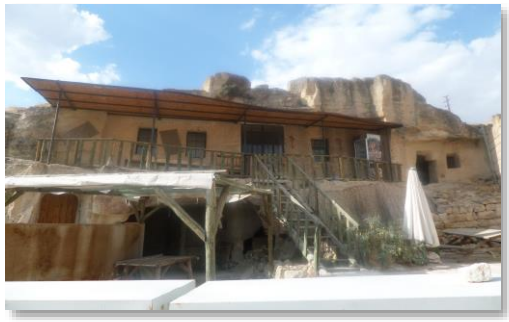


Figure 16. The building added to the Church of St John the Baptist

Figure 17. Vandalised walls in abandoned houses (Aktaş, 2019)

5. Re-Use Decisions and Conservation Recommendations for Çavuşin Village

The most effective problem for Çavuşin Village is the migration and abandonment situation experienced with the change of living conditions and the natural disaster experienced. This migration also affected the traditional houses and triggered the physical problems that will occur in the buildings. The abandonment of the buildings and the lack of maintenance-repair and conservation works cause the collapse of the buildings and the rapid deterioration of the original texture.

In preserving the architectural and historical character of monumental buildings, the needs of modern life should be taken into account and the

adaptation of old buildings for new purposes should be carried out taking into account economic, social and cultural needs (Council of Europe, 1985). The same rule applies to the functional transformation of traditional houses. In Çavuşin Village, traditional dwellings are concentrated on Vadiler Street. Some of these buildings have been converted into accommodation structures with simple or extensive repairs, while some of them are in danger of extinction due to lack of maintenance and repair. After the necessary physical interventions are made in the buildings and topography, the continuity of the settlement should be ensured by ensuring the return of the users to the region if possible, re-functionalising and revitalising the buildings that cannot be used with their original function, thus strengthening the economic situation of the people living in the region and preventing them from migrating from the village. At the same time, social activities in the region should not be limited to the coffee houses in the village square, but social and sportive activity areas should be created for young people and visitors in the village and projects that can meet these needs should be developed. These projects, which integrate with the traditional texture and do not harm the original values visually and physically, are an approach that can change the face of the urban texture with open and closed social spaces and make the village a point of attraction like the tourism settlements located in the Cappadocia Region and very close to Çavuşin Village.

Within the scope of the re-use proposals; it is suggested that the traditional buildings, which are especially abandoned and under the danger of collapse, be re-functioned with detailed restoration projects and be opened to the use of both local and foreign visitors. In line with this proposal, it is

foreseen that the Vadiler Street, which is aimed to become a centre of attraction with the buildings to be re-functionalised, will be closed to vehicle traffic by arranging a car parking area against the vehicle density that may be experienced on Vadiler Street. In addition, it is proposed that the functions designed on the street, which can only be accessed on foot, are not only for visitors but also for the use of the living public. These structures should be organised as commercial structures, entertainment structures, food and beverage areas, cultural structures, sports structures, health structures and at the same time, usage proposals should be designed by creating green areas. In this context, it is suggested that the abandoned residences be used as promotional offices, traditional handicrafts sales place, carpet rug weaving and exhibition workshop, wine production and tasting centre, course centre, workshop, restaurant, cafeteria, show / seminar building, pharmacy, playhouse, yoga and fitness centre.

In order to preserve the original architectural characteristic in Çavuşin traditional pattern, it is necessary to improve the physical conditions of the buildings as well as increasing the resident population living in the village and ensuring the use of the buildings.

6. Conclusion and Suggestions

As the Nara document on authenticity emphasises, the diversity of culture and cultural heritage constitutes an irreplaceable richness of feeling and thought for all humanity (ICOMOS, 1994). The settlements in the Cappadocia region, which is one of the effective reflections of this diversity both in the world and in Anatolia, contribute to this richness with their differences in settlement scale, although they show similar characteristics in general. However, as in many historical settlements,

traditional structures and historical texture in the Cappadocia region are faced with various dangers. It is an important issue to correctly determine the factors and types of deterioration that cause deterioration in the traditional texture and structures, and to evaluate the settlement and building scale in the conservation decisions and practices of the region while determining these reasons and the solution proposals created.

The most important problem in the preservation of the historical texture in Çavuşin is the neglect of the abandoned buildings and the fact that the maintenance and repair works are not integrated with the traditional texture. Another problem is that the conservation awareness of the public has not reached a sufficient level. It is a general moral obligation to protect cultural heritage and to pass it on to present and future generations (ICOMOS, 2018). This obligation is not only the responsibility of local and national administrations, but also of the users living in historical areas. In this context, it is necessary to raise awareness of the users, to encourage them to repair and use the buildings, and to register the buildings. In order to carry out conservation works in a healthy way, as a first step, awareness-raising activities should be carried out through local administrations and non-governmental organisations. Conservation awareness of the users directly affects their relations with the buildings and forms the basis of the activities required for the protection of the physical environment. It should be understood by the users that the changes to be made in the buildings should be decided by experts and conservation works should be supported by scientific data. Through periodical and non-periodical publications, seminars and conferences, and events organised by local administrations,

users should be made aware and encouraged to carry out maintenance and repair in the right way.

The people living in Çavuşin Village do not want their buildings to be registered, protection laws and sanctions. The support of the people should be obtained for the protection of the buildings by providing economic aid or state support. The registration of the buildings as cultural assets is among the measures to be taken for the protection of traditional buildings. Documentation work should be carried out together with survey - restoration - restitution projects for traditional buildings and state support should be obtained for financial and technical assistance. In this way, it should be aimed to prevent the demolition of buildings in poor structural condition or their transformation into ruins and unqualified maintenance and repair works.

Historic or traditional areas are part of daily life. Their preservation and integration with modern society form the basis of urban planning and development activities (ICOMOS, 2011). There is no conservation zoning plan for Çavuşin Village. This situation leads to constructions that damage, push back and destroy the traditional housing texture. In order to ensure protection in the region in accordance with universal conservation principles and the quality of World Cultural Heritage sites, a conservation zoning plan should be prepared together with the site management and any construction should be carried out in accordance with the conservation zoning plan. It should be noted that there are no registered buildings among the traditional houses of Çavuşin and the registration of the buildings is the most important and urgent conservation work. In this context, it is thought that combining the conservation proposals will provide data for

the conservation zoning plan to be made or for other studies to be carried out.

In addition to the advantages of tourism in the region, its disadvantages also arise due to the lack of high-scale decisions for conservation and lack of awareness. Tourism may be the most important resource and the phenomenon that provides development for the settlements declared as urban and natural sites. However, it should not be forgotten that the historical and natural environment, which encourages tourism, should receive a larger share from tourism. The most important issue that should be taken into consideration while making the necessary arrangements for the tourism movement in such settlements is that tourism is not the main purpose of conservation, but a potential tool that can provide economic benefits and accelerate the event in the conservation of the settlement. In the relationship between conservation and tourism, the balance between the purpose and the means should be adjusted very well. The economic benefits provided by touristic activities in historical settlements are the driving force for the conservation of these local architectural textures with touristic attraction (Ulusoy Binan, 1989).

Due to the restorations that have developed in the region in the form of investors combining multiple buildings and converting them into accommodation units for tourism purposes, the original plan schemes of the buildings are largely disrupted, new rock-carved spaces are added to the buildings or existing units are expanded, thus making it difficult to trace the original plan character in future documentation / conservation studies (Abdik, 2013). Thanks to the location of Çavuşin Village, which is close to the cities where tourism is intense in the Cappadocia Region, its

historical richness and traditional architectural texture, alternative tourism models that combine cultural, natural and agricultural values should be produced instead of practices where only cultural features are emphasised. The village can be turned into a centre of attraction with cultural tourism, agricultural tourism and nature tourism. Long-term sustainable visitor management strategies are needed to ensure that the value and integrity of the protected structures are not diminished over time against threatening factors. Strategies should maximise the benefits that visitors bring to the sites and remove the negative aspects as much as possible.

In line with the needs, opinions and wishes of the people living in Çavuşin Village, traditional houses can be converted into accommodation structures in order to develop the tourism activities of the region and to develop the region economically. However, in this case, in the restoration works to be carried out by experts, care should be taken to preserve the plan and facade features that constitute the original architectural characteristics of the buildings and the architectural integrity based on the traditional building - parcel ratio. The new buildings to be built should adapt to the layout of the street and should not disrupt the continuity. It should act as a continuation of the historical texture with its gabari, façade width, occupancy - void ratios.

Since social development is related to the physical environment, it cannot be considered independent of the physical environment, and activities that will affect social life will indirectly change the physical environment. As a result of the inadequacy of the village settlement to meet today's needs, the physical space cannot be used sufficiently because the young population leaves the traditional houses and either settles in the Yeni

Çavuşin region or migrates to other cities. In this context, it is necessary to increase the number of users in the settlement by planning the adaptation of social life to the present day and to support the village with new users.

In order to protect natural and geological values, to ensure the sustainability of traditional architectural examples and to protect them with their original features, main decisions should be taken at the upper scale within the framework of a holistic conservation approach and these decisions should be customised at the settlement scale. (Yavuz & Asatekin, 1998).

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Author Contribution and Conflict of Interest Disclosure Information

All authors contributed equally to the book chapter. There is no conflict of interest.

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Conservation of Architectural Heritage: Traces of History

Chapter 9

Design Sensibilities' Role on Urban Fabric Sequence of Heterogeneous Historic Contexts

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1. Introduction

Making any type of intervention in historic contexts with diversified layers (heterogeneous) to respond to its surroundings became a crucial issue from the transformations produced by the Industrial Revolution of the 18th century. This aftermath started to raise various discourses critically, and part of that historic trajectory from the 1960s focused on "new designs in historical contexts" or "new interventions in historical contexts" and recent synonyms replacing new designs like contemporary architecture, new buildings, and others. This attempt to upgrade the image and sociocultural expression of the historic context represented two faces of a coin. On one side, it fosters vibrancy and counters obsolescence of the setting as a form of sustainable conservation approach (Ryal-Net et al., 2020). While on the other side it can diminish the urban fabric sequence of the place through the design typology (Malinowska & Taraszkiewicz, 2020) articulated into the existing layers (design sensibilities)—reflective designs, neutral designs, or contrast designs. For these tendencies to materialize, an interplay between agency, the historic context character, and scientific knowledge-based standards requires to be energized. This kind of hypothesis aligned with the historic context's fabric, which Strappa et al. (2016, p.107) described as stratified (historical and contemporary) "individual and collective architectural solutions" implemented as a metaphorical sum of "type" rather than a "model."

Although historic environments are generally characterized as heterogeneous or homogeneous when citing the case of historic Cairo, which showcases different physical transformations that aligned with the two historic environmental types as identified by Abada (2002).

Heterogeneous are those contexts with medieval origins similar to the ones (Bilgin Altınöz, 2002) referred to as "multilayered towns." In contrast, homogeneous historic contexts possess chromatic features over a long period of time, as described in The Krakow Charter and The Valletta Principles (ICOMOS, 2000; ICOMOS, 2011). The examples of homogeneous historic cities largely bear Arab cultural morphology. This study focused on one example of a heterogeneous city with medieval cultural identity, Nicosia Walled City. A partitioned city since the 1974 communal war that led to it splitting between Turkish Cypriots on the northern side and Greek Cypriots on the southern side. Nicosia, despite the historical trajectory of imperial/colonial, independence, post-independence struggle, and the divide, still maintains its historical administrative function from the Lusignan Period to the Turkish Institutionalization Period. It represents a favourable ground for sociospatial, spatiotemporal, and design experimentation (Özüer & Erkartal, 2019) with the tangible and intangible traces that remain as cultural heritage and open collections for museology.

1.1. Design Typologies for Interventions in Historic Contexts

It relates with the general description of the historic context as a universal place with multidimensional values (The Institute of Historic Building Conservation (2021): Where the west meets the east (Alastos, 1976), and new and old buildings interact, allowing for the difficult memories of the past and at the same time negotiating the present sociopolitical, sociospatial, and sociocultural aspects (Doratli, 2005). In furtherance, pondering what the future aspirations would look like. The whole concept of preservation, valorization, and rehabilitation of cultural heritage was

first illuminated by The National Association for the Preservation of Urban Centers, L'associazione Nazionale Centri Storico-Artistici, ANCSA (Jokilehto, 2007). However, the concept has become multidisciplinary, traceable to UNESCO's (1972) definition of heritage (cultural and natural), which presents the bigger picture—heritage as "our legacy from the past, what we live with today, and what we pass on to the future generations." Based on this introductory stance, we raise the thought-provoking point: What is the role of design sensibilities on interventions in historic contexts?

Design is a process of maximizing the possibilities we can derive from spatial articulation, which connects with the (Lefebvre, 2003) conceptualization of the city as urban reality. It also flows into different domains of the creative industry (Fakharany, 2024). Such dynamic characters keep polarizing designers who approach it from a linear perspective. These sensitivities point to what this study called design sensibilities, comprising of two components: one pertaining to the designer and the other to the building itself. Integrating these two aspects allow for an examination of how designers apply design values in their work and how their architectural creations engage with the surrounding environment and cater for the nuanced needs of users (Belogolovsky, 2016).

To avoid the colorlessness of our historic cities, design processes will pass through the crucible of fair judgment (Cantacuzino, 2007). Especially with interventions contributing to saving past traces and at the same time constituting a harmonizing part and adding on the present urban fabric of the historic context (Taraszkiewicz et al., 2021). Since Cross (1984) reiterated that design approaches embody principles, procedures, and

practices from conception to realization, we argue whether its application in the historic context should remain holistic or relatively cosmeticized, like what non-experts will take design simplicity for.

Siding with what Kim & Lee (2010) asserted, we can describe the design process as tailored into two main directions: inside-outside design approaches, which concentrate on the functionality of the product, and outside-inside design approaches, which focus on how humans interact with and use the product. Another researcher referred to these phenomena as ‘integrative rational problem solving and reflective practice’ (Dorst, 1997). These notions are crucial for verifying the claims presented by the Royal Fine Art Commission (RFAC) in 1955-1956 regarding new designs in historic context. They argued that when designing within an existing context, it is essential to adopt an inside-outside approach rather than an outside-inside approach.

The approach of designing from the inside out exemplifies a modernist perspective that has faced criticism for inadvertently diminishing the human experience, as reflected in the visual language of architecture (Smith, 1975; Schumacher, 2002; Plevoets, 2021). In response, Lynch (1972, p.32–34) proposed the concept of "loose fit long life," which challenges the traditional "form follows function" doctrine. Sanoff (1988) invented the "Best Fit Rule" focused on visual assessment. In a similar mode, Groat (1988) added the “contextual design strategy,” leveraging on three variables: site organization, massing, and facade design. These perspectives emphasize that the exterior envelopes of buildings generally have a more extended lifespan than their internal functions, allowing for adaptability in use while maintaining a consistent facade. The approaches

can be succinctly expressed as distinguishing between the public, historical, and regulated nature of the exterior and the private, dynamic, and liberated character of the interior spaces.

The linear preference for visual unity gave rise to facadism as an intervention type that challenges design ethic, originality, and a potent switch for misrepresentation of past memory (Bargery, 2005). Within this limit, continuity as a term that aligns with the meaning of heritage can be jeopardized with unhealthy repetitions as a forgery design possibility (Smith, 1975; Burtenshaw et al., 1991; Gratz, 1989, p.57; Yeomans 1994, p.167). Our response to these ideological biases prevalent in architectural discourses highlighted long-standing diversities. A tendency that reveals a rich tapestry of thoughts and interpretations within the field.

With the challenge of achieving visual continuity, a fresh perspective that fosters a dialogue where contemporary interventions need not view traditional concepts as problematic, and old tissues should not dismiss modern innovations as unoriginal (Burke, 1976, p.117; Rossi & Eisenman, 1982, p.6; Edwards, 1992).

1.2. **Design Approaches Composition**

The institutions of architecture as part of the creative industry and not just the construction (building) industry cannot undermine content in line with the tech and digital era fastness on information dissemination. Incorporating story-telling into the creative process had started to evoke curiosity, as exemplified in P. Zumthor's poetic landscape experiment (Houses for Poems and Thinking Architecture) through a collaboration with literature writers and artists (Ventura, 2014). According to S. Ventura, they developed molecular perception as a sensual drive to explore

all the fluxes of a given context. Several researchers have identified multiple design approaches used by designers to intervene in the historical contexts (Ukabi & Akçay, 2023). From their studies, the design approaches were generically sorted into three groups of design sensibilities (reflective-related, neutral-related, and contrast-related), as shown in (Figure 1).

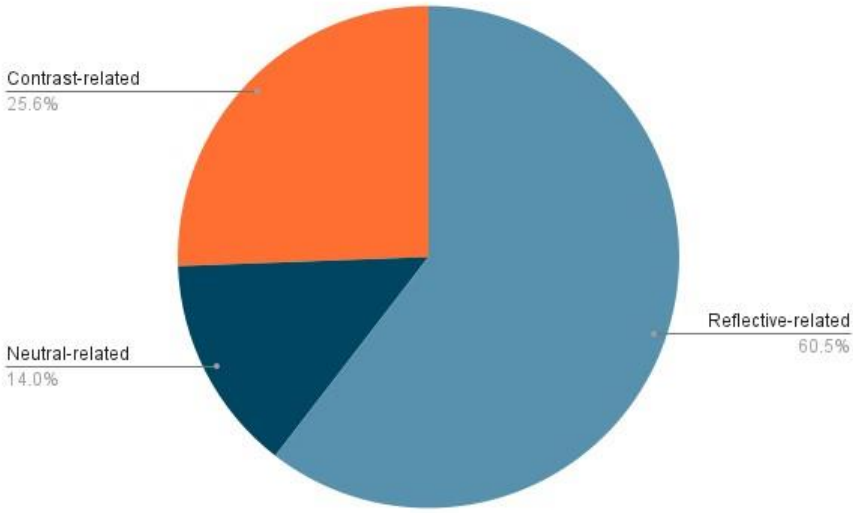

Figure 1. Generic grouping of design sensibilities, adapted from (Ukabi, 2024)

From Figure 1 and the images used to support the explanations of design sensibilities (Figure 2a-f):

- Reflective-related design sensibilities (60.5%) captured design approaches such as:

  Indicative design approaches—Design typologies function as indicators or symptoms that evoke or imply specific concepts, particularly those rooted in historical expressions. Undoubtedly,

they embody characteristics that highlight resemblances between contemporary and traditional elements. Rifat Chadirji adopted the local symbol of towering semi-arch rounded walls of the "Abbasid-era architecture" to design the Tobacco Monopoly Company Warehouses, 1967 in Iraq (Al-Mallak, 2021) (Figure 2a).

Reflective design approaches—Reflective design approaches prioritize the nostalgic value of authentic tissues within historic urban fabric. However, they often place less emphasis on contemporary usability and future aspirations for these historic contexts. In the example demonstrated with the Ronchamp Chapel in France (original), 1955 designed by Le Corbusier but its mimic appears in the Zhengzhou, China in 1990 although demolished after criticism from Corbusier's foundation (Thurston, 2018), (Figure 2b).

Selective-reflective design approaches—The selective-reflective design strategies focus on the process of creating new buildings with certain historic elements partially while discarding other features of old buildings from the final design. "Crystal houses" for Hermes (a luxury fashion house) for Warenar, designed by MVRDV, whose content statement was conceived as a reinterpretation of the traditional buildings that constitute the current urban fabric (Stevens, 2019) (Figure 2c).

- Neutral-related design sensibilities (14.0%) included:

Resiliency design approaches—These approaches are not influenced by traditional biases or driven solely by modern trends. Instead, they exist within the limits of a specific historical context while

incorporating a sense of equilibrium. An example of this design approach was implemented with the new addition to the Columbus Museum of Art, 2015, designed by Design Group (World Construction Network, 2016). They incorporated different transition spaces to define the interfaces between the existing tissues and the new wings without diminishing the historic traces of the urban fabric, (Figure 2d).

- Contrast-related design sensibilities (25.6%) comprising:

  Progressive design approaches—The new building develops through innovative phases that showcase the distinctive layers of the historical context. A new residential development added to the historic context with historic styles of worship interacting with contemporary styles in a harmonious contrast by COOKFOX Architects (Steele, 2022), (Figure 2e).

  Fashionista design approaches—These design categories generate a sense of novelty and surprise while also exhibiting transforming qualities that align with the progression of technology in society. The titanium foil installations added to the facade of the historic winery building now used as a hotel showcase a successful engagement of wow to introduce a mix of vibrant contemporary traces with historic ones. It interfaces with the existing medieval town of Elciego, Spain, with colors of the historic Marques de Riscal wine bottles and silver cork sublime with its historic traces quantitatively (Wang, 2017), (Figure 2f).

Figure 2a-f. Design sensibilities examples (Ukabi & Akçay, 2024)

2a-Tobacco Monopoly Company Warehouses, 1967, Iraq designed by Rifat Chadirji. Photo by Ragheeb Amoori (Al-Mallak, 2021).

2b-Ronchamp Chapel original built in France and imitation in China (Ikiz, 2024).

2c- Crystal houses new addition designed by MVRDV. Photo by Daria Scagliola & Stijn Brakkee (Maas, 2016).

2d- Columbus Museum of Art new addition, 2015 designed by Design Group. Photo by World Construction Network (2016).

2e-58 units Residential Condominium at the 378 West End Avenue Manhattan, 2021 by COOKFOX Architects in an historic area (COOKFOX, 2023; COMPASS, 2024).

2f-Hotel Marqués de Riscal in Elciego, Spain, 2006 (no.17/19) designed by Frank Gehry (Mafi & Bourgade, 2022).

Critically, each of the new additions shown in Figure 2a-f alters the existing traces of the historic context in a specific way and is aligned with one of the design sensibilities passively or actively based on their physical features. That sort of reaction may or may not be preconceived by the designers on the one hand, and on the other hand, we cannot overlook their environmental perception as artifacts of a specific historic context, especially in places with multifarious features.

2. Material and Method

Different qualitative and quantitative methods were adopted for this research: critical literature reviews, evidence-based research strategy, and evaluation of case studies using the conceptual Relational Evaluation Tool (RET). The quantitative part was engaged side by side through converting texts into numerical, incorporating statistical measures like frequencies, averages, ratios, and visual tools to extract the results. Furthermore, correlation of the results to reach a circumstantial conclusion. The purpose was to ascertain the sensibilities of design approaches on the historical traces of Nicosia Walled City (northern side) during the Turkish Institutionalization Period to 2023. The literature reviews focused on a major theme, design approaches, that represented 29% of all the trending concepts of interventions within historical contexts. Highly debated from multidisciplinary researchers involved in built heritage conservation and networks from dataset on “Documents on New Designs in Historic Environment” (Ukabi & Akçay, 2021).

Critical literature reviews were used to elucidate existing heritage values typology of built heritage management and to consolidate the contributions of vernacular heritage and earthen architecture as a referential framework (Chen & Li, 2021; Carlos et al., 2022). Other heritage conservation research that adopted qualitative and quantitative methods includes Farmer & Knapp (2008), who used it to determine the impacts of historical site programs' interpretation, and Menconi et al. (2018) engaged it to formulate an intervention plan for listed buildings with the rationale of enhancing their environmental resilience. Such theoretical backgrounds provided the determinants that were further scrutinized through evidence-based research strategy through the conceptual tools generated to evaluate the cases.

The process was also anchored on the study area through the selection of 16 cases to test the variables conceived from the literature exploration. Apart from the data derived from documentary sources, others came from online design networks, physical surveys of the study context accomplished with maps and taking photographs, and visits/informal talks with the three management bodies of North Cyprus concerned with cultural heritage (Town Planning Office, Antiquities Office, and Lefkosa Municipality). Further checking and retrieving data on new buildings that were added during the TRNC Period (1983 to 2023) and examining the regulation of new additions building height limits enacted in 2001, which was never enforced by the previous cultural civilizations of Nicosia Walled City, Cyprus, (Figure 3).

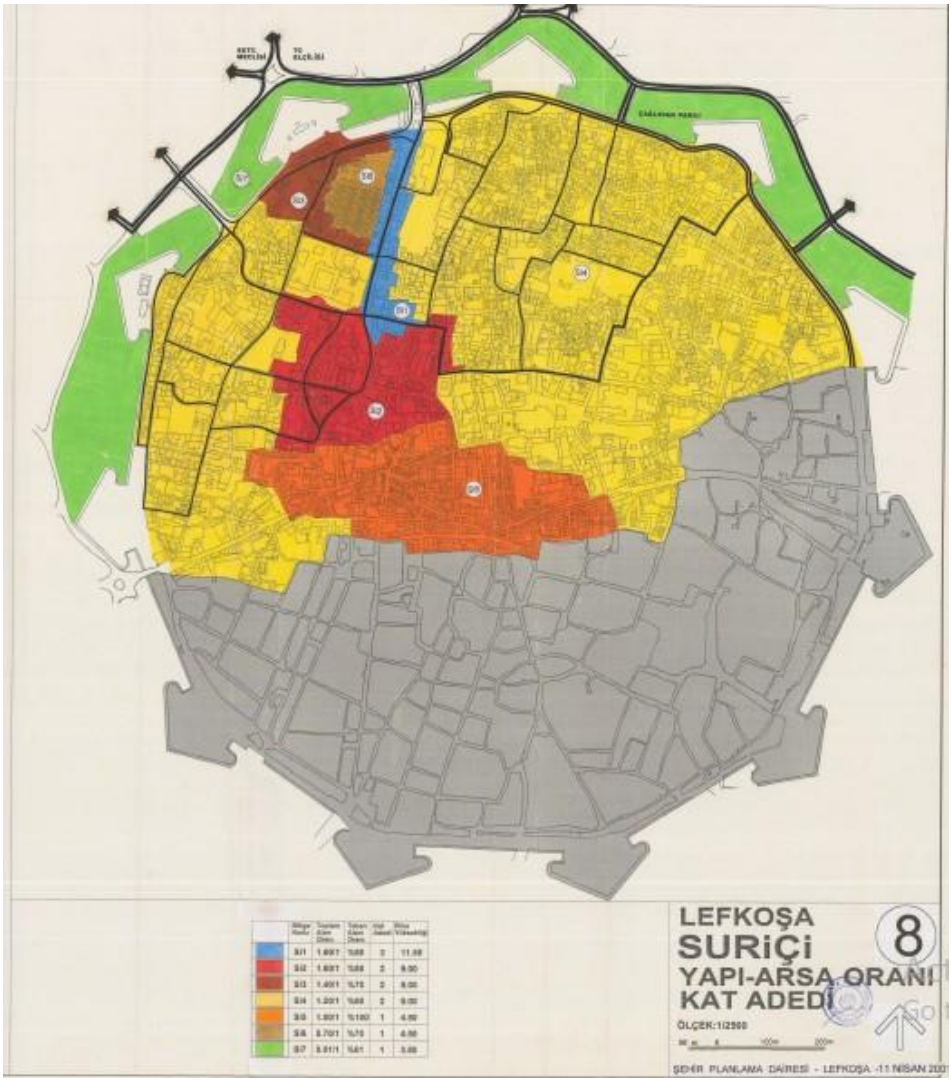

Figure 3. North Nicosia Walled City Floor limits in 2001, adapted from (TRNC Town Planning Office, 2019)

From Figure 3, the main commercial street from Girne Gate to the surroundings of Sarayönü Square were limited to 3 floors in height (blue colour and maximum ground floor area ratio (FAR) is 80%), other districts within the walls were limited to 2 floors in height (red colour-2 floors and

80% FAR, dark brown-2 floors 70% FAR, Yellow colour 2 floors and 60% FAR). Still, Karamanzade and the whole of Samanbahçe housing estate and the immediate outside surrounding of the walls are regulated to 1 floor height (orange colour- 1 floor and 100% FAR, light brown-1 floor and 70% FAR, Green colour-1 floor and 01% FAR). The cases were selected according to the following criteria:

- New additions that obtained approval from Anıtlar Yüksek Kurulu– AYK (the High Council of Monuments).
- From six neighborhoods that showed feasible new additions- ArabAhmet (6 cases), Ibrahim Pasa (4 cases), Iplik Parazi (1 case), Mahmut Pasa (3 cases), Selimiye (1 case) and Yenicami (1 case), (Figure 4-5).
- Built new additions with expression that depict new designs interventions were included, but those from competitions were excluded because design competitions have become another vast institution dealing with the subject explored.
- New additions that opens to the streets were considered.
- Periodic grouping as "Period before 2001 and Period after 2001 layers." The difference between the two periods is the regulation on floor height limits that was enacted and started enforcement in 2001. This year also defined the period the appraisal of the NMP (Nicosia Master Plan) Phase 2 project was conducted and preparing the background for its replacement with the Multifaceted Bi-communal Development Programme to tackle the pitfalls of the former scheme (Petridou, 2010; Ewers, 2018).

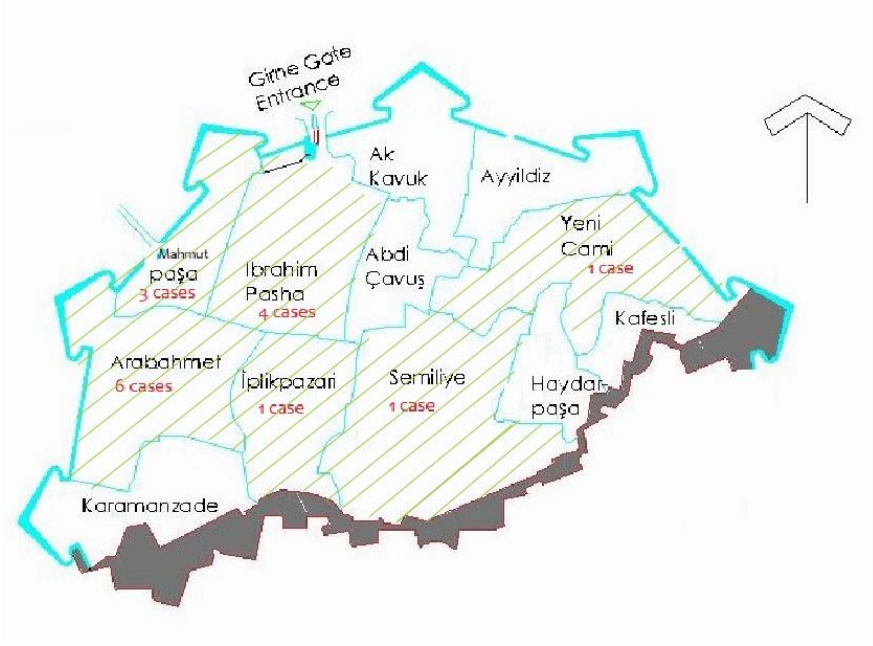

Figure 4. Map of North Nicosia showing districts cases were selected-hatched portions (Ukabi & Akçay, 2024)

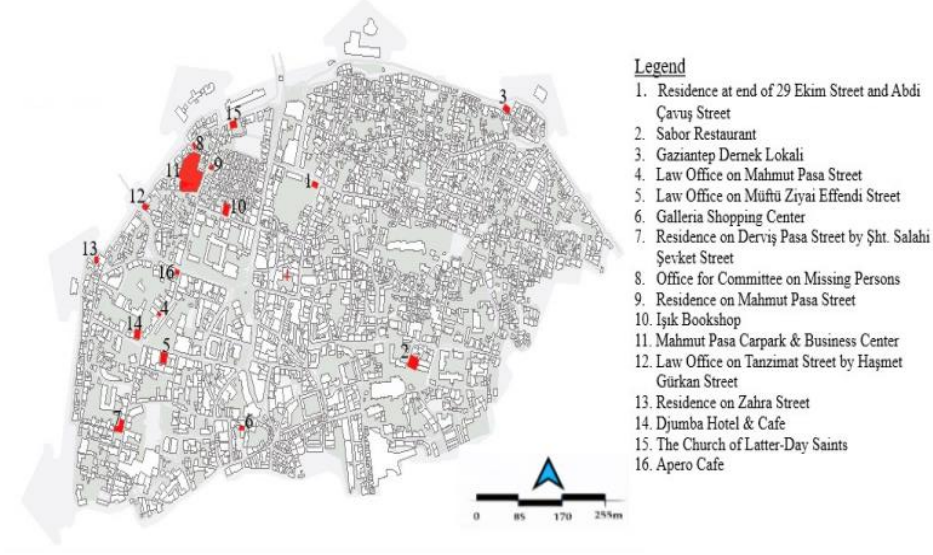

Figure 5. Cases map North Nicosia Walled City in TRNC Period, 1983-2023, adapted from (Ukabi, 2024)

3. Findings and Discussion

Cases 1-7 were identified and grouped as Period A1 Layers "Period before 2001," and cases 8-16 formed the Period A2 Layers "Period after 2001." The cases' present use falls into the categories of residential, commercial, offices, civic, and mixed use. The characteristics of each of the two conceptualized periods and their photos are shown (Figure 6-7):

Figure 6. Photos and features of Period A1 layers, adapted from (Ukabi, 2024)

- Cascading approach to window openings.
- The Cumba element derived from the Ottoman Period has been reimaged using contemporary materials.
- The façades finished with yellow stones, reappeared as a photo-type of Facadism.
- A substantial horizontal mass has been integrated.
- Significant commercial buildings are painted black in contrast with the existing context.
- The two-floor height limit is adhered to.
- A moderate incorporation of large glazing elements.

Figure 7. Photos and features of Period A2 layers, adapted from (Ukabi, 2024)

In each period conceptualized, the evaluation was structured using (Table 1 and 2) with four major protocols, namely criteria, S-criteria for sub-criteria (sub-variables), cases coded as (C1-C7; C8-C16), and frequency (F). On the tables, "**X**" denotes "not applicable" equals (0 point), whereas "✔" stands for "applicable" amounts to (1 point), and "✔̲" shows partly properties of the variable evaluated" counts as (0.5 points). Out of the 21 sub-variables engaged for the evaluation on Table 1, an average value of 49/21 approximately equals 2 served as a gauge. The results show 8 of the

variables responded significantly (reflective, selective-reflective, 1st-3rd principle ranking, heterogeneous, nostalgia, uniformity). Meanwhile, the remaining 13 variables (indicative, resiliency, progressive, fashionista, 4th-6th principle rankings, homogeneous, freshness, wow, harmony with contrast, contrast, and too contrast) responded insensitively (insignificantly).

On Table 2, the average value of 63/21 of Period A2 equals 3. Based on this result, 5 variables (indicative, 4th-6th principle ranking, and homogeneous) appeared insensitively (insignificantly). The variables identified to fall below the average are 7 (reflective, resiliency, progressive, fashionista, wow, contrast, and too contrast). The variables that were spotted above the average are 9 (selective-reflective, 1st-3rd principles ranking, heterogeneous, nostalgia, freshness, uniformity, and harmony with contrast).

Table 1. Period A1 layers' evaluation (Ukabi & Akçay, 2024).

Criteria	S-criteria	C1	C 2	C 3	C 4	C 5	C 6	C7	F
Design approaches	Indicative	X	X	X	X	X	X	X	0
	Reflective	✓	✓	X	X	✓	✓	X	4
	Selective-reflective	X	X	✓	✓	X	X	✓	3
	Resiliency	X	X	X	X	X	X	X	0
	Progressive	X	X	X	X	X	X	X	0
	Fashionista	X	X	X	X	X	X	X	0
Principles ranking	1st	✓	✓	✓	✓	✓	✓	✓	7
	2nd	✓	✓	✓	✓	✓	✓	✓	7
	3rd	✓	✓	✓	✓	✓	✓	✓	7
	4h	X	X	X	X	X	X	X	0
	5th	X	X	X	X	X	X	X	0
	6th	X	X	X	X	X	X	X	0
Historic environment character	Heterogeneous	✓	✓	✓	✓	✓	✓	✓	7
	Homogeneous	X	X	X	X	X	X	X	0
Visual appreciation	Nostalgia	✓	✓	✓	✓	✓	✓	✓	7
	Freshness	X	X	X	X	X	X	X	0
	Wow	X	X	X	X	X	X	X	0
Relationship with context	Uniformity	✓	✓	✓	✓	✓	✓	✓	7
	Harmony with contrast	X	X	X	X	X	X	X	0
	Contrast	X	X	X	X	X	X	X	0
	Too contrast	X	X	X	X	X	X	X	0
Total									49

Table 2. Period A2 layers' evaluation (Ukabi & Akçay, 2024).

Criteria	S-criteria	C 8	C 9	C 10	C 11	C 12	C 13	C 14	C 15	C 16	F
Design approaches	Indicative	X	X	X	X	X	X	X	X	X	0
	Reflective	X	X	X	X	X	X	✓	X	✓	2
	Selective-reflective	✓	✓	X	X	X	✓	X	✓	X	4
	Resiliency	X	X	✓	X	✓	X	X	X	X	1
	Progressive	X	X	✓	X	✓	X	X	X	X	1
	Fashionista	X	X	X	✓	X	X	X	X	X	1
Principles ranking	1st	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
	2nd	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
	3rd	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
	4th	X	X	X	X	X	X	X	X	X	0
	5th	X	X	X	X	X	X	X	X	X	0
	6th	X	X	X	X	X	X	X	X	X	0
Historic environment character	Heterogeneous	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
	Homogeneous	X	X	X	X	X	X	X	X	X	0
Visual appreciation	Nostalgia	✓	✓	✓	X	✓	✓	✓	✓	✓	5
	Freshness	✓	✓	✓	✓	✓	✓	X	✓	X	3.5
	Wow	X	X	X	✓	X	X	X	X	X	0.5
	Uniformity	X	✓	X	X	X	✓	✓	✓	✓	4.5

Relationship with context	Harmony with contrast	✔	X	✔	X	✔	✔	X	X	X	3.5
	Contrast	X	X	X	✔	X	X	X	X	X	0.5
	Too contrast	X	X	X	✔	X	X	X	X	X	0.5
Total											63

From the findings, design sensibilities (reflective-related, neutral-related, and contrast-related) manifested from three variables of the Relational Evaluation Tool: design approaches, visual appreciation, and relationship with context. From Tables 1 and 2, the sum of these variables from the two periods (Period A1 and Period A2) conceptualized gave rise to reflective-related (34.5 points =75.0%), neutral-related (8 points =17.4%), and contrast-related (3.5 points =7.6%), (Figure 8).

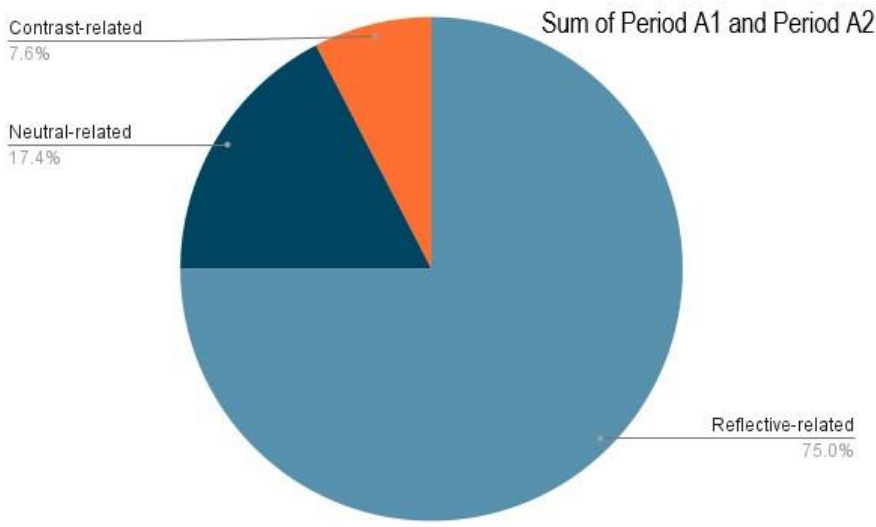

Figure 8. Summing Periods A1 and A2, adapted from (Ukabi, 2024)

When the results on Figure 8 are translated into ratios, the relations for the design sensibilities, reflective-related, neutral-related, and contrast-related, amounted to 10:2:1. Taking 33.3% into consideration as the mean percentage for the three design sensibilities will prompt the following deductions (see Table 1 and 2). Reflective-related design sensibilities came out as the most significantly adopted design approaches, with a total of 75% for both periods A1 and A2 compared to the other two, neutral-related with 17.4% and contrast-related with 7.6%. The ratio also portrays a similar progression with approximately 10 new traces of reflective-related; the corresponding for neutral-related stands at 2 traces, and the contrast-related remains at 1 trace. Since the outcome of the mean value when deduced into ratio terms is approximately 4, representing the historic limit of the historic context investigated (assumed equilibrium point) on one end. On the other end, this implies reflective-related crossed the limit by a total of 6 points, while the sum of neutral-related and contrast-related, amounting to 3 points, the average mark of the context explored was unreachable after summing the two. This quantitative approach for presenting the results came as a simplified manner of comparatively gauging visual data and texts into quantities as traceable tangibles open to experimentation like what designers do during form composition.

A logical reasoning of these outcomes from Figure 8 with the design sensibilities derived from the literature section on Figure 1 shows conformity and progression with the three design sensibilities identified. Overspread of reflective-related was identified in both theory at a general scale and in practice on a context-specific scale of the northern side of Nicosia Walled City. A consideration of the past is not commensurate with

present and the future aspirations in terms of values. The mystery of the historic traces is broken with the uneven preference for nostalgia values to a neglect of typological values proportionately. Such tendencies sprouted unsustainable imitations and diminished the traces of some cultural civilizations of the context as a product of different architectural solutions. This current status could signify a form of stagnation holistically, of which the architects are not the only cause; other agents and factors contributed to it. The experience of P. Zuthor's landscape experiment as explored by S. Ventura on creating "molecular perception" has not been allowed to flourish in this context. This outcome also contradicts the definition of cultural heritage provided by UNESCO (1972) when dwelling on the legacy of the past without considering the present and future aspects of the historic traces' transference.

The reading of content (conservation principles related to adding new traces in the historic contexts) and the interpretation process tend to drift to a preferred linear application. A practice aimed at discarding other design possibilities deemed outside the reflective-related design sensibilities turned unsustainable. This trend affected heterogeneous historic contexts negatively through reduction of diversified layers, but for homogeneous historic contexts, uniformity could be harmonious. However, in the context studied, raising the historic urban fabric to the equilibrium point with neutral-related or above it will bring about hybridization, which is a form of continuity or evolution. In the same progression, elevating the contrast-related sensibilities to the equilibrium point without lowering other sensibilities will lead to definitive urban sequences, which can be described as change. This level of change is

lively, visible, aspirational, and compatible, but not regimented by only architectural artistic aesthetic rules. However, an exaggeration of contrast-related sensibilities to the level of "stand-alone artifact" for a design icon without considering the existing ambiance of the historic context will be problematic. In either way, quantitative and qualitative weighing of tissues will be crucial to maintaining the historic fabric's transitional and sensational balance.

These findings also agreed with G. Strappa's and others stance on "type" or "model" for architectural solutions in the historic context with two modes of visual intensity. The type encourages multiplicity of historic urban fabric logic and is open-ended. This historic context investigated fell short of this during the TRNC Period, with contrast-related design sensibilities at approximately 7.6%, as shown in Figure 8. However, the model solely dwelt on the past familiar design samples and is closed-ended. The findings conformed with this perspective significantly based on the results shown in Figure 8, with reflective-related design sensibilities embodying approximately 75% of the entire new traces.

These findings also affirmed the contributions of C. Anderson for the historic context described as dynamic supporting design creativity, which aligned to additional heterogeneous traces on the one hand. On the other hand, fragile context depicted difficulty in articulating sequential diversity. This kind of historic context intricately breeds homogeneous traces. Midway between these two design sensibilities featured another identified as neutral-related, which connects features of the other two. They act as the balancing and, at the same time, as a game changer, depending on the

existing evidence of the historic context. The findings show that neutral-related increased the urban fabric created from reflective-related design sensibilities by approximately 17.4%. This is because the historic context displayed intense reflective-related traces on the one hand, and on the other hand, its existing significance before the TRNC Period was heterogeneous, constituting the evidence to build upon.

4. Conclusion and Suggestions

The northern side of the Walled City of Nicosia represents an open museum with multiple historic traces as the formative evidence of the various cultural civilizations' tendencies, which together define its urban sequence. Based on this long-standing heterogeneous composition, evaluating the role of design sensibilities on its historic urban sequence during the TRNC Period became crucial. This study conceptualized three design sensibilities: reflective-related, neutral-related, and contrast-related to make scientific sense. That stance, in turn, was interwoven with three roles, which resonates with Isaac Newton's quote: "For every action, there is equal and opposite reaction."

The reflective-related design sensibilities extensively stimulated and celebrated the nostalgia values of this historic context but undermined its diversified historic sequences. This action ended at introducing a static mode of the historic urban fabric in the present. In short, such practice plays within the gallery of design universality (uniformity) and disrupts the concept of type and continuity, invariably weakening the typological value of the historic environment.

The neutral-related design sensibilities viewed comparatively were fuelled below the historic visual limit but contributed to the role of the reflective-

related because of their intermediate backward and forward interaction to the side where the visual energy attraction is greater. In this case, it flowed towards the reflective-related design sensibilities. The contrast-related design sensibilities were lightly galvanized at a visual intensity that could not energize the typological values but landed at just hybridization. Their effect was submerged for lack of continuity force, and thereby leaving the historic sequence constituents to tangle.

Based on these levels of actions and reactions identified in Nicosia Walled City's northern side, the factor of sustainable change (conservation) appears irregular and retarded during the TRNC Period. The role of the reflective sensibilities fuels saturation of homogeneous historic sequences (traces) as they were implemented frequently. The next manifestation began to drive contrast sensibilities towards incremental historic sequences, but such efforts were thwarted by sparingly incorporation of contrasting features. The role of design sensibilities on the historic sequences of the historic context investigated settled at fabric maintenance. The study suggests architects and regulators reconsider the synthesis of new traces into historic contexts with heterogeneous character with the litmus paper of design sensibilities. They should incorporate proportionally the variables that activate design sensibilities and unity as a quantitative check rather than bridle measures. They should avoid over-leaning to extreme ends that freeze historic sequence or traces within the design framework.

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Conservation of Architectural Heritage: Traces of History

Chapter 10

Applying "Big Data" Layouts for the Design Strategies in Architectural Heritage Through Investigation of Data Mining Techniques

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1. Introduction

The aim of the study is to present a model proposal for the application of big data bases for design strategies in architectural heritage through the study of data mining techniques. In this context, the scope of the study focuses on the data obtained from the literature studies focusing on design strategies and big data and data mining in architectural heritage and the way these data are related. The method of the study focuses on presenting a model by identifying and evaluating the relationships between the prominent themes and approaches in the literature review. In this context, IoT technologies and big data solutions, smart city concept, IoT devices, BIM model, data analysis with AR/VR techniques, a multidimensional collection pyramid (MAP), big data solutions, cloud platforms, cyber security techniques, artificial intelligence-centered AR/VR techniques and data analysis, HBase distributed database and glTF format for BIM model data based on the complex, A multi-step model has been created. While the study cannot directly provide a physical tool for the study of data mining techniques of big data bases for design strategies in architectural heritage for the near future, it can work as a powerful aid to determine a strategy and an approach and to trigger new initiatives for these inputs to stand out as a work culture in the long term.

Living in a constant state of transition between reality and virtuality reduces the focus on the built environment in architecture. In order for architecture to remain resilient in the face of rapidly changing user demands, a more proactive relationship with the digital environment is required. With the collection of personal data, information sets that reach the size of large data are formed, even if they belong to a single user. This

data has the potential to reveal unpredictable patterns thanks to machine learning and cross-referencing. It is thought that personal big data can transform future architectural workflows (Meekings & Schnabel, 2016).

In the digitalization process, big data has become an important element for the strategic decisions of organizations. The development of analytical capabilities and facilitating innovation in business processes are gaining importance. It is also known that data security, privacy, and IT infrastructure are challenges that need to be adapted, and that big data has a significant impact on business operations and strategies. This impact is especially important for service customization and the development of predictive functions. At the same time, there is a need for changes in privacy policies, risk management, and data governance (Sholihati et al., 2024).

With big data and the Internet of Things, there is an increase in the use of different elements in architectural design. Traditional architectural elements have an important place in local building decoration and in the integration of modern architecture, these elements reflect the cultural heritage and provide a holistic harmony. However, there is a research gap on how to apply big data technologies to use these traditional elements more effectively in the architectural field. Studies that evaluate the use of traditional elements in different proportions with a scientific model and contribute to the development of this industry with modern aesthetic needs and innovative applications of traditional elements in the building decoration industry gain importance in this context. Analyses on how big data is used in the analysis of requirements in architectural decoration are made using computational models and traditional elements are combined

with modern architecture in a more harmonious way. Providing recommendations for the scientific selection of traditional factors in order to fill existing gaps is also positioned as part of this process (Liu, 2022). In this context, the common themes that need to be evaluated are highlighted below and the prominent values are evaluated relationally. These emphases also stand out as an important basis for the basic structure required for the development of a model (Figure 1).

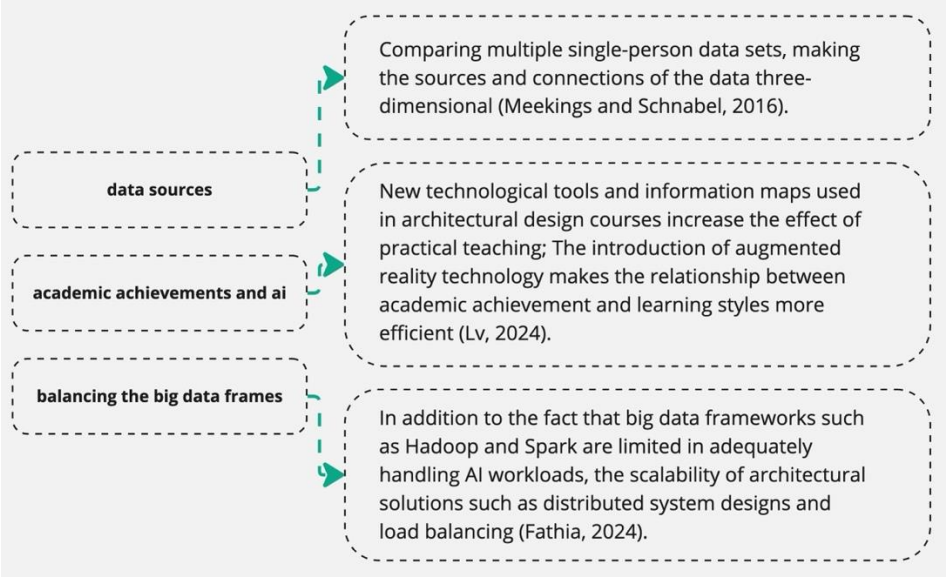

Figure 1. Main layouts to structure a model.

2. Big Data Layouts for Design Strategies

The architectural design of the system establishes a direct relationship between non-functional requirements and software architecture. In particular, system security stands out as an important non-functional need. The choice of architectural style and structure is made on the basis of non-functional system requirements. Big Data technologies are used for the storage of operational data in public areas. It is recommended to use a

secure architectural design in systems running on the cloud. Security issues focus on privacy and privacy, so different components of Big Data are being investigated. The security of outsourced cloud services is a growing concern, especially in terms of protecting sensitive data. Malicious database administrators can access and modify this data, which calls into question the reliability of database service providers. Various security mechanisms are needed to protect sensitive data in public clouds. In the tests, statistically significant changes were observed in plain text and multimedia content in different data sets from small to large (Jamali et al., 2024).

Architectural research plays a critical role in the development of knowledge in this field. The selection of the appropriate research methodology is very important to obtain high-quality results. Research methods help identify the most effective scientific strategies for testing hypotheses based on specific theories. However, choosing the most appropriate method among the various methods available can pose challenges for researchers. In this context, the Delphi method, which is widely used in architectural research, draws attention (Arisman et al., 2024).

We live in the age of big data, which is disrupting much of our society and organizations. Companies can benefit from this big data, but it hinders the use of information systems that support companies. In this article, we present an architectural model for integrating big data into educational information systems. The model is based on the urbanization paradigm that urban planners use when creating new cities or renovating existing cities. The model is illustrated at two architectural levels, emphasizing the

transition from one level to another using the urbanization paradigm (Redouane, 2024).

The tourism industry is making greater use of big data to improve decision-making processes and gain valuable insights. This data is becoming a promising tool for analyzing many aspects of tourism, including sustainability. The integration of big data with pioneering technologies such as machine learning, artificial intelligence, and the internet of things has the potential to revolutionize smart and sustainable tourism. However, the use of big data in the field of sustainable tourism is still limited. During the implementation phase, challenges arise such as governance, data privacy, ethical issues, and regulatory compliance. In this context, it is necessary to develop appropriate management strategies to overcome the problems (Rahmadian, 2024).

Big data is becoming the main component of enterprise architecture with the increase in digitalization. Among the factors facilitating the development of an efficient enterprise architecture, the effect of big data has an important place. Qualitative analysis is a method used to understand the complex interactions between enterprise architecture and big data. In this context, it is stated that big data improves analytical capabilities and provides innovation in business processes. In addition, big data makes important contributions to strategic decision-making processes. However, challenges such as data security, privacy, and adaptation of IT infrastructure must also be considered. Changes in applications are having a significant impact on business strategies and operations, improving system compatibility and providing customized services. The development of predictive functions is emerging as part of these changes. However,

updates to privacy policies and data governance are required. The new findings reveal the effects of big data on enterprise architecture and provide recommendations for practitioners and researchers in the field to develop successful strategies (Sholihati et al., 2024).

The rise of big data analytics platforms is generating remarkable interest among practitioners and academics. Organizations in the manufacturing industry gain great advantages in realizing intelligent computing and manufacturing activities by leveraging data analytics throughout the entire product lifecycle. However, redesigning existing information systems is one of the key requirements to align with modern data analytics platforms. A comprehensive review of the goals for data analytics adoption is important. In order to avoid cost increases, the uncertainties on the system quality of the new big data architecture need to be addressed. A goal-oriented approach will help stakeholders select appropriate architectural solutions in line with quality goals and constraints. This approach identifies architectural requirements by identifying potential obstacles. Goal-oriented modelling is used to identify obstacles that cause quality target failures, and fuzzy logic methods are integrated to solve uncertainties. The approach offers an innovative framework that facilitates the integration of big data analytics platforms into production systems. The effectiveness of this approach is proven by the scenario of redesigning hyperconnected production systems (Fahmideh & Beydoun, 2018) (Figure 2).

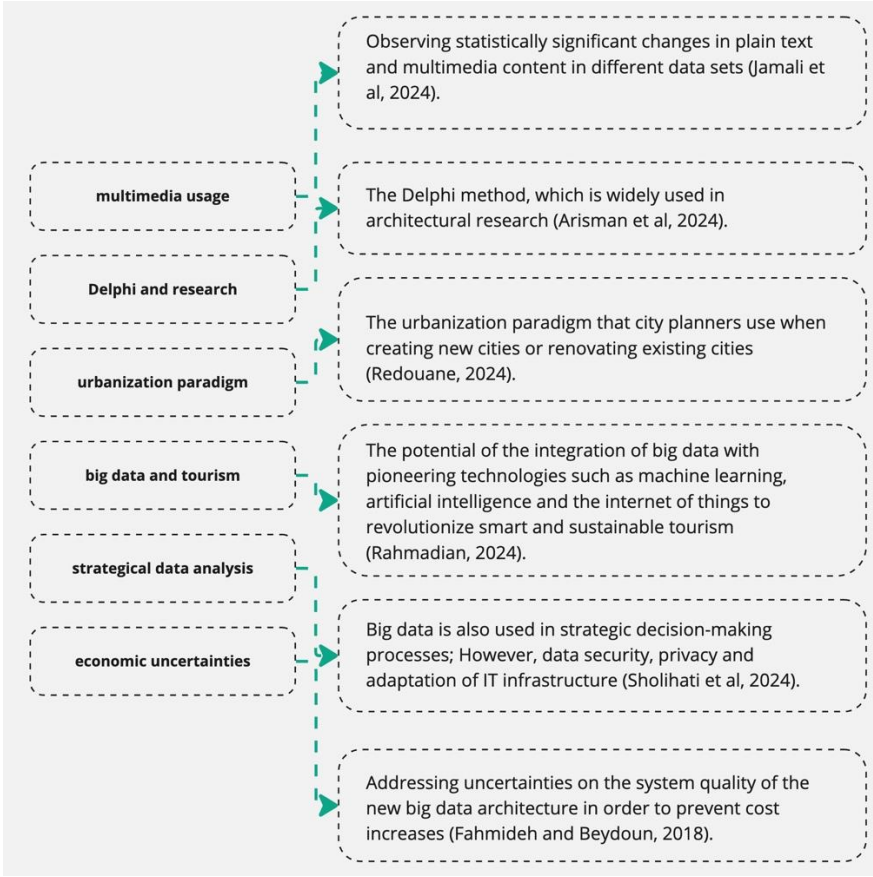

Figure 2. Big data layouts for design strategies

3. Potentials of Big Data for Architectural Heritage

Beyond elements such as color, shape, texture and material in urban space architecture, it becomes evident as a complex element that forms the reflection of urban areas and human culture. The difficulty of architectural color measurement prevents applications in street space from making large, detailed improvements. In recent years, the advancement of information technologies and the maturation of big data and deep learning techniques offer new research opportunities in this field. In this context,

an effective method has been developed by using deep learning technology to determine architectural colors in urban space. The experimental research, carried out on Jiefang North Road in Tianjin, involves segmenting streetscape images, removing architectural elements, and optimizing the edges of structures. The SegNet deep learning algorithm is combined with the K-Means clustering model to determine the colors of architectural elements. Building color measurement results were obtained by cross-sectional verification supported by questionnaires. This validation reveals the validity of the methods for the study of architectural colors in the street area. The overall coordination and hierarchy of architectural colors on Jiefang North Road was also analyzed. The results show that the measurement model can effectively present architectural color information and help designers perform color analysis by using this information. This method is of great help to managers, planners, and the general public in summarizing color characteristics and identifying problems (Han et al., 2023).

Architectural aesthetics allows elements such as shape, color, and rigidity to come together to enhance the appearance and value of a building or construction structure. Aesthetic application is a process that requires a high level of data collection and analysis and includes the basic requirements of structures such as safety and durability. In this context, the Paradigm of Selective Aesthetic Practice (SAAP) has been developed. SAAP collects site-specific information to meet user criteria in structural design, assessing people's expectations, visibility, and structural performance. The success of the application varies according to the adaptability and performance of the region. The impact of the data is

measured by deep learning methods. Aesthetic design recommendations are provided with two-tier configurations for zone adaptability and performance measurements. In addition, the deep learning module is trained to correct design errors. The training process is carried out independently of the previous layers of error and adaptability validation. As a result, user satisfaction is assured by qualified aesthetic design (Tang, 2023).

The role of digital technologies in architectural representation reflects today's complex socio-cultural progress. An understanding of the term render reveals the shift in the use of digital tools in contemporary architectural pedagogy. While the impact of new digital technologies symbolizes a historical and cultural evolution, it also triggers the development of an interdisciplinary culture. Today, instead of working only on perspective in architectural education, interaction with the environment is provided through tools such as user interface (UI) and virtual reality (VR). This creates a significant change in architectural representation and offers new ways to perform. The management of Big Data is transforming the understanding of hyper-textuality and hyper-resolution in the architectural field. Now, each of the architectural components presents a granular structure with the same resolution as the whole. The adoption of new means of representation allows for the emergence of a dynamic cultural dimension. These technological advances are becoming a fundamental direction in the evolution of architectural education and representation. As a result, the architectural representation of the digital age brings about a cultural transformation beyond technical developments (Bono, 2022) (Figure 3).

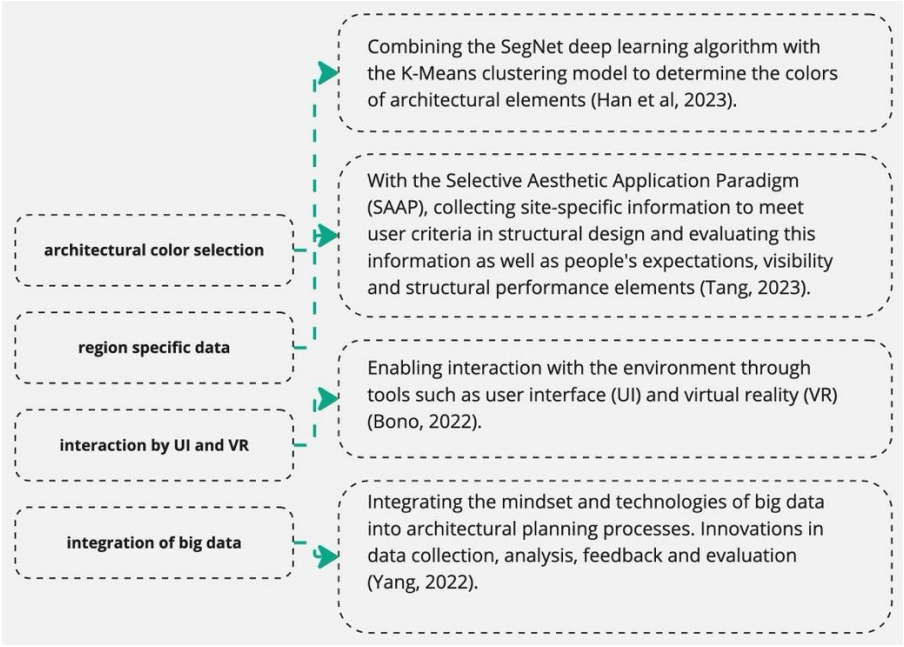

Figure 3. Potentials of big data for architectural heritage.

In the visual design of the building area model, a big data map-based method has been developed. This approach addresses the technical challenges of the information propositions offered by big data maps, enabling the integration of building area modelling and map visualization. Eliminating some of the shortcomings of traditional methods, this model offers an increase in work efficiency of up to 65%. The mindset and technologies of big data are integrated into architectural planning processes. Innovations in data collection, analysis, feedback and evaluation stages make architectural planning more effective. The big data perspective plays an important role in architectural design. The application of the methods and techniques required for the realization of visual design accelerates the process. This innovative approach creates a dynamic space

that encourages development in architectural planning. Big data maps allow visuality to come to the fore in design processes. In conclusion, big data-based methods offer a contemporary solution in building space modelling (Yang, 2022).

3. Investigation of Data Mining Techniques for Architectural Heritage

Big data analytics is used to discover meaningful patterns in large data sets. The integration of these analytical methods with agent-based simulations is gaining importance in order to improve architectural and urban design processes. Agent-based models create hypothetical cases, making it possible to examine designs with alternative datasets. The potential of this integration is discussed in two conceptual studies involving multi-level pedestrian areas and office designs. It is observed that agent-based models make design processes more flexible and efficient when used in conjunction with big data analytics. This combined approach offers valuable strategies, especially for urban designers and architects. Big data analytics has the capacity to produce more precise and dynamic solutions in spatial planning processes. It is noted that agent-based simulations generate new datasets for testing various architectural scenarios. This system enables more predictable and effective decisions to be made in future design projects. As a result, the combination of big data and agent-based models is becoming a powerful tool for both architecture and urban design (Scheutz & Mayer, 2016).

In the process of visual reconstruction of building spaces, large point cloud data sets pose challenges in terms of accuracy and integrity. To overcome this problem, a new reconstruction method has been developed using laser point cloud big data. Three-dimensional laser scanners collect point cloud

data in building areas and this data is processed in three stages: hierarchical calculation of the point cloud pyramid, thinning and block processing. After these processes, the line features of the building area are extracted using the improved Average Shift method. In addition, broken lines in the data are detected by double-radius threshold line tracing method. Features obtained from point cloud data of building areas form the basis of visual reconstruction. In this process, visual configuration is completed with translation matching and field matching algorithms. Multiple filtering techniques are applied in the data processing stages to increase the accuracy of the method. This arrangement of point cloud data recreates digital models of building areas in a more precise and seamless way. This technique contributes to more accurate visual results in building renovation and design projects (Ma & Li, 2024).

In architectural decoration engineering, construction quality control has a critical importance on project safety and cost. The development of big data technology offers a new opportunity to improve quality management in this area. The use of big data in project quality management is implemented to increase the effectiveness of construction quality control measures. PDCA and SDCA quality control theories and BIM technology are combined to enable process monitoring of building decoration projects. Big data-based construction quality control methods exhibit a significant performance increase compared to traditional methods. As a result of the implementation of the new model, construction quality scores are on average 5 points higher than in the first phase, and the frequency of quality problems is reduced by 23%. The multi-layered fuzzy comprehensive evaluation model rates the quality control effect as "excellent" with a

62.1% commitment value. The integration of data technologies significantly increases the effectiveness of construction quality control. This provides an effective management model in the sector and strengthens quality control processes. Architectural decoration projects achieve more efficient quality management thanks to these innovative approaches (Hong & Xie, 2024).

A new public domain assessment method has been developed on the basis of big data analysis. Visitor feedback on the architecture and landscape design of the Kimbell Art Museum is examined and a new evaluation methodology is revealed. In particular, the emphasis is on the functionality of landscaped public buildings. Thanks to the advantages of big data, effective analysis methods are being developed for public spaces with similar characteristics, which allows the environment to be optimized in the information age. Thus, the data obtained is used to improve public spaces and support design processes (Zeng et al., 2024).

A big data-based design method aims to improve the geometric form space composition and color planning analysis capability of smart city public buildings. This approach combines computer vision and remote sensing technologies to enable the perception of spatial combinations on building aesthetics. The spatial composition parameters of the building geometry are determined by a difference distribution model. The characteristics of the form elements in urban architecture are extracted and a big data information base is created at the aesthetic level by analyzing smart parameters. Thanks to this knowledge base, the spatial design of smart urban public buildings is carried out. Application tests show that this method improves the geometric structure and color planning of smart city

public buildings. In addition, it makes it possible to provide architectural aesthetics with high precision in large areas. It has the potential to increase the relative independence of the space in line with user needs and management requirements. This method supports urban areas to become more aesthetic and functional. As a result, an innovative approach for smart city applications is presented (Wang, 2022).

The architectural design of the system is treated as a creative process. There is a close relationship between non-functional requirements and software architecture. Security is one of the non-functional needs of systems and is a major concern. The architectural style and structure chosen must conform to these non-functional system requirements. Big data technologies are used to store large amounts of operational data in public spaces. A secure architecture in cloud-based systems is supported by design, structure and behavior diagrams. External security issues pose a serious threat to privacy and privacy. Malicious database administrators who gain access to sensitive data are among the elements that threaten data security. Effective security mechanisms are needed to protect data residing in public clouds. Tests show that statistically significant changes occur in plain text and multimedia content (audio and video) at time intervals measured in milliseconds (Jamali et al., 2024).

As a related example, the Dunhuang Mogao Caves offer an important resource in architectural history research as an art museum in the middle of the desert. The development of big data technologies in recent years greatly supports studies in this field. The creation of the Dunhuang Digital Museum illustrates the advantages of digitization. Digital processing of architectural paintings opens up new avenues for the promotion and

development of traditional culture. In 2017, China's State Council launched a project to promote the heritage and development of China's excellent traditional culture. Digital research of architectural paintings contributes to the preservation and dissemination of cultural heritage through big data and digitalization. This process provides a solid foundation for more in-depth analysis of architectural paintings and the preservation of research. Digitalization supports architectural history research as well as modern cultural communication. These investigations offer important directions for future architectural developments and the preservation of cultural heritage (Weng, 2024).

In the past, families where individuals with the same surname gathered built special family temples to worship their ancestors. These temples are called ancestral halls, and the historical significance of the family comes to the fore here. The South Min region places more emphasis on family ties than the northern region, attaching special importance to blood kinship. The people of southern Fujian have been internalizing in their aesthetic consciousness the values inherited from the architecture of these ancestral halls for generations. This study investigates the relationship between the folk aesthetic culture of Minnan ancestral halls and technological developments. In the context of Big Data and Artificial Intelligence, the impact of these developments on the evolution of regional aesthetic features is examined. Minnan ancestral halls adapt to the climatic conditions of the region, creating a unique architectural framework. The use of vivid colors and the art of stone carving are among the distinctive aesthetic features of these architectural structures. The large number of family temples requires a better analysis of aesthetic features. In this

context, big data storage and analysis methods are used to study representative ancestral hall buildings (Liu & Zhang, 2024) (Figure 4).

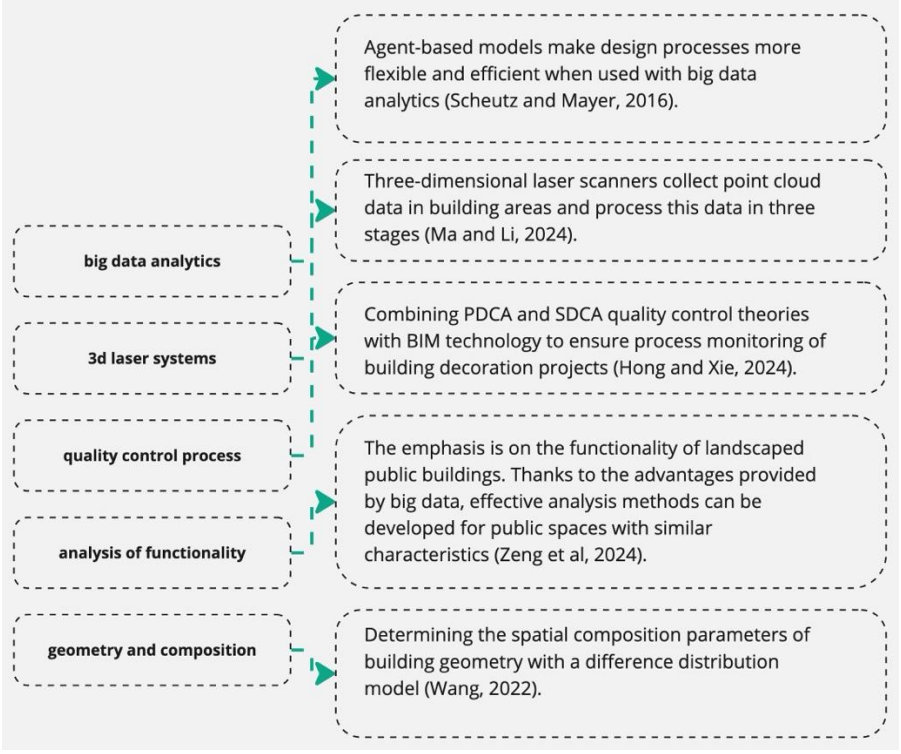

Figure 4. Investigation of data mining techniques for architectural heritage.

4. Structuring a Model to Apply "Big Data" Layouts for the Design Strategies in Architectural Heritage

Today, advanced IoT technologies and big data solutions aim to mimic or change the functions of the human brain. In this context, the trend towards IoT-based and big data technologies for next-generation smart buildings and city applications is increasing. Humans play an active role in the development and deployment of intelligent systems using these technologies. The smart city concept is evaluated together with its

ecosystem and its future aspects are examined. The book offers important insights into intelligent systems and suggests strategies with AI applications. The smart city framework is supported by architectural concepts and design principles. In addition, smart solutions and visualization simulations contribute to the forecasting of projects. The solution proposals are based on six main infrastructure areas: big data solutions, IoT technologies, cloud platforms, cyber security techniques, AI-centric AR/VR techniques, and data analysis. The studies carried out in these areas include the information and communication technologies ecosystem for the development of the smart city framework. As a result, proposed solutions for smart cities are integrated with current technological advances (Khang et al., 2023).

Computer Aided Architectural Design (CAAD) establishes a historical link with the use of generative algorithms and architectural intelligence in architecture. Advances in Artificial Intelligence (AI) and Machine Learning (ML) offer potential for building digital architectural tools, but these opportunities are underutilized in practice. Architects and urban designers are hesitant to use automated design software. This hesitation is linked to the development of digital tools such as CAAD, Computer Aided Design (CAD), Building Information Modelling (BIM) and Geographic Information Systems (GIS) in the past. Digital tools have evolved from CAD systems that support architectural elements to BIM software that functions without AI. While architects are dealing with design problems at the symbolic level, the benefits of using analytical artificial intelligence in solving these problems are increasing. Next-generation digital tools offer artificial intelligence possibilities that can be integrated with big data.

However, it is necessary to establish a clear framework in the communication between artificial intelligence and professional designers. The adoption of spatially analytic AI by smart cities adds a new dimension to environmental designs. In conclusion, AI plays a critical role in improving the quality of life for city dwellers and enabling them to achieve their sustainability goals (Stojanovski et al., 2022).

A visualization method based on a big data map has been developed to explore architectural space models. The tile pyramid model expands the hierarchical sum of time, space, and attributes by creating a multidimensional aggregate pyramid (MAP). In this context, the Spark cluster is used as a parallel preprocessing tool and the HBase distributed database is used as a persistent data storage solution. In addition, a component hierarchical division strategy based on the IFC structure tree is proposed for the restructuring of the BIM model. The reconstructed IFC file is converted to glTF format and the relationship between geometric space and semantic attributes is provided. The visibility detection algorithm is being developed with the aim of optimizing the visibility of building components based on the hierarchical limiting volume (BVH) structure. Experimental data shows that BIMviews takes about 40 seconds to load the IFC file, while the glTF file takes only 7 seconds to load with Three.js. This proves that the glTF format is more suitable for BIM model data. The visualization design made with the big data map offers viewing and interaction through the glTF format. As a result, the effectiveness of the visualization method based on the big data map is proven (Xu & He, 2022).

Today, the concept of smart city has gone beyond being just an idea and has become a constant need. These cities are supported by a complex structure built on big data collection and management. Intelligent System-Oriented Big Data Architecture stands out as a recommended data management-based solution for smart cities. Elements such as IoT devices, video cameras, and drones are used to process various data sources. The proposed data migration strategy also covers data processing and storage. The technical limitations of the big data environment are examined in detail. Data modelling, on the other hand, is handled from both a business intelligence and data science perspective. The aim is to facilitate daily life practices by providing city managers with the necessary solutions for smart and effective management. In this way, it contributes to the functioning of smart cities. As a result, it is important to create an efficient infrastructure for the sustainability of smart cities (Ouafiq et al., 2022) (Figure 5).

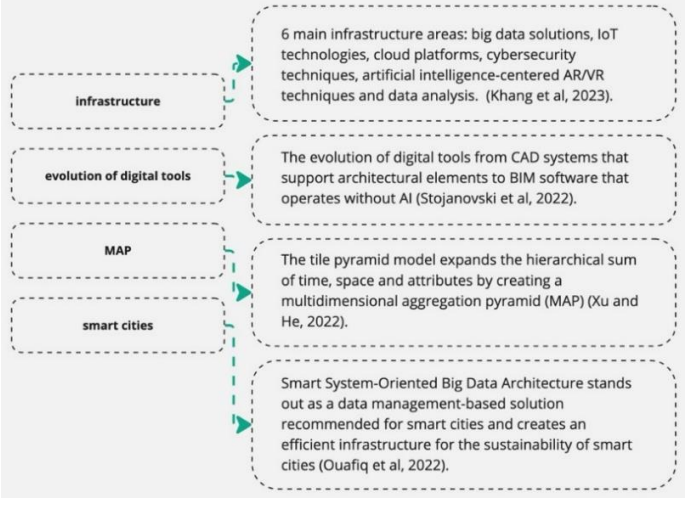

Figure 5. Structuring a model to apply "big data" layouts for the design strategies in architectural heritage.

4. Discussion and Conclusion

The transition between reality and virtuality reduces the focus on the built environment in architecture. Establishing a proactive relationship with the digital environment is essential for the discipline of architecture to keep pace with changing user demands. The amount of data collected about individuals reaches dimensions that can be considered as big data, even though it belongs to a single person. This big data phenomenon has the ability to uncover unpredictable patterns through methods such as machine learning and cross-referencing. The use of personal big data, which has the potential to influence future architectural workflows, is being explored. Ways are presented on how personal data can develop special connections for architectural design processes. Comparing multiple single-person datasets discusses two key issues on making the sources and connections of the data three-dimensional. In this context, a discussion is put forward about the future of data that will aid architectural design processes. Thus, it is discussed how data can be a tool in the practice of architecture. In short, the use of big data in the field of architecture paves the way for new design processes (Meekings & Schnabel, 2016) (Figure 6).

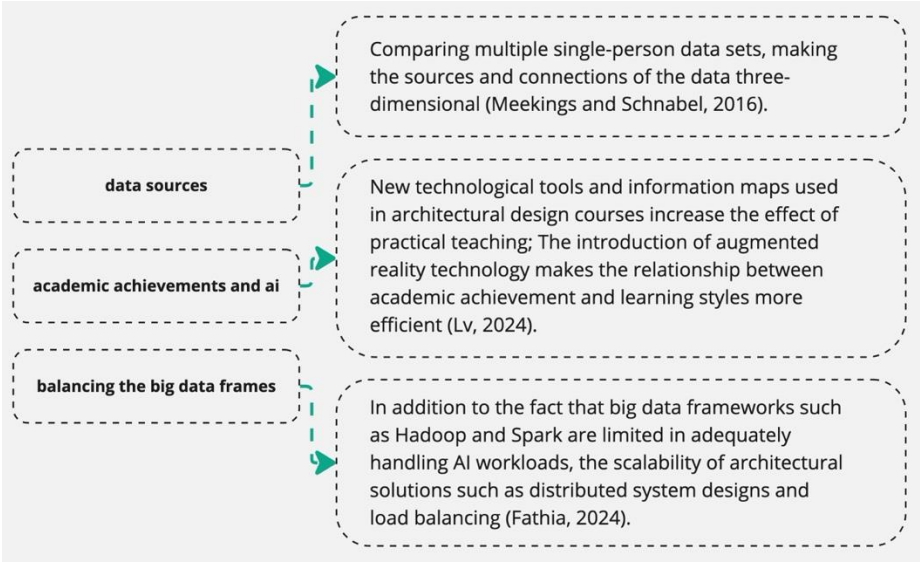

Figure 6. Outputs

New technological tools and information maps used in architectural design courses increase the impact of practical teaching. Problems such as long-term implementations, high costs, and validation difficulties of traditional teaching methods are solved by a more effective and autonomous teaching approach. In order to enable students to better understand the course content, the relationships between information elements and learning resources are optimized with knowledge maps. In order to strengthen the teaching organization, learning processes are restructured by taking into account the conceptual similarities of the information nodes. The introduction of augmented reality technology makes the relationship between academic achievement and learning styles more efficient. Thanks to the integration of technological tools, the efficiency and quality of learning of students increases significantly. The skills of architectural design students are making significant advances in all dimensions. These

reforms strengthen the quality of architectural design education and students' practical abilities (Lv, 2024). The influence of social media stands out as one of the defining features of the 21st century. Trillions of data points in the digital environment have a different importance according to the information sought. How this data can be used as a driving force in architectural design is being investigated together with artificial intelligence and other digital tools. Using big data, social media and artificial intelligence, various studies and journal articles on problems in the field of architecture and urban design are examined. The effective use of data collection methods in the field of design and urban planning is gaining importance in order to inform architectural design processes. Accurate evaluation of digital data helps to reveal design intentions and trends. This process allows architects and designers to develop more innovative and effective solutions (Trapold & Saldana Ochoa, 2023).

Artificial intelligence (AI) technologies and big data are transforming many industries, but the integration of these two fields faces scalability issues. In the interaction of AI systems with big data, computational efficiency and system architecture are among the critical elements to overcome these challenges. In AI systems that process big data, existing hardware and software solutions cause computational constraints, which affects the processing speed. The challenge of real-time data processing can be overcome by the development of robust parallel processing techniques. In terms of data management, the integration of high-speed data sources is a key requirement in scalable AI systems, and data preprocessing strategies play a critical role in the success of these systems. Big data frameworks such as Hadoop and Spark can be limited in

adequately meeting AI workloads. In addition, architectural solutions such as distributed system designs and load balancing are also important for scalability. Edge computing and cloud-based solutions, on the other hand, come into play to increase scalability for AI systems. Federative learning offers an innovative solution for training AI models on distributed data sources. As a result, hardware, algorithm, and architectural innovations are brought together to overcome scalability challenges and guide future developments (Fathia, 2024) (Figure 7).

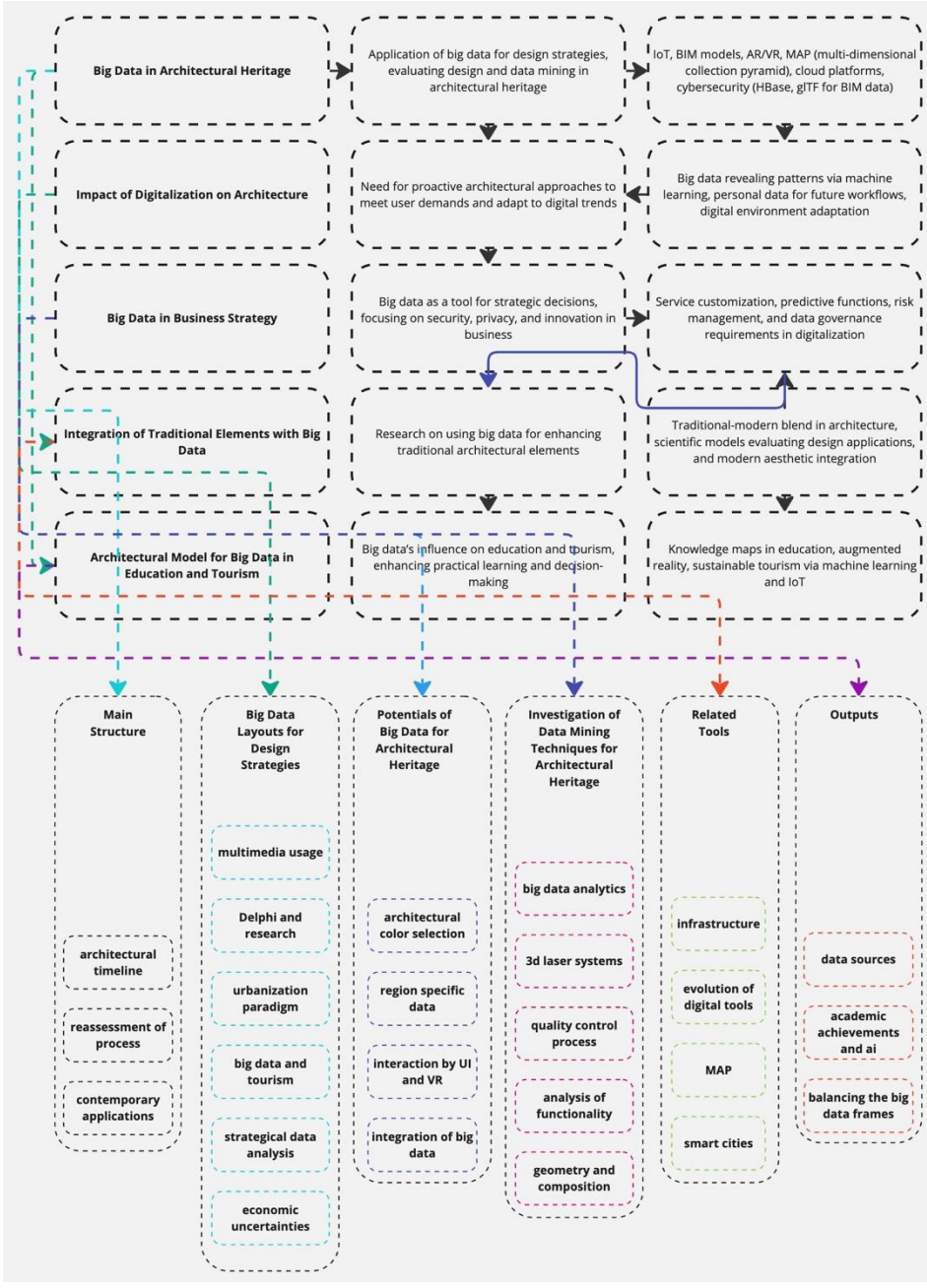

Figure 7. Model: Main structure to outputs

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The article complies with national and international research and publication ethics. Ethic Committee approval was not required for the study.

Author Contribution and Conflict of Interest Declaration Information

All authors contributed equally to the article. There is a conflict of interest with the Person(s) named.

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Conservation of Architectural Heritage: Traces of History

Chapter 11

An Evaluation on Legislation Related to the Conservation of Cultural Heritage in Northern Cyprus through International Regulations

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1. Introduction

The legislative framework of conservation has internationally accepted grounds, and in general, local laws and regulations follow those international concerns on the conservation of cultural and natural heritage. Pioneered by organisations such as the UNESCO and ICOMOS, richness and sofistication of those key points regarding conservation can be observed through an analysis of different charters and declarations since 1930s up to the present. It is important to follow this international agenda since conservation is a dynamic process which is affected by social, cultural, economic and environmental dynamics globally and has to be updated accordingly.

This research aims at a comparative analysis on cultural and natural heritage-related legislation of an internationally unrecognised country (Turkish Republic of Northern Cyprus/TRNC) through those concepts and internationally emphasised concerns. This long neglated comparative analysis of heritage-related legislation of Northern Cyprus is seen as imperative, considering the amount of historic structures in that portion of the island. Here this study will shed light on the necessity of reflecting universal concepts of contemporary concervation on local legislation which can prevent unreversable loss in terms of universal heritage of Northern Cyprus.

1.1. Cyprus: A Political Background on Legislation related to Conservation of Natural & Cultural Heritage

Cyprus has been hosting different civilisations which has been reflected on cultural heritage of the island. Although there were some unofficial attempts of heritage conservation during the Ottoman Period (1571-1878),

the legislation regarding heritage conservation dates back to the British Colonial Period (1878-1960) of the island. With the establishment of the Republic of Cyprus (1960) there were attempts to create a new architectural language, 'Cypriot Modernism' where conservation of heritage did not receive much attention during this short period (Arsoy & Başarır, 2019). From 1974 onwards, the island is divided 'defacto' and since then, the northern part of the island has been exempted from international recognition, except Turkey. In May 2004 the Republic of Cyprus joined the EU with an indefinite exemption of the northern part from EU legislation until a settlement has been reached. The pressures on land development by overseas owners have continued to grow and interest in the natural and cultural heritage of Northern Cyprus among foreign peoples and organisations has increased.

At present, this uncontrolled growth threatens the natural and cultural heritage of the island. Following the Annan Plan and with the opening of the boarders in 2000, and especially after the Republic of Cyprus becoming full member of EU, the northern part of the island received more opportunities interms of expertise and finance for the implementation of conservation projects. However, this has not been adequate as this part of the island is densely populated with different levels of cultural heritage. Nonetheless, the Cyprus Problem remains unsolved and the consequences of uncertainty and financial problems still have a negative impact on the conservation of the cultural heritage in the North.

However the political situation, the cultural and natural heritage of the island has many universal values that has to be conserved for the future generations. It is important to understand the continously updated concepts

underlined through the internationally accepted documents of conservation, as these matters becomes a part of the legislative and therefore implementational aspects of conservation in accordance with the socio-political and cultural and economical dimensions of specific countries.

1.2. Developments in the International Legislation of Heritage Conservation

According to the dictionary meaning, 'conservation' is 'the act of conserving, prevention of injury, decay, waste or loss; preservation'. However, heritage conservation has been recognised as the synthesis phase of an ongoing dialectical relationship between the old and the new. This synthesis has to be defined in a complex system where cultural, social, economic and environmental dynamics are operational at micro and macro scales. This is not a stable process; in fact, it has been formulated and reformulated continuously.

The protection, safeguarding of the historic environment has not only established a global operational reach but the field itself has significantly broadened. Heritage conservation is affected and evolved through both international and national approaches, dynamics and experiences. To understand the way a country develops its official perception of heritage conservation is possible through examination of the legal regulations of the country (Kuban, 2000; Kamacı, 2014; Orbaşlı, 2017; Picard, 2001).

The principles regarding the theoretical structure of heritage conservation are defined by the international platforms and adapted to the relevant country conditions by legal regulations. Social, economic, political,

technical, cultural and implementational dimensions of heritage conservation become functional through these legal regulations.

Starting with the 19th century, different approaches through heritage conservation can be perceived. Especially the reargument amongst the Arts and Crafts Movement and the ideas of William Morris who founded the 'Society for the Protection of Ancient Monuments (SPAB)', against the ideas of John Ruskin, one can conclude that the theories of 19th century Europe still define main discussions at the present (Orbasli, 2017).

The key theories of twentieth century conservation, which were emphasized by international charters and conventions of the period, such as of 'working with evidence', 'minimal intervention', 'tradition over technology', 'legibility and respect for the patina of age', can be clearly linked to 19th century European approaches to science, art and history (Orbasli, 2017). These international charters are limited to circumstances, to some extent, and time in which they were setup. A chronological evaluation of these international charters and declarations would provide clarity to the global attitudes and approaches regarding conservation. Nonetheless, it has been observed that, in the 21st century, universal concerns dominate the heritage conservation as well.

As it can be seen in Table 1., considering the international platforms of heritage conservation, a significant shift in terms of the key issues of conservation can be perceived. Here at the begining of the 20th century the main key issues regarding conservation has been shifted from the conservation of objects/monuments to conservation of environments and the urban texture. This can be especially witnessed considering the Athens Charter (ICOMOS, 1931), Venice Charter (ICOMOS, 1964) and the

UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage (UNESCO, 1972), in addition to many other related documents of that period (Table 1).

Following the UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage (UNESCO, 1972) which is one of the most ratified documents of heritage conservation up until the present, in addition to the documents such as the Amsterdam Charter (ICOMOS, 1975), Burra Charter (ICOMOS, 1979), Convention for the Protection of the Architectural Heritage of Europe (1985) and the Nara Document on Authenticity (ICOMOS, 1994), the emphasis of heritage conservation has been shifted. New concepts such as 'the Universal Heritage', and 'the Cultural and Natural Heritage' has been highlighted (Table 1).

Considering more recent periods especially with the UNESCO Convention for the Safeguarding of Intangible Cultural Heritage- Paris (UNESCO, 2003), one can observe the vision that has been changed in heritage conservation. Here new highlights in heritage conservation such as the 'intangible heritage' have been integrated as a significant part of heritage that should be conserved. Moreover, especially with the ICOMOS-TICCIH Nizhny Tagl-Charter for The Industrial Heritage (ICOMOS, 2003), conservation of the 20th century architecture has become an important part of the heritage conservation. Finally new concepts such as 'the sprit of place- genius loci' and 'wellbeing' has also become a part of the contemporary concepts of heritage conservation in the closer periods (ICOMOS, 2008; ICOMOS, 2011; ICOMOS, 2013; ICOMOS, 2014; UNESCO, 1977;) (Table 1).

Table 1. Chronological evolution of key concepts in heritage conservation according to the internationally accepted documents (Adopted from the stated internationally accepted documents of conservation by the Author, 2024)

International Legislation	Date	Concepts- Key Words
Athens Charter CIAM	1931 1933	Objects/monuments & close surroundings urban texture –public welfare
Venice Charter The International Council on Monuments and Sites (ICOMOS)	1964 1965	Objects/monuments & close surroundings Active conservation /utilisation /planning
The Split Declaration on Towns of Historic Interest UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage	1971 1972	Local-central authorities 'World Heritage' 'Natural heritage' 'belong to all peoples of the world'
Amsterdam Charter Operational Guidelines for the Implementation of the World Heritage Convention Burra Charter	1975 1977 1979	'Integrated conservation' 'active conservation' Management Plan Cultural Significance
Convention for the Protection of the Architectural Heritage of Europe Nara Document on Authenticity	1985 1994	Integrated Conservation Social parameters of conservation Expanding authenticity paramenters
European Landscape Convention (Florance)	2000	Cultural landscape, Natural landscape
The UNESCO Convention for the Safeguarding of Intangible Cultural Heritage- Paris	2003	Intangible heritage

ICOMOS-TICCIH Nizhny Tagl-Charter For The Industrial Heritage	2003	Industrial heritage –active conservation
Convention on the Value of Cultural Heritage for Society (Faro Convention) ICOMOS Charter for the Interpretation and Presentation of Cultural Heritage Sites	2005 2008	Public involvement Cultural landscape, sustainable conservation Common heritage socio-economical dimensions
The Valletta Principles for the Safeguarding and Management of Historic Cities, Towns and Urban Areas	2011	Management of urban areas, genius loci, quality of life Management plan, sustainability
ICOMOS – Türkiye The Florence Declaration on Heritage and Landscape as Human Values	2013 2014	Welfare –sustainability – balancing tourism Sprit of place- genius loci
ICOMOS-IFLA Principles Concerning Rural Landscapes as Heritage ICOMOS- International Cultural Heritage Tourism Charter - 2022	2017 2022	Rural Heriage Heritage as Human Rights Cultural Heritage Protection and Community Resilience Responsible – Sustainable Tourism

The following section will explore evolution of heritage conservation considering Northern Cyprus, in light of the above-mentioned international agenda of heritage conservation.

2. Material and Method

A comparative analysis method has been followed to evaluate current legislation related to conservation in Northern Cyprus. Thus, it is necessary to document the evolution of cultural heritage conservation in (Northern) Cyprus. In this comparative analysis and documenting, in addition to the above-mentioned international documents of conservation, periods in political history of Cyprus has been examined through sources such as Edbury,1994; Enlart,1987; Gunnis, 1947; Jeffery, 1983; Hill, 1949; and Luke,1965. For the local laws and regulations, first-hand laws mainly the 'Law of Ancient Monuments' (60/1994) (Eski EserlerYasasi) of the TRNC has been evaluated and analysed in comparison with previous laws and regulations.

Accordingly, the first legislative attempts on heritage conservation in Cyprus was started with the British Period (1878-1960), although there were some indirect conservation attempts, such as reusing existing historic monuments, existed during the Ottoman period (1571-1878). After the establishment of the Cyprus Republic (1960), following period of bi-communal conflict (1963-1974), legislation of heritage conservation could not be improved much and mainly based on the legislation of the Colonial Period. Even after 1974, with the establishments of Turkish Federated State of Cyprus (1975-1983) and consecutively the Turkish Republic of Northern Cyprus (1983-…), still the impact of Colonial Period laws and regulations are valid (Sabri, 2023).

At the present, according to the constitution of TRNC (1983), there are four sections that are related to the protection of historical and cultural heritage;

- Section 36; property rights
- Section 39; Protection of Historical, Cultural and Natural Values
- Section 40; protection of the environment
- Section 42; expropriation, sequestration and restriction to the properties of Vakf (Evkaf Foundation).

According to the constitution there many laws which are directly or indirectly affect the conservation of cultural and natural heritage. However, the scope of this paper is limited to the analysis of the main and most direct law in terms of heritage conservation; 'Law of Ancient Monuments' (60/1994), which originally dates back to the British Colonial Period of Cyprus.

As mentioned above, the basis of the current 'Law of Ancient Monuments' (LAM) dates back to the British Colonial Period. During the British Colonial Period, the 'Antiquities Law' (Chapter 31 of the Laws) was enacted in 1935 and amended in 1949 and 1959. Accordingly, many monumental buildings and some examples of civil architecture were listed. However, this law was focused mainly on the protection of monuments and archaeological findings which belong to the period earlier than 1700 AD. A new law called 'Law of Ancient Monuments' (35/75) was enacted in 1975 as a more contemporary version of the 'Antiquities Law' (1935-1959).

Following the establishment of the Turkish Republic of Northern Cyprus (TRNC, 1983), in 1994, the law that was enacted in 1975 was replaced with the current law, the 'Law of Ancient Monuments' (60/1994) since the old law was not comprehensive enough to meet contemporary needs and

standards. The new law provides the basis for determination of grading the conservation areas; rights and duties of the owners; and also, the law enables the establishment of the 'Ancient Monuments Fund'. In addition, this law was designed to identify the duties and obligations of the 'Supreme Council of Immovable Antiquities and Monuments'. Every development within the conservation area depends on the approval of this institution (Table 2).

Unfortunately, in the year 2017, regarding the 'Law of Ancient Monuments' (60/1994), an amendment has been proposed, where especially two important aspects of the law has been degraded. Firstly, the 'Ancient Monuments Fund' was dismissed, and the fund relocated under the general finances of the state, which was approved in the parliament of TRNC and the law has been revised. Accordingly, with the 14/2017 revision of the 'Law of Ancient Monuments' (60/1994), the 'Ancient Monuments Fund' was dismissed. Secondly, there was an attempt to deactivate the 'Supreme Council of Immovable Antiquities and Monuments' by dismissing the members of the council who belong to the NGOs, such as the Chamber of Turkish Cypriot Architects and the Chamber of Town Planners. This proposal has not been approved however the proposal is still valid.

3. Findings and Discussion

Examining periods in political history of Cyprus, in terms of developing policies towards heritage conservation, has shown that current legislation does not comply with the international discussions on this topic. Table 2. indicates the chronological order of historical periods on the island of Cyprus versus the international agenda through that time period.

Table 2. A Comparative analysis of International Agenda of Heritage Conservation with the Historical periods that the island has gone through (Adopted by the Author, 2024).

Historical Periods of the island of Cyprus	**Dates**	**International Agenda of Heritage Conservation Concepts- Key Words (dates-accordingly)**
British Colonial Period...	1930 s	Objects/monuments & close surroundings Conservation of historic urban texture Public welfare Active conservation /utilisation /planning balance 'World Heritage' 'Natural Heritage' 'Belong to all peoples of the world'
Turkish Federated State of Cyprus *Turkish Republic of Northern Cyprus*	1975s 1983 1994	'World Heritage' 'Natural Heritage' 'Cultural Heritage' 'Belong to all peoples of the world' 'Common heritage' Financial aspects of conservation Cultural Significance Expanding authenticity parameters
Revisions and Revision Drafts on the 'Law of Ancient Monuments'	2000s Up to present	Cultural landscape, Natural landscape Intangible heritage Industrial heritage –active conservation Public involvement Cultural landscape, sustainable conservation Common heritage Socio-economical dimensions Management of urban areas, genius loci, quality of life Management plan, Sustainability Welfare –Sustainability –balancing Tourism Sprit of place- genius loci

Table 3. provides a comparative analysis of the international agenda of heritage conservation with the current ''Law of Ancient Monuments-TRNC' (60/1994). Originally the law can be considered as a product which carries the heritage concerns of the period it has been produced. However, unfortunately it has been observed that it could not be updated according to international concerns and concepts regarding heritage and heritage conservation. Here it can be observed that the main terminology and the key-words that are extracted from the internationally-accepted documents of conservation do not match with the current law of conservation in Northern Cyprus. Especially considering concepts of 'universal heritage' or that heritage belongs to all humanity; and 'common heritage' has been observed as missing from the current law and regulations. Additionally, in terms of management of cultural heritage, the law is missing participatory and inclusive approaches such as 'community involvement' as advised in contemporary documents towards heritage. Conservation of industrial and modern period heritage has also been observed as missing from the current law of conservation. Moreover, the term which appears on the title of the law as 'Ancient Monuments-Eski Eserler' has been seen as outdated, as the concept of heritage is internationally much broader than the stated. The relatively more recently-added concepts such as well-fare, well-being, human-rights, and conservation in relation to quality of life has also been not observed in the curent law.

Table 3. Comparative analysis of International Agenda of Heritage Conservation with the current ''Law of Ancient Monuments' (60/1994) (Adopted by the Author, 2024).

Concepts- Keywords included within the *TRNC- 'Law of Ancient Monuments' (60/1994)*	International Agenda of Heritage Conservation Concepts- Key Words	
"Ancient Artifact" *(Eski Eser)*	"Cultural Property"	"Cultural Heritage" "universal heritage"
"Natural (protected) area"	"natural landscape"	"cultural landscape"
Segmental implementations Ordinance *(emirname)*- with no planning agenda	"sustainability", "socio-economical dimensions of conservation" integrated conservation	Management Plan "Participatory area management" Conservation-participation-supervision-transparency
"Preservation of ancient artifacts and natural assests" 'Protected site'	Conservation of the 20th century architecture and urban texture	Cultural Landscape
Authority and management focused at the central state	more duties and authorithy given to local administration and NGO.s	"participatory area management models" Community involvement within the process of conservation
"Preservation of ancient monuments/artifects and natural assests"	Conservation of intangible heritage	Sprit of place- Genius loci Quality of Life

4. Conclusion and Suggestions

Heritage Conservation is a well-established discipline, which continues to evolve. However, implications of the international agenda can be missing from local laws and regulations. Northern Cyprus has many archaelogical, architectural, urban as well as intangible heritage assessts. City walls of Famagusta, or Nicosia are only some of these heritages which can be considered as of outstanding universal value. However, political isolation brings together a lack-of an up-to-date vision in terms of heritage conservation. Conflict and post-conflict areas may include many significant products of heritage, where special legislation is necessary under these special circumstances, for long-term heritage conservation.

Examining periods in political history of Cyprus, in terms of developing policies towards heritage conservation does not comply with the international discussions on this topic. This may be related to the struggled history of the island; heritage conservation agenda could not become a priority. Although, the pioneering role of the internationally-accepted documents of conservation is known, there are also criticisms on the aspects that are somehow ignored within the heritage discourse. However, as it can be extracted from the analysis above, the conservation discouse is one of the most developing and well-established disciplines. In terms of local reflections of this vision, some regions/countries are not as fortunate as the others. Therefore, not only more research, but also more actions should be undertaken for heritage legislation under the areas which considered as conflicted.

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Conservation of Architectural Heritage: Traces of History

Chapter 12

Space-Life Formation in Cumalıkızık Settlement from Reading to Analysis

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1. Introduction

Humans are born, grow up, love, fall in love, get upset, be happy, get angry, dream, think, be peaceful, get older, and die in a space. People's lives are formed both within and along with space in multidimensions. Concurrently, these multidimensions maintain their precessions.

"Designing a space means designing a human, and a world that human live within, regardless of whether we are aware of that. In this context, an architect or interior designer is an interesting person as an artist. He/she finishes the work and lives in it!" (İnam, 1992, p.186). The moment a person steps into a space, he/she starts to live in the space and naturally, create for the space. Through enclosing their balconies, walking through the pathways, seeing the corner of a street as a meeting spot they intervene in the space, and therefore, they live in it. Thus, the spaces hold much more meaning than being places to use or, physical structures that provide shelter from the outdoor environments.

Space includes traces of a whole life in physical, social, psychological, philosophic, historical, environmental, and ideological contexts. Therefore, the explanation of physical features is not sufficient to address the relation between a human and space that is built upon life experiences. Because spaces include the experiences and traces of life as well as the life itself. In his book Architecture of Happiness, Botton states this as:

"The house has grown into a knowledgeable witness. It has been party to early seductions, it has watched homework being written, it has observed swaddled babies freshly arrived from hospital, it has been surprised in the middle of the night by whispered conferences in the kitchen. It has

provided not only physical but also psychological sanctuary. It has been a guardian of identity" (Botton, 2010, p. 12).

Andaç also indicates that a space includes traces from its inhabitants as: *"These four walls which I still see in my dreams, and that I still remember every inch of them along with the marks, happiness, longings, delusions, and expectations in my soul whenever I close my eyes, have so many things to say to me today"* (Andaç, 2010, p. 41). *"We should not forget that the neighborhoods we live in, the streets we walk, and the houses we locked in ourselves are not "places of residence"; they are a part of our culture of living. We find the spirit of our existence among them"* (Andaç, 2010, p.14-15).

From the reference of the spaces' formation with life, this study aims to answer the question of what defines (or not define and how can it be explained) the foundation of the complex relation between people and spaces which are enriched with what had, is, and will be experienced within them.

1.1. Aim, Scope and Methodology of Study

"Living the space starts with an action, and an action starts with a thought" (İnam, 1992). The study is based on how to approach the formation of space-life. Furthermore, it defines the roadmap, scope, and methodology of the study.

"In this context, humans are not chaotic beings; they still live by attributing meaning to their lives and the environment they live in even though they sometimes experience chaos, and gaps or nonentities in meanings of the things" (İnam, 2006). However, attributing meanings, cherishing, or creating a bond directs us to question an idea (Botton, 2010).

Therefore, one should start the exploration journey of the space-life formation by following the traces of the relations which allow us to understand the space.

The first encounter in the formation of space-life is experienced through the body. The relation of human and space is built upon the body which is the source of all perception and consciousness. Individuals' experiences of space through their bodies are described as a poetic thought in memory. A space does not only include people, but it also has things in it and gains more meaning through these things. In the meantime, things mediate people to experience a space with their bodies. Therefore, the formation of space-life is understood over the body, poetic thinking, and things.

The second step is to read the body, poetic imagination, and thing relationship that makes the space understandable through the sample space. *"Sample space"* is not only considered as a field or area but also as an event throughout the study. The space is a scene that is located at a point and is constant even though the movements in it change. On the other hand, the event is alive with what happens, ends, evolves, and starts over in the field. Thus, the space is examined not on a single plane but on a sample space with its multi-component layers.

After the interpreting and reading of the space, the third step of the study is analysis. The understood and read space-life formations are analyzed in a holistic way.

In the study, a model or guide is not presented regarding what the analysis of space-life formation will be useful for and how it will be put into practice. The main concern of the study is to design one of the methods on how to discover the formation of space-life. Instead of standard discourses

created by oppositions, a new perspective is tried to be developed. Instead of "either this or that", it tries to understand the space together with the life that takes place within by thinking of "both this and that".

2. Relationships That Give Meaning to the Formation of Space-Life

People experience architectural space primarily through their bodies, imagine it poetically, and comprehend it together with things. Based on this way of life, space is attempted to be understood by considering it through the relationship between body, poetry, and thing.

2.1. The Existence of the Body in the Formation of Space-Life

Our experience of space is shaped and understood through our body with the simultaneity of all senses. The body allows us to understand space as the one that perceives, is perceived, and moves in space. In other words, *"if I did not have a body, there would be no space for me"* (Merleau-Ponty, 2005). The mystery of the perceiving eye lies in the fact that they not only see but also see themselves while seeing. The reason for this can be explained by the holistic understanding of the body with all its simultaneity. As Zengin also stated: *"Our being in a body is the possibility of our being in the world. Moreover, the existence of the world in us is also possible through the body. This existence occurs sometimes by contracting and taking the world in, and sometimes by opening and taking it out into the world" (Zengin, 2003).*

While the body is directed toward the object through consciousness, the body reaches the object by moving (Merleau-Ponty, 2005; Husserl, 2005). Bollnow's living space, which he forms as an opposition to mathematical space, is defined by the moving body (Bollnow, 1961). The absolute existence and movement of the body organizes the space with scales such

as here-and-there, near-far, up-down, above-below, and right-left (Casey, 1997). The perceiving and moving body is the zero point of the living space, therefore, the coordinate system passes through the body. As the body moves, the coordinate system also moves and the space is rearranged (Bollnow, 1961).

Bloomer and Moore state that the three-dimensionality of space is rooted in the movement of the body and thus, forms a basis for our perception of space. The spaces we inhabit with our bodies are perceived through mutual interaction. Our living spaces are defined through our experiences with this interaction. Our living, moving bodies, whether we are aware of it or not, constantly engage in dialogue with space and reproduce spaces (Bollnow, 1961).

Merleau-Ponty explains that the body is like a book that needs to be read and understood and the other is a self that has another body (Merleau-Ponty, 2005*). "Our body is both an object among objects and something that sees and touches them"* (Pallasmaa, 2011, p. 27). In this dual relationship of body perception, the person's contact with himself/herself progresses through the space he/she is in (Merleau-Ponty, 2010; Merleau-Ponty, 2005). Spaces are remembered by our bodies as much as they are remembered by our nervous system and brain (Pallasmaa, 2011). In this context, the distinction between subject and object disappears, while the person is in the space he/she is in, the space also exists within the person.

Space is seen, touched, listened to, measured, perceived, organized, and described with our physical existence. People use their own bodies to measure and proportion not only when they live in space but also in the production of space. In traditional societies, builders make spaces by

looking at their bodies, just as birds make their nests with their bodies. Space is discussed, approached, and confronted based on the body (Holl, et al., 1994).

2.2. Poetic Thinking/Imagining in the Formation of Space-Life

Poetic language is different from daily language because the poet expresses familiar things in such a way that the basic structure of the thing is reached, and it forces the reader to enter the essence of things (Merleau-Ponty, 2010). Space and poetry, which are thought to be two different concepts, are fundamentally related to each other with their similar characteristics. Images and metaphors are the common denominators of poetry and space. Both concepts intersect in the intuitive world of man. While space has the power to produce poetry, poems have the ability to create space. When one is in space and when poetry is read, it creates mental processes and sensations (Öztepe, 2007).

When we look at the etymological roots of the word poetry/poetic, it comes from the Greek word "*poesis*" and carries the meanings of making, bringing into being, as well as creating and formation in the mind (Heidegger, 1971; Berlemont et al., 2014).

Poetry, which has the connotation of making, is not a form of expression, but a unique form of making sense of language and settlement experiences (Heidegger, 1971). Poetic knowledge is also obtained as a result of our embodied experiences in the world (Berlemont et al., 2014). On the other hand, poetic thinking can reveal the cultural codes of space as a method of measurement. Bolak Hisarlıgil and Uludağ (2008) considers folk songs as a form of poetic thinking, that is, as a method of *"taking criteria"* in comprehending the integrity of space-time. He examines folk songs, which

are an extension of daily life in Anatolia, as a poetic way of thinking formed by the exponential growth of colors, words, traces, and sounds in the continuity of space and time (Bolak Hisarlıgil and Uluoğlu, 2008).

Bachelard also examines the image not with its visual effect but with *"resonance".* The concept of resonance points to the movement between the subject and the object and calls for unification and integration instead of a sharp distinction between the two. The process of resonance corresponds to poetic imagination; it becomes one of the tools that give meaning to space (Bachelard, 2013).

The relationships that space establishes with the body and memory are discussed poetically in terms of psychoanalytic and semantic aspects and explained with poetic imagination. Thus, space is defined with poetic imagery, which eliminates the distinctions between tangible and intangible (Lin et al., 2011). While poetry comes to us spatially and takes root within us, space also becomes the area of poetic imagery directly. People shape spaces, and again, the same spaces shape people's memories, feelings and thoughts and accommodate them in a poetic form (Bachelard, 2013).

Lived spaces are also the formal shelters of people's emotional and spiritual worlds in the daylight (Bachelard, 2013).

People's multi-dimensional imagination of the spaces they live in with tastes, smells, sounds, and memories comes into being through poetry (Lin et al., 2011). Each points of lived space have the power to create different poetic images. The layered integrity of the space can be grasped through poetry and poetic imagery, which are the products of an infinite imagination.

2.3. The Position of Things in the Formation of Space-Life

Heidegger does not find the concept of object appropriate and states that it is an abstract reduction disconnected from experience. He uses the concept of *"thing"* as opposed to the *"object"* that develops with Cartesian thinking (Adams, 2010; Sharr, 2010). Things are not found in experience, they are established together with experience. Here, the object is not a static situation that remains the same and unchanging within the information given to the oriented mind. The object continues to be re-established in space, thus continuing its movement (Husserl, 2003).

Objects are not *"things"* that are only a matter of need, function, and form in daily use, and they have the potential to shape life. In this way, it is possible to trace how objects enable us to understand and attribute meaning to the spaces we live in. These traces provide access to holistic meaning in contrast to the dualities of *"spirit or matter, dream or reality, subject or object, place or space"* (Soja, 1996). At this point, a dynamic relationship emerges instead of the dualities of space/object, object of space/space of object.

An object can change its properties because it changes places. The shape and mass of the same object at the equator and the poles change depending on the space it is in. Space can cause changes in objects (Merleau-Ponty, 2010). Similarly, objects can change our perception of space. "*The object we put in a corner of our room can expand our horizons and open the door to a different meaning of space"* (İnam, 1992).

The essence of an object is not understood solely through a definition based on its *"itself"*, that is, its form and geometric features. Every object exhibits a dynamic existence concerning its subject in the conditions and

possibilities of the space it belongs to. Space can be considered as the ground that allows the object to *"become/exists".* While space is the container that allows the *"existence"* of the object, the individual can be understood as the *"one who completes the becoming"* of the object. Bachelard explains this situation through the door as an object. He states that the door corresponds to the "universe of being in between" in the decision-making process of the human spirit rather than the object of space that separates and connects the inside and the outside. If we were to retell the story of all the doors we have closed and opened, and all the doors we want to reopen, we would be telling our entire life. The door, which is the object of space, also evokes the images of decision-making, being in between, beginning and ending as a threshold point (Bachelard, 2013, p. 268).

When people use objects, they leave traces on them. For this reason, memories can be remembered as they stick to things. Memories, dreams, and images are stuck to objects and are waiting there for the individual (Bachelard, 2013). This waiting place can sometimes be a place remembered in longing, sometimes a house where childhood memories accumulate, and sometimes a museum that contains the past.

3. Reading the Life Formation of Space

"To live is to leave a trace behind"
Walter Benjamin
"To live is to be able to read what you have lived"
Ahmet İnam

3.1. Examination of Space as a Research Design

The body, poetry, and thing relationship that gives meaning to the space is examined in the sample space, through the space-life formation. This

examination is considered as the research design. The research design consists of two basic components.

- The first component is the research method and process. Under this heading, the case study method is used. The techniques and processes supporting this method are discussed.
- Under the second component, the research location, the location of the sample, the reasons for choosing it, and the boundaries and scope related to these are presented.

3.1.1. Research Method and Process

A qualitative research strategy was adopted in the research. The case study method, which is a qualitative research strategy, was selected. This method was supported by experience trips and observations as research techniques. The qualitative research method, case study, is a form of research orientation rather than a series of techniques for application purposes (Neuman, 2012). In the case study; events, phenomena, and people are discussed and examined in the natural flow of daily life. The case study is a method in which holistic and relational information is obtained, and this information is used in thought and theory formation processes (Given, 2008 and Yin, 2009). The case study method is used in cases where the boundaries are not clearly defined, and more than one data source is available to examine a phenomenon within its real-life environment. The main purpose of the case study method is to discover the uniqueness of each situation or phenomenon (Given, 2008; Yin, 2009). With these scopes, the case study expresses a research perspective rather than a method. This perspective can be developed by using different methods together (Eisenhardt, 1989).

The sample space is not only considered as an area or field throughout the study; it is also considered as an event. The area is a scene that is located at a point and is fixed even though the movements within it change. The event is alive with what happens, ends, evolves, and starts again in the area. The sample space is not an object; it is constantly reproducing and developing with the formation of space-life. As a result, Cumalıkızık settlement is approached holistically, not as an object of research, but as the event itself. In the space-life section, space is examined through,

- the position of the body that perceives and moves in space depending on the actions and events
- the way space takes poetic images and criteria in daily life
- and the mutual transformations and creation relations in the space-object union.

3.1.2. Cumalıkızık Settlement and Home Space as a Research Area

The sample space was determined as Bursa's Cumalıkızık settlement and the vernacular houses in conservation settlement. At this point, two critical questions arise.

- why conservation area and vernacular houses in conservation area?
- why Cumalıkızık settlement?

Every place of residence carries the idea of home in its essence (Bachelard, 2013). In addition, the home is the source of the closest and most special relationship between the person and the environment (Seagert, 1985). The home is defined as the physical structure that reflects the characteristics of the individual, establishes a relationship with the environment, is the reference point of the person in the world, and the social environment that includes the daily interactions of the individual with others (Hayward,

1975). *"... A home is a physical element of the emotional lives of family members and the mutual connections between them and their belongings"* (Alexander, 1970, p. 60). It is *"a time journey shared with the houses where people live, the streets where they breathe, and the people with whom we chat"* (Andaç, 2010, p. 25).

Today, in a universal environment where people are displaced and homeless, where everything is changing rapidly, there is talk of *"world person"* and *"world spaces".* The basis of this discourse is that people are constantly traveling, spending most of the day in places outside their homes, and the way they experience space is broken with modern technologies. However, when we look at spaces that offer a variety of uses, we can see that there is an effort to make people who are displaced and homeless experience a sense of home. Hotels promise home comfort. Office designs that offer home comfort and environment are supported to increase people's productivity and creativity. The elderly want to stay in nursing homes that provide a home environment. Hospitals that provide a home environment accelerate the patient's recovery process and patients prefer hospitals that provide a home-like feeling. Spaces with various functions are tried to be designed and built on the "*space-life formation of the home"*. These situations reveal the necessity of examining the relationships that attribute meaning to the space-life formation through the home space.

The reason why the exemplary architectural space was chosen as a house in a conservation area can be seen in the traces of the *"production and living"* process. Conservation areas are traditional settlements and, in these areas. the home space is made and lived through a natural *"becoming and*

existing" process, just like the birds that Bachelard mentioned forming structures by measuring, looking, and using their own bodies (Bachelard, 2013).

There are many studies on house spaces in conservation area and traditional settlements. These areas have the potential to bring new answers and questions to the agenda in every study with their spatial continuity, historical texture, and multi-layered structure. In this study, traces of these potentials are sought in the sample site of Cumalıkızık. The reasons for choosing Cumalıkızık settlement and the houses there as samples are seen in the examination of the spatial layers and historical process of Cumalıkızık settlement.

Cumalıkızık is located on the slopes of Uludağ, 12 km from Bursa city center (Figure 1). According to the Orhangazi Foundation Charter dated 1685, the settlement was established as a foundation village in the 1300s. After the Ottoman conquest of Bursa, the Kızıklar branch of the Kayı Tribe Turks settled in the region and founded seven Kızık villages. Of the villages, Cumalıkızık, Hamamlıkızık, Derekızık, Değirmen Kızık, and Fidye Kızık have survived to the present day. Of these, the architectural texture of Cumalıkızık has been preserved to the present day with a few deteriorations (Perker, 2012). The village, which was called "Kızık Şıhlar", started to be recorded as "Camilikızık" with the construction of a mosque in the 18th century. The name "Camilikızık" was replaced by "Cumalıkızık" over time (Anonymous, 2004). There is no scientific consensus on the names of Cumalıkızık and other villages. However, it is thought that the word "Kızık" comes from the word "kısık", which means "mountain pass" in Turkish of the Yörüks living in Kızık villages (Yıldırım

Municipality, 2015). In addition to the civil architectural examples that continue to be used as houses in the village, there are also monumental works listed as baths, mosques, cemeteries, and tombs. Moreover, at the entrance of the village, there is an Ethnography Museum where various items used by the people of Kızık villages are exhibited (Bursa Alan Başkanlığı, 2013).

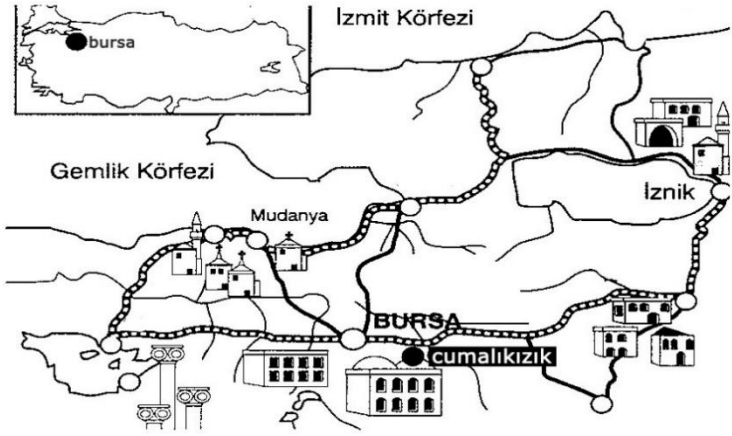

Figure 1. Location of Cumalıkızık[1] (Adıgüzel Özbek, 2015)

The popularity of the village, which has been used as a set for various TV series and movies in the past, has increased day by day. With this development, the region has been under intense pressure from tourism since the 90s. Today, the spatial and life formation in the village is shaped by intense tourism, gardening, a small number of chestnut production, and conservation board works (due to being a UNESCO World Heritage Site). Those who experience the settlement and architectural space show diversity in these aspects.

[1] The image was taken from the Bursa Promotion Guide prepared by the Ministry of Culture and Tourism, but corrections and additions were made by the author.

In line with the studies, research and analyses conducted on Cumalıkızık; targets, actions, management plans, and strategies have been developed to carry out these actions. The basic principle of the targets is to emphasize *"the village's ability to continue its existence with its unique identity as a living and sustained village".* All plans, programs, goals, and preservation work for the future are united in a single discourse: *"life", "experience", "continuing by living"*, and *"preserving by living".* With these observable processes, the space-life formation in the settlement undergoes various fractures, while the traditional spatial texture of the settlement can be examined. As can be seen in Figure 2, as the space evolves in time, various fractures have occurred in the region. These fractures are sometimes reflected in the repair of a wall with different materials at different times, and sometimes in an electric lamp replacing the gas lamp at the door. On the other hand, the traditional architectural fabric can be both examined and felt.

Figure 2. Spatial Changes and Definability in Cumalıkızık (Adıgüzel Özbek, 2015).

3.2. Reading the Spatial Life Formation in Cumalıkızık Settlement

The relational network of body, poetry, and thing that give meaning to the space-life formation is examined in Cumalıkızık settlement which is an exemplary place. The traces of the space-life formation are examined in

rooms, courtyards (hayat in Turkish which means ‘life’), corbelling/projection, and door thresholds that form the spatial integrity of the house.

3.2.1. The “Room” That Hide the House

Each room in the house is built considering all the needs of daily life rituals. Rooms are designed to respond to daily life activities of people such as sitting, eating, washing and sleeping (Küçükerman, 1995; Küçükerman, 1985). A room is allocated as a space for the needs of each of the small family units in the house. Therefore, the room is also called a household (hane in Turkish) in many regions (Kuban, 1995). *"The room is always an entity, a whole, on its own"* (Eldem, 1987, p. 15).

Although the standard features of the rooms in the Cumalıkızık house are mentioned, the poetic thinking diversifies and finds its equivalent in the pilgrim room discourse. Pilgrim rooms can be seen as the poetic image of the space-body relationship, which contains both cultural and religious meanings. The fifth pillar of Islam, going on the pilgrimage, is the last pillar that is prayed for before death. The rooms arranged for the bride are considered as important as those prepared for the ones returning from the pilgrimage, and the room prepared for the bride of the house is called the pilgrim room by this name.

For the room to respond to the vital ritual, a re-inhabitable order is established according to the event-space relationship. This order is met by the fixture system built together with the house. Although there are standard objects and fixtures in the room, the way they come together and form the whole is shaped according to the space-life requirements. Cansever states that this situation is not based on a set of rules and has the

"spirit of standards" (Cansever, 2010). The body that makes the space meaningful is examined through the *"things of the space"* that shape the room according to the spirit of poetic thinking standards. The things of the space-life formation in the room are the closet (yüklük), the stove/hearth (ocak), and the arbor/hall (çardak/sofa).

Yüklük (The Closet)

"Yüklük is an interesting element built together with the house. The origin of the word probably dates back to the era when nomads viewed their beds as a burden while moving from one place to another" (Kuban, 1982, p. 201). The meaning of "yük" is "object", that is, a thing, and the suffix "-lık, -lik, -luk, -lük" added to the end makes it a place name. In the Turkish language, objects are spatialized with the suffixes added to the end. This indicates the integrity of the thing-space relationship from a linguistic perspective.

In the vital action-event, yüklük is both something built in the room according to the need and a place for the things put in it. On the other hand, yüklük enables day and night use in the space. In this sense, the yüklük object is a place that stores the "day-night" time. In the space-time continuum, mirrored cabinets and dressers were added next to the yüklük (Figure 3).

Figure 3. Space-Life Formation from Yüklük to Mirrored Cabinet (Adıgüzel Özbek, 2015)

The name 'yüklük', which was constructed as a result of an operational need, has a linguistic formation that describes its spatial character. This contextual formation is reflected in today's usage as follows. The yüklük, which is emptied by moving the beds and quilts inside, serves as storage with various functions. However, it still contains specially prepared bed quilts with embroidery and lace, which are kept ready for guests. Especially for the grandchildren who come from Bursa during the holiday, these are taken out and shakedowns are laid out. In short, yüklük continues to shoulder the family's burden with its current usage.

Sekilik-Sedir (Bench Area/Platform-Couch)

The room is entered from a front area called under the platform (seki altı) or in front of the platform (seki önü). Seki altı is a place where shoes are taken off and placed in front of the entrance door, approximately twenty centimeters below the platform (seki). A step from seki altı leads to the sekilik (bench area), where the seating area is surrounded by couches (sedir) on two or three sides (Eldem, 1987; Küçükerman, 1985). Seki altı,

sekilik, and sedir are shaped and used within a spatial semantic integrity. Kuban makes the following observation regarding this situation:

"For the Turks, sitting has a special meaning. This meaning is expressed in the low 'sedir's. The sedir sits together with the person in the room. Sitting low or on the floor is the characteristic stance of the Turks. The sedir is the closest solution to this stance. Wide, low sedirs invite people to sit. Until chairs became fashionable, sitting close to the floor responded to the psychological tendencies of the Turks regarding sitting… The act of sitting comfortably is certainly related to the fact of living, and the sedir is such a corner" (Kuban, 1995, p. 210)

The sedir arrangement that Kuban stated is related to life itself, has given way to corner seats in Cumalıkızık settlement over time. The things that people call corner couches or corner seats are sedirs with contemporary materials. The body movement and seating arrangement of the sedir continue to exist in corner seats produced with contemporary materials, that is, in corners. Life changes the material and production processes of the sedirs, which are the things of the space. However, the formation of the things in the space with the body experience maintains its continuity (Figure 4).

Figure 4. The Formation of Sedirs and Seki with Life (Adıgüzel Özbek, 2015).

Ocak (Hearth)

The hearth (ocak) is functionally located in the room to meet needs such as cooking, heating, and lighting. It has a characteristic shape in the room. The hearths in the room are generally considered for the needs of a nuclear family (Küçükerman, 1998). The areas that serve as kitchens and large hearths are located in the courtyard, independent from the house (Kuban, 1995). In Cumalıkızık, the hearths are covered and worn out in unused rooms. In the courtyard, however, the hearths continue to be used. Therefore, the meaning of the hearth in the room and courtyard is examined according to the space where they are located.

Bachelard states that in poetic reverie, the lamp on the dining table symbolizes the sun rising in the evening in the house (Bachelard, 2013). This lamp is thought to correspond to the hearths in rooms of Cumalıkızık

houses. The hearth symbolizes the evening sun of the house. It is no longer a mere heating-cooking-illumination object in the space, but one that brings people together and makes them dream. Spaces are built around the hearth and people live in this area. Individuals turn to the hearth for warmth and illumination. This meaning has begun to disappear or has been transferred to the courtyard hearths. In the area where natural gas pipes cannot be connected to the houses due to preservation issues; coal, electric stoves, and hearths continue to be used (Figure 5).

Figure 5. Hearths in the Room (Adıgüzel Özbek, 2015).

Çardak (Arbor) // Sofa (Hall)

In Cumalıkızık settlement, the space where the houses are connected to the courtyard is called arbor/hall (çardak/sofa). As an intermediate space, çardak/sofa is neither inside nor outside. What distinguishes it from other intermediate spaces is that it is thought out in advance and is not coincidental. In addition to being an intermediate space between rooms, its location between the garden and the street also defines a strong space. In Cumalıkızık settlement, arbors are enclosed in a way that allows them to preserve the same form while continuing their spatial importance and functions as both a circulation element and a family gathering space. The

spacious seating feeling that the arbor gives is tried to be provided with large, wooden-looking same-height windows (Figure 6).

Figure 6. Windows Opening to the Arbor (Adıgüzel Özbek, 2015).

The arbors both provide passage between rooms and respond to various functions with the kitchen niche and sofas it hosts. In today's use, the kitchen niche gives its place to a kitchen and dining area that are designed together. A sewing machine can be carried to the arbor, therefore, it can also become a workspace for women (Figure 7).

Figure 7. Space-life objects in the arbor (Adıgüzel Özbek, 2015).

3.2.2. "Avlu (Courtyard) /Taşlık (Entrance) // Hayat (Life)" That Hosts the Family

In the general definition of the Turkish house, the space that allows its users to reach the rooms on the ground or first floor has a front that faces the courtyard is called "*hayat"*. It can have one or more open sides while

being covered with a ceiling or porch-like structure from above. Hayat may have different names in various regions of Türkiye, such as *'sergah'* around Ankara, *'hanay'* in Izmir and Rumeli, *'divanhane'*, and *'tahtaboş'* in other regions (Hasol, 2023).

There are two types of courtyard formations in Cumalıkızık houses. The first is the courtyards that are entered directly from the street. In the other alternative, there is no outer courtyard; an entrance area that can be reached from the street is followed by the arbor section. There is a roof, a kitchen, a hearth, and a fountain in the courtyard. With this arrangement, the courtyards are the common-use areas of the family (Figure 8).

Figure 8. Space-Life Formation in the Courtyard (Adıgüzel Özbek, 2015).

An individual looking for a roof over his/her head also builds a roof in his/her courtyard for his/her animals. The barn is called dam (roof). Mentioning the roof of the animals indicates a sense of belonging is maintained for the animals. Today, it finds its imaginary equivalent in expressions such as dam of restaurant, dam of souvenir, and dam of accommodation. The part of the yard that functions as a kitchen is called an aşhane (soup kitchen); the meals of a large family are cooked in aşhanes. Since bread, walnut Turkish delight, and walnut buns are mostly made in the stone hearth next to the aşhane, it is called fırın (furnace).

The location of the stone hearth is important and defines the kitchen space. The hearth in the courtyard is identified with the woman baking bread. In

the summer, women in the neighborhood come together at the hearths, and preparations for winter are made in unity, accompanied by conversations. Similarly, the hearths in the courtyard see the preparations and rush of religious holidays. They keep this sight to themselves. Before the holiday, other family members come to the 'baba ocağı' ('father's hearth' which refers to the family home) and the women all cook Turkish delight together. A poetic space is established in the daily life ritual with the holiday joy, which is a cultural unifier at the hearth.

The constant burning of the hearth in the house indicates the unity of the family members for eternity. The phrase "father's hearth" shows the patriarchal order of the family; a warm home defines a family. On the other hand, the phrase "even though it is called father's hearth, it is actually the mother's lap" tells us that the woman is the female bird who organizes the house and builds the nest. Today, economic continuity has been added to this expression. Jam, marmalade, and tomato pastes to be sold in front of the door are boiled and bread is baked on the hearth. In this way, the hearths include women in working life and contribute to the family economy. The hearths built for baking bread are the places where the family earns their living (Figure 9).

Figure 9. Space-Life Formation from the Courtyard to the Hearth, From the Hearth to the Door (Adıgüzel Özbek, 2015).

The courtyard is also a place of gathering. At the sitting object in the courtyard; meals are eaten, guests are hosted, winter preparations are started, circumcision bed is made. This corner is the “thing” that calls for togetherness with its openings and closings. The courtyard calls for gathering and coming together in daily life with the raised sitting corner it contains (Figure 10).

Figure 10. In a Courtyard; a Corner of Life (Adıgüzel Özbek, 2015).

3.2.3. “Çıkma-Kafesli Pencere (Projection-Lattice Window)” in the Unity of Interior-Exterior

The projection (çıkma) takes different forms depending on the terrain, the street-house relationship, the view, and the effect of the wind. In cases where the street and the plot are crooked, sawtooth bay windows/projections are seen, and if the ground floor is in a narrow corner, corner or room-wide bay windows/projections are seen.

In traditional houses, while the ground floors are blind, high, and enclosed like a city wall, projections (çıkmalar) on the upper floors embrace the street. At the same time, these projections make it easier to look down from above with their orientation, while making it difficult to be seen from

below (Yürekli and Yürekli, 2007). With this formation, the projection provides both interior-exterior integrity and protection from unwanted eyes.

In Cumalıkızık's houses with winter floors, projections are located on the summer floors. There are many different projection shapes in the region, such as straight projections, mitered projections, corner projections, and polygonal projections. The mitered projection is seen in cases where the house and plot relationship does not allow for a quadrilateral shape. Thus, the spaces on the upper floor become quadrilateral and are thought to become more useful. Corner projections are shaped on the beveled ground floors in houses on angular plots (Perker, 2012).

The most important spatial value of the projections in Cumalıkızık is that they allow the spatial volume of the second floor to be expanded, unlike the ground floor which is built narrow so that the courtyard and gardens can be wide. On the other hand, projections allow for the reformation of living spaces and the daylight beam into the interior from different angles. Not even a single house's projection blocks the light of the other but gains a unique presence in a way that establishes a relationship with the street. In this way, the façade has become more expressive and light-shadow plays are created on the street. Projections are a "thing" that enriches the street as much as the interior design.

The projections, formed by the extension of the interior space to the exterior space, call for integration and unity. In addition to expanding the room physically, they determine the spatial value together with life. In the sample space, the projections extend from the pergola to the courtyard. They are experienced through their efforts to expand the pergola as a

connecting, social space that is located in the middle. The individual, sitting on the sedir inside of the projection, or in a contemporary chair or corner seat; enters and experiences the perspective of the street (which is a public area) and the courtyard (which is a semi-public area). Although it was wanted to enclose the arbor for complete protection, the effect of the light coming from the courtyard on the interior space is thought to be irreplaceable (Figure 11).

Figure 11. Projections Extending from Room to Courtyard and from Courtyard to Street (Adıgüzel Özbek, 2015).

Another façade element as important as the projections is the latticed windows. It can be said that latticed windows are the best example of social formation in the context in which they are used for privacy. At the same time, the most significant spatial value of latticed windows is the light-shadow effect they provide and the perception they form by looking through such a window. Pallasmaa (2000) states that the purely formal and visual expression of the window is insufficient to express its architectural value, and that looking through the window and the daylight coming from there correspond to its real counterpart in architecture (Pallasmaa, 2000). On the other hand, the fact that lattice windows are not preferred in today's life tells a lot. Lattice windows continue their existence with preservation regulations and restrictions. Instead of lattice windows, residents prefer

window forms that allow more contact with the street and provide more daylight to the interior. The woman who hides her privacy behind the lattice window now wants to water the flowers in the flowerpot she has made in front of the window. Privacy has been reduced to curtains, and the light and shadow play provided by the lattice window has been left to tightly closed curtains all day long.

3.2.4. House-Street threshold, front door

In Cumalıkızık, the relationship between the houses on the ground floor and the street is established by doors, which are the only gaps. However, these doors do not define a border but a threshold between the house and the street. Bachelard sees the door as the decision-making process of the human spirit and states that every door that opens and closes also corresponds to the universe of being in between (Bachelard, 2013). Real architectural experience stems from observed transcendental physical encounters. Therefore, verbs come before nouns; the mere formality of a door is insufficient to describe its architectural expression. The architectural experience takes place in the dialectic of entering and exiting through the door (Pallasmaa, 2000). In other words, real spatial experience exists in the unity of being inside and outside (Bachelard, 2013).

In Anatolian settlements, the world is uncovered with a door that is opened while walking on the street. Daily life spills over to outside with the cushions thrown in front of the door. *"The cushion on the threshold that softens the hardness of the stone, calls for a positioning where the inside folds into the outside. Doorways are a front where daylight and shadow, wood and stone, stone and cushion, wall and floor, now and then are poetically folded."* (Bolak Hisarlıgil and Uluoğlu, 2008).

Sitting in front of the door is a common experience of daily life. In Cumalıkızık, there are still cushions and stalls in front of houses. The doorways, which have been the places to wait for people to come home, to spend time, and to get together, are also spots for making sales at the present. With the stalls that are opened, the doorways also become the places of those who come. The customers who come shop in front of the door witness boiling tomatoes and playing children through the doorway or are invited to the courtyard used as a restaurant. Now, the doorway; as a combination of public, semi-public, and private spaces, feels more than the sum of these three (Figure 12).

Figure 12. Space-Life Formation with the Inside and Outside of the Doorway (Adıgüzel Özbek, 2015).

The story of closed doors is told by the rope hanging from the door handle. If the rope is hanging from the door, it shows that the household is at home. When the rope is pulled, the door is opened with the latch attached to it,

and when the door is opened, it hits the doorbell and informs the household that someone has arrived. A rope can shape the way of living in a space. It is a reflection of the openness and inviting nature of the house to the outside world in poetic thinking (Figure 13).

Figure 13. The Rope That Opens the Door to the Space (Adıgüzel Özbek, 2015).

The formation of the doorway within the spatial life is designed on its own. This design begins with the street and the doorway being formed in a way that allows for living. As the use of the house changes, the individual who lives there with his body adds his/her own design to it. This addition is accompanied by simple objects such as wood, stone, thread, and nails, and they transform into something different when they enter the space and come together.

4. Analysis of the Life Formation of Space

In the study that extends from understanding to examining, that is, from the conceptual framework to the research design, the formation of space-life is addressed. The body, poetry, and thing in space define the network of relations that allow us to understand life in space. This network of relations is read in the formation of space-life in Cumalıkızık. The reading

of the relations that give meaning to space is resolved holistically in this section.

In the past, the barn space was called *dam* (roof), but today, it is called and used as a *dam* of goods, *dam* of restaurant, *dam* of guests (hostel). Similar situations are also seen in the current use of expressions such as *aşhane* (soup kitchen) and pilgrim rooms. These expressions are accepted as poetic images; they continue to persist by hybridizing today. Expressions about the space in Cumalıkızık settlement have been accepted in body experience and individual use, can be seen as poetic images, and are analyzed as spatial memories.

It has been read through the *sedir, yüklük,* and oven/furnace fixtures, which are things that shape space and change with life. Developing materials and production technology affect things. This effect changes the physical appearance of things up to a certain point. The dimensions of things in space, their positioning and the way the body experiences them remain the same. The person who encounters that space for the first time can see the change in the body-thing relationship in continuity. Therefore, the *yüklük*s can remain intact, and the *sedir*s are replaced by corner sofas produced in the same size and shape. Because the user seeks continuity in the space and the person who encounters it for the first time can observe the lived experience that permeates this continuity. The formation of the body and the thing with life in the space is resolved in this continuity.

The production and consumption processes, which are the source of income, have been shaping the space and intertwining with life since the past. In the formation of space-life, the relationship between the thing and poetry is possible with the development of attachment to it. People are

looking for a phenomenon that will create a sense of attachment in the formation of space-life. The reason for this situation is not only the habits and access methods of people, but also the spatial equivalent of those habits and access. The search for the same access, the same place, the same habits is a commitment to space rather than physical requirements.

The body, poetry, and things that give meaning to the space present an intertwined ground. First, this ground was examined and then analyzed in terms of singularity, interrelationships, togetherness, and wholeness. The key concepts that emerged as a result of this analysis are memory, continuity, and commitment.

5. Conclusion and New Beginnings

In this study, which attempts to analyze the formation of space-life, first of all, the formation of space with life has been given meaning through body, poetry, and the thing. Then, the traces of this meaning have been examined through the space-life formation of the *"sample space"* within the research design structure. The sample space is Cumalıkızık settlement due to the feelings of the home space and the production processes of conservation settlements supporting the conceptual framework. It has been analyzed holistically by reading the relations that give meaning to space in the sample space. This analysis primarily reveals the following criticisms and inferences in terms of the research method and approach.

The study used case studies and observation tools that are used intensively by social sciences to access new information. The study suggests a journey where the process is valued and the entire process is questioned instead of a model, guide, or definitive result. The most important conclusion obtained in this journey is that the methods and techniques used are

questioned with a research approach. The proposed and applied method is specific to this study. However, care was taken to look critically and question and draw their boundaries while using the techniques. It is thought that this article first contributes to the production of architectural knowledge in terms of research methods and processes.

The following results were reached by interpreting, examining, and analyzing the space-life formation.

One of the reasons why Cumalıkızık settlement was chosen as a research area is that it presents readable situations even if there are gaps. The visual readability at the beginning of the research, the fact that concepts, definitions, and expressions specific to the region are still being used, has enabled the reading of the memory specific to the region. In terms of space, it has been observed that the architectural identities of the houses remain intact, but there are gaps in continuity with the use of old and new materials together.

The analysis of the body, poetry, and thing relations that give meaning to the space, brought forward the concepts of space memory; continuity, and commitment. The field study was carried out in the example of local architecture. As a result, taking the reference from the local, the concepts of memory, continuity, and commitment were suggested for the space design. These concepts are the subject of many studies on architectural space. However, what is specific to this study is that it is reached by starting from the space-life formation. It has been concluded that the user searches for these concepts and relationships while experiencing the space and feeling like he/she belongs to that space. This result, which takes its reference from the local, tells the following about the space design: Space

design should be realized in a way that the user can experience that space continuously, create a memory of that space, and ultimately establish loyalty. Memory, continuity, and loyalty are the points where the space is shaped by life. Therefore, it is thought that these concepts should be strengthened in the application as well as in the design of the space.

The perspective and questions presented above can be considered to include a perspective extending from space to place by emulating the past and re-establishing it discursively. However, the essence of the work is to explore the formation of space and life. The uniqueness of life that permeates space can be traced in the *"memory, continuity and attachment of space"*. Then, to understand, examine, and analyze space together with life, it is possible to understand *"body, poetry, and thing"* and analyze this meaning in the continuity, attachment, and memory of the formation of space and life. As the body, things, and poetic dreams in the space change with life; the user or designer will be able to build on this scenario.

While the whole study revealed the results above, it also opened the door to the following new beginnings.

The examination and analysis process of the space-life formation was carried out in the house spaces, which are examples of local architecture. It is thought that the investigation of contexts in today's housing approaches will tell a lot about the formations extending from house to house. In addition, which relationships will be found in these houses, how frequently these relationships will be encountered, or which ones will be more visible will enrich the subject. At this point, the question arises as to which methods and techniques will be used to question the relationships that give meaning to life in space in today's houses.

Another new beginning could be to continue the discovery journey of the shaping of space with life with examples other than the home typology. The subject of such a study could be office spaces, considering that people spend half of their days in their workplaces. However, airports are also an interesting space typology that can be examined in this regard. Airports, which are seen as timeless and only as transitional spaces, are also places of meeting and separation.

The study also opens the door to considering life during space design. In space design, how life and the shaping of space by life will be included in the process, and the discussion of this issue in terms of educational philosophy is suggested as the subject of future studies.

This journey that explores the formation of space-life, while revealing its own results, carries the subject to new beginnings in terms of different space typologies, space design, and space design education. The roadmap of this study sets an example for new studies; the results are the beginnings for new ones. It is thought that the connection between space and life will gain more importance every day against the mechanical space designs shaped by cognitive, technological, capitalist, and global processes.

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All authors contributed equally to the article

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Conservation of Architectural Heritage: Traces of History

Chapter 13

Digital Portrait of Cultural Heritage

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1. Introduction

Cultural heritage, in its most general definition, is all of the artefacts with various values that have historical, artistic, aesthetic, ethnological, anthropological and social value for human history (UNESCO, 2009). This heritage includes many tangible and intangible assets that reflect the identity and history of societies. While physical objects such as monuments and buildings constitute tangible cultural heritage, information transmitted from generation to generation such as traditions, rituals, beliefs and lifestyle constitute intangible cultural heritage (İslamoğlu, 2018). Cultural heritage, which individuals or communities perceive and perceive with the values and practices they have from the past to the present, expands its boundaries with globalisation. In today's digital age, the way people perceive and interact with cultural heritage is rapidly transforming. This transformation offers new opportunities in the transfer of cultural heritage to future generations. Digitalisation plays an important role in the protection and dissemination of cultural heritage (Silberman, & Purser, 2012). In recent years, cultural heritage has become one of the areas whose popularity on digital platforms has been increasing day by day (Maniou, 2021). While cultural heritage elements such as museums, historical buildings, etc were predominantly only the physical space experiences of individuals, today digital platforms play an active role in reflecting the representations of heritage. Individuals now not only experience their experiences in places as individual and physical interactions, but also reshape the visibility and perception of heritage by sharing this experience with wider audiences through digital platforms (Barthel-Bouchier, 2016). Digital platforms contribute to the global circulation of heritage beyond

spatial boundaries and its access to large masses (Ciolfi, 2012). On the other hand, this situation transcends the local context of cultural heritage and reveals its universal value (Van den Akker & Legene, 2017).

One of the digital platforms is social media. Social media has become an important field in understanding how cultural heritage is perceived and expressed by individuals in today's world where technology is advancing rapidly. Social media, which accelerates the dissemination of heritage, is not limited to visual representations such as photographs, but also creates environments that reinterpret heritage in the digital space by enabling the interpretation of the experience (Vassiliadis & Belenioti, 2017; Drotner & Schroder, 2013). This situation creates a digital memory of cultural heritage as well as allowing individuals to keep up-to-date by creating an active interaction space with heritage (Khalid & Chowdhury, 2020). Various representations provided through social media create an active interaction space between heritage and individuals, allowing heritage to remain up-to-date, as well as creating its digital memory (Khalid & Chowdhury, 2020). Social media, which is conducive to sharing and feedback in almost real time, helps heritage to gain a permanent place in social memory and creates a cultural archive for future generations (Giaccardi, 2012; Liang, Lu, & Martin, 2021). This process allows cultural heritage to gain a dynamic meaning rather than a static concept. Social media posts not only recognise heritage, but also play a role in its transfer to the future by increasing public awareness and awareness for its protection with community participation (Smith, 2020).

This study aims to reveal how cultural heritage is represented on social media platforms. The study aims to reveal how digital interactions on

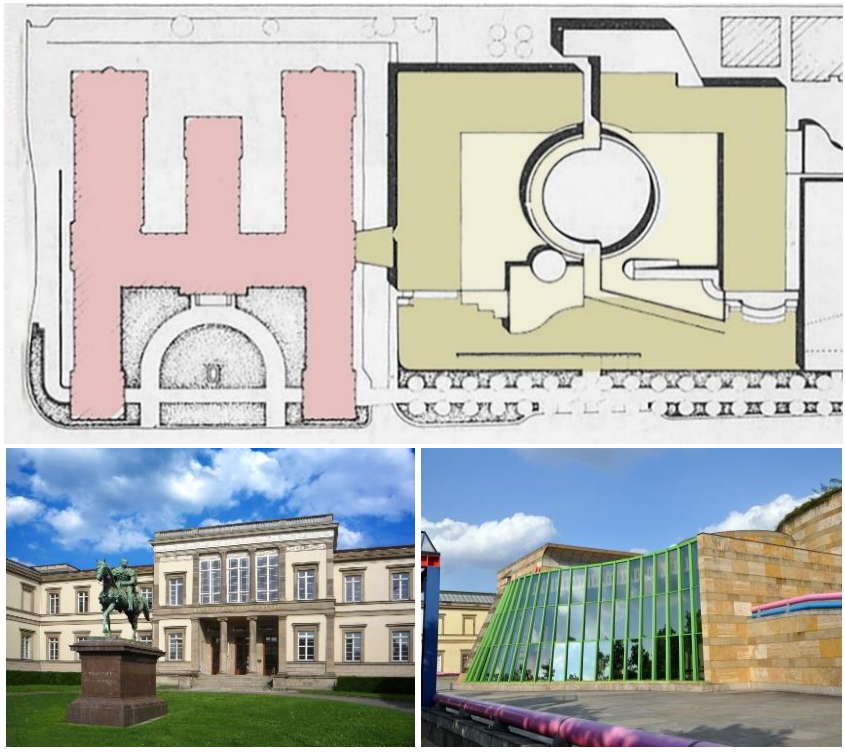
social media platforms take place in the minds of those who experience cultural heritage. Focusing on the digital representation of physical space, this study endeavours to offer a new perspective on the alternative construction of cultural heritage.

2. Material and Method

The ways of experience and representation of cultural heritage are in a state of change in the digital age. While in the past, individuals' interactions with the building usually took place in physical spaces, today digital platforms offer a new layer in the representation and dissemination of heritage. At this point, especially social media are platforms that allow individuals to leave digital traces of their interactions with the building, their personal experiences and emotional reactions. At the same time, the posts that come together on these platforms provide an overview of the visibility and representation of heritage in the digital world. Individuals reconstruct their personal experiences with the place as a result of physical visits on digital platforms using visual and linguistic tools.

This study aims to reflect the visibility of cultural heritage on digital platforms and aims to reveal the traces left by experiences in digital memory. The study is limited to Instagram, a social media platform actively preferred by millions of users worldwide. The sample of the study, whose conceptual framework was created by first reviewing the literature on the concepts of cultural heritage and digitalisation, was determined as the Staatsgalerie Stuttgart, one of Germany's important art museums located in the state of Baden-Würtemberg. Built in 1843 as the Alte Staatsgalerie and built in 1984 as the Neue Staatsgalerie, the museum structure consists of a series of associations in terms of space, art and

design periods and context (Figure 1). While the Alte Staatsgalerie consists of a flat and rigid geometry, the Neue Staatsgalerie is characterised by the use of steel and glass materials, a curved facade and bright colours. In other words, these two masses reflect the coexistence of opposites. In addition to these, the Neue Staatsgaleri designed by James Stirling is one of the prominent designs of the postmodernism period.



Alte Staatsgalerie (1843) Neue Staatsgaleri (1984)

Figure 1. Site plan and photographs of the study area (Eyüboğlu, 2024)

The data collection process of the study was carried out in two stages (Figure 2). Firstly, the posts made by the visitors were identified. At this point, in order to identify the right posts for the target, it was ensured that the visitors made a direct connection with the museum visit and posted a

post with ‘staatsgaleriestuttgart’ as the location tag. On the other hand, only publicly accessible posts were included in the study. In order to obtain current posts within the scope of the study, it was ensured that they were made within the last 10 years, were location-oriented, did not contain any human figure and were not just works of art. In this context, 93 Instagram posts were identified for the study. In the second stage, the building was visited, photographed and floor plans were obtained.

A mixed method was used in the data analysis of the study. Firstly, spatial analyses were carried out. In this context, based on the spatial references and visual clues in 93 Instagram posts, the places that visitors photograph and include in their digital posts were determined. Then, the identified spaces were marked on the floor plans and the dense areas that the visitors included in their digital posts were identified. In the second stage, textual expressions of 93 Instagram posts were analysed. Emotion analyses of these texts in which visitors expressed their thoughts were performed with Phyton software program. The analyses of the data were performed by machine, taking into account the advantages such as speed, consistency and scalability. At this point, the posts were made ready for data analysis by going through text pre-processing stages such as cleaning, stemming and stemming. In the analyses, word-based methods, in which algorithms analyse words and determine the general sentiment tendency, were preferred. In the sentiment analyses of the posts, emotional polarity (positive, negative, neutral) and subjectivity-objectivity values were calculated depending on the word tone. Then, all values were visualised with tables and histograms.

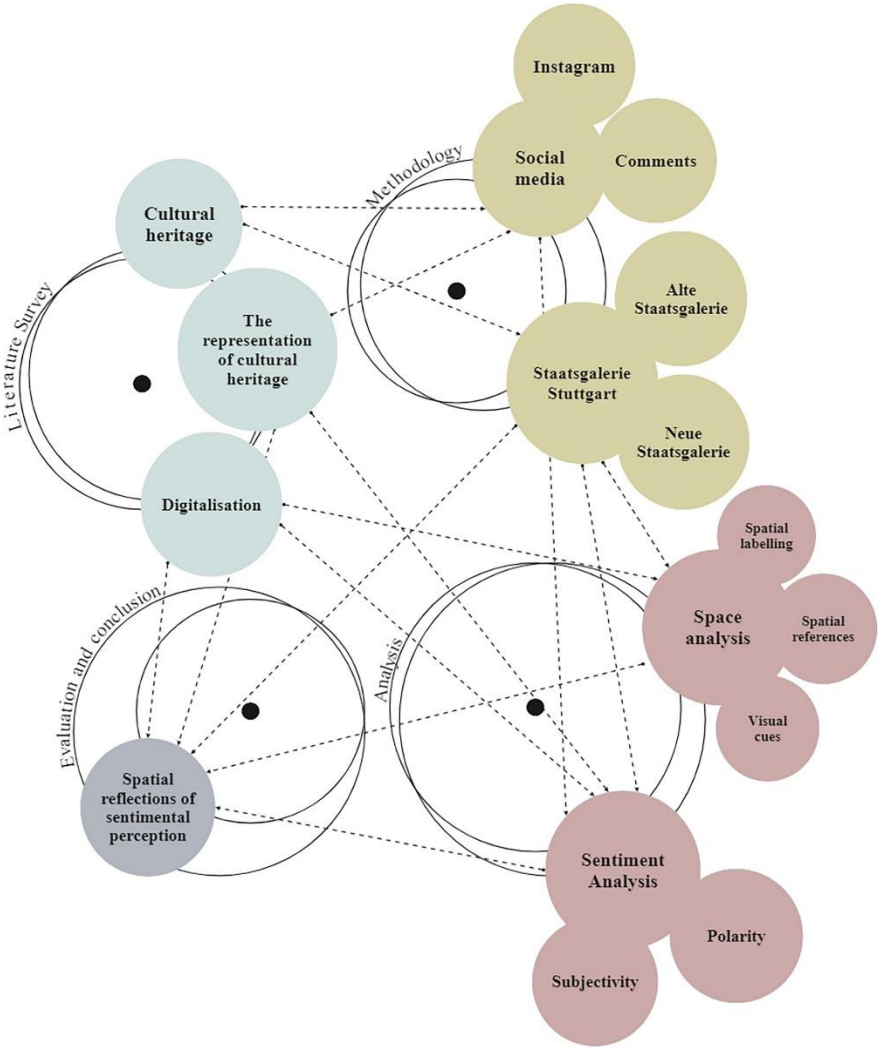


Figure 2. Research design of study

3. Findings and Discussion

The findings of this study, which focuses on the representation of cultural heritage in digital environments, consisted of visual and textual content in the social media posts of visitors. The findings of spatial analysis were

obtained from the visual contents of 93 Instagram posts, and the findings of emotional analysis were obtained from the textual contents.

3.1. Findings related to spatial analyses

The spaces that visitors included in their Instagram posts were identified in line with references such as form, material, colour, artwork type, etc. and marked on the floor plans, thus spatial analyses were carried out through visitor movements and popular spaces. When the floor plans of the building were evaluated together, it was seen that the most dense area was the foyer of the Neue Staatsgalerie (Figure 3). Visitors who made visual posts about this area mentioned glass surfaces and reflections on these surfaces for the foyer, and also used textual content such as a colourful and fun corner of the city. Although the posts made in the foyer vary from outdoor and indoor areas, it is thought that this area stands out because it is visually striking and offers a rich experience. In addition, it can be said that the striking green coloured steel structure in the foyer has a critical importance in social media platforms where visuality is at the forefront. This area offers attractive spaces for visitors by presenting a remarkable and dynamic composition. On the other hand, the dominant green colour in the space and the glass surfaces that create an uninterrupted relationship between inside and outside create a positive atmosphere for the visitors. The structure of the building acts not only as a structural element but also as a design element by providing depth and movement effect in the space with its colour selection and form. For this reason, the foyer stands out with its form that creates a sense of

flow compared to other parts of the building with straight and static lines.

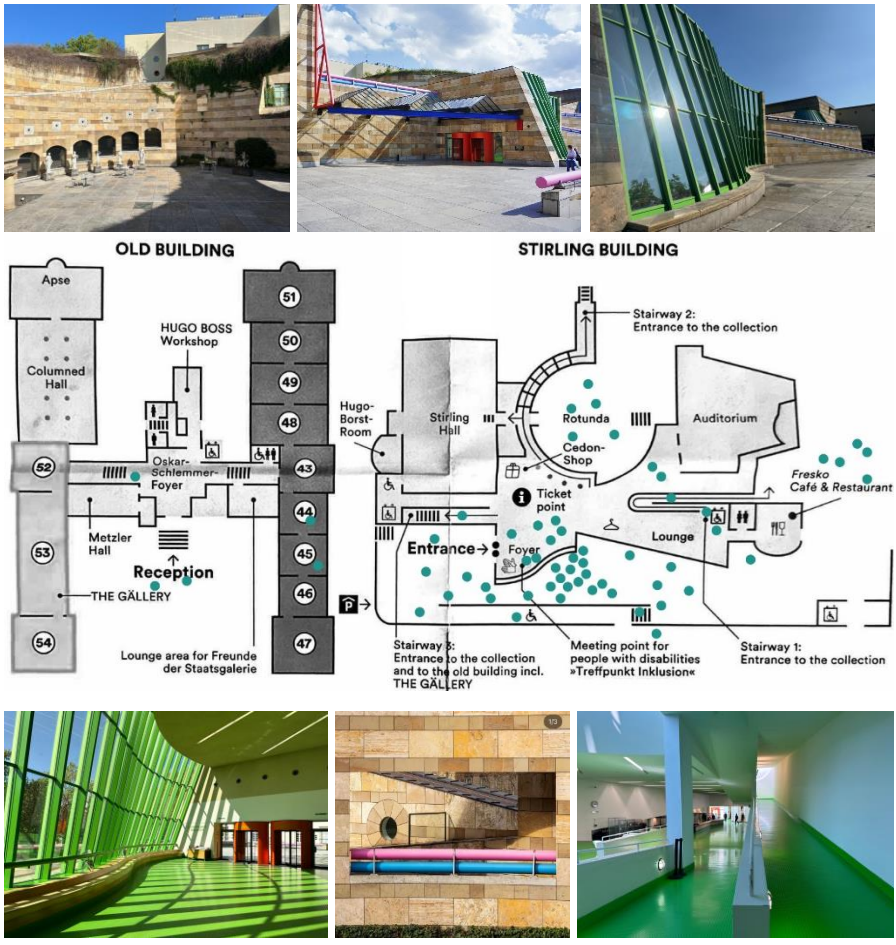


Figure 3. Ground floor plan and photos of the building (Eyüboğlu, 2024)

At the same time, in the design with a postmodernist attitude, this area has a symbolic feature in terms of recognition and recognition. In addition to all these, this area is a starting point where visitors transition to the exhibition experiences. In other words, it is one of the first places where visitors communicate with the space. For this reason, this area, which users

use as an area for buying tickets for the exhibition, obtaining information, waiting and resting, has been in a central position for taking photos and sharing as it has intense interaction.

The other area that stands out in the visitors' posts is the area with blue and pink stair railings and steel beams in the exterior. This area contrasts with the façade design of the historical monumental building built of natural stone in terms of material and colour usage (Figure 3). Visitors likened the blue and pink coloured steel stair railings to infinity and emphasised that the coloured steel surrounds the building. They also emphasised the use of travertine, sandstone and coloured steel in this area and mentioned the combination of modern materials with historical elements. It was observed that the contrast in the use of materials was effective in making this area stand out in the posts.

Another area where visitors shared intensely was the triangular shaped glass roofs in the main entrance area, where contrast was also effective (Figure 3). Visitors defined this area as an ironic attitude and included the contrast between steel construction and natural stone facade in their comments. The courtyard in the centre of the Neue Staatgalerie was another area of interest. It was observed that this area attracted attention with its various layers, especially circulation routes and ramps. Visitors evaluated the round courtyard as an interpretation of the Colosseum in Rome.

In the shares made from the exhibition spaces, it was observed that the architectural elements did not have a prominent place, instead, factors such as the period of the exhibited work and the fact that the works were produced by world-renowned painters were dominant. In addition, visitors

stated that they found it positive in terms of determinism that the works were exhibited by dividing them into certain periods and that the wall surfaces of the spaces differed for each period. At this point, it has been observed that the exhibition spaces in the Neue Staatsgalerie, where modern artworks are exhibited, are at the forefront compared to the Alte Staatsgalerie, where classical artworks are exhibited (Figures 3 and 4).

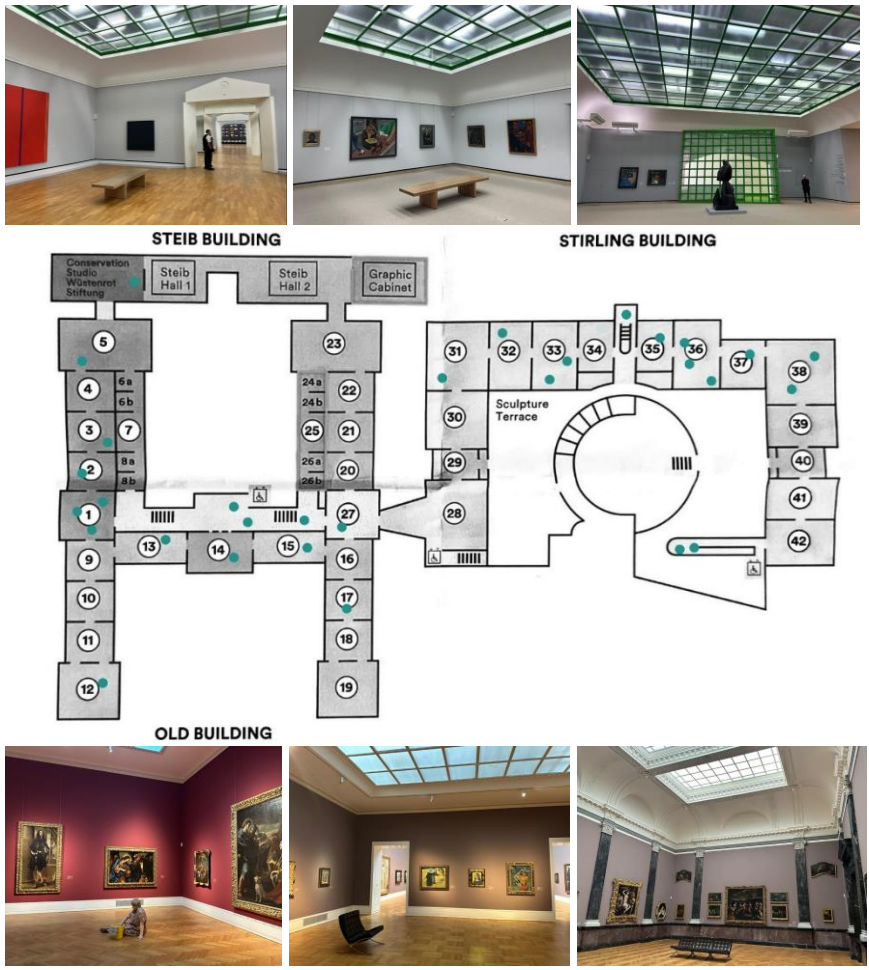


Figure 4. First floor plan and photographs of the building (Eyüboğlu, 2024)

On the ground floor of the Alte Staatsgalerie, mainly classical works such as ‘Old German Paintings’ and ‘Dutch painting’, which reflect a limited historical interest in the history of German art, are exhibited. It is possible to say that these works are limited compared to others in terms of sharing with visitors. It was observed that the exhibition spaces with ‘Italian paintings’, ‘European Art’, ‘Contemporary art’ works on the upper floor were more prominent (Figures 3 and 4). It is thought that these works, which represent important periods of art history, attract the attention of visitors with their colourful and lively compositions. However, it has been observed that ‘contemporary art’ works increase the number of shares by increasing visual richness with the innovative forms and expressions they contain.

3.2. Findings Related to Sentiment Analyses

The polarity ($-1.00 \leq p \leq +1.00$) and subjectivity ($0.00 \leq s \leq +1.00$) values of 93 comments on Staatsgalerie Stuttgart were analysed to determine the sentiment tendencies towards the building. In this context, polarity (p) values analysing positive ($p > 0$), negative ($p < 0$), and neutral ($p = 0$) sentiments and subjectivity (s) values revealing subjective ($s \geq 0.5$) and objective ($s < 0.5$) expressions of the comments written about Staatsgalerie Stuttgart were obtained (Table 1).

Polarity and subjectivity measurement values were averaged to determine the thoughts and feelings in the comments written about Staatsgalerie Stuttgart. In this context, it was observed that the average polarity value of the comments about Staatsgalerie Stuttgart was +0.20. This value shows that the comments about the museum in question are generally quite close to neutral, containing slightly positive sentiments.

Table 1. Polarity and Subjectivity Values of All Comments

Review	P	S	Review	P	S	Review	P	S
R1	-0.10	+0.10	**R32**	-0.20	+0.30	**R63**	+0.50	+0.35
R2	+0.12	+0.35	**R33**	±0.00	±0.00	**R64**	±0.00	±0.00
R3	±0.00	±0.00	**R34**	+0.20	+0.60	**R65**	+1.00	+1.00
R4	+0.27	+0.52	**R35**	+0.58	+0.75	**R66**	+0.17	+0.31
R5	+0.08	+0.44	**R36**	+0.50	+1.00	**R67**	+0.27	+0.30
R6	+0.55	+0.75	**R37**	±0.00	±0.00	**R68**	±0.00	±0.00
R7	+0.13	+0.45	**R38**	+0.45	+0.55	**R69**	+0.15	+0.31
R8	±0.00	±0.00	**R39**	±0.00	+0.60	**R70**	-0.10	+0.60
R9	+0.50	+0.50	**R40**	+0.23	+0.34	**R71**	+0.85	+1.00
R10	+0.13	+0.44	**R41**	±0.00	±0.00	**R72**	±0.00	±0.00
R11	+0.60	+0.79	**R42**	-0.20	+0.30	**R73**	+0.80	+1.00
R12	+0.50	+0.60	**R43**	-0.01	+0.86	**R74**	+0.44	+0.55
R13	±0.00	±0.00	**R44**	±0.00	±0.00	**R75**	+0.35	+0.50
R14	±0.00	±0.00	**R45**	+0.50	+0.50	**R76**	±0.00	±0.00
R15	+0.50	+0.60	**R46**	+0.39	+0.55	**R77**	+0.15	+0.53
R16	+0.37	+1.00	**R47**	+0.32	+0.50	**R78**	±0.00	±0.00
R17	+0.31	+0.33	**R48**	+0.30	+0.44	**R79**	+0.17	+0.50
R18	±0.00	±0.00	**R49**	+0.23	+0.23	**R80**	±0.00	±0.00
R19	+0.40	+0.70	**R50**	+0.43	+0.72	**R81**	±0.00	±0.00
R20	±0.00	±0.00	**R51**	+0.08	+0.21	**R82**	-0.20	+0.30
R21	+0.10	+1.00	**R52**	±0.00	±0.00	**R83**	+0.20	+0.58
R22	+0.65	+0.65	**R53**	±0.00	±0.00	**R84**	±0.00	±0.00
R23	+0.34	+0.54	**R54**	±0.00	±0.00	**R85**	-0.060	+0.39
R24	+0.40	+0.46	**R55**	-0.09	+0.52	**R86**	+0.30	+0.48
R25	+0.07	+0.18	**R56**	-0.09	+0.28	**R87**	±0.00	±0.00
R26	+0.80	+1.00	**R57**	+0.40	+0.50	**R88**	+0.20	+0.30
R27	-0.30	+0.70	**R58**	+0.80	+0.75	**R89**	-0.12	+0.30
R28	+0.47	+0.73	**R59**	+0.14	+0.45	**R90**	+0.40	+0.70
R29	-0.10	+0.35	**R60**	+0.67	+0.75	**R91**	-0.030	+0.13
R30	+0.09	+0.35	**R61**	+0.60	+0.95	**R92**	±0.00	±0.00
R31	-0.10	+0.60	**R62**	+0.28	+0.55	**R93**	±0.00	±0.00

The subjectivity value, which shows the subjectivity and objectivity of the comments about the museum, was determined as +0.40 on average. According to this value, although the comments mostly contain facts based on objective information, it was observed that there were also statements containing personal opinions and emotions. When the average polarity and average subjectivity values are interpreted together; it is seen that the feelings towards Staatsgalerie Stuttgart are slightly positive and moderately objective. Some information about the architect of the building, the year of construction and the construction process, as well as the form and the colour used, the use of daylight, etc. in the content of the visitor posts were effective on the polarity and subjectivity values.

The extent to which the comments on Staatsgalerie Stuttgart are spread around the average values was obtained with the standard deviation value. The standard deviation value for the polarity value expressing positive, negative and neutral moods was calculated as +0.53. This deviation value, which is quite high compared to the average polarity value (+0.20), showed that the comments spread over a wide range. The standard deviation of the subjectivity value, which expresses the objectivity and subjectivity of the comments, was calculated as +0.31. Although it is a small value compared to the average subjectivity value (+0.40), comments with objective and subjective content were also distributed in a wide range. While the visitors mentioned the modern interventions to the historical building in their negative comments, they emphasised that the building is aesthetically impressive and that daylight creates pleasant effects in the interior.

When the mean polarity and subjectivity values and the standard deviations of these values are evaluated together, it is seen that although the mean polarity value of +0.20 is close to neutral but positive comments about Staatsgalerie Stuttgart, with a high standard deviation value of +0.53, it is seen that some comments are extremely positive or extremely negative. This situation indicates that there is a wide variety in the polarity of emotions. On the other hand, according to the mean subjectivity value of +0.40, the comments were predominantly objective, but according to the deviation value of +0.31, it was seen that these comments varied in terms of objective and subjective expressions (Table 2).

Table 2. Average Values of Polarity and Subjectivity

	Polarity (p)	**Subjectivity (s)**
Average	+0.20	+0.40
Standard Deviation	+0.53	+0.31

Of the 93 comments on Staatsgalerie Stuttgart, 54 were positive ($p > 0$), 14 were negative ($p < 0$) and 25 were neutral ($p = 0$). The proportional distribution of these values was 58.06% ($p > 0$) positive, 15.05% ($p < 0$) negative and 26.88% ($p = 0$) neutral. According to these values, it has been observed that those who experienced Staatsgalerie Stuttgart mostly reflected their positive emotions. In addition, it was revealed that negative sentiments were quite low. This historical building located in the city centre and its postmodern style annex have gained a place in the minds with positive sentiments. The numerical and proportional distributions of the subjectivity (s) value, which gives information about the objective and subjective emotional states, are listed. Accordingly, 57 of the comments

were in the objective (s < 0.5) and 36 of the comments were in the subjective (s ≥ 0.5) value range. In the proportional distribution, it was seen that objective comments were 55.91% (s < 0.5) and subjective comments were 44.08% (s ≥ 0.5). Objective comments based on real judgements about Staatsgalerie Stuttgart were at the forefront (Table 3).

Table 3. The Numerical and Percentage Distribution of Polarity and Subjectivity Values

	Polarity (p)			**Subjectivity (s)**	
	p > 0	**p < 0**	**p = 0**	**s < 0.5**	**s ≥ 0.5**
Average	54	14	25	57	36
Standard Deviation	%58.06	%15.05	%26.88	%55.91	%44.08

A stacked histogram was used to visually interpret the relationship between positive, negative and neutral polarity values. A stacked histogram was created by coding positive comments about Staatsgalerie Stuttgart in blue, negative comments in light brown and neutral comments in pink. In the histogram where polarity values were visualised, it was observed that positive comments were densely covered. On the other hand, according to the stacked histogram, negative (p < 0) comments were limited between ±0.00 and ≈-0.30. With this narrow range, it was observed that negative comments were not very negative and were close to neutral. Comments containing positive (p > 0) sentiments were in the range of ±0.00 to ≈+0.90, but they were especially concentrated in the range of ±0.00 to ≈+0.55. This wide range (±0.00 between ≈+0.90) shows that there are comments containing very positive emotions. Comments expressing

neutral (p = 0) sentiments were not clearly positive or negative, but contained slightly positive tones (Figure 5).

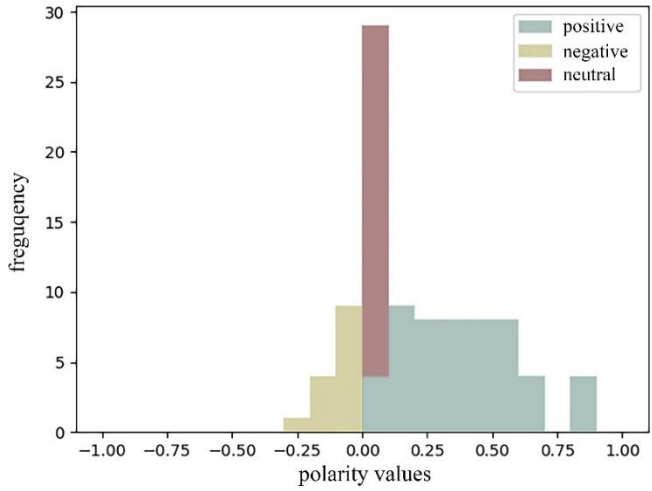


Figure 5. Stacked histogram by polarity category

The stacked histogram was used to visually interpret the relationship between subjectivity values (objective and subjective). According to the stacked histogram created by coding subjective and objective comments in different colours, it was observed that the comments were highly objective ($s < 0.5$) both quantitatively and in terms of content. These comments, about half of which are concentrated in the value range of ±0.00 to +0.20, contain highly objective expressions. The comments containing subjective ($s \geq 0.5$) feelings were in the range of ±0.00 to +1.00, but they were especially concentrated in the range of +0.50 to +0.70. According to the density in this narrow range, highly subjective comments remained in a limited number. According to the position and quantity of the comments with objective and subjective content in the histogram, it was observed that

the comments were predominantly objective, and highly subjective (+0.90 between +1.00) content was limited (Figure 6).

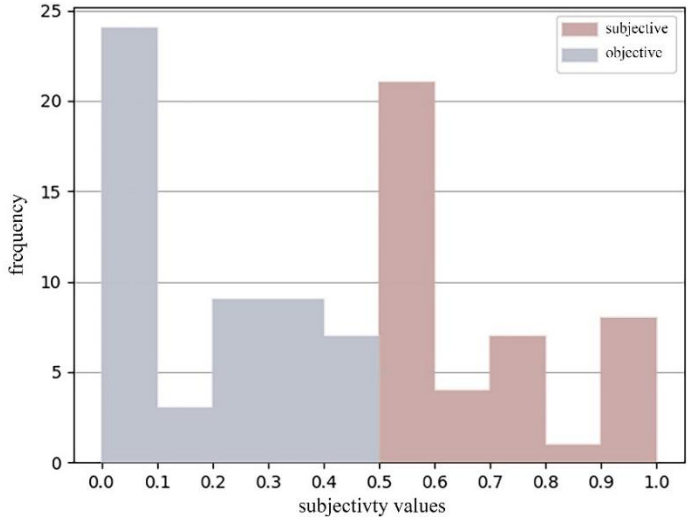


Figure 6. Stacked histogram by subjectivity values

A Stacked histogram was created to summarise the distribution of the total data in polarity and subjectivity categories and to make sense of the relationship between these categories together.

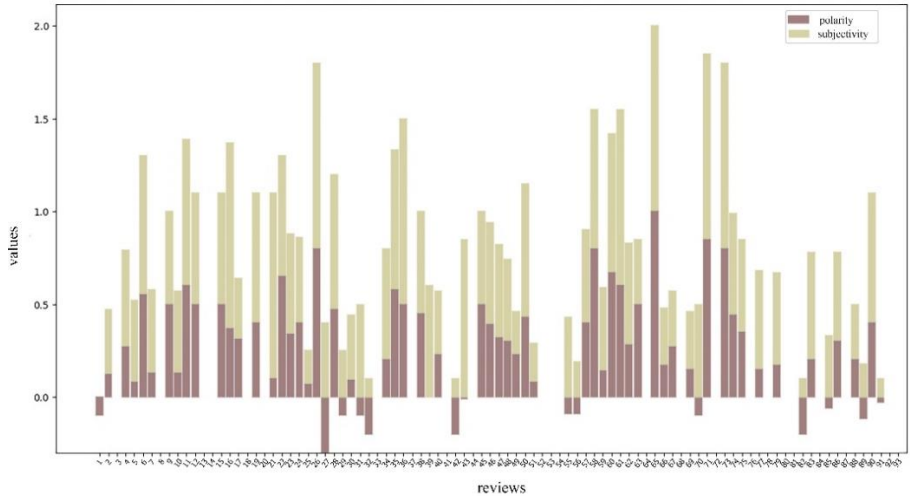


Figure 7. Stacked histogram by polarity and subjectivity values

According to the histogram, 24 of the 93 comments in the dataset had both polarity and subjectivity values of ±0.00 (p=0.00, s=0.00). Objective content that does not contain emotional content about Staatsgalerie Stuttgart and provides completely neutral and unbiased information has been at the forefront. On the other hand, it was observed that moderately and highly positive ($0.5 \leq p \leq 1.00$) content also contained subjective content ($s \geq 0.5$). All of the comments containing negative ($p < 0$) content were in the narrow range of 0.00 to ≈0.30, but they were found to contain highly objective content ($s < 0.5$) (Figure 7).

4. Conclusion and Suggestions

Although cultural heritage is considered in a broad perspective, buildings that reflect the architectural understanding and lifestyles of a certain period, are associated with a historical event, and stand out with their structure and construction techniques are representatives of cultural heritage. Today, those who experience cultural heritage convey their interactions with heritage through various visual and textual posts on digital platforms. These posts not only reflect the feelings of the experiencer towards the heritage structure, but also create an alternative representation in the digital environment. In addition, those who see the posts learn and recognise the structure and cultural heritage goes beyond physical boundaries. In this context, the study focuses on the visual and textual alternative representation of Staatsgalerie Stuttgart, a cultural heritage, on the digital platform.

The interactions of the visitors who experienced the Staatsgalerie Stuttgart building and posted on the Instagram platform with visual and textual expressions about it were analysed. While the prominent places were

determined with the visuals of the places that the visitors included in their posts, their feelings about the building were determined with the textual expressions they included in their posts. The architecture of the building and the modern and contemporary artworks exhibited in the Neue Staatsgalerie have a high tendency to be shared on social media. At this point, the fact that the space has remarkable details, especially form, colour and structure, and the high visual appeal of the works are decisive. Especially the entrance of the Neue Staatsgalerie is a remarkable element with its form and colour. In contrast, the Alte Staatsgalerie has a more limited appeal for social media users due to its classical museum layout with its linear and symmetrical plan scheme and the historical and intellectual depth of the exhibited artefacts. Visitors who want to create a visual impact prefer the steel-structured area with remarkable architectural features in the foyer area. This area offers unique perspectives from different angles with its curved and moving form and colour. The foyer has become an iconic space with its dynamic photographic opportunities, being a central circulation point and the original aesthetic understanding brought by the postmodernist style.

According to the mean values of the contents of the textual expressions, visitors have slightly positive and moderately objective feelings and thoughts about the Staatsgalerie Stuttgart. It can be said that visitors generally have a positive attitude towards the museum, but this situation is at a calm level of appreciation. However, while expressing their experiences, it is clear that visitors give information about concrete features such as architectural structure, exhibited artefacts and exhibition layouts, and do not show an emotional attachment to the building. On the

other hand, although emotions varied in positive and negative value ranges, observations based on facts were generally expressed. In conclusion, the visitors of the Staatsgalerie Stuttgart generally focused on the buildings and artefacts and did not show excessive emotional attachment to these elements. This cultural heritage building located in the city centre was associated with positive and objective emotions.

Digital platforms appear as an important medium in determining the place of cultural heritage in the mind of the individual. These virtual interfaces, which provide an alternative representation, can be an effective and effective control tool for the protection and recognition of cultural heritage.

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Author Contribution and Conflict of Interest Declaration Information

All authors contributed equally to the article. There is no conflict of interest.

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Conservation of Architectural Heritage: Traces of History

Chapter 14

Evaluation of Eco-Museum Potential for Rural Sustainable Development and Conservation of Architectural Heritage; Case of Çamlıbel / Mrytou

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1. Introduction

Historical and cultural environments are cultural heritage areas with a layered structure in historical, cultural, social, physical, and economic contexts. Therefore, these areas are formed due to a great accumulation from the past and that the societies that lived in that environment continuously provide tangible and intangible cultural heritage values and the relationships they established with nature. The protection of cultural heritage, sustainable development, and sustainability of tourism are among the important and targeted issues today. In addition to natural environments, the protection of the cultural heritage and the socio-cultural environment and their transfer to future generations, and ensuring economic development in this process, are possible with correct planning. Nowadays One of the methods in which concepts such as cultural heritage, natural environment, social life environment, and sustainable tourism are evaluated together is eco-museums.

Museums are institutions that shed light on the future while by preserving and exhibiting works of science and art, reveal how societies lived and what happened in the past.

The word museum comes from the Greek word mouse, which means the temple of the muses (Turgut, 2020). On the other hand, the International Council of Museums (ICOM) defines the museum as follows: ‘A museum is a permanent, non-profit institution, open to the public, that serves society by acquiring, preserving, researching, communicating and exhibiting the tangible and intangible cultural heritage of humanity and its environment for education, study and entertainment.’ (ICOM, 2006, p. 3-9) In this context, museums contribute to society's development by transferring

humanity's natural, artistic, scientific, and cultural values to the public and future generations (Boylan, 1992). In other words, the right to live in urban environments that have preserved their identity and reflected their historical and cultural heritage is vital and social for every society that wants to shape its future by embracing past. For this purpose, the concept of the eco-museum, which can also be defined as a "living museum", comes to the fore as a model and protection strategy that can be a tool for the sustainable preservation and protection of natural, historical, and cultural environments/heritage (Belen & Erdoğan, 2017). Varine (1996), who compared classical museums with eco museums, explains that eco museums display societies' identities according to their geographical conditions. The concept of eco-museum, an important product of the new museum movement, emerged at a meeting organized by ICOM (International Council of Museums) in France (Davis, 2011). Ecomuseums: A sense of a Place. 2nd Edition London and New York: Continuum. The organization organized under the name of the International Roma Movement of Museums (MINOM) created the institutional structure of the new museum movement (Cengiz & Dağlı, 2018).

Çamlıbel /Myrtou village in Northern Cyprus is a town that hosts original examples of rural architectural heritage with its traditional stone houses, narrow streets, and historical, natural beauties. Therefore, it is an important example in Northern Cyprus of its protection and transfer to future generations.

This study aims to evaluate the potential characters of the Çamlıbel village with the ecological museum approach to ensure sustainable rural

development in the region. Moreover, the research aims to propose a model to protect historical, natural, social, and physical values and cultural heritage by determining the potential of the ecological museum model in the Çamlıbel /Myrtou Region.

1.1. Eco-Museum

Eco-museums are a 'New Museum' system and practice aimed at the sustainability of the natural values, local identity, cultural heritage, and social diversity in the region (Ertürk, 2017). Unlike traditional museums, ecological museum (eco-museum) aims to holistically preserve and promote a specific region, village, or town. This model does not only exhibit in a specific building but treats the entire region as a "museum". The general aim eco-museums to preserve the cultural, historical and natural values of local communities and present them to visitors, and for local people to take an active role in this process. Rivard (1988) explains the differences between traditional museums and eco-museums and defines eco-museums as systems that spread over a wide area and offer visitors the opportunity to visit nature and culture with the participation of local people (Figure 1).

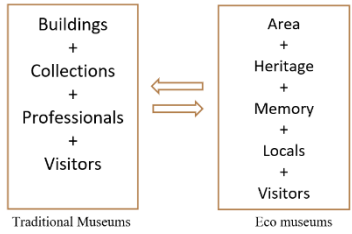


Figure 1. Rivards ecomuseum formula (Rivard, 1988)

Accordingly, traditional museum approaches based on classical museology focus on objects and exhibitions in buildings. On the contrary of the traditional system, eco-museum focuses on the discovery and holistic interpretation of cultural heritage in open places (Davis, 1999).

Eco-museums are seen as an important tool in terms of their features that highlight the protection of cultural heritage and the environment; they are based on sustainable development principles, they embrace local community participation, they undertake protection and promotion functions, they ensure the integration of nature and culture, and they are an important tool in terms of community education and awareness. Eco-museums are a concept put forward in France at the International Council of Museums (ICOM) meetings in the early 1970s (Rivard, 2012). In this context, the concept of eco-museums are types of museums that emerged as an alternative to the traditional museum concept and aim to protect, research, and exhibit the cultural, historical, natural, and social values of local communities. Unlike traditional museums, it rejects the concept of exhibition confined to a closed area and emphasises community participation (Howard, 2002). Eco-museum models contribute to many important areas such as the preservation of local culture, protection of cultural and natural heritage, participation of local communities, and sustainable development in the places where they are located. In this context, according to Varine (2006), the basic philosophy of eco-museums is to protect the cultural heritage by emphasising the regional character and continuing its life cycle, while also offering destinations to visitors.

Common elements that stand out in exemplary eco-museums around the world include cultural and historical heritage, local community identities, geographical region, and natural/landscape value (Davis, 1999).

Therefore, the eco-museum concept can be explained as an application tool that contributes to the local people and the development of the region by contributing to society. This is an effective system that supports sustainable conservation by building a bridge between the past, present, and future. Eco-museums are conservation-based practices that provide and support local sustainable development supporting historical and cultural continuity. Aiming to preserve the cultural heritage together with the local people, eco-museums offer visitors the opportunity to be in touch with nature, while also providing the opportunity to experience and learn the local culture. For this reason, the classification of heritage values is important in the practices to be carried out for the protection of cultural heritage. Within the scope of the eco-museum classification can be made such as follows;

- ✓ Cultural Heritage Value (Local architecture buildings and archaeological site)
- ✓ Social Heritage Value (intangible heritage values)
- ✓ Natural Heritage Value (environment, forest, fields and agriculture)

Values that can be grouped under three main headings are the main parameters that need to be addressed to ensure protection and sustainable development in eco-museum projects.

1.2. Cultural Heritage

Various cultural values that have survived from ancient civilizations to the present constitute the cultural heritage of current societies. Cultural heritage is the elements that reflect historical, social, and cultural values to the present day and tell societies' past (Süer, 2021).

This approach explains Heritage values as the sum of tangible and intangible values related to the identity, culture and history of a society. Therefore, while historical environments, building, monumental structures, natural and cultural landscapes constitute tangible cultural heritage, living values such as language, tradition, dance, music, handicrafts, ceremonies and food culture belonging to these places constitute intangible cultural heritage (Erdoğan & Çetinkaya, 2018).

In this context, cultural heritage constitutes the whole of the material and spiritual values that a society has accumulated throughout history. At the same time, these values represent the identity, sense of belonging, history and cultural continuity of the society (Chhabra et al., 2003).

Therefore, keeping social memory alive, and transferring to future generations and continuity of culture are directly linked to the protection of cultural heritage. In addition to all these, the protection of cultural heritage plays a vital importance role to ensure sustainable economic and social development.

1.3. Sustainable Rural Development

Sustainable rural development includes projects that support agriculture, animal husbandry, ecotourism and the local economy in order to strengthen the economy and ensure sustainability (Bowitz & Ibenholt, 2009). Besides, these sustainable rural development projects include

efforts to preserve cultural heritage while ensuring the economic development of rural regions (Aslam & Awang, 2015).

According to the United Nations Organization, sustainable rural development is defined as "the economic and social conditions of small communities as combining and ensuring the efforts undertaken to improve the conditions" (Borelli & Ge, 2019). Areas with local identity and cultural heritage characteristics are the places that need to be protected.

In this context, protected areas should be aimed at achieving their goals within the framework of specific projects and the basic elements should be revealed (Nayim, 2015).

For this purpose, the relationship between sustainable rural development and the eco-museum is gaining more importance. Eco-museums, unlike traditional museums, aim to protect the cultural and natural assets of the region, the lifestyles and values of the local people (Castro et al., 2024). The fact that this method is directly based on society contributes to rural sustainable development and creates a sustainable social and economic structure.

Therefore, it is thought that the sustainable development of Çamlıbel region, which has cultural, natural and environmental values, with the eco-museum approach will provide a holistic development by keeping the cultural heritage alive, strengthening the local economy and protecting the environment.

2. Materials and Method

In recent years, studies on sustainable development and protection of cultural heritage have been taken into consideration together with tourism, economic, and socio-cultural effects.

Çamlıbel village in Girne province, in Northern Cyprus, was chosen as the research area in this study. The region has a rich potential for the value of rural architectural heritage and natural resources. Furthermore, the village has suitable conditions for being an ecological museum. The geographical structure, natural environment, and existing cultural heritage assets of Çamlıbel village are suitable and important cultural heritage values for evaluation in the context of sustainable development.

As the first stage of the study, national and international literature on rural sustainable development, ecological museums and preservation of architectural heritage was researched. In this context, the effects of eco-museums on rural development and successful examples in different regions of the world were examined. Additionally, academic studies on the preservation and use of rural architectural heritage were analysed.

As a second step, site observation and investigation were carried out in the selected study area. With the field studies carried out in Çamlıbel village, the physical characteristics of the region, local architectural elements, natural resources and current socio-cultural structure were observed. Traditional cultural architectural elements, local building materials, agriculture lands and ecological characters were documented with on-site photography.

In addition, in determining the ecological museum potential of Çamlıbel, the results obtained by considering the compliance of the region with the economic, social and environmental sustainability criteria were supported by a SWOT analysis (Table 1) in terms of ecological museum potential. Suggestions were developed for the area in line with the findings obtained within the scope of the evaluation.

3. Case of Çamlıbel/Myrtou

Çamlıbel is located 28 km southwest of Kyrenia, on the Kyrenia-Guzelyurt main road. It is established at a central point where three main roads coming from Lefkoşa, Girne, and Güzelyurt meet and is a junction where all roads passes. Geographically, it is 268 m above sea level and neighbors Geçitköy (Panagra) to the north, Tepebaşı (Yorgoz) to the west, Karpaşa (Karpasia) to the south, Hisarköy (Kambiyli) to the east and Özhan (Asomatos) villages to the southeast (Figure 2) (Laptabelediyesi.com, 2024).

Figure 2. Location of study area; Çamlıbel (Eyyamoğlu, 2024)

Çamlıbel attracts attention with both its historical and natural beauties. It is located at the foothills of the Beşparmak Mountains, intertwined with nature. Çamlıbel is a settlement where the traditional village life of Cyprus continues and also carries important traces of the local cultural heritage of Cyprus. The old name of Çamlıbel, where Greek Cypriots lived until 1974, is Myrtou. The village, which was inhabited entirely by Cypriot Turks after

1974, is an important example of rural architectural heritage with its traditional stone houses, narrow streets, and natural beauties.

3.1. Findings

In order to determine the eco-museum potential of Çamlıbel, which was chosen as the study area, it is essential to evaluate the values that will contribute to the eco-museum planning. Accordingly, determining all parameters of the natural, social and cultural values of the region will be useful to evaluate the potential of the village. The area of the study, Çamlıbel village in Cyprus, is an impressive village with both its natural and historical riches. In terms of cultural heritage values, villages reflect the lifestyle, traditions, and natural and historical texture of the local people. Although Çamlıbel is generally known as a village, it is a centre for the surrounding villages in terms of its location, according to the village's size and population. For this reason, the administrative location of Çamlıbel can be considered as a town rather than a village. Moreover, it is possible to say that Çamlıbel village is a settlement with a very old history.

The ancient Pigades Temple (625 BC) and the St. Panteleimonas Monastery (18th century), are the most important examples of the historical accumulation of the region (Bağışkan,2013). One of the important reasons for being a central village is that the St. Panteleimonas Monastery in the village contributed to the development of the village throughout history (Table 1).

Table 1. St. Panteleimon Monastery (Eyyamoğlu, 2024)

1	**St Pantheleimon Monastery (Architectural Heritage)**
	Name: St. Panteleimon Church Monastery **Type:** Monastery /Cultural Heritage Value **Year:** 17-18 Century **Location:** Center of the Çamlıbel Village **Description:** The monastery made a great contribution to the development of the village. There are monasteries and service buildings around the church in the center of the building complex, whose construction dates to the 17-18 centuries. A conservation project was carried out in 2015 with UNDP-Cyprus support and grant for the buildings built using local and traditional materials. The plant, lion and eagle motifs on the monumental entrance gate on the south façade provide information about the richness of the monastery. Today, the surroundings of the monastery buildings are closed with iron fences and access to the buildings is not possible.     

Historic water aqueducts are another important heritage value in the region. Although the construction date of the aqueducts in the village center is known, they are located surrounding the monastery land (Table 2).

Table 2. Water Aqueducts (Eyyamoğlu, 2024)

2	**Water Aqueducts (Architectural Heritage)**
	Name: Su Kemerleri **Type:** Water Aqueduct /Architectural heritage **Year:** Unknown **Location:** Center of the Çamlıbel Village **Description:** Date of the aqueducts, is thought to be related to the monastery. Most of the arches built with local materials and techniques have not survived to the present day. Although some of the surviving parts have been restored, a significant part of them is in a state of disrepair. Ceramic pipes that provide water transfer can still be seen on the arches.     

Although there is no record of the exact founding date of the region, the archaeological sites around it shows that its history dates back to ancient times. Sanctuary of Pigades is the main archaeological heritage site (Table 3).

Table 3. Sanctuary of Pigades (Eyyamoğlu, 2024)

3	**Sanctuary of Pigades (Archeological Heritage)**
	Name: Sanctuary of Pigades **Type:** Archaeological site / Cultural Heritage Value **Year:** 1650BC-1050BC (Late Bronze Age) **Location:** 2 km of South East Çamlıbel Village **Description:** 'Pigades', located on the plain in the southeast of Çamlıbel, is a temple in an archaeological settlement. Today, only a small fence has been made in the temple area. The archaeological site is neglected and abandoned. Informative signs for touristic purposes that tell visitors about its history have deteriorated over time and are neglected.     

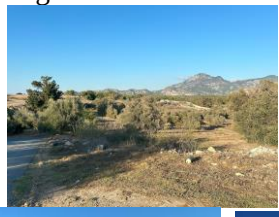
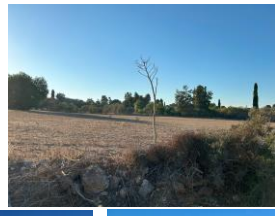
Çamlıbel town contains valuable examples of traditional architectural materials and construction techniques. Buildings built with traditional construction techniques and materials are important vernacular architecture examples of the region (Table 4).

Table 4. Village Square (Eyyamoğlu, 2024)

4	**Village Square (Social & Cultural Heritage)**
	Name: Village Square **Type:** Vernacular village center/Cultural-Social value **Year:** Unknown **Location:** Center of the Çamlıbel Village **Description:** There are original examples of vernacular architecture in village square. It is a very typical area, shaped by vernacular Cyprus architecture, and the center of social life. This area contains civil buildings and social gathering points with arches made of local materials. Village coffeehouses, markets, post office, Muhtar's office, mosque and similar commercial facilities that reflect traditional culture.     

These examples demonstrate an environmentally sensitive approach to buildings built with a building approach that is environmentally friendly, durable, uses local resources and provides energy savings. In terms of the geographical location of the village, which is built on a high plateau on the foothills of the Beşparmak Mountains, is also quite extensive in terms of its natural features. Regional characteristics allow for the coexistence of both forest areas and arable agricultural lands. In the forest areas, in addition to pine and cypress trees, dwarf trees with maquis characteristics, which are typical Mediterranean vegetation, can be seen (Table 5).

Table 5. Natural Environment (Eyyamoğlu, 2024)

5	**Natural Values (Natural Heritage)**
	Name: Natural Environment **Type:** Natural Heritage **Year:** - **Location:** All around the village **Description:** Not only Çamlıbel village but also its entire surroundings have natural beauties and rich ecosystems. Tree species such as red pine and cypress in the region are both sources of oxygen. The maquis vegetation, which grows under the influence of the Mediterranean climate, as in Cyprus, offers a rich biological diversity. Some types of endemic plants and natural wildlife unique to Cyprus increase the ecosystem and biological richness of the Çamlıbel region. Production of Olives, grapes, carbs, almonds, and various vegetables and fruits are the main agricultural activities of the region.     

In the village where a typical Cypriot village life exists, social relations between the local people are well developed. Therefore, the intangible cultural heritage continues in the village depending on the social life of locals. According to the literature review conducted within the scope of the study, the social, cultural and natural values evaluated in eco-museum projects were determined in the field study.

Buildings in the region are spread over a wide area and natural life and natural lands are intertwined with the buildings area. This layout allows the gardens of the houses in the village to be large and green. In addition, the cultural, social and natural values that should be evaluated within the scope of a possible eco-museum project for sustainable rural development were determined by the analyses carried out in the village. For this purpose, an imprint has been created for the listed cultural heritage values, features, history and locations are given below in tables with explanations. Maronites living in Northern Cyprus are an important part of the multicultural structure of the island and have represented the cultural, religious and social diversity in Cyprus throughout history. One of the Maronite settlements in Northern Cyprus, which is Karpasha/Karpaşa village, is located in the Çamlıbel region and has an important place in terms of cultural diversity. Keeping alive and promoting the Maronite culture, which is a proof of the multicultural history of Cyprus, is an important factor that will contribute to the diversity of eco museums in the region and contribute to cultural continuity (Table 6).

Table 6. Karpaşa Maronite Village (Eyyamoğlu, 2024)

6	**Karpaşa/Karpasia Maronite Village (Social&Cultural Heritage)**
	Name: Karpasia/Karpaşa **Type:** Maronite village / Cultural-Social value **Year:** Unknown **Location:** 1 km of South of Çamlıbel Village **Description:** Karpaşa is the second example after Koruçam/Kormakitis village where the Maronite community lives in Northern Cyprus. It is an important example of the culture and belief styles of the Maronite society. There is one church belonging to the Maronites and many housing examples of Cyprus vernacular architecture in the village.     

3.2 SWOT Analysis of Çamlıbel/Myrtou Village Region

SWOT analysis is an effective method to analyze the effects of the study area on internal factors to make historical, cultural and social evaluations in rural areas such as the Çamlıbel region. Conducting a SWOT analysis in the context of cultural heritage and eco-museum villages is an important approach to understanding such projects' strengths, weaknesses, opportunities and threats. For this reason swot analysis can be used for strategic planning to increase the sustainability of planned projects and create more value for local communities of area. Therefore, swot analysis was used as a tool based on the observations made to determine the situation of the Çamlıbel region. The strengths and weaknesses revealed by the analysis results and the opportunities and threats are listed below. According to the SWOT analysis made, the opportunities for the region to become an eco-museum are quite high. However, it is observed that weaknesses and threats criteria are also too high to be ignored. Weaknesses and threats regarding the region are important points that need to be addressed. For this purpose, the SWOT analysis results used in the evaluation of Çamlıbel's eco-museum potential will help in the development and strategic planning of the project (Table 7).

Table 7. Swot Analysis of the Çamlıbel Region (Eyyamoğlu, 2024).

Strength	Weaknesses
● Existence of cultural texture ● Existence of natural texture ● Presence of historical ruins and artifacts in the region. ● The presence of an important monastery belonging to the Christian religion in the village ● The existence of a prehistoric temple near the village ● Different beliefs and religions living together in the region ● Being suitable for cultural tourism ● Being located at the intersection of transportation networks to major cities and is easily accessible. ● Being among forests and rich in natural resources ● The existence of the Vernacular Architecture examples	● Damage to cultural assets ● Construction and other practices that damage the historical, cultural and natural texture ● Environmental pollution ● Economic reasons ● Break away from tradition ● Not using traditional construction techniques ● Not using traditional building materials in new buildings ● State and local governments do not have a conservation policy for the region ● Lack of advertisement and promotion ● Lack of accommodation for tourists ● Not doing any nature-related touristic activities ● Lack of promotion of local culture to tourists ● Lack of investment support ● Lack of tourism policies for the regio
Opportunities	**Threats**
● Having many cultural assets in region ● Sanctuary of Pigades temple is in the area ● St Panteleimon monastery is in the region ● Being close to Geçitköy/Panagra pond ● The richness of natural resources and views ● Two different faith communities living together ● Being close to Karpaşa/Karpasia and Koruçam/Kormakiti villages, which are the only	● Lack of environmental awareness among the public ● Lack of conservation awareness among the public ● Lack of venues for cultural purposes ● Lack of venues for accommodation purposes ● Lack of promotional initiatives ● Ignorance of local people in conservation and sustainability ● Lack of government-supported region-specific sustainable development plan

examples of the Maronite community living in Northern Cyprus. ● Potential to become a centre of attraction in terms of history, culture and faith tourism ● Having geographically rich landscape features ● The abundance of endemic plants specific to Cyprus in the region ● Rural production continues ● Continuation of local animal husbandry ● No immigration from abroad ● Continuation of social life and relationships ● Various heritage items depending on on-site display can be transferred to the future	● Insufficient education on the subject

4.Discussions

The findings obtained within the scope of the research reveal that Çamlıbel (Myrtou) is a special village with the potential to be evaluated with the ecological museum (eco-museum) model for the sustainable development of its rural region and the preservation of architectural heritage. Existing literature reveals that eco-museums are types of museums that aim to support sustainable development in rural areas by ensuring the combined protection of nature and cultural heritage and social participation. Therefore, handling the Çamlıbel town, which has many historical, natural and cultural values, with the eco-museum model will serve to ensure sustainable rural development in the region as well as to protect the cultural heritage. Observations made in the region and the resulting SWOT assessment results reveal that sufficient efforts are not

currently being made for the development of the region and the sustainable preservation of cultural heritage.

The preservation project of the St. Panteleimonas Monastery, which contributed to the development of the town throughout the historical process, was carried out in 2015 after a long time. However, today it is not open to visitors, and it appears to be deteriorating day by day due to environmental factors. The current situation in the monastery is contrary to the protection of cultural heritage and the goals of sustainable development. However, important steps can be taken for regional development and preservation with appropriate use policies for monastery buildings. In this way, monastery buildings can contribute to the development of the region, as in the past. In addition, the unrestored parts of the aqueducts around the monastery will be preserved in this way. On the other hand, the lack of any practices that encourage tourism and visitation of archaeological value, such as the Temple of Pigades, is another important problem identified in the region. It is not a wrong approach to consider the Maronites and Karpaşa village as the most important value of the region in terms of culture. Because the number of the Maronite community, one of the communities living in Cyprus, is low in Northern Cyprus. In the north, they live only in the villages of Koruçam/Kormakitis and Karpaşa/Karpasia, both of which are around Çamlıbel. When the cultural values of the Maronite community are evaluated within the scope of the eco-museum project together, cultural diversity will add special value to the steps to be taken within the scope of sustainable development. In fact, this is one of the main purposes of the eco-museum approach.

In addition to all these, the preservation of local civil architectural examples existing in the region and continuity of the socio-cultural life are values that are lacking in the region. In accordance with the main purpose of this study, it is inevitable to make some suggestions as a result of the analyzes carried out to preserve the historical and cultural identity of Çamlıbel's traditional settlement texture.

4.1 Suggestions

Results obtained according to the findings show that the region has many values that can be eco-museum parameters, but it has not been projected with a holistic approach. Based on the principle that eco-museums are a concept where residents, cultural heritage and nature are evaluated together, it is envisaged that the practices to be carried out will contribute to the sustainable development of the region. In this context, the main goal should be to reveal the cultural and historical identity of the local people and transfer to future generations.

According to the results of the study, it would be best to focus on SWOT analysis as one of the first steps to be taken. Aim of this focus must be to develop the strengths/opportunities and at the same time reducing weaknesses and threats.

In this regard, it will be possible to achieve the targeted result when the suggestions listed below are applied.

- ✓ First of all, governmental policy should be developed for the region,
- ✓ Existing cultural assets should be made available for visiting,
- ✓ Informative and guiding signs should be used for tourists,

- ✓ Natural, cultural and environmental awareness of the people of the region should be improved,
- ✓ Improvements should be made to increase the number of tourists visiting the region,
- ✓ The accommodation and restaurant facilities that are missing in the region should be encouraged to be opened,
- ✓ Buildings with local architectural features, should be encouraged for restoration and reuse,
- ✓ In new constructions, local architecture should be encouraged to use local materials and techniques,
- ✓ Activities that reflect and promote the cultural life in the region should be encouraged,
- ✓ Advertising and promotional campaigns should be developed for the region,
- ✓ Seasonally appropriate events should be organized for summer and winter periods,
- ✓ Various walking routes in different directions should be determined and nature walking activities should be organized for the region, which is surrounded by abundant forests and natural landscapes,
- ✓ The values of the Maronite community, which are special for the region, should be supported and cultural diversity should be maintained,
- ✓ Economic support for locals should be provided by government,
- ✓ Educational programs should be developed for local people,

- ✓ Support should be provided to increase production such as local agricultural products and handicrafts
- ✓ Governmental policies that support and promote domestic production should be developed,

In line with these suggestions, it is aimed to achieve sustainable development in the region. While achieving the sustainable development goal, the protection of cultural heritage and the continuity and transfer of social and natural heritage will also be ensured. Although the main idea is sustainable rural development, the eco-museum project, which is an innovative concept worldwide and supports both development, conservation and the participation of local stakeholders, can also be implemented in parallel with this method.

5. Conclusion

This study was undertaken to evaluate the potential of the Çamlıbel region to become an eco-museum within the scope of protection of cultural heritage and sustainable rural development. The town contains many rich values in terms of both natural and cultural riches. The applicability of the eco-museum idea, which is described as a museum where natural and cultural heritage is preserved, exhibited and kept alive with the direct participation of local communities, to the Çamlıbel region has been evaluated. It should be said that the natural and cultural heritage of the region, as well as the cultural diversity originating from the local people, fully comply with the eco-museum criteria. However, according to the site observations and the swot analysis produced as a result, it is revealed that the region has strengths in many areas and weaknesses in many areas.

Therefore, the current situation of the region creates imbalances that contradict the concepts of sustainable development and sustainable conservation. When the recommendations made based on the findings are implemented, will be possible for the region to live as an eco-museum. In this way, is clear that the ecomuseum proposal will provide the opportunity to preserve, document and transfer the local architectural structures, techniques and materials in the region to the society. Moreover, it will contribute to the preservation of not only individual buildings, but also the natural and cultural environment in which the buildings are located. In this context, the region can contribute to the revival of economic circulation and sustainable rural development by creating an attraction point for visitors.

The results obtained with the method followed in the study were instrumental in obtaining data that will shed light on future studies. In this context, the study can be furthered by conducting a survey to measure and evaluate the awareness level of the local people.

For sustainable conservation, common values should be determined together with the local people, and the users of the area should be informed in the works to be carried out to keep these values alive. To protect the heritage in the region and ensure development, it is necessary to approach the region holistically. This approach for rural areas can be achieved by establishing an eco-museum, but necessary measures must be taken to prevent the destruction of the rural heritage. Therefore, local people should be involved in the process.

As a result, with the eco-museum project approach, is possible to protect and continue the cultural heritage in Çamlıbel town and at the same time

ensure sustainable development. To achieve success in the project, cooperation between the local people and the administration is inevitable, and it is the duty of both parties to preserve the cultural heritage and transfer it to future generations.

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Conservation of Architectural Heritage: Traces of History

Chapter 15

Traces of the Past for Today's İstanbul Hasköy

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1. Introduction

Buildings, squares, bridges and roads reflect the period in which they were built. Cities may contain historical information about the past. While the physical environment can carry periodic integrity, traces of different periods can also remain in small pieces within the city. It is possible to say that the fabric of the city, along with its living dynamic aspect, is in change depending on time. Settlements are closely related to climate conditions, proximity to water and food resources, and life safety, which are vital for sustaining life. Anatolia is full of examples of cities that were rebuilt each time they were destroyed. These changes can occur partly or collectively. Large fires, earthquakes, landslides and wars are disasters that can cause large-scale destruction of cities in every aspect. Along with epidemics, famine and war, natural disasters are major factors in the change of the built physical environment. On the other hand, the interaction of cities with other settlements, political, social and economic factors can bring about changes in all aspects of cities or parts of cities. The development and change of each city over time may differ with its location characteristics. A settlement with vineyards and gardens and large mansions in one period may become an industrial centre in another. A city that develops and gains its economy as an industrial city may remain idle over time, and its population and economy may change. The urban fabric, color and even smellscape may transforms through time. Another factor may be the change in economic activities and the consequent impact on the population. For this reason, in the analysis of the physical elements that define a neighborhood today, the inclusion of the elements on the streets

that integrate with the topography in addition to the prominent monumental buildings provides more data in terms of defining the region. Examples of civil architecture include buildings, garden walls, and trees that are more than a century old. In addition to all these physical elements, economic, social and environmental data also play an important role in tracing the past. Elements of socio-cultural life, economy and the businesses integrated with that city can be given as examples. Functions such as fishing or shipyards and ports that come with being on the seashore can become important elements that define the city. On the other hand, the traces of all historical layers in urban planning strengthen the connection between the past and the city, and thus the people living in it. The physical environment is in integrity with the users and functions that sustain it. The meaning of a place, on the other hand, is integrated with the person's social environment, social life together with that environment and the physical spaces where the activities that develop this life take place (Gustafson, 2001). The expression of a place may also change with changes in time (Gustafson, 2001). The historical characteristics of a place are influenced by the physical appearance associated with its history, the social events associated with its history, and the tools that emphasize its historical dimension (Ries & Schwan, 2023). Landscape elements are also included in the physical environment from the past to the present. The readability of historic places, historical knowledge and strengthen the visitor's knowledge of the relative past (Ries & Schwan, 2023).

To understand historic environments with traces of the past, physical environmental features may be used as a basis. The social fabric may have changed and the form of economic life may have changed radically.

However, the remains of the places used in the past still provide information on this subject. Hasköy settlement, located in Istanbul Beyoğlu district is one of the examples that have been layered with different periods and cultures parallel to the city's history. In this study, the historical traces of the Hasköy neighborhood that survive today are examined. The traces of this past are discussed in general terms, based on observations rather than detailed findings.

1.1. The Linking to the Past

Architecture and urban design have evolved throughout history as a reflection of social and cultural dynamics. In this process, the effort to connect with the past manifests itself as a desire to preserve the identity and character of cities. In this context, Istanbul's Hasköy neighborhood stands out as a region bearing the traces of the past. The effort to connect with the past stems from the desire to preserve historical continuity and cultural heritage in architecture. In this context, the relationships that people establish with architecture, that is, with space and the past, gain importance in protecting and embracing individual and social memories. Keeping the traces of the past alive in architecture and urban space is not only an aesthetic preference, but also means the protection of social memory. Architectural structures assume the role of carriers in the transportation of social and cultural values. Buildings, even after many years, find life in the stories of new users and are remembered in one way or another. As Bergson (1919) stated, *"Also called spontaneous or image-memory, this type of recollections providing personal memory-images, can be the basis of the association of ideas''* (Bergson, 1919, p.87). Thus, space is a constantly changing reality over time; our perceptions

continuously follow one another, and it is difficult for anything to gain a permanent place in our minds. Our ability to understand the past is only possible through preserving the material environment that surrounds it. Therefore, memory is a concept directly related to spaces. This connection to the past enables individuals and societies to understand their identities and carry these identities into the future.

Spatial memory demonstrates how we mentally construct a building or environment. As stated, *"Humans have always formed relationships with the past through various methods of remembering. Individual or collective memory is tied to an object, monument, structure, or place"* (Aykaç, 2022, p. 51). Those who deal with the academic side of the work are curious about the physical and social conditions that enable architectural space to be strongly embedded in social memory. Ordinary residents, who are a part of the daily life of the neighborhoods, can embrace the spaces with a nostalgic longing for the past. The question of why we look back to the past can be answered by the structures within the city and their place in individual and social memory. The meanings attributed by users create a stage in the flow of daily life within the urban structure by establishing a connection that ensures continuity within changing memory spaces. However, it is not necessary for these places to be public, highly publicized or monumental structures that have a place in the collective memory of individuals.

The past, with all its individual and social benefits, provides data for spatial memory. Sometimes it is a photograph, sometimes it is a street where a ball is played, and sometimes it is a silent wall pattern from the Ottoman era that bears witness to memories in Hasköy (Figure 1). What does not

change is the inhabitants of the city who attribute new meanings to a structure whose location is fixed over time, in short, change itself. Space contains different meanings that cannot be reduced to the physicality of the building. As a matter of fact, history contains a story beyond the physical existence of the building. For all these reasons, memory and cultural heritage feed each other and reveal our instinct to protect. What are remembered-memories and meanings in the unity of space and memory can accumulate at the foot of a ruined mansion in Hasköy.

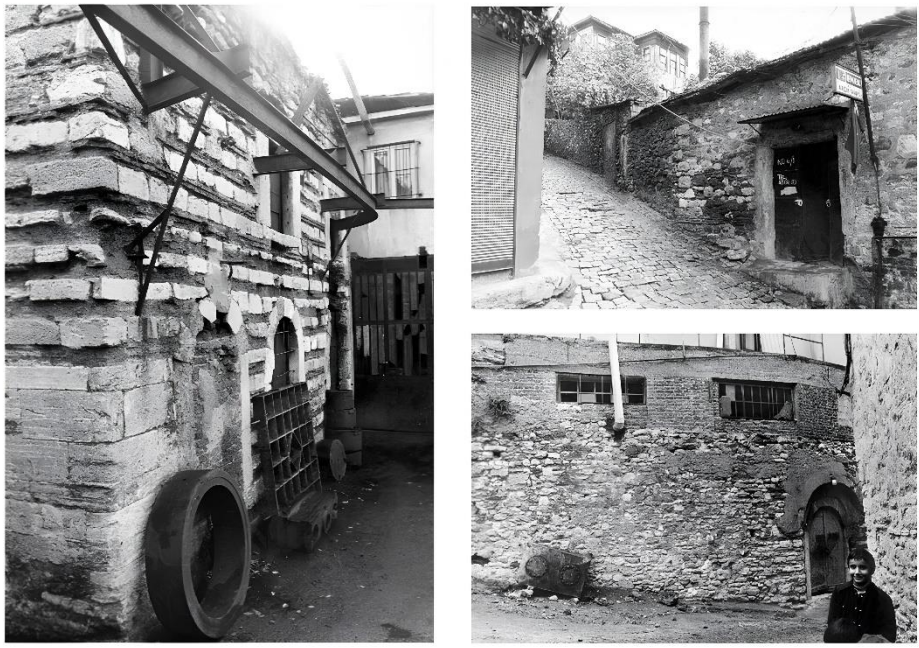

Figure 1. A street in the Hasköy neighborhood of Istanbul, traces of buildings where different layers are read, 1981, (dai-istanbul-fotothek collection).

A building described by Evliya Çelebi and Eremya Çelebi Kömürciyan in Hasköy transcends the boundaries of memory with the meanings attributed by the new users of the city centuries later. To conclude the question of

why we look to the past more succinctly, it can be shown that it is to remember again, to give meaning to the new, and in fact, and to never forget.

2. Material and Method

In the study, Hasköy neighborhood of Istanbul Beyoğlu district are examined traces of past. (Figure 2) The study includes the evaluation of the data obtained within the scope of literature research and on-site investigation within the scope of qualitative research. The historical maps were used along with the current map of the region. The historical layers of Istanbul Hasköy have been handled in the context of street morphology, building characteristics, economic and social life, and landscape history at the urban and building scale with monumental buildings.

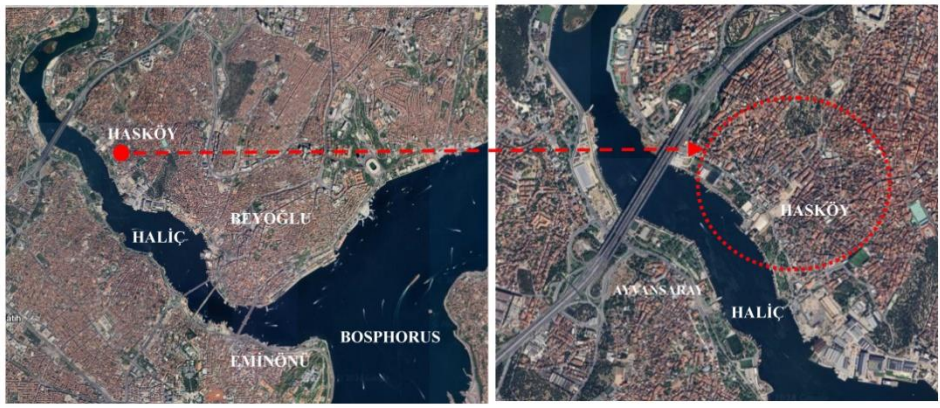

Figure 2. Istanbul Hasköy neighborhood location map, (Google Earth, n.d).

Although Hasköy is a neighborhood that is integrated with its surroundings, its unique social structure through the history. The main source on the history of Hasköy neighborhood is Evliya Çelebi Seyahatnamesi. Alarslan Uludaş (2022), in his detailed research on the

historical past of the northern shores of the Golden Horn, including Hasköy, discussed many historical buildings with different functions, including those that have not survived to the present day. The Hasköy neighborhood of Istanbul's Beyoğlu district has witnessed profound social and economic transformations throughout history. The commercial, social and cultural processes along both shores of the Golden Horn have been important for Istanbul, and the presence of the shipyard in the Golden Horn has greatly affected the region. Today, surrounded by Sütlüce and Halıcıoğlu to the west, Kasımpaşa to the east and the Golden Horn to the south, Hasköy draws attention with its rich heritage from the past to the present.

2.1 Hasköy's Development Through The History

Istanbul's unique identity in the historical perspective, perhaps even in world history, begins with being the capital of the greatest political entity of the pagan world (Kuban, 1970). As Kuban (1970) also points out, there is no other city that has dominated the politics and culture of the Mediterranean region for such a long period. The city is one of the places that carries the cultural and spiritual heritage of different civilizations in the most concentrated form. One of the most important historical settlements where the traces of this heritage can be traced is undoubtedly Hasköy.

Known as the favorite summer residence of the Byzantine nobility since the fifth century, Hasköy was home to important buildings such as monasteries and palaces reflecting the splendor of that period. This region covered with forests, which Emperor Michael III (842-867) frequently visited for hunting, also made a name for itself with the Hagios

Panteleimon Monastery built by Theodora, the wife of Emperor Theophilos (Karakaya, 2004). The historical texture of Hasköy bears the traces of a past that has been continuous for centuries.

The observations of Evliya Çelebi (1611-1682) during the Ottoman Empire provide valuable details that shed light on the understanding of Hasköy. According to Çelebi, although Hasköy is referred to as a town, it is actually a very special settlement. According to Çelebi, almost three thousand houses with gardens and some of its vineyards grew lemons and citrons in Hasköy. It is famous for its sea-facing houses, fresh air and cheerful atmosphere. Especially the lemons and pomegranates grown in the gardens of Jewish families named Küpelioğulları, Mordakay, Nesim and Kemal are legendary. While there is a mosque and two masjids in Hasköy, it is understood that there are no buildings such as inns, imaret and madrasahs. The rest of this district, which had one Muslim neighborhood, consisted of eleven Jewish neighborhoods. According to Evliya Çelebi, after a great fire in Istanbul, Jews settled in Hasköy and formed more than twenty communities. After the Jews in Eminönü were resettled in Hasköy due to the construction of the New Mosque, it became a real settlement area (Kömürciyan, 1988; Mantran, 1991). People of a certain importance had mansions built for themselves on the shores of the Golden Horn in large private gardens. There are large areas extending to Kasımpaşa and Hasköy ridgeline. Okmeydanı, where the janissaries and soldiers practiced, was also located here (Mantran, 1991).

According to Evliya Çelebi, Hasköy, which had a population of approximately 17,000 at the time, was compared to Thessaloniki in Rumelia and Safed in Arabia; it housed twelve synagogues and many

rabbis. Hasköy was also home to two Greek neighborhoods, three churches and an Armenian neighborhood. Evliya Çelebi (1611-1682) states that there were more than six hundred shops, as well as markets selling valuable goods, fifty leather processing shops, one hundred taverns and three hundred houses.

Located right next to Hasköy, the seaside Tersane Garden was a region belonging to kings during the Byzantine period, but it is also known as the place where Sultan Mehmet the Conqueror pitched his tent after the conquest and distributed the spoils to the veterans. For this reason, various mansions, baths, pools and fountains were built by sultan's decree (Evliya Çelebi, 2003). However, in Evliya Çelebi's narratives, it is stated that the Armenians did not have a place of worship in Hasköy at that time and that they went to Balat for worship (Evliya Çelebi, 2003).

Hasköy is known as a cosmopolitan neighborhood where different ethnic groups lived together during the Ottoman period. Especially since the 11th century, the Jewish population in this region has been concentrated, and it has hosted a rich Jewish cultural heritage with its religious and educational institutions. According to some Byzantine sources, Hasköy, which once had a very dense Jewish population, was inhabited by Jews before the Ottoman Empire and the large cemeteries visible on the Halıcıoğlu ridges date back to that time (Kömürciyan, 1988).

Towards the end of the 17th century, Hasköy became the center of industrial activities with the establishment of small shipyards and workshops. This important region, where cannon were cast in Istanbul, came to the forefront as a developing industrial zone on the Golden Horn from the reign of Sultan Ahmed III onwards. According to tradesmen's

notebooks, there were eyestone workshops, leather sewing workshops and tile-brick kilns operated by Greeks, Jews and Muslims in Hasköy (Göncüoğlu, 2005). This diversity made Hasköy one of the most important regions of Istanbul not only culturally but also economically. According to Kömürciyan, the fact that this neighborhood was called “Keremitya” in the Byzantine period indicates that there were tile-brick kilns there in the past (Kömürciyan, 1988). According to the information in the archival records about the production centers of bricks used as building materials in the Ottoman Empire, they are referred to as “brick blend” or “kârhane”, and the brick production centers in Büyükdere, Karaağaç and Hasköy are referred to as “brick blend” or “kârhane” in three different archival records (Günay, 2022).

By 1830-1840, Hasköy had changed, many of the beautiful houses and lavish gardens described by Evliya Çelebi had disappeared, but the quality of life in certain areas continued to provide space, light and views that residents fought to preserve, and small orchards continued to be maintained in selected locations (Rozen, 2021). The change of the region and traces may also see through historical maps (Figure 3).

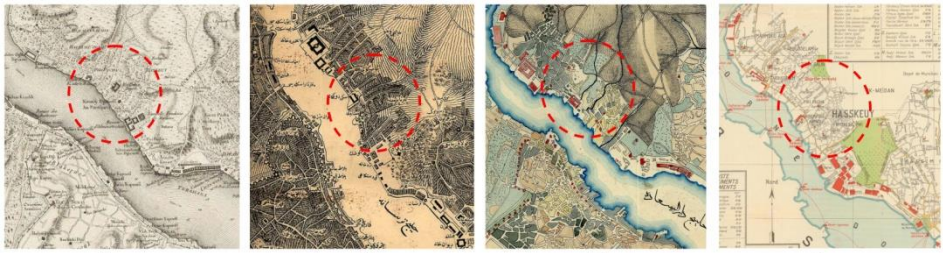

Figure 3. Historical Istanbul maps (partial) showing Hasköy and it's surroundings, a) Plan de la ville de Constantinople (Kauffer, 1786), b) İstanbul Map, (Daru'l-hilafetü'l-aliye ve civarı haritası) (Moltke, 1839), c) Haliç ve çevresinin haritası - Map of Golden Horn and its surroundings (Mustafa Vasıf Paşa, nd), d) Plan general de la ville de Constantinople (Société Anonyme Ottomane D'Études et D'Entreprises Urbanies, 1922).

In the late Ottoman Empire, Hasköy maintained its importance as one of the industrial and commercial centers of Istanbul. From the 19th century onwards, the Golden Horn became an important port and naval base with its rapidly developing shipyards. Although this industrialization process led to the destruction of palaces along the shore, such as the Aynalıkavak Pavilion, Hasköy remained a favorite holiday destination for Greek Orthodox leaders until the late 19th century. In the Byzantine period, Hasköy was called "Arabind" or "Paraskevi" after the church of Hagia Paraskevi, which was left to the Greeks after the conquest, and today's Greek Church and Ayazma bear the same name (Kömürciyan, 1988).

Since the mid-19th century, Hasköy became known for its textile workshops and industrial enterprises, and became one of the first industrial areas of Istanbul by hosting many spinning and weaving factories. In the same period, the Jewish population continued to occupy an important place in the region (Karmi, 1996). As in other districts of Istanbul, there were

dozens of fires in and around Hasköy in the 19th and 20th centuries, resulting in the destruction of a significant number of buildings (İBB 2024; Bali 1997; Açan 2006). During this period when plague epidemics (1712, 1717, 1810, 1865, 1871, 1913) affected the demographic structure in the region, traditional Jewish neighborhoods disappeared over time, but Hasköy was able to preserve its Jewish identity until the mid-20th century (Sağ, 2015). In the eyes of Edmondo De Amicis, who visited Istanbul in 1874, Hasköy was portrayed as *"a large, crowded and very poor Jewish neighborhood"* (De Amicis, 1981).

During the beginning of 20th century period, Hasköy, along with its Golden Horn surroundings, became a center where industrial activities gained more momentum. In the early 20th century, the textile industry in particular showed a great development in the region and Hasköy attracted the attention of both local and foreign investors. The increasing number of factories in this period strengthened the economic structure of the neighborhood, while the worker settlements established reshaped the demographic structure of Hasköy. In 1974, with the construction of the Golden Horn Bridge, Hasköy became more strongly connected to Istanbul's transportation network, but as of the 1980's, the shores of the Golden Horn were cleared of industrial facilities. In this process, the social and economic structure of Hasköy underwent radical changes and the neighborhood gradually transformed into residential and commercial areas.

3. Findings and Discussion

The historical settlement of Hasköy is analyzed chronologically and functionally. Social life and extension functions, physical traces of

economic activities and the structures that survive today have been tried to be identified. Today, Hasköy has become a district that attracts attention with new universities, transportation networks, modern housing projects and commercial centers. Although some of the buildings that preserve its historical texture have been restored, there are still areas that are in ruins and have irregular construction. The gardens and orchards mentioned by Evliya Çelebi are no longer prominent. The presence of buildings from the past reveals the complex structure of Hasköy, which harbors the past and the future together.

Some of the buildings dating back to different periods such as mosques, masjids, lodges, churches, synagogues, cemeteries, fountains, baths and schools have survived to the present day. There are also a small number of residential buildings that are examples of civil architecture. Although the majority of the surviving buildings date back to the 19th century, many buildings dating back to earlier periods have survived. There are 11 fountains dating to the 19th century in Hasköy. Silahdar Yahya Efendi Fountain, Hasköy Mosque, Halil Aga Subyan School, Handan Aga, Keçeci Piri and Kiremitçi Ahmet Çelebi Mosques, Lengerhane and Hasköy Shipyard are among the surviving historical buildings.

Studies show that Hasköy was the leading district in Istanbul in terms of synagogues and school buildings in the historical process. It is possible to say that this situation is related to the population characteristics of Hasköy in the mentioned period. Since the Byzantine period, Hasköy has been an important social structure for Hasköy with its population and structures such as schools, places of worship and cemeteries. While the area where Hasköy Primary School is located today was once home to the Hasköy

English School founded by the London Jewish Community, important educational institutions such as the Camondo Institute (1858-1889), synagogues, Hebrew printing houses and mission centers left deep traces in the historical texture of the region. The Parmakkapı, Sinyora, Esgher, Karay, Kula, Maalem, Mayor Synagogues and the Alliance Israélite School are among the important examples of Jewish heritage that have survived to the present day. The Nersesian School (1836), the Kalfayan Girls' Orphanage and the Nubar Shahnazaryan School are educational institutions that have not survived (Kiremitçiyan, 2020).

Production structures dating back to the 18th century, also related to its location, continued to increase until the 20th century. Industrial heritage buildings continue to be used as museums and educational institutions. Hasköy Lengerhane (18th century) and Hasköy Şirket-i Hayriye Shipyard (1861), where Hasköy's connection with the sea was established, are re-functionalized and used as industrial museums. The function of the shipyard has changed, but its physical presence remains. Hasköy Wool Yarn Factory (1952) has been demolished in recent days; it is now a construction area for a housing project.

The presence of brick and tiles workshops in the past brought along its use in the construction of surrounding buildings in Hasköy. Today, although the workshops are no more, dozens of buildings built with bricks are still standing and in use (Figure 4). It is an important example of the connection between production and the city.

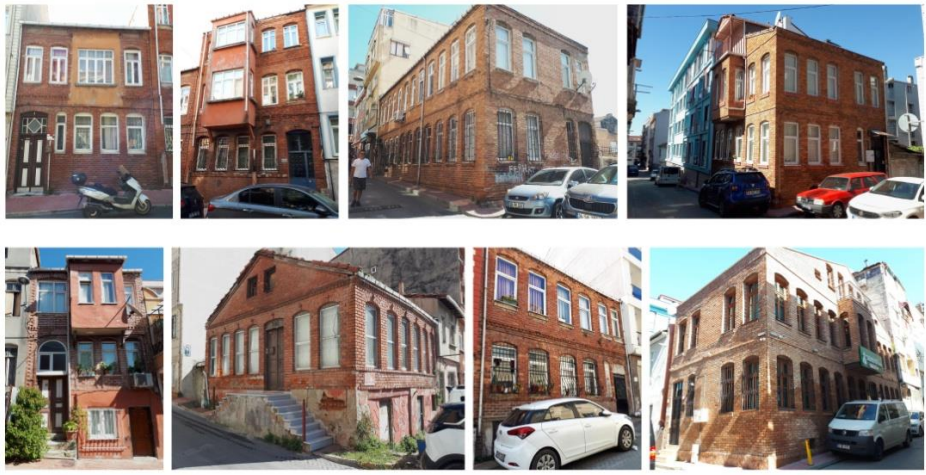

Figure 4. Building examples built with brick building material in Hasköy neighborhood (Yücel, 2024).

Today, even though Hasköy lives in a universe without the different social structures that are part of the historical narrative, traces of its legacy can be traced. Today, it is possible to see alternating walls from the Byzantine and Ottoman periods even in a single building on the streets of Hasköy (Figure 5).

Figure 5. Historical buildings and ruins with stone walls, a) Sinyora Synagogue (left)- Ayia Paraschevi Church wall (right), b) Kula Synagogue ruin, c)Mayor Synagogue, d) Hasköy Greek School ruins, e)Historical mansion ruin, f) New building on historical wall (Yücel, 2024).

Reading these layers from the traces of buildings makes the space as a whole a carrier of that cultural heritage. Even though the original owners of these buildings are no longer with us, these places still carry a meaning for someone who lived in Hasköy fifty years ago. For some, the protagonist of their childhood, youth or memories may be a street, an old house or an old mosque hugging the beach. Memory narratives, while maintaining their temporal dimensions, represent timelessness by refusing to remain in the past and be forgotten. The very relationship between memory and space leads the mind to form a meaning. Sometimes, the new layers added on top of the traces transform the physical characteristics of the building into something disconnected from the images that have taken place in the minds of the society. Even though *"this place is no longer that place"*, the

traces take place in the memories of the former inhabitants by greeting new users. As a matter of fact, spatial memory refers to a cognitive process related to how individuals perceive and remember physical environments and spaces and how they organize this information. To put it in architectural terms, spatial memory shows how we construct a building or an environment in the mind.

4. Conclusion and Suggestions

Hasköy is located between Kasımpaşa and Sütlüce on the northern shores of the Golden Horn. With its location and history, it has been an important point in the Golden Horn in every period of history. Although it covers different periods in Hasköy, there are historical traces in many areas that started, continued or finished in different periods within the scope of education, industry and religion. Today, some of the traces of the past in Hasköy neighborhood are places of worship, fountains and industrial facilities from the last century. Many educational institutions of different status were established in the neighborhood. Some of them are still standing today.

Although it is not at the forefront in terms of economic activities today, it attracts everyone's attention again as a settlement on the shores of the Golden Horn, where educational and cultural institutions continue to be concentrated. For this reason, Hasköy, where the traces of the past have not been erased, will gain meaning with what it carries from today.

From the 19th century, when the shores of the Golden Horn were in intensive use as an industrial production area, the de-industrialization of the Golden Horn since 1980 brought about the end of production activities in the region. However, today, a few of them are used for education and

culture. It can be followed as a distinct trace on urban scale maps. With the contribution of topography, the high garden walls of the religious buildings that have existed in the region since Byzantium have become an important element of the streets today.

Evliya Çelebi's description of vineyards, gardens and orchards cannot be sustained today. Again, the existence of important brick workshops in Istanbul's building production is out of question. However, it is possible to see the integrity of brick and Hasköy in the surviving buildings in the region today. With brick, brick workmanship and the contribution of brick to architecture, it is possible to capture both production and traces of the past in building examples.

In today's historic cities, the past shows its presence in the city with its traces and is mostly embodied in physical elements. Historical buildings or ruins, an activity that continues today, may contain information about the past of that city. For this reason, the preservation of periodic traces in stratified historical cities contributes more to feeling the rich culture of that city. Considering the past and its traces in planning will be an important tool in establishing a connection with the past.

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Author Contribution and Conflict of Interest Declaration Information

All authors contributed equally to the article. There is no conflict of interest.

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Conservation of Architectural Heritage: Traces of History

Chapter 16

Traces of Spatial Memory in Turkish Cinema from Cultural Heritage Perspective

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1. Introduction

Cultural heritage can be regarded and evaluated as a carrier that uses spatial memory throughout history to preserve the identities and cultural values of societies. Spatial memory, which conveys how places carry memories, emotions, and social bonds, reflects the impact of these places on individuals and communities, as well as their relationship with social memory. Cinema, which has the power to revive and narrate spatial memory by carrying the past into the future, uses space not only as a visual backdrop but also as a reflection of cultural and historical contexts. In this context, understanding the interaction between spatial memory and cultural heritage in cinema is crucial for uncovering the impact of cinema on social memory and cultural heritage. This study aims to analyze the representation of cultural heritage and the cultural meanings of spaces in Turkish cinema by examining traces of spatial memory. Additionally, it explores how Turkish cinema shapes cultural memory and heritage by evaluating how spaces are codded in cinema and how cultural heritage is reflected.

1.1. Cultural Heritage in Cinema and Space

The International Council on Monuments and Sites (ICOMOS) defines cultural heritage as “the entirety of tangible and intangible values that have survived from the past to the present, described as a reflection of people’s values, beliefs, knowledge, and traditions, which are in constant change without the bond of ownership” (ICOMOS, 2013, p.2). This concept, as defined in the United Nations Educational, Scientific and Cultural Organization (UNESCO) Convention Concerning the Protection of the World Cultural and Natural Heritage (UNESCO, 1972, p.2), encompasses

a broad spectrum of values, including historical buildings, monuments, and structures. This encompasses a wide range of tangible and intangible elements, including sculptures, paintings, and other works of art, as well as intangible values such as music, dance, rituals, oral traditions, expressions, and even natural landscapes. Despite their intangible and invisible nature, these values constitute the essence of what defines a society. Furthermore, cultural heritage represents a repository of non-renewable values that serve as a conduit between the past, present, and future, facilitating intergenerational communication, instilling a sense of belonging to a place, nation, and culture, and addressing individual identity issues (Kiper, 2004, p.14). In its 2001 Universal Declaration on Cultural Diversity, UNESCO acknowledges cultural heritage as a source of creativity. The Declaration asserts that "heritage, in all its forms, as a record of human experience and aspirations, must be preserved, enhanced, and transmitted to future generations to foster creativity in its entirety and to inspire genuine dialogue among cultures (UNESCO, 2001, p.2)." In this context, cultural heritage functions not only as physical remnants or artistic artefacts, but also as an archive that sustains social memory.

Cultural heritage encompasses all characteristics of the environment that emerge from the interaction between people and places over time (ICOMOS, 2013, p.2). By constructing places, individuals simultaneously shape the culture and identity of their society. The spatial memory generated through this interaction is considered a crucial interface for examining the influence of places on social memory. In shaping social memory, places transcend their role as mere physical locations, evolving into spaces where past events, experiences, and values are remembered,

reproduced, and transmitted. French sociologist Maurice Halbwachs's theory of collective memory provides a significant framework that emphasizes the importance of places within this context. According to Halbwachs (2017), collective memory is a process through which individuals reconstruct their memories within a social context, with places serving as key components of this process. Places function as material carriers of social memory because people associate their memories with specific locations, and through these places, they engage in the process of recalling the past.

This relationship between cultural heritage and spatial memory is particularly evident in narrative-based visual arts, such as cinema. Cinema films are a powerful means of expression that have the capacity to convey the social and cultural meanings of places to the audience as well as their physical characteristics. The spaces used in films can function not only as a setting in which the story takes place, but also as a symbol that evokes social values, historical events and collective memory. In this context, spatial memory in cinema can be considered a reflection of cultural heritage.

The representation of cultural heritage in cinema and the reproduction of spatial memory through cinema, and the interaction between these two concepts, represent a research area that requires examination from the perspectives of both cinema studies and cultural heritage studies. While cinema has the potential to reach large audiences in the process of preserving and transmitting cultural heritage, the concept of spatial memory can provide insights into how cinema shapes social memory through the use of spaces. In this context, an examination of the

representation of cultural heritage in cinema and the role of spatial memory provides an opportunity to elucidate the dynamics between these concepts. Turkish cinema provides an especially fruitful case study, offering the potential to utilize spaces as both a reflection of cultural heritage and as a tool in the construction of social memory. Consequently, an examination of the traces of spatial memory in Turkish cinema from the perspective of cultural heritage not only facilitates the development of novel approaches to the protection of cultural heritage, but also provides a valuable foundation for understanding the contributions of cinema to social memory.

1.2. Transformation of Space in Turkish Cinema

The spaces created by society reflect the cultural and social values of that society. When people interact with these spaces, they express and interpret their own identities. The reciprocal relationship between humans and their environment positions space as a vital aspect of human intellectual and emotional creation. Consequently, cinema, as a medium that reproduces societal output, emerges as a platform for observing this mutual interaction.

As an art form reflecting both the spaces people inhabit and the cultural and social values of society, cinema holds the capacity to present diverse spaces and their profound emotional and intellectual dimensions to audiences. Thus, cinema adds a new dimension to the concept of space, transporting audiences to different places, sharing experiences, and providing insight into social issues.

According to Balazs, cinema is deeply connected to social reality and profoundly influences people. It not only replaces stories that form social

bonds, but is also shaped by them (Balazs, 2013, p.151). Balazs' perspective, which focuses on cinema's relationship with social reality, highlights the essential role of space in cinema. Cinema offers viewers the opportunity to experience both the past and the present through spaces. In doing so, it can deeply influence the emotions and thoughts of its audience. Spaces in films provide not only a visual experience, but also convey emotional and symbolic meanings; thus, spaces in films are not merely physical environments; they offer viewers profound communicative experiences within social contexts.

The emergence of cinema as a visual art depends on space, as it presents slices of everyday life and forms a structure that narrates human experiences shaped by people. Moreover, according to Sarı, the study of cinematic works provides insight into patterns of social life, lifestyles, and socio-cultural and socio-economic structures (Sarı, 2010, p.22). In every sense, the production of social relations can be understood as the production of space. The reproduction of space can be defined as the reproduction of human relations, daily life and meanings (Akbal Süalp, 2004). Thus, cinema is an art form that depends on space and influences the structure of social relations. In cinema, spaces generally refer to the real world and express social, societal and physical structures (Aslan, 2010). Despite the diversity of subjects covered by movies, they can be regarded as research fields where evidence of cultural heritage can be found, as they present a representation of everyday life. National cinemas, in particular, are fields where tangible and intangible cultural heritage can be observed. The effort to develop a distinctive cinematic language, along

with its evolution in parallel with social, political, cultural, and economic changes, makes Turkish cinema a field worthy of research in this context. The distinctive identity and style of each period contributed to the evolution of Turkish cinema. The dynamism of these periods facilitated the advancement and deepening of cinematic art, and each innovation and change reflected in cinema made the representation of cultural heritage more visible.

Following the first screening by the Lumière brothers in 1895, interest in cinema emerged in the Ottoman Empire, as it did globally. According to Teksoy, Ottoman society's familiarity with the Karagöz shadow play facilitated the acceptance of cinema (Teksoy, 2007, p.11). The journey of Turkish cinema, which began with the first screenings for the palace, continued in the few surviving examples as a propaganda tool, dealing with themes such as processions, funerals, and prisoners of war, depicted in short snippets of everyday life. In these films, battlefields, town squares, and streets are the most common settings. In the few melodramatic films, settings such as mansions and waterfront villas were used, often resembling theatre sets. Until 1922, the initiatives led by military societies formed the foundation of Turkish cinema. Starting in 1922 with Muhsin Ertuğrul, a period later known as the 'theatre-makers era', films continued to serve as propaganda tools but also began to explore different themes. This shift contributed to a relative increase in spatial diversity.

During the nationalization process, although there was no official censorship board until 1932, films were inspected by the local police before being screened, and inappropriate parts were cut before being permitted for public showing (Güngör, 2019, p.347). This practice also

reflects the censorship procedures in the early stages of Turkish cinema. While locations in films continued to be designed and used as theatrical sets, these sets were specifically created for each film; they were constructed to reflect the period, status, and narrative of the film. From 1932 onwards, due to the strict censorship imposed on cinema, films were unable to break free from certain patterns and were confined to similar themes, constantly grappling with concerns of censorship. This led to the repeated use of similar spaces, thereby limiting spatial diversity. This situation, which had negative consequences for the development of the country's cinema, restricted the content of films and hindered the emergence of free and critical approaches in cinema. For a country striving to develop its own cinematic language, being subjected to such heavy censorship has constituted one of the key obstacles to creativity.

The years between 1939 and 1950 are considered a transitional period for Turkish cinema. Although there was some opposition from theatre actors, movies still maintained theatrical language, and due to censorship, directors predominantly worked with adaptations of literary works rather than original screenplays (Özön, 2013, p.194-195). Domestic cinema production decreased due to the reliance on private capital, resulting in an increase in the screening of American and Egyptian movies. In 1948, the reduction of taxes on Turkish films resulted in an increase in the number of domestic productions, which in turn led to a rise in employment in the industry and the establishment of new cinema companies. As the number of movies increased, Turkish movies began to be exported to the Middle East. Although this development revitalized the Turkish cinema industry, Yaylagül noted that it negatively affected the quality of movies and the

cultural development of society (Yaylagül, 2004, p.242-244). During this period, Taş Parçası (1939), the first Turkish movie to feature three-dimensional sets, was produced (Onaran, 1994, p. 40). Following this movie, which is considered the beginning of the Transitional Period of Turkish cinema, movie settings became more diverse, and real locations beyond theatrical sets were increasingly utilized.

The influence of theatre on Turkish cinema remained significant until the 1950s (Meriç, 2007). With the intense public interest in the 1950s, cinema became a space for socialization. In response to public demand, commercial cinema production increased (Kuyucak Esen, 2010), and melodramas, along with family and romantic films, began to be produced rapidly (Scognamillo, 2010, p.112). The social and spatial realism efforts of the 1960s also found expression in Yeşilçam (Kasım & Atayeter, 2012). Yeşilçam movies emphasized clear dichotomies such as rich-poor and beautiful-ugly, which led to the differentiation of viewers' film preferences along these lines. Poor and rich neighborhoods were spatially separated, and the virtuous character of the lower-middle class was emphasized, while the upper class was portrayed negatively. In this context, villas symbolizing the cold and distant relationships of modern life were contrasted with neighborhoods of houses symbolizing warm and close relationships (Akyol Altun & Uzun, 2012). Yeşilçam movies developed in parallel with the social structure, attracting large audiences by focusing on easily reaching viewers and meeting their expectations. During this period, cinema productions were often similar to each other and the settings were often similar or even identical. Dinçay & Özer (2013, p.149) argue that due to limited financial resources, Yeşilçam movies

continued to rely on real locations. It is possible to mention some residences that were decided to be used in films. In fact, these residences were often used in different films without any changes to the rooms inside. The 1962 film Sokak Kızı and the 1965 film Kırık Hayatlar are examples of this type of use of space (Figure 1). It is particularly noteworthy that the music cabinet, the single armchair and the wallpaper were used in exactly the same way in the shared living room scenes of both films. In addition to this, the films also used spaces belonging to houses and various public buildings.

Figure 1. Same Residential and Spaces used in Sokak Kızı (1962) and Kırık Hayatlar (1965) movies (Prepared by authors).

The 1960s marked a period of significant change in both world and Turkish cinema. According to Sim, during this period, several young filmmakers contemplated the representation and messaging of Turkish cinema (n.d.). Through these discussions, filmmakers who shared similar ideas developed distinct theoretical approaches, including national cinema, nationalist cinema, and revolutionary cinema. These approaches played a crucial role in reshaping both the content and style of Turkish cinema. The

approaches that emerged during this period contributed to the strengthening of Turkish cinema's identity and introduced new perspectives on filmmaking from various viewpoints. As cinematic styles evolved and diversified, the settings employed in films became increasingly varied, with spaces shaped according to the film's perspective containing traces of cultural memory.

The 1970s proved to be a challenging period for Turkish cinema. The oil crisis, economic difficulties, and the proliferation of television adversely affected the film industry. During this period, interest in cinema attendance among women and children declined. This development exacerbated the crisis within the film industry. In this challenging climate, sex films emerged as a strategy primarily aimed at attracting male audiences to cinemas. Despite this trend, directors such as Yılmaz Güney and Ömer Kavur, who continued the Revolutionary Cinema movement that began in the 1960s, produced films that aimed for realism, incorporated political criticism, and highlighted social issues (Kayalı, 2006, p.18-19). These films typically addressed issues such as the feudal system, landlordism, property relations, traditions, customs, and the role of women in society (Özön, 1985, p. 393). In the 1960s and 1970s, space was utilized to reflect the film's subject matter and convey symbolic meanings. Considering the themes explored in these films, spaces frequently embodied cultural traces of rural life.

The adoption of liberal economic policies in Türkiye during the 1980s marked the beginning of a significant period of commercial growth for the cinema industry. To compete with the foreign cinema industry, local producers concentrated on creating films with higher box-office potential;

simultaneously, this period was characterized by intense censorship practices. As television audiences expanded with the introduction of video cassettes into homes, the relaxation of pressures on the cinema industry following the 1986 Law on Cinema, Video, and Music Works ushered in a new era. During this time, initiatives were taken to support and safeguard the industry, and there was a growing awareness that cinema should be perceived not only as a commercial enterprise but also as a form of cultural heritage and expression. Arabesque melodramas, artistic themes, depictions of depression, women-centered stories (Kuyucak Esen, 2010, p.179-80), and the events of 12 Eylül (Abisel, 2005, p. 244) were frequently explored in films. The positive atmosphere and production potential of the sector were adversely affected by changes to the Foreign Capital Law, later referred to as the 'Hollywood coup of 1987.' In addition to a variety of genres, the 1990s witnessed the production of literary adaptations, comedies, films addressing urban issues, arabesque and sex films, historical works, real-life stories, women-centered themes, and films with political content (Scognamillo, 2010, p. 441-445). As the profile of Turkish society diversified during this period, filming locations also diversified. In addition to authentic locations, filming increasingly took place on sound stages aided by technological advancements. In particular, green screen technology enabled the creation of digital environments, rendering the use of space in cinema more creative and flexible. This diversity has significantly enhanced the transmission of social and cultural codes through cinema's visual language.

Since the 2000s, advancements in technological capabilities within Turkish cinema have led to a reduction in costs and an increase in domestic

film production, bolstered by both national and international funding. Domestic films have consistently achieved higher box office returns than their foreign counterparts. Moreover, the widespread adoption of the Internet has facilitated online film viewing, resulting in the emergence of dedicated film streaming platforms over time. The integration of the Internet into daily life has empowered the film industry to engage with audiences through these platforms. Monthly subscription services have afforded viewers the opportunity to access new releases without visiting cinemas. In addition to their own productions, these platforms also provided access to films produced by the broader cinema industry. These platforms have played a critical role in combating the rising trend of piracy in recent years. These technological advancements and shifts in viewing habits have broadened the research potential of Turkish cinema in exploring representations of cultural heritage. For instance, the transition between digital environments on film platforms and the utilization of traditional film sets and actual locations illustrates how cinema reflects cultural codes. Questions concerning the historical development of cinematic spaces, their interplay with social class, cultural identity, and economic conditions, as well as the impact of these representations on cultural memory, reveal cinema's critical role in preserving cultural heritage.

Every space utilized in cinema serves as a reflection of society's cultural codes. For instance, a variety of spaces-from slums to luxury residences-visually convey social class distinctions while reminding audiences of the depth and complexity inherent in cultural and social realities. Cinema functions to preserve cultural heritage by conveying traces of the past to

contemporary audiences. The role of spatial representations in cinema extends beyond mere background elements; they deepen the narrative, shape character identities, and facilitate emotional connections for the audience. In this context, cinema is not merely an art form that entertains; it also functions as a medium that reproduces and sustains the historical and cultural memory of society.

In Turkish cinema, spatial memory nis a fundamental component of this representation. In cinema, the city represents not only a physical environment but also carries significant meanings associated with social and cultural structures. In this context, urban spaces reflect historical narratives, social changes, and cultural values. Buildings, in turn, represent the city's historical and cultural heritage concretely, and these representations are further illuminated by the visual narrative of cinema. Conversely, space emerges as the area where these structures converge, serving as a site for social interactions and the accumulation of cultural memories.

2. Material and Method

This study aims to explore the traces of spatial memory in Turkish cinema by analyzing cinematic representations of cultural heritage. The research emphasizes a broad historical perspective in order to assess the cultural diversity and richness of Turkish cinema holistically. In this context, significant turning points are highlighted to examine the use of space in Turkish cinema and how these spaces are encoded in relation to cultural heritage. In the 1950s and 60s, films used spaces as backgrounds that reflected social class differences and structures; these spaces functioned as symbols that delineated and emphasized class differences. In the 1970s,

influenced by economic crises and social changes, spaces were framed thematically to reflect social issues and structures. From the 1980s onwards, developments such as accelerated urbanization and internal migration transcended thematic and symbolic meanings, evolving into a tool for directly representing social realities. This diversity demonstrates that space serves as a repository of memory, documenting social culture through various representations in cinematic language.

In order to visualize the historical process through cinematic representations, selected film scenes will be analyzed using visual content analysis. This method will reveal how both interior and exterior spaces relate to social memory through a detailed analysis of the spatial and cultural elements within the scenes. The spaces depicted in films reflect the material and spiritual values, traditions, lifestyles, and cultural identities of societies through the language of cinema. These spaces are regarded as significant elements of cultural heritage, serving to document, preserve, and transmit both physical spaces and social practices. Consequently, these sites function as carriers of both social and spatial memory in cinema.

The originality of this research lies in demonstrating that the spaces utilized in Turkish cinema play a crucial role in both social memory and the preservation and documentation of cultural heritage. In this context, the research discusses how cinema renders everyday life and ordinary spaces visible through cinematic representations and documents cultural and social transformations in Türkiye.

3. Findings and Discussion

The representation of cultural heritage in cinema can be articulated through the close relationship cinema maintains with society's collective memory. As an art form, cinema reconstructs the past, societal values, and collective memory through both visual and auditory mediums. Film imagery can encompass both tangible and intangible elements of cultural heritage. On the one hand, films physically represent historical buildings, monumental spaces, and urban landscapes; on the other, they symbolically convey traditions, customs, and societal values. In cinema, space functions as a medium for transmitting and reproducing cultural heritage, rather than merely serving as a backdrop. In this context, cinema allows audiences to experience cultural memory, creating a representational space that connects the traces of the past with the present.

Turkish cinema visualizes social memory and cultural heritage by depicting the transformation of cities and buildings to audiences. Particularly since the 1950s, the use of space in cinema has reflected social class distinctions, economic crises, and processes of urbanization, thereby highlighting the spatial dimensions of urban transformation and social change. Within this framework, spatial memory goes beyond the mere representation of historical and cultural elements, emphasizing how these elements are continually shaped by the present. In this context, the traces of spatial memory in Turkish cinema are analyzed through a thematic framework focused on cities and buildings. These thematic findings show that cinema portrays cities as the primary stage for social transformations, while buildings serve as the physical bearers of spatial memory. These representations can be categorized into two primary groups: "Cities as the

Main Stage of Social Transformations" and "Buildings as the Physical Bearers of Spatial Memory".

3.1. Cities as the Main Stage of Social Transformations

In cinema, space plays a pivotal role as the foundation upon which social memory is constructed. In this context, cinematic space is reconfigured to reflect transformations in historical processes, providing the opportunity to trace socio-cultural as well as historical developments. Cities, as central sites of these developments, are spaces where social relations and cultural dynamics are embodied. Thus, as the main stage of social transformations, the city can be considered and analyzed as a structure that evolves in response to various dynamics and events within historical processes.

3.1.1. Traditional settlement and culture

Settlements, as one of the most potent representational spaces for transmitting cultural codes, are used in cinema as settings where social norms are most clearly observable. Often depicted as rural dwellings in Turkish cinema, these spaces are significant as spatial embodiments of traditional lifestyles. These spaces provide a context where local architectural textures intertwine with daily life, facilitating individuals' understanding of their social roles and identities. In this context, space illuminates' pre-urban life not only as a physical place, but also as a place of memory, where cultural rituals, customs and traditions are preserved and perpetuated.

Figure 2. Film examples of local architectural texture (Prepared by authors).

Examining the film selection in Figure 2, the local architectural textures of various regions across the country emerge as significant representational tools, reflecting the distinct social structures and cultural heritage of each region. In these examples of two-story constructions, one can observe clues about the family life in the region where the film was shot. This architectural style may reflect the traditional social structure of extended families cohabitating, in contrast to the nuclear family-oriented lifestyle of apartment living. Built in harmony with the region's climatic conditions and incorporating traditional materials and construction techniques, such structures can be viewed as part of a spatial heritage extending from the past to the present.

3.1.2. Migration and urbanization

The processes of migration and urbanization have introduced representations that vividly reflect the transformation of spatial memory in Turkish cinema. Migration from rural areas to urban centers emerges as a crucial factor, profoundly influencing the transformation of spatial

identity. Slums, in particular, provide examples of spatial memory where migrants struggle to establish a sense of belonging, despite their efforts to integrate. In cinema, these spaces function as critical representations of the rapid transformations brought about by modernization and urbanization, while also drawing attention to social inequalities.

In this context, the movies featured in Figure 3 depict slums characterized by narrow, neglected streets, cramped structures, and inhabitants struggling to adapt to urban life. It becomes evident that as people strive to adapt to urban life, they simultaneously transform the space by drawing on elements of their rural past. For instance, the rural tradition of 'doorstep conversations' shifts to the street steps in urban areas, demonstrating how urban space, in certain instances, takes on the characteristics of a private sphere.

Figure 3. Film examples of migration and urbanization (Prepared by authors).

The interiors depicted in these films likewise reflect the cultural traces of the era, portraying domestic life in the urban context. Notably, the furniture bears traces of rural life; for example, kitchen cupboards, known as “oflan” or “terek” in certain regions, become integrated into urban homes. Urbanization also carries the risk that rural culture may be subsumed and eventually disappear within the urban environment due to the forces of modernization. In this context, spatial memory is continuously reconfigured by the forces of modernization.

3.1.3. Modernization and the reproduction of urban memory

Modernization has transformed the historical urban fabric into a layer of spatial memory frequently examined in cinema. In particular, modernization-induced transformations create fissures in the city’s historical memory, causing urban spaces to lose their original identities. As a result, a conflict emerges between the historical identity of cities and the changes brought about by modernization. Cinema portrays this conflict through architectural transformations and the evolving uses of space. For instance, an examination of the film selection in Figure 4 reveals how Taksim Square’s urban fabric has evolved over time. Simultaneously, the films reflect how new needs and evolving technologies have driven this transformation.

Figure 4. Film examples of the changing urban texture (Prepared by authors).

Historic buildings are depicted not only as architectural structures but also as vessels of social memory. It is therefore crucial that these buildings remain accessible today, whether with their original or altered functions, in addition to being experienced through the cinematic lens. This connection between past and present illustrates society's commitment to its historical and cultural identity, transforming these buildings into living history. The contemporary use of sites depicted in films allows individuals to engage with a segment of that era's cultural heritage. Such experiences can raise awareness of the importance of transmitting cultural heritage to future generations by revitalizing it.

An analysis of Figure 5 reveals examples of both past and present uses of these buildings. Due to the popularity of the *Hababam Sınıfı* series, a room in the Adile Sultan Pavilion, where the film was shot, was converted into a museum in 2014. Similarly, Atatürk's room in the Pera Palas Hotel, where he stayed while in Istanbul, was transformed into a museum and opened to the public. Because these museum spaces are grounded in the preservation of the building's authenticity, they serve as valuable sources of accurate information about both the period and the structure. Additionally, buildings like Haydarpaşa Railway Station, which still retains its original function, establish strong connections to the past. Although Haydarpaşa is currently closed for restoration, it has become an enduring symbol of hope in Turkish cinema.

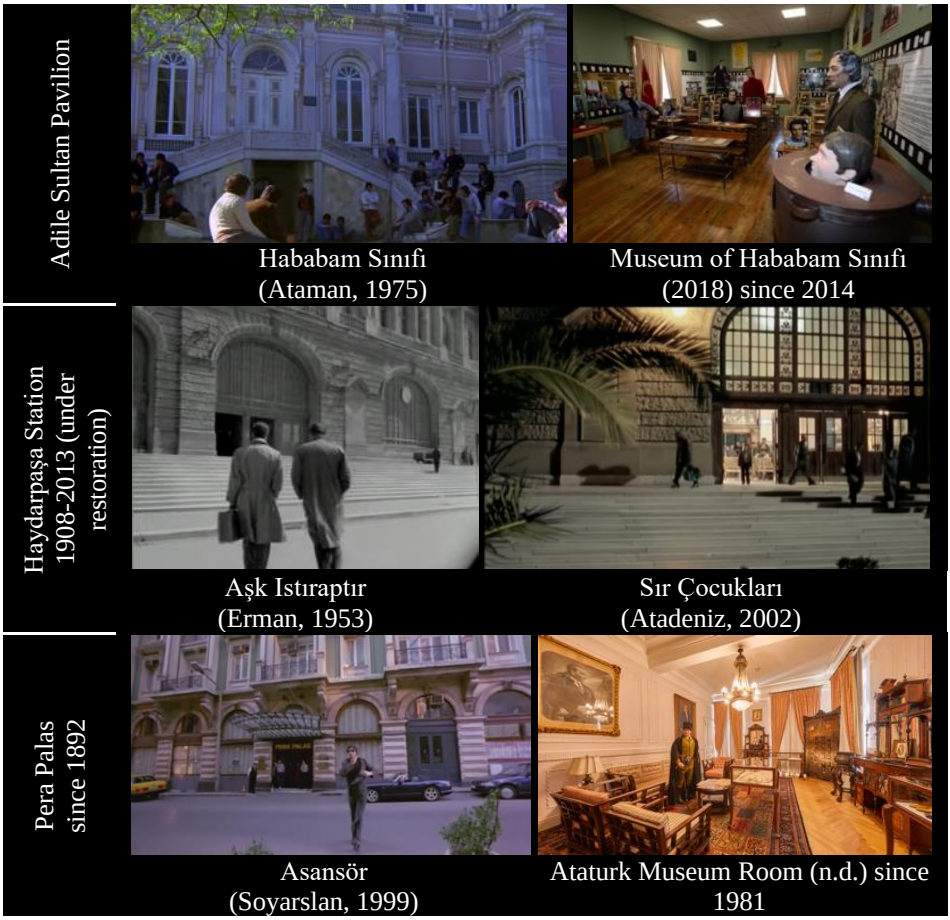

Figure 5. Examples of the use of buildings in cinema and today (Prepared by authors).

Many films have explored how old urban textures are transformed by modernization, altered by new structures, and how this process impacts social memory. In this context, the city is not merely a living space, but also an archive where traces of the past are preserved, and where spatial memory is continuously reproduced. The reproduction of urban memory emerges as one of the most prominent manifestations of social change. Urban memory, continually reconstructed and updated through the accumulation of individual and collective experiences, emerges as a key

manifestation of social transformations. In this context, Turkish cinema approaches space as a multi-layered site of representation, where traces of the past are either erased or rewritten.

Shifting lifestyles over the course of history have triggered the rapid transformation of urban spaces and either the weakening or reconstruction of ties to the past. This type of urban transformation and reconstruction process can be observed in the selection of films presented in Figure 6. The city's reconstruction and transformation in response to the growing population and shifting lifestyles is clearly depicted in the close-up scenes from Istanbul's Rumeli Fortress.

Figure 6. Film examples of reproduced urban memory (Prepared by authors).

In light of these transformations, space is reinterpreted not only as a physical dimension, but also as a layered memory space where images of the past and memories interweave. Urban transformation projects have compelled individuals to redefine their memories of the city and their identities, as old buildings are demolished and replaced with modern structures. Figure 7 presents a film featuring the Atatürk Cultural Centre (AKM), one of the key structures of urban memory, which was demolished in 2018. Although urban memory retains traces of the past, it is constantly reshaped by evolving socio-cultural conditions. Turkish cinema plays a pivotal role as a mediator in the reproduction of urban memory,

contributing to the construction of social memory by reflecting the multi-layered meanings embedded in space.

Figure 7. Example of a film featuring AKM (Prepared by authors).

3.2. Buildings as the Physical Bearers of Spatial Memory

It can be argued that buildings belonging to society represent a phenomenon that facilitates the construction of cultural memory through both the physical and social environments. In this way, buildings serve as instruments that embody a society's identity at the spatial level, becoming prominent through the spaces where cultural memory is represented and reproduced. These spaces are of significant importance as elements of memory, reflecting historical events, societal transformations, and individuals' personal experiences. In the context of cinema, these buildings serve to transform the space into a medium through which memory is conveyed to the audience.

Within the context of spatial memory, buildings in Turkish cinema can be analyzed under two primary categories: 'private buildings' and 'public buildings.' This distinction highlights not only the differentiation of physical spaces but also the extent to which memory is shaped and imbued with meaning.

3.2.1. Private buildings

Private buildings (dwellings) serve as spaces where individual memories are formed and spatial traces of socio-cultural identities are preserved, thereby ensuring continuity of ties to the past. A variety of dwelling types,

including slums, villas, mansions, and apartments (Figure 8), have been featured in Turkish cinema. This diversity serves as a significant source of both spatial and cultural memory. A variety of social, cultural, and class distinctions, along with elements of everyday life, are readily discernible within these spaces. Moreover, the depiction of these edifices serves as a vital conduit for encapsulating the nuances of interpersonal and familial dynamics.

Figure 8. Film examples of various residential buildings (Prepared by authors).

The film Kadının Adı Yok (Figure 9) provides an illustrative example of how the relationship between the individual and the family is represented through the medium of space. In this film, the depiction of human relationships, personal preferences and tastes is conveyed through the use of spatial representations. The three residential structures associated with the same character – the father's house, where the protagonist was born and raised; the family house, where he lived while married; and the bachelor house, where he later lived alone – symbolize distinct human

relationships. The father's house reflects the relationship with his parents, the family house symbolizes the marital relationship, and the bachelor house embodies personal preferences and tastes.

Figure 9. Film example of how the relationship between the individual and the family (Prepared by authors).

The events, emotions, and relationships experienced within these dwellings collectively reflect the cultural memory of society. These buildings not only reveal the inner worlds of the characters but also symbolically recreate memories and evoke a longed-for past.

Figure 10. Film example of reconstructing life through the symbolic weight of space (Prepared by authors).

This practice of reconstructing life through the symbolic weight of space is exemplified in the film Hakkari'de Bir Mevsim (Figure 10). The urban character's appropriation of the rural space presented to him, alongside his

expression of past life practices through this space, can be understood as an integral part of cultural heritage, situated at the nexus of individual and spatial memory. Furthermore, the film reflects cultural traces of both traditional and modern life. In contrast to traditional homes, where multiple functions are performed within the same space (such as the multifunctional room in a Turkish house), modern homes are characterized by the separation of spatial arrangements for each function. This spatial separation is similarly depicted in the film. When the protagonist first encounters the room that will become his, overlapping functions are apparent. He engages in sitting, eating, and sleeping within the same space. In subsequent scenes, the space undergoes 'modernization.' Distinct areas for sleeping, eating, and working are established. At this point, it is possible to observe a spatial representation of both rural and urban life within the same time frame.

3.2.2. Public buildings

Public buildings are spaces designated for communal use that fulfill essential functions in urban life. The spaces within these buildings serve as sites where collective memory is constructed and social events take shape, thereby facilitating the representation of spatial memory on a broader scale. In Turkish cinema, public spaces function as important narrative tools that convey the dynamics of social life and collective memory to the audiences. These spaces act as physical carriers of cultural heritage, bridging traces of the past with the present by visualizing the social and cultural functions of space.

In this context, historic buildings have significant value as carriers of collective memory, reflecting the architectural styles, technologies, and

social structures of their respective periods. The spatial memory associated with these buildings is linked not only to their architectural design but also to their geographical location.

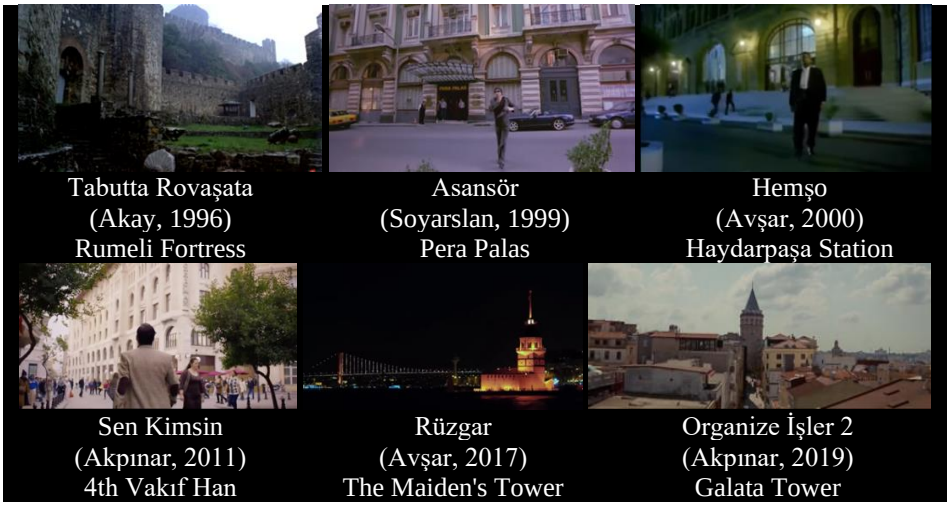

Figure 11. Film examples of historical buildings (Prepared by authors).

An analysis of the films shown in Figure 11 underlines the importance of Istanbul's historic buildings. These buildings contribute to cultural heritage and collective memory through the narratives they convey from the past to the present. For example, Haydarpaşa Railway Station, as a symbolic destination of migration between Anatolia and Istanbul and a place of hope, occupies a significant position in cultural memory, while Galata and Maiden's Towers, as iconic structures of the city, serve as expressions of urban memory. Pera Palas and the 4th Vakıf Han are architectural legacies of the culture, trade and accommodation of their respective eras, while Rumeli Fortress serves as a cultural heritage site that reflects defense systems and strategies.

Religious spaces, as examples of public buildings, are frequently portrayed in cinema as integral elements of cultural and social memory, closely

connected to individuals' beliefs and spiritual lives. Such spaces are often employed to symbolize characters' inner quests or social connections. The films illustrated in Figure 12 exemplify this type of spatial usage.

Figure 12. Film examples of religious buildings (Prepared by authors).

Industrial spaces, another category of public buildings, prominently feature in cinema as areas that embody the traces of modernization and industrial transformation. Industrial buildings reflect the spatial manifestations of social memory and conflict. Cinema has the capacity to represent and preserve industrial spaces. Films featuring industrial buildings reflect the technological, economic, and social changes of their era and may be regarded as historical documents of that period. An analysis of Figure 13 reveals the economic and technological conditions prevalent during that period

Figure 13. Film examples of industrial buildings (Prepared by authors).

4. Conclusion and Suggestions

This study aims to examine the ways in which spatial memory is represented within the context of Turkish cinema, with a particular focus on the interplay between the city, its buildings, and the spaces within it. Additionally, it seeks to investigate the impact of these representations on the portrayal of cultural heritage in cinema. In this context, the utilization of space in Turkish cinema, particularly since the 1950s, when the transition from film sets to actual locations occurred, has assumed diverse forms. During the 1950s and 1960s, space was employed as a backdrop, reflecting social class distinctions and societal structures. Subsequently, In the 1970s, Turkish cinema became a thematic medium representing social issues and structures shaped by economic crises and social changes. From the 1980s onward, accelerated urbanization and internal migration led to the rise of Turkish cinema as a tool that directly represents social realities, transcending its thematic and symbolic meanings. This study assesses the traces of spatial memory in Turkish cinema by analyzing the categories of city and structure. In this context, the term 'city' is used to denote a location where social transformations occur. The concept of traditional settlements is understood as a representation of rural living spaces that embody traditional lifestyles. In these settings, social roles and identities are established, cultural rituals and customs are maintained, and the dynamics of family life are made visible. Concurrently, these spaces offer insights into traditional spatial production, reflecting the local architectural character of various regions, incorporating traditional materials and construction techniques adapted to the region's climatic conditions.

Migration from rural to urban areas has had a significant impact on the transformation of spatial identities. The emergence of slums, as a spatial consequence of this migration, represents a portrayal of the struggles faced by people in securing a foothold in cities, negotiating their belonging, and the manifestation of social inequality. At the same time, slums are viewed as stages where migrants, facing challenges in adapting to urban space, "traditionalize" their surroundings. As slums undergo "modernization" through urban transformation, this rapid process results in the destruction of both the unique identities of urban spaces and the significant structures that embody urban memory. At this point, the destruction of these urban identities and structures contributes to the construction of social memory through cinema. Furthermore, the continued use of these spaces in films provides an opportunity to convey part of the period's cultural heritage to contemporary audiences.

Buildings, as entities that concretize societal identity in spatial terms, come to the forefront within spaces where cultural memory is represented and reproduced. In this context, they are examined under two categories: private and public. In this context, the buildings in question are examined under two categories: private and public. In Turkish cinema, private buildings are predominantly depicted as residences. In films featuring a variety of residential types, including slums, villas, mansions, waterfront houses, and apartments, each dwelling reflects its own internal dynamics, along with social, cultural, and class distinctions, as well as everyday life and the dynamics of individual and family relationships. Houses serve not only to reveal the inner worlds of the characters but also to symbolically recreate memories and the longed-for past. This is achieved through the

expression of human relationships, personal preferences, and tastes through spatial settings.

Public buildings, which bring the traces of cultural heritage into the present by visualizing the social and cultural functions of space, reflect the architectural style of past periods, the construction technology of their time and the social structure of society. In some cases, these buildings contribute to cultural heritage and collective memory through the stories they contain, while in others they are portrayed in relation to the beliefs and spiritual worlds of individuals. At times, they have been used as powerful tools of representation, bearing the marks of modernization and industrial transformation.

Turkish cinema provides a rich field of study for exploring the interaction between spatial memory and cultural heritage, as well as the ways in which social memory is constructed and transformed over time. It serves as a crucial platform for reconstructing social memory through spatial memory, while carrying the traces of the past and cultural values into the present. Cinema strengthens individuals' connections to the past and makes the impact of cultural heritage on social memory more visible. In this context, Turkish cinema's use of space offers viewers the opportunity to experience the traces of the past and cultural identity, enabling them to grasp the multi-layered structure of society.

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Conservation of Architectural Heritage: Traces of History

Chapter 17

Tracing the Cultural Heritage Value of Antioch: Founding the Museum of Antioch Under the French Mandate

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1. Introduction

Antioch (Antakya), which has hosted many civilizations from the Hellenistic period to the present day, has a layered structure and a rich cultural heritage. The historical texture of the city bears traces of the development and transformation of the civilizations living there. Antakya is located in the Lower Asi Valley on the plain where the Asi River ends, surrounded by the Amanos Mountains to the north and Kel Mountain to the south. The city was founded on the foothills of the mountain known today as Habib-i Neccar Mountain. Born in Lebanon, the Asi River flows through Lebanon, Syria and Türkiye. Flowing from south to north, the river passes through the foothills of Habib-i Neccar Mountain in Antakya and reaches the Mediterranean Sea through Samandağ district (Demir, 1996).

The history of settlement in and around Antioch dates back to the Middle Paleolithic period. During excavations between 1954 and 1966, finds dating back to 100000-40000 BC, tools from the Upper Paleolithic period and bone fragments belonging to Homo Sapiens Çevlikensis were discovered (T.C. Hatay Valiliği, 2019). The city was founded in 300 BC by the Seleucid Empire under the name of Antioch (Dönmez, 2022). Antioch, which was under the patronage of Alexander the Great at that time, gained strategic importance due to its location on maritime trade routes (Downey, 1961). The ports located in the city are known as Çevlik and İskenderun today. The city planning of Antioch was shaped in a grid pattern around the main axis running northeast-southwest. The city utilized city blocks in a 2:1 ratio typical of the Seleucid period; this ratio is also seen in Seleucid cities in Syria and Mesopotamia.

The Hellenistic period continued until 64 BC, after which Antioch gained a great status, especially during the Roman Empire. During this period, the city became one of the centers of early Christianity in the world. Antioch became a very important center in the early Christian period as it was the first place where the followers of Jesus were called "Christians" (Açıkgöz, 2016). The Church of St. Pierre, the first church of the Christian religion, located in a cave in the mountain, was in Antioch and the city also had a great religious significance since it was mentioned in the Bible (Demir, 2016). With the beginning of the Byzantine Empire in 395, the city continued its development (Dönmez, 2022).

The Roman Emperor Pompei minted coins in Antioch for the first time, and on these coins the city was referred to as a "metropolis". Throughout antiquity, the city established a close relationship with Rome in terms of trade, religion and culture, becoming the third largest city in the world after Rome and Alexandria (Downey, 1961). One of the most important structures that the Romans added to the city was the Antioch Hippodrome, which was built similar to the Circus Maximus in Rome (Humphrey, 1986). Another important structural activity carried out during the Roman period was the construction of a colonnaded street in the city. This road, known today as Kurtuluş Street, was surrounded by colonnades decorated with mosaics and sculptures (Demir, 2016).

During the Byzantine Empire, Emperor Justinian used the city as a military base and had new churches and fortifications built. However, a major earthquake in 526 caused serious damage in Antioch (De Giorgi & Eger, 2021). During this period, the city was attacked many times by the Persians and Arabs, and was conquered by the Islamic armies in 636, ending nearly

900 years of Roman rule. The city started to lose its military, commercial and cultural importance of the Roman period with these invasions (Şancı, 2006). Antioch, which remained under Islamic sovereignty under the Umayyads and Abbasids for about 300 years, returned to Byzantine rule after the Crusades and various efforts were made to regain its old identity (Ömeroğlu, 2006). It served as the capital of a Crusader state between 1098-1268 (Açıkgöz, 2016).

Antioch then came under the rule of the Seljuks (1085-1097) and Mamluks (1268-1517) and entered the process of Turkification. The city, which experienced constant wars until it came under Ottoman rule, could not recover its former central vitality. During the Ottoman Empire period (1517-1918), due to the city's distance from the capital and its loss of military and political importance after the conquest of Egypt, it turned into a small settlement where commercial activities were carried out.

In the 19th century, Antioch was a sparsely built settlement with a low population and it had long since lost its status as one of the most important cities of the Roman Empire after Rome and Alexandria. French travelers who came to Antioch during the late Ottoman period searched for remains of the Roman Empire, early Christians and Crusaders, but found only a few traces in the city, such as a cross on the walls or a Roman column in a modern house. This is because the old buildings and historical texture of Antioch have been largely destroyed as a result of destructive earthquakes, which occurred to a large extent at that time, such as the recent earthquake in 2023 (Açıkgöz, 2016). The region fell out of Ottoman rule after World War I. The city was known as Iskenderun Sanjak under the French

Mandate. In 1939, it joined the Republic of Türkiye and was renamed "Hatay" with Antakya (Antioch) as the central district (Arıman, 2002).

As can be understood from this brief summary, Antakya (Antioch) has been a city with thousands of years of history, where different identities have lived under the rule of many different wills. Each experience has added a new layer to the city over time, and the cultural heritage contained within this multi-layered structure has gained importance in terms of understanding the historical importance of the region. Although many cultural heritages could not preserve their existence due to various destructive earthquakes in the region, it is important to examine the archaeological excavations carried out during the French Mandate period, the finds obtained from these excavations, the museum initiatives to exhibit them, and examination of the Museum of Antioch's building, which was established for this purpose and still continues its existence with a different function, in order to record the cultural heritage of the city. The devastating earthquake in the region in 2023 caused the destruction of a large part of the city, but the Museum of Antioch's building is one of the important structures having historical importance and a long history, that survived the earthquake. For this reason, this chapter provides information mainly about the excavations that led to the construction of this building and the building itself, along with the brief history of the city considering architectural context

2. Material and Method

First of all, the multi-layered and cultural texture of Antakya, which constitutes its precious historical value, is analyzed. The urbanization and structuring created by this multi-layeredness are illustrated on a map.

Afterwards, the story of the excavations carried out during the French Mandate period has been one of the most important points of the research. In accordance with the research on the excavation process, the excavation diaries, excavation reports, photo archives and hand drawings of the staff involved in the excavations were analyzed. The project drawings and visual archives of the architect of the museum were examined and analyzed.

3. Antioch and its Multi-Layered Cultural Heritage

Antioch is a city nourished by many cultures and civilizations, rich in urban planning and social identity. When considered in the architectural context, it contains important elements regarding the buildings constructed during the urbanization process and its urban texture. Antioch has survived for centuries by preserving the legacy of different administrations, and has been under the rule of Hellenic, Roman, Persian, Seljuk, Mamluk, Abbasid, Ottoman, French and Republic of Türkiye administrations. This multi-layered history has left deep traces on the city's architecture and cultural texture, creating a city identity shaped by the architectural understanding and cultural structure of each period. The blending of the city with different cultural and architectural traditions throughout its long history has made it a multicultural and multilayered residential center. This rich heritage has created a series of intersections and interactions in the social and physical structure of the city, making Antioch a symbol of cultural continuity and diversity.

The city walls, which were built to ensure the security of Antioch under Seleucid rule, are 12 kilometers long, made of cut stone and brick, and include strategic passages and gates (Özdemir, 1994). While these walls

determined the boundaries of the city, the high walls unearthed during archaeological excavations on Kurtuluş Street were explained as border defense structures belonging to the Seleucid period (Gökdemir, 2011). With various additions during the Byzantine and Roman periods, the height of these walls reached 23 meters and made significant contributions to the city's defense infrastructure.

Antioch, with its multi-layered historical structure, contains an architectural continuity from the Roman period to the Ottoman period. The streets and avenues in the city were paved with cut stones, and drainage systems were added to these roads to prevent the flooding of rainwater from Habib-i Neccar Mountain. Dead ends, which are frequently encountered in narrow streets as an important feature of the historical urban texture, are characterized by wooden and masonry building systems. The facades of the buildings facing the street are usually surrounded by high walls and designed with inward facing courtyards. Although the urban structure of Antioch was initially built on a grid system, organic street routes were added over time and the city reached its original morphology (Yüzer, 2021).

During the Principalities Period, religious and social buildings came into prominence in Antioch. Among these, a few buildings that survived until the 2023 earthquake stand out. Habib-i Neccar Mosque, Ulu Mosque and Yeni Mosque; Cundi, Meydan and Yeni Baths can be given as examples (Bolat, 2016). However, the majority of the buildings that survived in Antioch until the recent earthquake were built during the Ottoman and French Mandate periods.

Kavalalı Mehmed Ali Pasha, the Governor of Egypt, took advantage of the internal conflict and revolted against the Ottoman Empire and moved to Syria in 1831. In 1832, Ibrahim Pasha, the son of Kavalalı Mehmet Ali Pasha, and his troops defeated the Ottoman army in the place known today as Belen. After this war, the administration of the region passed to İbrahim Pasha (Tekin, 1993, as cited in Garbioğlu, 2017). Between 1832 and 1840, İbrahim Pasha ruled the region for eight years and during that time he had a palace and barracks built for himself. After he left the region, the palace started to be used as a government mansion. During the reign of Abdülhamid II, reconstruction works were carried out in the region and new neighborhood plans were made. This new area developed differently from the traditional city structure and became the administrative center of the city. Many buildings, including commercial activities, were built. The road, where the government house (popularly known as the "palace") was located, was named "Saray Street" and is still called by this name today (Temiz & Kolay, 2019). Other prominent buildings include Orthodox Church, Synagogue, Sarımiye Mosque, Ahmediye Mosque, Meydan Mosque, Sheikh Ali Mosque, and commercial buildings such as Kurşunlu Han, Çelenkoğlu Han and Sabunhane (Bolat, 2016).

During the period of military rule that began with the French occupation in 1918, new buildings were constructed with different materials and architectural styles and the architectural changes in the city continued. Examples of important buildings constructed during this period include the Governor's Office, Cinema (last known as the Parliament Cultural Center), French Bank (last known as the Protestant Church), Governor's Mansion, Adalı Mansion, Rıfat Bereket House (last known as Ata College), Livan

Hotel, Antakya Municipality, Affan Coffee House, Kuseyri Building, Great Antakya Park and the Archaeology Museum, that will be examined in this study.

After the French Mandate period, the independent Hatay State was established as a result of the political situation of the period. This left Antioch out of the first modernization movement that took place in the first years of the Turkish Republic. During this period of independence and then during the republican period, construction continued to develop on the other side of the Asi River, as it did during the French Mandate period. Prominent buildings of this period include the Ziraat Bank, the People's House (later the Provincial Health Directorate), the Abdülgani Türkmen Mansion (later the Chamber of Tradesmen and Artisans), the Consulate General of the Republic of Türkiye in Antakya (later the Sultan Sofrası) and various new residential buildings (Bolat, 2016). As can be seen in the map showing the multilayeredness of Antakya (Figure 1), many civilizations that have lived in Antakya can be read. In the mapping study, many buildings that remained standing before the earthquake were marked and overlapping areas were scanned. This map study is based on the documentation work done by M.E. Bolat in his master's thesis under the title “Historical Layers of the City of Antakya” (Bolat, 2016).

In the following sections, the archaeological excavations conducted in the city during the French Mandate period are mentioned. These excavations revealed the multi-layered cultural heritage of the city (Figure 1) and led to the construction of a new structure in the city: Museum of Antioch.

Figure 1. Multi-layering in Antakya.
It was devoloped by Göktuğ Görkem Mardin (Bolat, 2016)

3.1. Archaeological Excavations: Site Detection

The multi-layered structure of Antakya has been intensively researched since the French Mandate Period. During the French period, especially the city monographs of Sauvaget (1934) and Weullersse (1934) and the surveys and excavations conducted by Princeton University in the city revealed scientific data regarding the ancient physical structure of the city and helped to understand its relations with the modern city (Rifaioğlu, 2018). The first breakthroughs were made by the American archaeologist Howard Crosby Butler (1872-1922) with his archaeological explorations and excursions in Syria in 1899, 1904 and 1909 within the American School of Classical Studies. Howard C. Butler carried out many studies in the Syrian region during these years. Later, Charles R. Morey, head of the Department of Art and Archaeology at Princeton University, proposed explorations and excavations in Antioch, which was inhabited in antiquity and the Middle Ages. The department saw these initiatives as a legacy of Butler's work. Morey thought that Princeton University would be the best choice to lead these excavations. This would be a natural continuation of the Syrian explorations of Howard C. Butler, who is also a Princeton University graduate. The Index of Christian Art, founded by Howard C. Butler, was the most comprehensive institution for the interpretation of the Early Christian and Byzantine elements that would emerge from the discoveries and excavations in Antioch. In 1930, the Syrian Antiquities Service granted Princeton a six-year excavation permit at Antioch (Figure 2). Throughout 1931, fundraising continued, and in December of that year the Antioch Excavation Committee was formed (Princeton University, n.d.).

The excavations were initially sponsored by Princeton University in conjunction with the National Museums of France, with financial support from the Worcester Art Museum and the Baltimore Museum of Art.

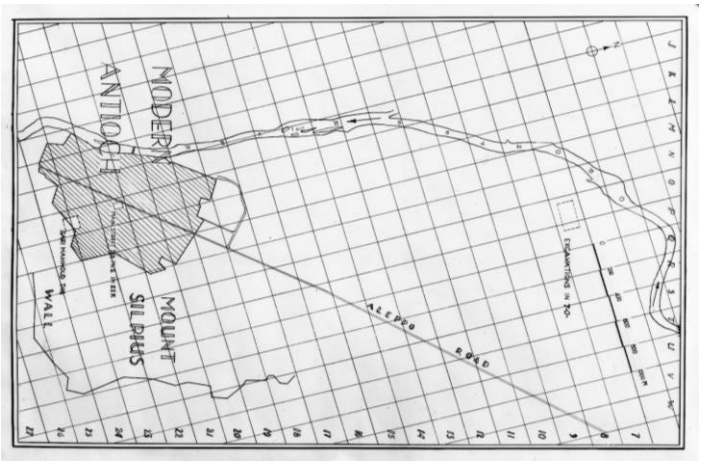

Figure 2. Site plan with grid showing modern Antioch and excavation areas. Item Sets: Antioch Catalogued Photographs, Image Number:1404. (Princeton University Visual Resources Collection, 2024)

The Antioch Excavations Committee, of which these museums were members, was later expanded to include other American museums and academic institutions. The Fogg Art Museum at Harvard University joined the committee in 1936 (Barsanti, 2012). Between 1933 and 1936, four phases of excavation took place in Antioch and the suburb of Daphne. When the initial excavation permit expired in July 1936, the committee requested and was granted a six-year renewal. In 1937 excavations also began at Seleucia, the port city of Antioch (Princeton University, n.d.). The focus of the excavations outside Antioch was on sites with historical contexts of life in antiquity. In addition to these contexts, it is noteworthy that these places were the setting for various mythological stories. Daphne,

now Harbiye, is the place where the legend of Laurel and Apollo, mentioned in Greek mythology, took place. Seleucia is the current Samandağ region. This settlement was a port city during the Ancient Greek period. It was later recognized as an independent state by the Romans and used as a naval base. This region also contains the story of an important name in the history of religions, Moses and his staff turning into a sapling.

3.2. Archaeological Excavations: Unearthed Artifacts

During the four phases of excavation, 40 excavations were carried out in Antioch between 1932 and 1939 under the French mandate (Rifaioğlu, 2014). The excavation team failed to uncover some of the important structures they had hoped to uncover, including Constantine's Great Octagonal Church or the imperial palace. The Great Octagonal Church (Domus Aurea), also known as the Golden House, was the cathedral where the Patriarch of Antioch preached. It was one of the churches started to be built during the reign of Constantine the Great. It is thought to be located on the island where the Imperial Palace of Antioch was located during the Seleucid period. The cathedral was closed in response to the burning of an ancient temple of Apollo in the Daphne region.

It became an important point of contention between Christians and Julian (a Christian apostate), who closed the cathedral. From 526 to 587 it was damaged by a series of earthquakes, fires and Persian attacks. In 588 it was destroyed in another major earthquake and was never rebuilt (Downey, 1938). Although the rest of the church was destroyed, the dome is said to have rested on the ruins. It is understood that after this earthquake no attempt was made to rebuild the great church. This can be explained by the fact that Antioch was no longer an imperial residence of the Eastern

Roman/Byzantine Empire, the island was no longer surrounded by the city walls that remained in place, and the site of the church was outside of the developing city of Antioch (Figure 3, Figure 4).

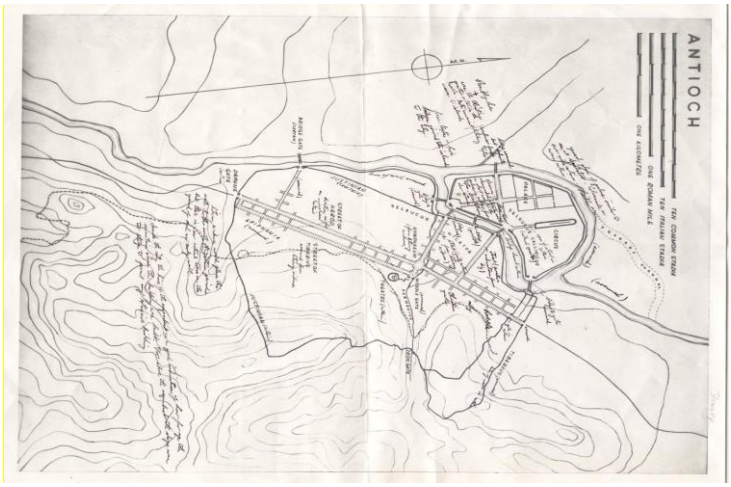

Figure 3. Ancient Antioch, with city walls and major streets, 18 Dec 1935. Item Sets: Antioch Drawings, Drawing Number:13. (Princeton University Visual Resources Collection, 2024)

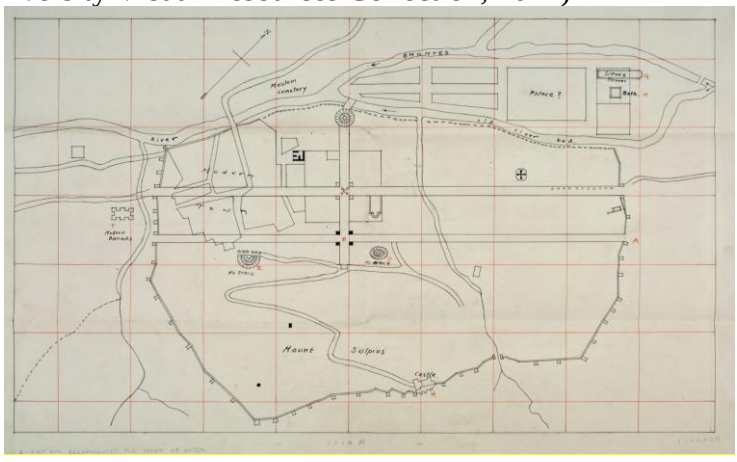

Figure 4. Preliminary map of Antioch showing projected location of ancient features and probable areas for excavation. Item Sets: Antioch Drawings, Drawing Number: 20. (Princeton University Visual Resources Collection, 2024)

The Cassian Church subsequently became the patriarchal church of Antioch (Kennedy, 2006). This church is also known as the church of St. Peter, but it is not the church of the cave (St. Pierre), which is also known as the church of St. Peter. version of the Holy Lance was found in the treasury of this church in 1098 during the First Crusades. It was here that the Crusaders found the Holy Lance, which for some may have been important in raising their morals. According to the biography of the murdered patriarch Christopher; the spear was one of the relics in the cathedral's treasury. In 1190 the cathedral became the burial place of Frederick Barbarossa. The skin of the Holy Roman Emperor Frederic Barbarossa was buried in the church in 1190 and later his bones were taken to Jerusalem. In 1268 the cathedral was burned by Sultan Baybars during his looting of Antioch (De Giorgi & Eger, 2021). Despite these setbacks, the great success of exploration and excavation has been the recovery of high quality Roman mosaics from villas and baths in Antioch, Daphne and Seleucia. The first excavations in Antioch, carried out by Princeton University in March 1932, uncovered nearly 300 mosaics (Downey, 1938). The mosaics depict a variety of images, including animals, plants and mythological beings, as well as scenes from the daily lives of the people living in the region at the time (Fant & Reddish, 2003).

In order to better understand the development of the excavations, it would be of great benefit to examine the first-person accounts of the people working in the field. In 1935, Sir Leonard Woolley was directed to the region for an expedition. In the diary he kept during his trip, Woolley recorded his observations as follows:

"*In the spring of 1935 I was sent by the Trustees of the British Museum to North Syria to look for a site for excavation. The object which I had in view was to trace the connexions, if such existed, between the civilization of Minoan Crete and that of the Asiatic mainland, and the conditions required by such theoretical intercourse limited my investigations to a relatively small area… The Sueidia area was the one place which combined all the advantages sought by the early trader. The mouth of the Orontes affords a safe and sheltered anchorage where ships can tie up alongside the wharves; the river itself was navigable as far inland as the site of Antioch; from the port a road ran inland, up the river valley, following for the most part the river and elsewhere passing through open rolling country, and it debouched on the great Amik plain through which the Orontes winds. A level pass through the hills bordering the plain on the east led on to Aleppo, and thence the caravan-route went past Carchemish to Nineveh or down the Euphrates to Babylon… The Amik plain is strewn with mounds, the ruins of a hundred ancient cities; it must have been densely inhabited and very rich, and for over-sea traders using the Sueidia harbour it gave an interim market of the greatest value. At this harbour then, and along this road, material evidence for intercourse between Asia and the Aegean would be found, if such were to be found at all… The Department of Antiquities of the Haut Commissariat, to whose courtesy and readiness to help in every way I am greatly indebted, gave me a permit for the excavation of the Sheikh Yusuf site and for making sondages on the other three;*

an expedition was planned for 1936. To my regret, however, the Trustees of the British Museum found themselves unable to undertake the financial commitments of a new expedition. The scheme would have been postponed indefinitely, or dropped altogether, had not Major-General Sir Neill Malcolm come forward and sponsored a fund which should finance the work under the aegis and in the interest of the Trustees… The expedition started work towards the end of March and continued until nearly the end of June. From Syria I had with me Hamoudi and his two sons, Yahia and Alawi, of whom the former did the photography; a few old workmen from Carchemish made the nucleus of the working-party, and local labourers to the number of about 180 were enrolled… Ten levels were found, the lowest resting on virgin soil. The top level had been destroyed by denudation and by the plough; a few meaningless fragments of walls survived, but nothing that could be called a ground-plan…" (Woolley, 1937, p. 1-5).

Despite these unfavorable conditions, important discoveries were made during the excavations in this region. A large number of various coins were found during the excavations. The coins found were in a consecutive series starting from Elagabalus to the Crusader coins of Bohemond IV, Duke of Antioch. The coins found form a successive series starting from Elagabalus to the Crusader coins of Bohemond IV, Duke of Antioch. Elagabalus, also known as Marcus A. Antoninus, was a Roman emperor of the Severan dynasty from 218-222. Bohemond IV was Prince of the Principality of Antioch from 1201 to 1205, 1208 to 1216 and finally from 1219 until his death. During the Sixth Crusade in 1228/1229, he first

supported and then abandoned the troops of the Holy Roman Emperor Friedrich II. For this he was excommunicated by Pope Gregory IX in 1230. In the light of this information, it indicates that there was a settlement in this region for approximately 900 years. In addition, numerous small cups with very long and thin tubular rims, numerous molded fragments with crude bird and animal figures, a few cut glass samples, and a large number of flat blown glass vessels, bottles, etc., almost all in fragments, were also discovered in the area. The second layer, with its pottery and coins, is dated between 375 and 320 BC. There were numerous coins of Alexander the Great at Tel Sheikh Yusuf. In contrast, only a single early Seleucid coin was recorded. The buildings in this layer are a new version of the fire-destroyed buildings in the third layer. The third layer is better preserved thanks to the two layers above it. This layer is dated between 430 and 375 BC. This layer yielded a series of stacks of warehouses and shops for commercial activities. The layout of these settlements was generally separated by narrow streets at right angles. They are simple structures with rubble foundations and mudbrick walls. Some of the walls are plastered and whitewashed, but the walls are mostly bare. The use of cut stone is very rare. Only one building stands out from the others in these layers. Woolley described this building as follows: “Ashlar stone was seldom used except in the jambs of doors or in the external angles of buildings. One building in level 2 had a small alcove built of burnt bricks and cut stone plastered with cement and paved with burnt bricks, but that was the unique example of 'good' building” (Woolley, 1937, p. 6). The objects found among the ruins reinforce that none of the buildings discovered here were residential. The piles of pottery found in the third layer were not

randomly distributed. Each object was found grouped separately in various storerooms. In one room were found stacked long wine jars, large jars with a fuller center, and various small, narrow-necked, spherical Greek vases, aryballis. These are thought to have been stored either for export or as they were received from incoming ships. Another surprising thing that reveals an intensive trade operation in this layer is the mass production. Wooley referred to this situation in his expedition diary as follows: "It was even possible to say that in certain cases we were dealing with definite consignments sent from single factories, as when in one room there were found upwards of a dozen aryballis all bearing the same ornament, the output of one workshop if not of one workman. All the imported wares were Attic, and it was evident that throughout this period Athens held a monopoly. There were great numbers of coins, and they too were almost exclusively Attic, only some of the smaller denominations being from the mints of Sidon, Aradus or other Syrian coast towns, though some seemingly Attic coins are local imitations. The local pottery shows the strength of the Greek influence, for the shapes are in all cases based on those of Greece" (Woolley, 1937, p.6-7).

The fourth layer of the excavation is dated between 520 and 430 BC. It was observed that trade was at the forefront in this layer as in the others. The trade flow in this layer indicates that there was a demand for more luxurious objects. The third and fourth layers yielded a large number of small amulet-like objects made of colored glass and Phoenician type colored glass vases. Egyptian-type amulets made of frit and Bes figurines were also found. However, it was understood that these had a commercial purpose. Woolley mentions this issue in his diary as follows: "Scaraboids

and other stamp seals in glaze and glass were fairly common, and that these were objects of trade and not things in actual use dropped here by accident was proved by our finding small hoards of such, in one instance fifteen scarabs all together; and the same was true of the fibulae, which were very numerous" (Woolley, 1937, p.8). The fifth and sixth layers are successive phases, again distinguished by the reconstruction of various deposits. These layers date to the seventh and first half of the sixth century BC. Trade during this period was not with Athens, but with the islands and especially with Rhodes.

According to the findings of the excavations in this region, Seleucia has a settlement history of approximately 900 years. The excavations reveal the commercial structure, economic activities and cultural interactions of the city in different layers. The various objects recovered from the excavations reveal that trade was very lively in this region, and that this commercial network spread over a wide geography starting from Attica to the islands and from there to Phoenicia. The records kept by Sir Leonard Woolley emphasize that the goods produced and imported in the region were remarkable and that this settlement functioned as a trade center thanks to its port.

The article "The Antioch Excavations on the Asi River" written in 1936 by Charles R. Morey, who served as the head of the excavations, provides an overview of the excavation process. Morey's work provides a detailed account of how the excavations were systematically carried out and which finds were unearthed. The excavations yielded a number of important finds. The planning of the city of Antioch reflects the typical urbanism of the Roman Empire. Public buildings such as avenues, forums and baths

are noteworthy. The large number of baths in particular shows that they formed an important part of the socio-cultural life of the city. In addition to these, religious buildings from various periods were also found (Figure 5, Figure 6).

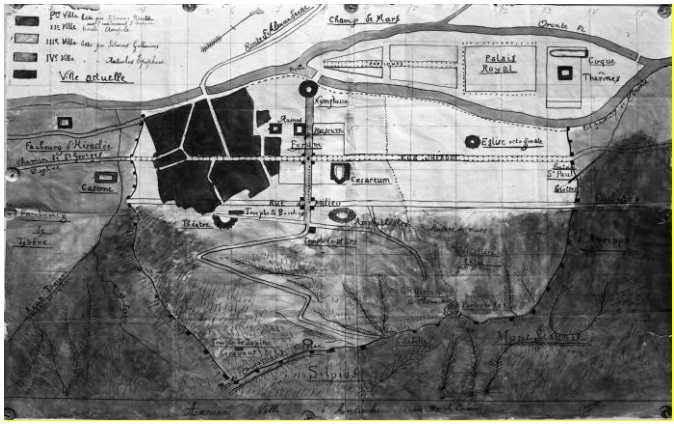

Figure 5. Sketch map of Ancient Antioch created after the findings Item Sets: Antioch Catalogued Photographs, Image Number: 1164. (Princeton University Visual Resources Collection, 2024)

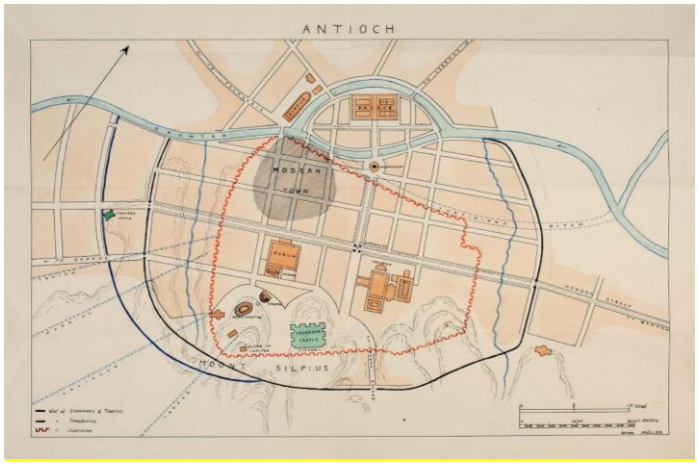

Figure 6. Color site plan of the Roman city in ancient Antioch. Item Sets: Antioch Drawings, Drawing Number: 28. (Princeton University Visual Resources Collection, 2024).

In addition to architectural finds, a large number of artistic findings such as mosaics and frescoes were found. Mosaics were widely used both in houses and public spaces. The mosaics found in the large villas built during the Roman period often include mythological scenes, animal figures and various landscapes. These unique artifacts indicate that Antioch had a rich artistic tradition and that the aristocrats in the city valued aesthetics and art. The colors and materials used in the mosaics give an idea of the fine workmanship reflecting the techniques of the period. The frescoes, on the other hand, show that the city also attached importance to wall decorations. Frescoes, which generally depict religious themes, were preferred extensively in churches and religious buildings. Apart from mosaics and frescoes, sculptures from the Roman and Byzantine periods are also important. Roman portrait sculptures and sculptures depicting mythological figures were found both in public spaces and private properties. The detailed workmanship in the sculptures, as in the mosaics and frescoes, reveals the high level of techniques and workmanship capacity of the period. Busts from the Roman period include especially the imperial family and local aristocrats (Morey, 1936).

William Alexander Campbell, who came to Antioch in 1932 as field director for the excavations, shared his excavation notes in various publications in 1934-1937. Excavation of the site began in March 1932 (Figure 7, Figure 8, Figure 9).

Figure 7. General view of excavations under Room 3, Bath D, Date: 5/26/1933. Item Sets: Antioch Catalogued Photographs, Image Number: 1151. (Princeton University Visual Resources Collection, 2024)

Figure 8. General view looking north, Bath A, Date: 3/16/1932. Item Sets: Antioch Catalogued Photographs, Image Number: 10. (Princeton University Visual Resources Collection, 2024)

Figure 9. General view of Rooms 51, 43 and 58, Date: 4/19/1932. Item Sets: Antioch Catalogued Photographs, Image Number: 101. (Princeton University Visual Resources Collection, 2024)

First, Dr. C. S. Fisher conducted a preliminary survey of the northwest of the modern city and began a large-scale excavation to topographically link this section with the rest of the city. Prof. G. W. Elderkin diversified this work by starting excavations in other parts of the city and in the Daphne area. Prof. Elderkin found a wall with intense stonework dating back to the first century BC in this region and searched for ancient tombs. Dr. Fisher uncovered three Roman baths, a Byzantine stadium and an ancient Roman house. He found very important artistic findings in this house. These included a dancing boy, a dancing girl, a symposium, the Judgment of Paris and five panels with various mythological stories representing Phaedra and Hippolytus. In November 1932, a remarkable discovery was made at Daphne (Figure 10, Figure 11). The Yakto Mosaic has a medallion in the center surrounding a bust of a woman, called Megalasophia, holding a bouquet of roses (Figure 12).

Figure 10. General view of drains between Rooms 30 and 34, Villa at Yakto Date: 5/18/1933. Item Sets: Antioch Catalogued Photographs, Image Number: 1063. (Princeton University Visual Resources Collection, 2024)

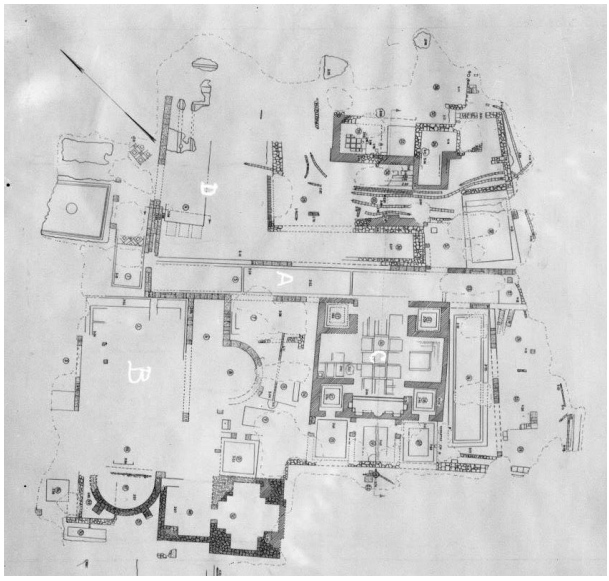

Figure 11. Plan of Villa At Yakto, Date: 5/31/1933. Item Sets: Antioch Catalogued Photographs, Image Number: 1290. (Princeton University Visual Resources Collection, 2024)

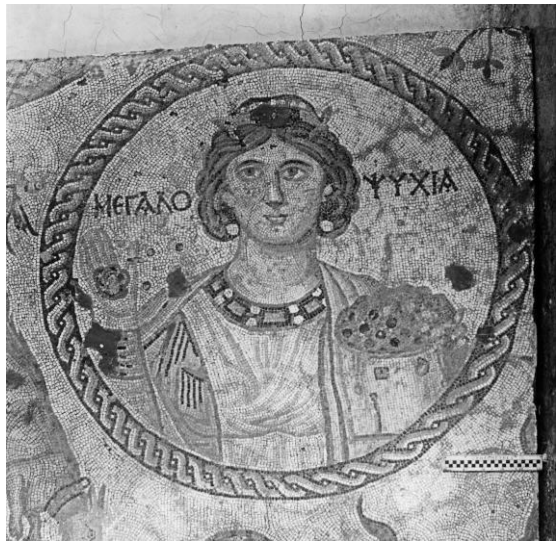

Figure 12. Megalasophia at the Center of the Yakto Mosaic. Item Sets: Antioch Catalogued Photographs, Image Number: 1331. (Princeton University Visual Resources Collection, 2024)

Around this mosaic is a border decorated with representations of the buildings of ancient Daphne and Antioch. There are representations of the villa of Ardaburius, the Olympic stadium in Daphne, the large octagonal church, a commemorative column, and a bridge over the Asi River and the city gate. The mosaic is a very important historical artifact that provides information about life in Daphne and Antioch in the fifth century, as the people it depicts gathered around a building, worked in shops, drank, or lived on the streets (Figure 13). A bust of Thalassa of high stylistic and technical quality was found in the same location. Another remarkable thing found during the excavations is the intensity of the use of geometric forms. Numerous geometric patterned mosaics were excavated as floor coverings in the buildings (Figure 14).

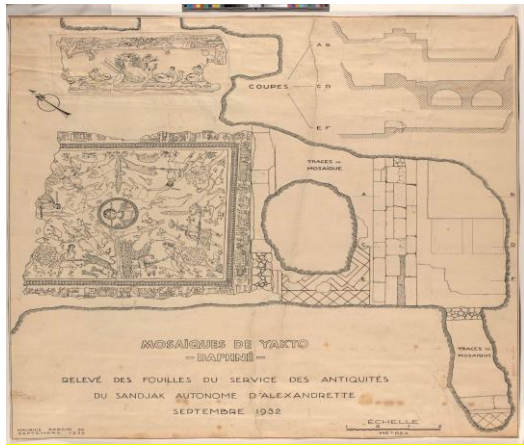

Figure 13. DY-17/18-H/J, Yakto Complex, Plan and Sections. M. Bardin, 1932. Item Sets: Antioch Drawings, Drawing Number: 396. (Princeton University Visual Resources Collection, 2024)

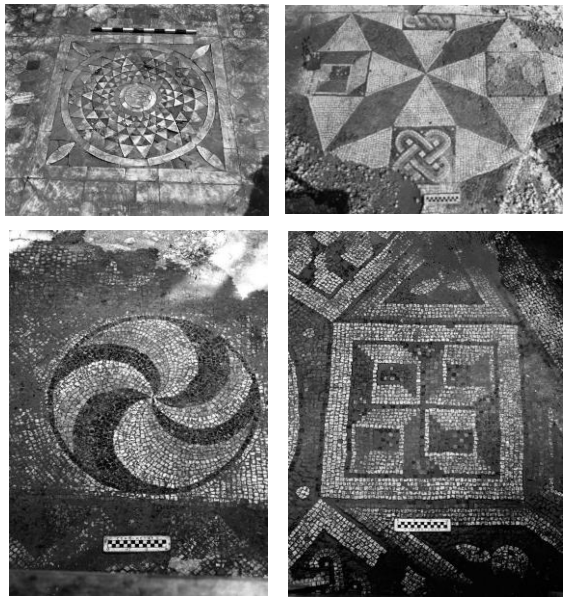

Figure 14. Geometric Shape Patterned Floor Coverings. Item Sets: Antioch Catalogued Photographs, Image Numbers: 1036, 1138, 1076, 1078. (Princeton University Visual Resources Collection, 2024)

During 1933, excavations were concentrated in Dr. Fisher's work area. A mosaic depicting Hermes carrying Dionysus to the nymphs was found in this complex. The room where the mosaic was found is a rectangular room with geometric patterns and borders with various floral patterns. Around the same time, the excavation of the Circus of Antioch continued (Figure 15, Figure 16). The length of the arena of the building was recorded as 492.50 meters, the radius of the semicircular ends as 31 meters, and the length of the carceres as 130 meters. The outer walls of the building were designed in the usual way, with an arch form in each of the vaulted partitions (Campbell, 1934).

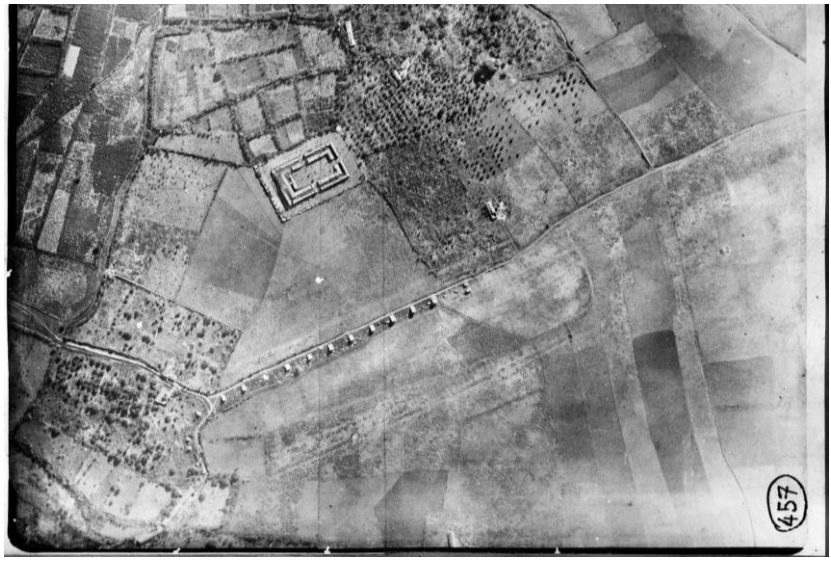

Figure 15. Aerial photo of Circus and temple area, Date: 5/24/1933. Item Sets: Antioch Catalogued Photographs, Image Numbers: 1119. (Princeton University Visual Resources Collection, 2024)

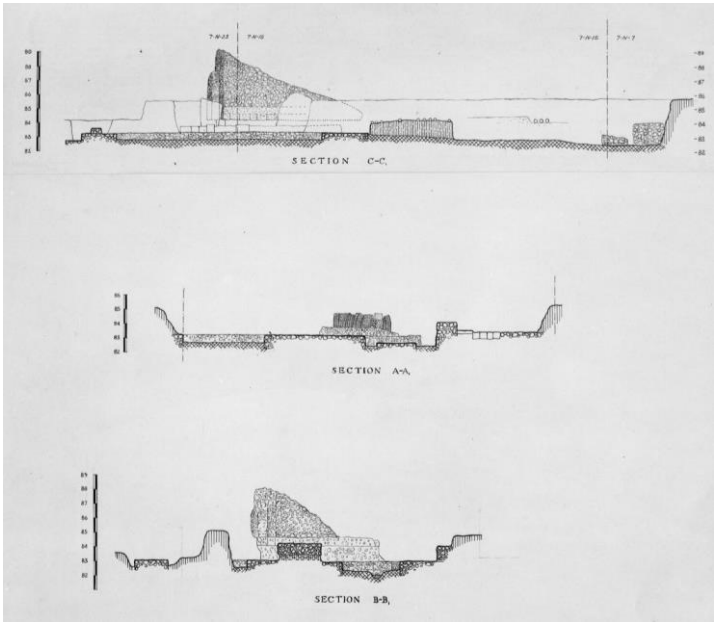

Figure 16. Sections from north end of Circus Hippodrome A. Date: 5/31/1933 Item Sets: Antioch Catalogued Photographs, Image Numbers: 1291. (Princeton University Visual Resources Collection, 2024)

After the first two excavations, the third excavation period began in March 1934. The excavation of a building near the place known as Saint Paul's Gate in ancient times began. However, the excavations could not progress as desired due to the spring water coming from the mountain from time to time. Despite the unfavorable conditions, the excavation team managed to reach the ground level of the building. The square apse made of limestone is remarkable in this building. In addition, the Roman-era Antioch theater was also reached. The discovery of the theater provided an important clue to the central planning of the ancient city. Various aqueducts were discovered in the Daphne region and these discoveries formed the basis for further research on the city's water systems. In addition to these

excavations, a large part of the walls of the Justinian period were photographed and mapped. Within the walls of this period, a large cemetery and an area surrounded by the walls of the Tiberius period were identified. During the ongoing excavations in Daphne, the remains of a villa dating from the third century were found. In this villa, a columned hall connects to a nymphaeum with a pool containing a mosaic of Erotes fishing on the backs of dolphins. On the opposite side of the hall there are three rooms facing the colonnade. The largest room is in the center and has mosaics arranged in a triclinium. The other two rooms also contain various mosaics. Opposite the entrance was a panel of three figures depicting a Bacchant, Lycurgus and ivy, Apollo and Daphne. The central scene shows Eros driving two Psyche into the sky, surrounded by a large frame decorated with black, red and yellow pelts. In the other section, another panel depicting Heliades feeding one of Helios' horses was found. These reflect the aristocratic lifestyle of the house. A helmeted head of Ares from the Roman period, satyr figures, statues of Aphrodite and Apollo were also found during the excavations (Campbell, 1936).

The fourth and fifth phases of excavations on Antioch took place in 1935 and 1936. The main objective of the excavations was to specify the location of the city center of Antioch. For this purpose, excavations were carried out along the avenue on the north-south axis of the city. An early city wall (2nd century BC) was found in the excavation area. A vaulted passage leading to the arena of the Circus of Antioch was also discovered. During these excavations, the excavation of the theater in the Daphne region was completed. Sculptures of nymphs and satyrs were found in the theater. Villas and houses were also discovered during this process. The

mosaics in the villas generally depict mythological scenes and sea gods. Oceanus and Tethys depictions are among these mosaics. Another villa was decorated with mosaics representing hunting scenes and the seasons. The mosaics depicting Bacchus and his followers offer insights into Roman art (Campbell, 1938).

During the sixth phase of excavations, the main street of Antioch, which played an important role in the urban development of the city from the Hellenistic period onwards, was discovered. This street was widened in the second century of the Roman Empire and the 9.60 meter wide road was paved with stone and drainage channels were found on both sides. The excavation of bridge structures on the main street allowed the discovery of waterways and drainage systems. In the meantime, many new mosaics were discovered around Daphne and Antioch. A mosaic depicting Narcissus was discovered. This scene, in which Narcissus looks at his reflection while sitting on a rock, has again become an important example of Antiochian mosaic art. In the north of Antioch, a large mosaic floor dating to the fifth century was discovered in an area near Saint Paul's Gate. This mosaic is decorated with small winged figures representing the seasons. A medallion in the center is surrounded by fruit and leaves, with a female figure in the center (Campbell, 1940).

The diaries and reports by Charles R. Morey and William Alexander Campbell (Figure 17) provide important insights into the urban development of Antioch during the Hellenistic, Roman and Byzantine periods, its waterways and the art of the period. The mosaics, bridges, and architectural structures uncovered during the excavations provide an in-depth understanding of the city's history and culture. The excavations

reveal that Antakya was an important metropolis during the Hellenistic, Roman and Byzantine periods and that the city had a high level of artistic and architectural wealth.

Figure 17. Staff photograph of the 1933 Antioch expedition. William A. Campbell of Wellesley College, who served as field director of the eight campaigns, is seated at the far right; Jean Lassus (the excavator of the colonnaded street) is standing third from the left. Item Sets: Antioch Catalogued Photographs, Image Number: 1296 (Princeton University Visual Resources Collection, 2024)

The processes that occur after the discovery of the mosaics are also an important topic to address. More than 300 mosaics uncovered in Antioch have been distributed among the sponsors of the excavations. This process has led to the dispersal of the mosaics from Antioch to various parts of the world. The remaining mosaics have been positioned in a planned museum named Antioch Museum. Approximately 160 mosaics were sent to the United States, while 11 mosaics were sent to the Louvre Museum. The mosaics sent to the United States were distributed among 29 different museums and academic institutions. Notable organizations among these

museums include the Baltimore Museum of Art, the Princeton University Art Museum, Dumbarton Oaks Research Library and Collection, and the Worcester Art Museum. For instance, a large mosaic known as the "Worcester Hunt," found in a villa in Daphne and depicting hunting scenes, holds a special place in the exhibition hall of the Worcester Art Museum. Another significant work is the mosaics from the House of the Atrium in Antioch. The mosaics from the House of the Atrium were divided among four major museums. While the Louvre Museum received the scene "The Judgment of Paris," the Worcester Art Museum acquired the mosaic depicting the drinking contest between Heracles and Dionysus. Princeton University obtained a mosaic scene representing Aphrodite and Adonis. Another striking example is the fragmentation of mosaics that spread across the floors of large residences, which were distributed to various museums. The mosaics from the House of the Boat of Psyche were shared during the excavations. Portions of these mosaics were sent to the Baltimore Museum of Art, some to the Louvre, and some to Princeton University. A portion is also currently displayed at the Hatay Archaeology Museum. This actually indicates that the integrity of the works has been compromised. Additionally, some of the institutions that received these distributed works have either put them up for sale or transferred them to other institutions. For example, the mosaic titled "Tethys," exhibited by Dumbarton Oaks, was later sold to Harvard Business School. The "The Dark Ages" exhibition held at the Worcester Art Museum in 1937 was one of the first major exhibitions of the Antioch mosaics. This exhibition highlighted the significance of the excavations in Antioch on a global scale and showcased the support that museums provided for these projects.

Another exhibition held in 2000, titled "The Lost Ancient City," marked an important milestone in the exhibition of artifacts obtained from the Antakya excavations. Another exhibition dedicated to the Antioch on the Orontes excavation was presented by Dumbarton Oaks in Washington from April 7 to October 10, 2010. As a result of these exhibitions, the objects displayed together for the first time represent a snapshot of the discoveries made in Antioch in the 1930s (Barsanti, 2012). The fact that the mosaics were severed from their original locations and distributed to various collections and institutions raises important questions about how this complicates the understanding of their stories. Since the works have been detached from their original context, the value of their artistic and historical significance will always be a topic of debate.

3.3. Artifacts Left in Antioch and the First Attempts at Museology

Parallel to the excavations, the preservation and display of archaeological finds was another important issue. Along with the processes mentioned in the previous section, various plans were made for the mosaics remaining in Antioch. At first, these artifacts were exhibited in Antakya High School and Antakya Municipality building. However, as the number of finds increased, the Service d'Antiquités, the antiquities department of the French State, began to consider the need to build a museum for this purpose. Architect Michel Ecochard was commissioned to design the museum (Jacquot, 1931, as cited in Rifaioğlu, 2014).

Michel Ecochard (1905-1985), who was awarded the Aga Khan Architecture Prize for his role in the ongoing restoration of the Azem Palace in Damascus, donated his archive to the Prize. The collection represented his work as an architect, urban planner and archaeologist, and

revealed his keen interest in photography and aviation. After studying at the Ecole des Beaux-Arts in Paris, he practiced in Beirut from 1931 to 1944, in Rabat from 1946 to 1952 and in Paris from 1953 to 1983. During the French Mandate period, he took part in the excavations in Baalbek and in many restoration projects, especially in Palmyra. In 1934, he was appointed architectural advisor to the Syrian government, overseeing the restoration of the Azem Palace and designing a modern executive house. He also conducted research with Claude Le Coeur on the documentation of the baths in Damascus. From 1940 to 1944, he was director of the Service d'Urbanisme in Syria and created a new urban plan for Beirut (1943-1944). Between 1940 and 1944 he was director of the Service d'Urbanisme in Syria and designed a comprehensive urban plan for Beirut. In 1945, he traveled to the United States with Le Corbusier to study the principles of functional urban planning and applied this knowledge in Morocco. Although the plan he developed especially for Casablanca was highly acclaimed, he resigned from his position due to disagreements with contractors. He presented his experiences in Morocco at the CIAM conference in 1953, followed by several international projects such as the University of Karachi (Pakistan), Conakry (Africa) and Yaoundé (Cameroon). In Beirut, Ecochard developed the Collège Protéstant and several educational institutions and hospital projects, and later designed the Kuwait Museum and an infrastructure-based urban plan for Beirut. In Damascus, he prepared a new plan on traffic and transportation (Archnet, n.d.). According to this information, Antioch stands out as one of his early works in Michel Ecochard's career. Although not as extensive as other major cities and projects in his career, Antioch was a stop where his early

professional development and contributions to regional heritage were embodied. It should not be forgotten that the political processes that Antioch underwent and the results that emerged from them also had an impact.

The artifacts left in Antioch were started to be exhibited in the museum building designed by Michel Ecochard. Many valuable mosaics of various sizes, sculptures depicting mythological figures and kings of Ancient Antioch times have found their place in the museum. In addition to these, a large number of coins, storage products made of glass and clay, hand tools of the period, etc. are other objects exhibited.

4. Museum of Antioch Under the French Mandate

Michel Ecochard's projects are characterized by functionality, simplicity and simplicity of form. It is seen that Ecochard attached importance to the connection with the environment where he tried to settle, and integrated the architectural and cultural context of the city very well under the modern architectural movement that started at that time. While Michel Ecochard's architectural understanding embraces the important elements of the international modernist movement, it is also understood that he was sensitive to the local conditions and physical possibilities of the geographies such as Antioch, the Middle East and Africa. For example, the medium-hard ivory-colored stone from Salkın Quarry, 30 km away from Antioch, was used in the Antioch Municipality Building, the Hatay State Parliament Building, the Consulate General of the Republic of Türkiye in Antioch and Ecochard's work Museum of Antioch (Figure 18) (Demir, 1996). The museum building was located on the corner of the City Square, west of the Asi (Orontes) River (Figure 19). The museum's design concept

was to display large-scale archaeological finds, especially large Roman mosaics. The design project was completed in 1933, the construction of the museum began in 1934 and it was opened to the public in 1939 (Jacquot, 1931, as cited in Rifaioğlu, 2014). Since the mosaics excavated were unalterable objects, the plan scheme and architectural form were shaped with the priority of displaying these mosaics. It is seen that the design concept of the building in general avoids ornamentation and has clean and clear lines. Details were avoided in the project and the structure was simplified as much as possible.

Figure 18. A general view of the construction process. (MIT Aga Khan Documentation Center, Michel Ecohard Archives, 1935)

Figure 19. General views of the building. (MIT Aga Khan Documentation Center, Michel Ecohard Archives, 1935)

Ecochard approached the structural design as a space creator (Figure 20). As seen in the facade drawings of the building, there were also various arched surfaces (Figure 21).

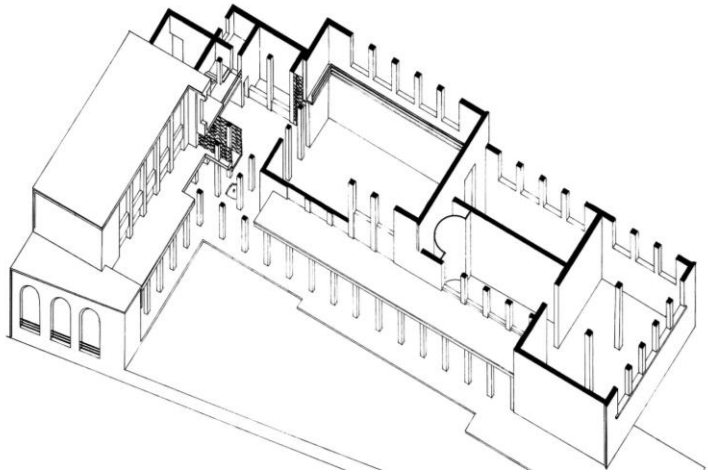

Figure 20. Antioch Museum, Axonometric Section Drawing. (MIT Aga Khan Documentation Center, Michel Ecohard Archives, 1935)

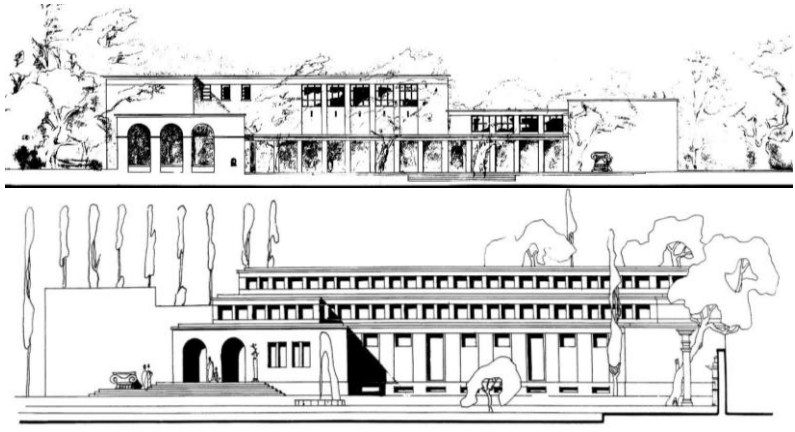

Figure 21. Antioch Museum, Facade Drawings of the Building. (MIT Aga Khan Documentation Center, Michel Ecohard Archives, 1935)

It is thought that the high walls and inner courtyards of Antakya's housing typology were observed and reflected in the design process of the project. The interiors focused on functionality. Since the main purpose of the museum was to exhibit mosaics, sculptures and other artifacts unearthed during the archaeological excavations of that period, the layout of the spaces was shaped in line with this purpose. The large exhibition halls allowed the artifacts to come into direct contact with the viewer, and Ecochard created a route where visitors can experience one area and then easily move on to the next. The exterior as well as the interior spaces of the building were incorporated into the exhibition layout and the landscape areas were also spatialized. In the project, Michel Ecochard's consideration of local climatic conditions was also evident through these areas. For example, in his projects in Damascus and Beirut, he used courtyards and large canopies to provide cool air flow in hot climates. However, it should not be forgotten that the Antioch Museum was the first important place in his architectural career. In fact, it is understood that he carried the experiences he gained in Antioch to other places he worked.

The upper lateral window openings in the building enabled the most efficient use of natural light in the exhibition halls. The high wall surfaces of the building functioned as display elements within the interior spaces. The mosaics obtained from the archaeological remains were arranged in a planned display structure both on the floor and on the wall surfaces. Natural light was effectively integrated into the space. Large windows were strategically placed to allow daylight to penetrate the exhibition spaces. Daylight played an active role in the experience of the space and the artifacts. The doors that connected the exhibition halls to the other

service spaces had the same design approach. There were upper lateral windows above the door openings, just like on the facades. In this way, daylight from the facade filled the corridor areas connecting to other spaces (Figure 22).

Figure 22. Antioch Museum, Exhibition Hall Interior View I. (MIT Aga Khan Documentation Center, Michel Ecohard Archives, 1935)

The concrete and local stone materials that made up the structure and the natural materials used in the interior, such as various ceramics, marble and wood, tried to create an atmosphere in harmony with the historical artifacts. The interiors of the museum not only display the artifact, but also create a layout that allows visitors to interact with it. The width and organization of the exhibition spaces offered visitors a comfortable stroll. The mosaics were preferred to be displayed as they were on the floor rather than on the wall and the gaps left between the load-bearing elements allowed the visitor to navigate around the work. In addition, in order for visitors to experience the space in a more holistic way, the exhibition areas of different sizes and the arrangement of the exhibited works were planned.

In one exhibition hall, an interior balcony was designed to better perceive and experience the large-scale mosaic works exhibited on the floor. Visitors accessed this balcony via a rotating steel staircase with stringers. On the wall surface where the balcony was located, door openings of various widths and the displayed mosaics were used to maximize the efficiency (Figure 23).

Figure 23. Antioch Museum, Exhibition Hall Interior View II. (MIT Aga Khan Documentation Center, Michel Ecohard Archives, 1935)

In addition, the mosaics were framed with wood and displayed like a painting. The wooden frames took the shape of the existing form of the mosaics. In the floor covering of the exhibition halls, square shaped ceramics without ornamentation were preferred in a very simple way. It is seen that the skirtings and the floor covering were made of the same material throughout the spaces. The same material was also preferred for the staircase connecting the floors. A pattern with square ceramics was

created on the landing of the staircase reaching the upper floor. Although it is not known why, an interrupted border application draws attention here. In the design of the staircase, the handrail found its place in the space with a very minimalist approach. It is seen that the wooden handrail was fixed to the railing with a piece of metal with a cylindrical cross-section and the door in this area was more ornamented and had many glass openings compared to the exhibition areas (Figure 24).

Figure 24. Antioch Museum, Exhibition Hall Interior View III. (MIT Aga Khan Documentation Center, Michel Ecohard Archives, 1935)

In the semi-open space in the garden area, designed in a colonial layout, the surfaces of the facade were also used for display and large mosaics are displayed in the landscape. It can be observed that Ecochard used square shapes in his designs. He preferred the grid system many times in urban planning. He designed the urban planning of Casablanca with 8x8 meter

square modules. The first examples of Ecochard's use of the square shape can be seen again in the Antioch Museum. The ivory-colored stone extracted from the Salkın Quarry used in the construction of the building was given a cubic form and used as load-bearing elements here. The square surfaces of the cubic stones forming these bearing elements were in the same proportion as the squares forming the windows. Consisting of 7 identical cubes, the load-bearing elements sat on the ground with a larger base than the cubes made of the same stone material. Corinthian capitals unearthed during the excavations were exhibited on the top of each support. Along the facade of the building there was a floor molding made of the same stone material (Figure 25).

Figure 25. Antioch Museum, Antakya Museum, Garden Area and Exhibition Organization in the Landscape. (MIT Aga Khan Documentation Center, Michel Ecohard Archives, 1935)

As it is understood from the examination of the museum building, architect Michel Ecochard tried to establish a connection with both the function of

the building and the culture of the environment where the building is located in all the details of the design. In this respect, it can be said that in addition to the archaeological finds it houses, the building itself is also in an effort to reflect the cultural heritage of the city of Antioch.

4. Conclusion and Suggestions

In conclusion, Ecochard, who built the Antioch Museum in 1931, made a significant contribution to the archaeological and cultural heritage of the city with this project. The establishment of the Antioch Museum provided a platform to exhibit the historical artifacts of Antioch, one of the most important excavation sites of the period, and also aimed to protect and promote the archaeological values of the region. Ecochard's role in this project can be characterized not only as an architectural designer, but also as a protector of cultural heritage. The construction of the museum in Antioch can be considered as one of the first examples of Ecochard's interdisciplinary approaches between restoration, architecture and urban planning. The Antioch Museum exhibited the cultural heritage of the region with a structure that incorporated the modernist understanding of the period, and at the same time undertook the function of carrying this heritage to the present day. The artifacts found here were later moved to the Hatay Archaeology Museum, which opened in 2014. In the 2023 earthquake, the Old Antioch Museum is one of the rare old buildings that survived the earthquake. Various maintenance and repair works were carried out in the building after the earthquake. Currently, the building has been transformed into a city library.

As a result, Antakya (Antioch), which contains the traces of many civilizations, has a rich cultural structure. Studying this cultural

accumulation formed with the contribution of each civilization is of great importance not only for local history but also for world history. Antioch’s archaeological finds, architecture and works of art illuminate the past of the region and reveal the interactions of different civilizations. The city's role as a religious, commercial and cultural center has led to constant change over time. This has created historical continuity and cultural diversity. After the recent earthquake in 2023, various projects have been designed and implemented for the city. It is a matter of curiosity how the urban texture will regain its identity in the coming years.

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Conservation of Architectural Heritage: Traces of History

Chapter 18

Ottoman Sufi Music Venues Observed Through European Eyes

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1. Introduction

Istanbul, the intersection point of Eastern and Western cultures, has always been a source of interest and curiosity for the West throughout history. With its streets, palaces, bazaars, and lodges, Istanbul has become a center of attraction and is essential in the works of many travelers and artists. Travelers seeking the exoticism and mystical atmosphere of the East, when they arrived in Istanbul, mainly showed great interest in the lodges and convents of the Mawlawi and Rifai dervishes, visiting these places before descending to the shores of the Golden Horn and the Bosphorus. Travelers who had difficulty entering mosques could observe the rituals of Mawlawi and Rifai dervishes in lodges without encountering any obstacles, and they recorded these observations in their works, supported by engravings. The written and visual narratives in these works reflect the West's perspective on Ottoman society while providing important information about the spatial organization of the sema ceremony and the places where it is performed. The narratives of European travelers create a valuable field of research for understanding Ottoman architectural and cultural heritage while serving as historical documents.

The ceremony's movement and music have shaped the spatial formation of lodges and tekkes. Additionally, since there were no structures like concert halls or conservatories during this period, the Mawlawi Lodges played a central role in the education and transmission of music. These places where music education and performance are carried out have contributed to the training of many musicians; thus, they have played an essential role in forming the traditional repertoire of music and its transmission across generations. In this context, the spatial formation of Ottoman sufı musıc

venues buildings has been examined within the scope of the study from the perspective of European travelers and artists based on music and space; these structures have been analyzed with a descriptive approach, considering their historical and cultural contexts.

2. Material and Method

Among the rediscovered sources of Ottoman culture, history, and places, travelogues provide detailed information about the Mawlawi lodges in Istanbul. It is known that the rituals, lodges, and convents depicted in travelogues have been described in detail since the 17th century. However, the travelogues depicting the dervishes and their sema rituals gained more interest in Europe in the 18th and early 19th centuries and became a literary subject (Zarcone, 2015, p.81-86). In this context, this study aims to examine the Istanbul semahane from the perspective of European travelers and artists, using travelogues and engravings as primary sources. This study, conducted within the framework of qualitative research methods based on literature review, document, and text analysis methods, aims to provide a general framework regarding Mawlawi order and Mawlawi lodges. In the study, the descriptions of the semahane found in travelogues and engravings were evaluated through a descriptive and interpretative approach, comparing them with architectural elements, interior arrangements, and the architectural understanding of the period to determine the extent to which these depictions reflect reality and the originality of the artist's observations. The method used to analyze the sources above offers the opportunity to explore the objective dimensions of spaces and the underlying world of meanings and examine documents from different perspectives.

3. Mawlawi Order, Mawlawi Lodge, and Music

Among the sources of Ottoman culture, history, and places, travelogues provide detailed information about the Mawlawi lodges. Mawlawi Order is a path belonging to the Sufi school of Islamicate, established in the late 13th century in Konya to continue the life philosophy and thoughts put forth by Rumi. After the death of Rumi, this order was systematized by his son, Sultan Veled, and it organized itself between the 13th and 15th centuries, establishing the order's customs and practices. Apart from the aspects related to the Mawlawi order, significant progress was made in literature, music, painting, calligraphy, and other arts, and many artists and musicians were trained. This close relationship established with art has historically placed the Mawlawi Order in a prominent position among classical Sufi mystical organizations.

3.1. Functional Scheme and Architectural Program of the Mawlawi Lodge

Mawlawi lodges have played an essential role in developing and institutionalizing the Mawlawi thought through their various social functions. Initially established in Konya, the Mawlawi lodges gradually spread to different regions of the Ottoman Empire, particularly Cairo, Gallipoli, and the Balkans, and evolved into a standardized structure. When looking at the locations of these sect centers, it is generally observed that they are established on trade centers and the roads connecting them. Additionally, in line with the principle of avoiding a life dependent on materialism and objects in Mawlawi philosophy, it is understood that the Mawlawi Lodges were initially built outside the city centers. Still, with the expansion of the cities, they ended up within residential areas. The fully

equipped lodges called Âsitâne are considered the administrative and spiritual centers of the orders. They are generally places where a tomb or the seat of a great Sheikh is located. Âsitâne serves as the sects' administrative center and the principal place of worship and education. However, smaller-scale lodges are called "zaviye." Mawlawi lodges are generally structures designed to meet the accommodation and temporary shelter needs of dervishes from outside, and therefore, they do not host activities such as education (Gölpınarlı, 2006, p.13-15).

Tanrıkorur (2000) classified the spatial organization of Mawlawi lodges into seven main groups based on their functions: worship and education, visitation, accommodation, nutrition, cleanliness, transportation, and ancillary sections. The worship and education sections include structures such as the semahane, meydan-ı şerif, matbah-ı şerif, scribe room, bookcase, and independent library. In contrast, the visitation sections consist of the türbe and hazire. Living areas are defined by sections such as the harem, selamlık, guesthouse, and dedegan cells. In contrast, the nutrition sections include places like the kitchen, pantry, bakery, somathane, and şerbethane and agricultural lands. The cleaning includes a bathhouse, laundry, ablution areas, a well, and cisterns. Due to the location of the Mawlawi Lodges being far from the residential area, there is a stable for transportation. Moreover, it is known that there were small boathouses and piers for the Mawlawi Lodges located by the sea, such as those in Beşiktaş and Bahariye. Some secondary sections provide community services such as the timekeeper's room, fountain, and soup kitchen (Tanrıkorur, 2000). All these functions demonstrate that the Mawlawi Lodges have a complex structure and that each space serves multiple

functions and actions. However, the semahane, the central element of the architectural structure of Mawlawi Lodges, forms the core of the complex and is distinguished from other units by its function as a place of worship.

3.2. The Semahane and Music

Semahanes are places where the Mawlawi Sufi order performs its rituals and worship, specifically the Mawlawi Ceremony (Mukabele-i Şerif). Semahane is mainly located under a separate roof in the central position of the Mawlawi Lodges. Mukabele, Hatim, kandil, and eid gatherings are held in structures without separate mosques, where the five daily prayers are performed, and the semahane, which blends worship and education, is considered the holiest place in Mawlawi Lodges. Although it is observed that the semahane buildings share standard architectural features within the framework of the centuries-long history of the Mawlawi Lodges, they have undergone various changes and transformations with the institutionalization of the Mawlawi customs and rituals. In this context, the spatial organization of the Semahane has developed in proportion to the etiquette and form of the ritual at the time it was built (Tanrıkorur, 1996, p. 207-208).

According to the Mawlawi understanding, sema is the expression of the deep love and excitement that a lover of God feels towards Allah, manifested through spinning movements (turning) accompanied by music (Çetinkaya, 2011). The Sema ceremony is a theatrical performance characterized by a specific choreography, where the rhythm continuously changes, accelerates, and decelerates, accompanied by music and hymns performed with the ney, kudüm, and other instruments. In this context, just like every space is shaped according to the users' needs, the spatial

organization of the semahane is also shaped according to the ceremony's choreographic, acoustic, and visual dimensions. Tanman (1994) pointed out the idea that everything in the universe, from atoms to planets, is in circular motion has been reflected in the same ritual, and this circularity has played an important role in the spatial organization of the seminar halls. Based on this situation, starting in the late 18th century, beveled squares, polygons, and circles were preferred instead of square or rectangular plan schemes (Tanman, 1994, p. 181-182). The Sema ceremony required the arrangement of galleries due to its performative aspect and the fact that it is open to every one's observation. On the ground floor, there are sections reserved for men, and on the upper floor, there are sections reserved for women and the mutrib committee. Additionally, there is a sultan's lodge in the semahane in Istanbul. The section known as the mutrib gallery, which includes the sazende (instrument players), ayinhan (ceremony singer), and na'tihan (na’t singer), is generally positioned opposite the mihrab above the main door in the semahanes built after the 18th century. Additionally, in the fully equipped large semahane, there are two rooms for the neyzenbaşı (the head flute prayer) and kudümzenbaşı (the head kudüm prayer), positioned in connection with the mutrib mahfil, as well as the semazenbaşı. In Mawlawi lodges without a mosque, the same halls were used as mosques, and for this reason, elements aimed at worship, such as the mihrab and minbar, were added to the space. The sheikh (He is the leader, representative, and highest authority of the sect) rug is spread before the mihrab, facing the qibla. The semahane is also used for educational purposes, and the mawlawi pulpit, where Mawlawi lessons are conducted, is located next to the mihrab. In summary, the

spatial organization of the semahane is shaped by music, the order of the sema ritual, and the functions present in the space.

4. The Representation of Istanbul Lodges in the Works of European Travelers and Artists

Semahane, the ritual and worship centers of the Mawlawi order, were established in essential trade centers of Anatolia during the early Ottoman period and found their place in the city's Sufi life with the conquest of Istanbul. Due to Istanbul's unique social and cultural structure, the Mawlawi lodges have become essential to the city's multifaceted Sufi life. Still, their numbers have stayed within five throughout history. The main reason is that the Mawlawi Order, with its social topography, governance style, and close relationship with art, appeals to a more elite group than other sects. Additionally, the fact that Mawlawi lodges have an extensive architectural program and require large plots of land also affects this situation. With the conquest of Istanbul, the Church of Christ Akaleptos, designated as Kalenderhane by Fatih Sultan Mehmed for wandering dervishes, is considered the first center of the Mawlawi order in the capital. However, historical sources indicate that the Galata Mawlawi Lodge also called the Kulekapı Mawlawi Lodge, lost its function and was abandoned by establishing the Galata Mawlawi Lodge in 1491/1492. Following this, the Yenikapı Mawlawi Lodge was built in 1598, the Beşiktaş Mawlawi Lodge in 1622, the Kasımpaşa Mawlawi Lodge in the years 1623-1631, and the Üsküdar Mawlawi Lodge in 1792-1793. After the demolition of the Beşiktaş Mawlawi Lodge, the structure was first moved to the slopes of Maçka and then to the Bahariye Mawlawi Lodge (Tanman,1994, p.177-178). Due to their extensive architectural programs, the Mawlawi Lodge

in Galata, Yenikapı, Kasımpaşa, Beşiktaş, and Bahariye were classified as "âsitâne," which are fully established centers of the Mawlawi order. In contrast, the Üsküdar Mawlawi Lodge was constructed as a "zâviye" (smaller lodge) to accommodate dervishes from rural areas, serving as a temporary lodging rather than a primary center for rituals or education.

Curious about Eastern exoticism and its mysterious atmosphere, European travelers and artists visiting Istanbul have shown great interest in the lodges of Mawlawi and Rifai dervishes. Travelers, Orientalist painters, and engravers have allocated an essential place to dervishes in their works, offering a glimpse of their perspectives to those aspiring to journey to the East. European travelers, while describing the Galata Mawlawi Lodge, which is a Mawlawi lodge, as the lodge of "spinning dervishes," "dancing dervishes," or "howling dervishes," referred to the Üsküdar Rifai Lodge as the lodge of "howling, shouting, moaning, and humming dervishes." In travelogues, the Sema ceremony was closely observed by travelers as a spectacle. In contrast, some travelers found this ritual "pleasant, sublime, and spiritual," while others described the ceremony as "one of the strangest practices of Islam," characterizing it as a monotonous, ungraceful, and horrifying display. Travelers have not only described the music and the performance of the rituals but also conveyed their way of life and thinking about the dervishes, their clothing, the location of the Mawlawi Lodge, and its architectural formation from their perspectives. Therefore, these works are of great importance because they have artistic value and reflect the architecture and city image of Istanbul during that period (Zarcone, 2012, p. 196).

4.1. Galata Mawlawi Lodge

One of the first original Mawlawi structures, the Galata Mawlawi Lodge, was built on the hunting lodge estate of İskender Pasha in the Galata hills. The semahane of the Galata Mawlawi Lodge, where rituals are performed on Tuesdays and Fridays, has been built six times throughout history (Işın, 2014, p. 299-310). Due to the intense cultural life in the Beyoğlu region in the 19th century and the increasing visitor interest in the semahane, Sultan Abdülmecid had the interior decorations of the semahane redone. According to Tanrıkorur (2000), this interior decoration carried out by Menas Kalfa has reshaped the semahane almost like a theater stage, creating a more theatrical effect with columns, ceilings, and lighting (Tanrıkorur, 2000, p. 140-141).

A document related to the first constructed semahane has yet to be identified. However, in the work dated to the late 17th century by Jean Baptiste Van Mour (1671-1737), who came to Istanbul in 1699 at the invitation of the French ambassador Marquis de Feriol, and in the engravings published by the artist in 1714-1715, there are details regarding the spatial organization of the second courtyard (Tanman, 2010, p.86). In the work of J. B. Mour, as observed below, the semahane, which is single-story and without a gallery, is seen to have an octagonal-shaped sema area. The prayer area is covered with wooden flooring, and it is noteworthy that it is secured with nails. The wooden columns and railings surrounding the sema area physically delimit the sema area, creating the gallery's layout. It is observed that the wooden railings create the züvvar gallery by separating the sema area. On the right side of the same area is a mihrab and a

postnişin, and on the left is a higher-positioned mutrib gallery. Additionally, a wooden dome covers the top of the sema area (Figure 1).

Figure 1. Whirling Dervishes Lodge, Jean Baptiste van Mour (jstor.org, 2024)

Mawlawi Lodges appear as multifunctional structures that, in addition to their worship functions, also house various living spaces such as libraries, kitchens, and dining rooms. In this context, J. B. Van Mour, in another work, depicted dervishes eating and playing the ney at a table set on the ground. In the artwork, details such as a carpet covering the floor, cushions lined along the walls, green-painted recessed walls, and a wooden table positioned in the center stand out (Figure 2).

Figure 2. Dervishes Eating Together, Jean Baptiste van Mour (jstor.org, 2024)

The engraving included in M. de Ferriol's 1714 publication "Recueil de Cent Estampes Representant Differentes Nations Du Levant," with the

caption "Les Derviches dans Leur Temple de Pera achevant de tourner" (Dervishes in Their Temple of Pera finishing their whirling), was also painted by Jean Baptiste van Mour. Ferriol stated that the engraving shows the Mawlawi lodge in Beyoğlu, which is covered with a dome and has perfect flooring and a balcony for musicians (Ceco, 2015, p, 96). In the engraving, a Sema ceremony is depicted in the semahane of the Galata Mawlawi Lodge, rebuilt for the second time. The space features an octagonal sema area without a gallery, a wooden dome divided into radial segments, spectator galleries bordered by railings surrounding the sema area, wooden columns rising at the corners, and aligned windows, all accurately depicted. However, the composite capitals on the wooden columns and the baroque-style decorations seen on the skylights are not yet in harmony with the Ottoman architecture, leading to the belief that the artist approached the space with their artistic interpretation (Işın et al., 2010, p. 226) (Figure 3).

Figure 3. Jean Baptiste Van Mour's Sema Engraving (digitalcollections.nypl.org, 2024)

The engraving in Aubry de La Motraye's work "Voyages du Sr. A. De La Motraye, en Europe, Asie & Afrique" depicts the interior of the Galata

Mawlawi Lodge. Since the engraving dates back to the mid-18th century, the work represents a semahane without a gallery, featuring a circularly arranged sema area, wooden turned railings, composite capital columns, and a mihrab immediately to the right of the entrance. The space also features hanging elements used to suspend rowed windows and chandeliers (Figure 4).

Figure 4. Dance of the Dervishes, Willia Hogarth, 1723-1724 (pinterest.com, 2024)

D'Ohsson, in his work "Tableau général de l' Empire Ottoman," mentions the uniqueness of the Mawlawi dance, which is not seen in other communities, and the semahane where the dance is performed. He reported that the semahane, supported by eight wooden columns, was a square house (D'Ohsson, 1791). Additionally, the book details the choreographic arrangement of a sema ceremony in the Galata Mawlawi Lodge, which was rebuilt for the second time, in the engraving by C.N Cochin included in the book. In the engraving, architectural elements such as the octagonal planned sema area, wooden columns, and railings, inscriptions on the columns, wooden dome, elevated mutrib gallery, mesnevi pulpit, and

double-rowed windows are depicted, and these details resemble the elements in J.B. Van Mour's engraving. However, Cochin changed the positions of some architectural elements to make the architecture of the Mawlawi Lodge more comprehensible. The railing opening that allows the Sheikh and the whirling dervishes to enter the sema area has been shifted, and the mihrab has been hidden between the columns and replaced with the mesnevi pulpit (Işın et al., 2010, p. 230) (Figure 5).

Figure 5. Dance of the Whirling Dervishes, C. N. Cochin (gzt.com, 2024a)

In Lord Baltimore's travelogue, information about the interior of the third semahane, rebuilt for the third time in 1766 during the reign of Sultan Mustafa III, can be found. In this work, the circularly shaped sema area, wooden columns and railings surrounding the sema area, the entrance door and the music gallery above it, the mesnevi pulpit opposite the entrance and the mihrab next to the pulpit, the women's gallery covered with a lattice, the rowed windows, inscriptions, and the wooden dome can be seen. Additionally, the work depicts the Ottoman people alongside foreign spectators (Figure 6).

Figure 6. Galata Mawlawi Lodge, F. Smith (royalacademy.org, 2024)

In the first quarter of the 19th century, the work drawn by E. Korneef and engraved by E. Scotnikoff depicts a sema ceremony held in the Galata Mawlawi Lodge, which was renovated for the fourth time during the reign of III. Selim. During this period, significant changes were made to the spatial arrangement of the semahane. The circular-shaped sema area is surrounded by square-sectioned columns and turned wooden railings, with inscriptions on the columns, double-rowed windows, and a wooden dome divided into squares with strips. To the left of the mihrab is the sultan's balcony, and to the right is the women's balcony, separated by a lattice. The women's gallery is elevated in the third courtyard, but in the depiction of the fourth courtyard, the women's gallery is located on the floor. The work's architectural details, carvings, and ornaments are depicted in the Baroque style (Işın et al., 2010, p.234) (Figure 7).

Figure 7. Sema Ceremony at the Galata Mawlawi Lodge, E. Scotnikoff (Işın et al., 2010)

Guillaume Martin, who visited Istanbul in 1794 and spent about a month and a half there, briefly mentions the Mawlawi, Bektashi, and Rifai dervishes in his work titled Voyage a Constantinople. He stated that the Mawlawi dervishes lived in a relatively enclosed space in Pera, surrounded by a cemetery, a dilapidated mosque, and old houses. The traveler notes that the dervishes gather on Tuesdays and Fridays to perform their unique and exciting rituals. Additionally, he mentions the existence of a gallery for women's covered with lattice (Martin, 1819, p. 128-129).

John Richardson Auldjo visited Istanbul during his eastern journey in 1833. Auldjo: The traveler stated, "To witness the ceremony of the dancing dervishes, I visited the mosque in Pera on Tuesday," referring to the Mawlawi Lodge. He noted that the semahane was built octagonal with galleries where visitors sit. Additionally, he reported that the dervishes' cloaks were hanging on one of the balconies in the galleries. In addition, musical instruments such as the ney, flute, and drum were displayed. Stating that the Sheikh is located opposite the entrance, Auldjo mentioned

on the next page that the sheikh is positioned to the right. He emphasized the presence of a women's gallery covered with lattice on the left side of the entrance and the existence of railings and wooden columns surrounding the sema area. He also details in his work that the Sema area has a wooden floor made of chestnut wood, inscriptions on the walls, and oil lamps hanging on an octagonal brass rod suspended from the ceiling (Auldjo, 1833, p. 73-75).

Miss Julia Pardoe, who visited Istanbul in 1835, detailed her observations in her work titled "The City of the Sultan and Domestic Manners of the Turks." Pardoe mentioned that she visited the Mawlawi lodges in Istanbul twice and detailed the location of the Galata Mawlawi Lodge and the architectural features of its semahane, which was built for the fifth time. In his work, she noted that the courtyard of this lodge, located directly opposite a small cemetery on the slope leading down to Galata, could be entered through a door adorned with carved decorations. When entering the courtyard, she stated that the graves of the deceased dervishes are on the left side, and the main building with a three-cornered roof structure is on the right side. She pointed out that within the courtyard is an eight-cornered dervish tomb with a central section sixty centimeters high, edges wide enough for a person to walk around, and a marble fountain with protruding eaves (Pardoe, 1837, p.40-41). Pardoe states that the tekke building has protruding walls and a medium-sized structure. She expresses that the building exhibits an eight-cornered architectural form adorned with embroidery. In her work, she emphasizes that the middle part of this structure, which he refers to as a "mosque," is the sema area, separated from the ground by railings and belonging to the dervishes. Pardoe

mentions that in the interior layout of the tekke, there are sections designated for dervishes and spectators and a dimly lit balcony in the lower part of the building. She draws attention to the women's gallery by noting covered with lattice in the lower left part of the balcony where female spectators watch the ceremonies. It indicates a narrow area on the sides of the inner part of the brightnesses, covered with mats, where the dervishes sit during the ceremonies. She emphasizes that iron rods have been lowered from the center of the well-partitioned semahane in eight directions and that cross-iron rods have been attached to these, with glass lamps of different colors and sizes placed on top of them (Pardoe, 1837, p.42).

During her visit to Istanbul, Elizabeth Mary Grosvenor observed the city's cultural and social structure and made detailed descriptions, especially about the rituals and architectural structures of the period. They mention that they went to the tekke near the little cemetery (Le Petit Champ des Morts) to watch the whirling dervishes' performance, which takes place on Tuesdays and Fridays. She states that the middle part of this structure, which has an octagonal plan, is surrounded by railings to separate the sema area and that there are designated sections for visitors around it (Grosvenor, 1842, p. 320). Grosvenor, stating that there was a section reserved for visitors, with a gallery covered with lattice for Turkish women and a gallery extending across the hall's upper floor, also mentions that part of this gallery was used as the sultan's box. The traveler likens the semahane to a theater due to the liturgical service performed, with music being a spectacle and the space being shaped according to this performance (Grosvenor, 1842, p. 321). Considering the date of Grosvenor's presence

in Istanbul, it is understood that this semahane is the fifth Galata Mawlawi Lodge to be built.

Two Scandinavian travelers who visited Istanbul in 1842 are among those who conveyed their impressions of the dervishes. H. C. Andersen noted that the ceremony at the whirling dervishes' lodge created a serene madness, giving the appearance of a kind of ballet. In the Galata Mawlawi Lodge in Pera, within a courtyard filled with cypress trees, he conveyed that the main lodge is separate from the temple building where the dance is performed. He mentions the züvvar gallery, saying they were taken to a low balcony covered with wicker to watch the ceremony but later moved closer to the wooden curtain. Additionally, it mentions that while heavy music is performed in the closed balcony above (mutrib gallery), the tekke window offers an extraordinary panorama (Hamsun & Andersen, 2024, p. 122-123).

The work by painter F. Wallis and engraver A. H. Payne, titled "Derwischkloster in Pera" and dated to the 1850s, depicts the state of the Galata Mawlawi Lodge during the II—Mahmud period. The work has a flat-arched door, an inscription above the door, the tughra of Mahmud II, and a large banner. Immediately to the right of the entrance is a fountain and a library; behind the library is the kitchen, and to the left is an open mausoleum. Next to the mausoleum is a two-story stone building with windows shaded by awnings (Işın et al., 2010, p. 216) (Figure 8).

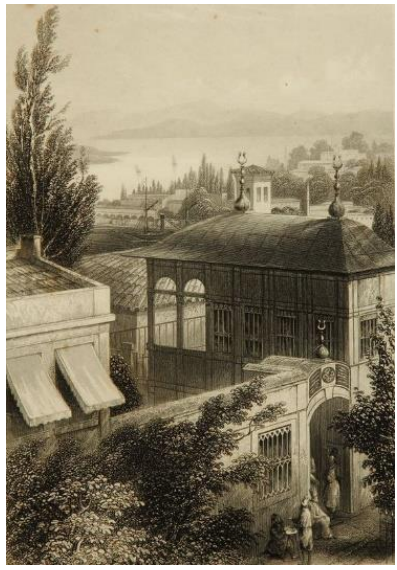

Figure 8. The entrance of the Galata Mawlawi Lodge, A.H. Payne (pinterest.com, 2024b)

Another traveler who mentions the Mawlawi lodges is Fernand Schickler. Schickler describes the dervishes as the monks of Islam and their lodges as monasteries, noting that the most essential dervishes are those who whirl and engage in dhikr. Schickler states that the whirling dervishes' rituals are performed in a square-shaped hall surrounded by wooden columns and railings. The hall floor is covered with parquet and surrounded by straw mats, indicating that shoes are prohibited in the hall. Emphasizing that foreign visitors can watch the ceremony from behind the railings outside the entrance, Schickler also mentions a chandelier in the middle. However, the traveler's failure to provide information about the name of the semahane he visited, its location, or the day the ceremony was held weakens the context of the narrative (Schickler, 1863, p. 59).

Theophile Gautier visited Istanbul in 1856 and, like his predecessors, was only interested in the Mawlawi and Rifai orders, describing their lodges and rituals in detail in his work "Constantinople." Gautier stated that the lodge in Pera was in a square filled with ornate gravestones made of white marble and surrounded by cypress trees. He mentioned that the facade of the Tekke is quite simple and that a stone plaque is inscribed in Turkish above the entrance door. He stated that the structure does not have a monumental feature and, while generally containing typical elements of Ottoman architecture, it also possesses a unique character. While describing Tekke's interior, Gautier spoke of the sections dedicated to clergy and prayer, the yellow rooms illuminated by daylight, and the stage where the dervishes performed their rituals.

Additionally, Gautier conveys his spatial observations about the semahane: *"The hall where the whirling dervishes perform their religious dance is at the end of the courtyard." The hall where the religious ceremonies are held resembles a dance and theater hall. In the center is a polished, perfectly flat surface surrounded by circular railings three feet high. Around the hall is a gallery surrounded by thin columns arranged in a circular shape. These columns are designated for the Sultan or distinguished spectators. Tight lattice protect other areas to ensure privacy, and these sections are reserved for women. The musicians are directly opposite the mihrab. There are inscriptions of Quranic verses on the mihrab. All these places are painted in blue and gold colors and are extremely clean* (Gautier, 1875, p.129).

In the engraving published by Amedeo Preziosi in 1857, the semahane, built for the fifth time, is observed (Tanman, 2010, p.88). In the semahane,

which has a two-story structure with a gallery, the wooden flooring, fixed with nails, is noteworthy. The sema area, designed in a square shape with 45-degree beveled corners, is surrounded by wooden columns with Tuscan capitals and turned wooden railings. Additionally, the rows of windows, the inscriptions hanging from the gallery railings, the male audience watching the ceremony, and the circle of oil lamps hanging from the ceiling are all described in detail (Figure 9).

Figure 9. Galata Mawlawi Lodge, Sema - Amedeo Preziosi (artcollection.dcms.gov, 2024)

C. Oscanyan states in his work that the sema area is large, surrounded by railings, and has a polished surface. He states that the balconies are on three sides of the sema area, with one balcony reserved for the sultan and the other for Turkish women. He mentioned the mihrab niche, which indicates the direction of the Tekke and the position of the Sheikh seat in

front of this niche. He also noted that the walls were adorned with cornices and that inscriptions and sultans' tughra were decorating the walls. In Oscanyan's work, there is also a depiction of railings with lathe craftsmanship and wooden columns, where the sultan's balcony can be seen, and the choreographic arrangement of the ceremony is illustrated. These details provide essential information about the courtyard's spatial organization and the interior space's formation (Oscanyan,1857, p. 40-44) (Figure 10).

Figure 10. Tekke, Galata Mawlawi Lodge,1857 (Oscanyan,1857)

In his work "Custom and Habits of the Turks," Albert Richard Smith describes a visit to a lodge in Pera where dervishes performed a dance. Smith stated that they entered an octagonal structure, and railings and balconies surrounded the central area of the structure. He also noted that some of the chambers were reserved for Christians. Smith mentioned that during his visit, he visited the mausoleum and purchased a copy of a

painting depicting the funeral ceremony, which he also included in his work. Additionally, another painting in Smith's work supports the impressions of the Mawlawi Lodge. In this painting, dated to the 1850s, the sema area surrounded by turned railings, wooden flooring, and galleries supported by wooden columns can be seen. (Smith, 1857, p. 93-96) (Figure 11).

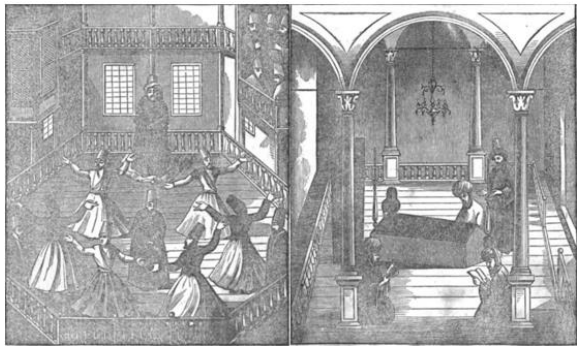

Figure 11. Sema and Sheikh Galip's Tomb at Galata Mawlawi Lodge (Smith, 1857)

Lennep's 1864 work depicts the semahane built for the sixth time. In the work, an octagonal prayer area is seen, and this area is bordered by wooden columns and turned railings, creating a gallery arrangement. Above the entrance door is a musician's gallery; opposite it, the Sheikh is positioned. The aligned windows, wooden craftsmanship, and decorative details stand out in the overall layout of the structure. However, the architectural features of the period need to be more adequately reflected, and details such as the sultan's and women's galleries have not been included. Therefore, the work inadequately reflects the architectural design of the period (Figure 12).

Figure 12. Performance of the Whirling Dervishes, Henry John van Lennep (Duru, 2012)

R. Arthur ARNOLD, in his 1868 publication From the Levant, the Black Sea, and the Danube, mentions the whirling dervishes as one of the places every traveler must visit in Constantinople. Arnold states that one facade of this Mawlawi Lodge, located on the main street of Pera, is green and has gilded Quran verses and a crescent on the entrance door. Arnold states that the Sema ceremony is performed in an octagonal, gallery-style hall, likened to a dance hall. While mentioning the presence of the galleries and low iron railings surrounding the sema area, he reports that these galleries are interrupted in the mihrab section. He indicates that the mutrib gallery, where musicians perform, is located in the protruding gallery opposite the mihrab. Additionally, he mentions a women's gallery surrounded by wooden latticework on three sides, a gallery for foreign visitors, and an ornate sultan's gallery. He emphasizes that the remaining areas are filled with Turkish viewers (Arnold, 1868, p. 36-37).

In his work titled "A Cruise in the Bosphorus, and in the Marmora and Aegean Seas," Townsend shared his observations about the Galata

Mawlawi Lodge and supported them with an illustration. He mentioned that the dervishes danced in a room covered by a large, circular dome with an octagonal shape. He also stated that the sema area was covered with polished parquet and surrounded by galleries. In the visual included in the work, an octagonal prayer area surrounded by wooden railings and columns, row windows, and inscriptions can be seen (Townsend, 1875, p. 91-92) (Figure 13.)

Figure 13. Dance of Dervishes (Townsend,1875)

In 1908, Anna Grosser Rilke, who was in Istanbul, stated that she was deeply affected when she first watched the Mawlawi dervishes, whom she described as dancing dervishes. Rilke described the sema area as "a dance floor surrounded by wooden railings and not very large. " With this definition, she referred to the spatial arrangement of the semahane. She also mentioned the presence of a balcony, slightly elevated from the ground, where the audience and the music ensemble are situated (Rilke, 2011, p. 225).

4.2. Yenikapı Mawlawi Lodge

Yenikapı Mawlawi Lodge, known today as Mevlana Gate, was established in the summer garden of Malkoç Efendi, surrounded by vineyards, parks, and meadows. Located in the out-of-wall settlement area of Istanbul, the Yenikapı Mawlawi Lodge is the largest in the city. In the mystical cosmology of Mawlawi Sufism, sacred numbers hold an essential place, and it is observed that these numbers are also reflected in the order's architectural order. The number 9 and its multiples, considered sacred, have been a criterion for determining the number of cells in Mawlawi lodges. The influence of the number 18, representing Nezr-i Mevlana, on the architectural structure of the Yenikapı Mawlawi Lodge is evidenced by 18 cells and 18 wooden columns surrounding the sema area (Işın, 2014, p. 311-312). In the works of Joseph von Hammer, Mary Adelaide Walker, E.A. Grosvenor, and D. Coufopoulos, it has been reported that there is a Mawlawi lodge in Yenikapı. Still, no information has been found regarding its spatial organization.

In the work "Suprêmes visions d'Orient" by Pierre Loti and Samuel Vıaud, the Yenikapı Mawlawi Lodge is described in detail. It is reported that in Ramadan of 1913, they were invited to dinner at the lodge of the spinning dervishes outside the walls, and they noted that not everyone could quickly enter there. When they entered a large dining room, they reported that the walls were adorned with inscriptions and that they gathered around a small table in this room, which was covered with wooden flooring. Later, they stated that they were taken to the divanhane and that these places were arranged in a manner they referred to as "Eastern style." They reported that after the Divanhane, they went to the tekke's mosque to watch the

ceremony and that a place was reserved for them in the gallery. Travelers may have meant "mosque" by using the term "cami" (mosque in Turkish), as it is known that prayers were performed in the semahane before the mukabele. Additionally, they mentioned that the circular section in the center of the semahane forms the sema area surrounded by railings and that this ritual, which they define as a religious dance, is performed in front of a grand funeral decoration, thus touching upon the relationship between the semahane and the tomb (Duru, 2012, p. 933-934).

4.3 Beşiktaş and Bahariye Mawlawi Lodge

The Beşiktaş Mawlawi Lodge was built in 1621 in the "Kazancıoğlu Gardens," a recreational area located between Beşiktaş and Ortaköy, where Çırağan Palace stands today. Information about the Mawlawi Lodge and semahane can be found in Evliya Çelebi's Seyahatname and in a miniature believed to belong to the Beşiktaş Mawlawi Lodge. According to Evliya Çelebi, the first Mawlawi lodge was not fully equipped but consisted only of a mosque and a semahane. Additionally, Evliya Çelebi states: "The Beşiktaş Lodge is located by the sea, and its semahane overlooks the sea, making it a high Mawlawi Lodge." There is no equal to Istanbul, neither here nor elsewhere. The Semahane is a pearl with a vaulted ceiling, but the current masters cannot build the central dome; the poor cells are on the western side. The courtyard of the Semahane is adorned entirely with walnut panels and is decorated on three sides with crystal and agate stones'' (Tanrıkorur, 2000, p.157). However, the Mawlawi Lodge has been demolished during various urban development and reconstruction processes in the surrounding area.

In the miniature, the flooring of the sema area is covered with polished wooden panels extending in the direction of the qibla, and it is observed that the wooden panels are nailed to the flooring beams. Additionally, Evliya Çelebi states that the floor of the Sema area is made of walnut, and surrounding the Sema area is the spectator gallery known as "züvvar," which features wooden columns with a square cross-section painted in green and brown, serving as railings at the edge of the gallery. The ceiling of the audience gallery has been painted burgundy and divided into squares with white strips. The gallery layout depicted in the miniature differs from other Mawlawi lodges. The semahane in the miniature is designed to be a single story high, at the height of a human being from the ground. The ceilings of the galleries are covered with vertically laid wooden panels painted with a special dye, and small arches have been placed at the top. It is covered with yellow gilding and inscriptions (Tanman, 1998, p.194). On the sea side of the semahane, there is a mihrab niche with a circular arch; to the right, (west) of the sama area is a gallery for the audience and a lower minbar for the recitation, and on the east side, there is a musician's gallery. The ceiling of the sema area is covered with a wooden dome adorned with indigo blue and gilding (Tanman, 1998, p.189-195) (Figure 14).

Figure 14. Miniature of the Beşiktaş Mawlawi Lodge (Işın et al., 2010)

Gemelli Careri stated that he visited the Beşiktaş Mawlawi Lodge, located by the Bosphorus, to see the lodge of the whirling dervishes. In his work, he mentions watching a dance performance in a room where everything was painted and decorated (Careri, 1719, p. 309). On the other hand, Joseph von Hammer mentioned that he visited the Mawlawi Lodge located right by the sea and that this lodge is one of the most visited places in Istanbul.

Pardoe mentions the Mawlawi Lodge in the "Palace of Beshik-tash" section of her work "The Beauties of the Bosphorus." Pardoe has stated that it is a temple built by Sultan Selim on the palace grounds. She has been reported that this beautiful mansion, which looks like a tulip and is dazzling, belongs to the whirling dervishes (Pardoe, 1839, p. 19) (Figure 15).

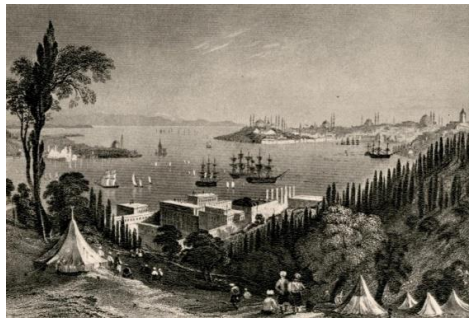

Figure 15. Beşiktaş Palace (archives.saltresearch.org, 2024)

Established as a continuation of the Beşiktaş Mawlawi Lodge, the Bahariye Mawlawi Lodge was built on the Bahariye shore, covered with meadows, between Eyüp and the end of the Golden Horn. The Mawlawi Lodge, with its location and exterior appearance, resembles the surrounding groups of civil structures. The mausoleum-semahane structure of the facility has been designed to be two stories high and made of wood. In the semahane, which has a square plan with beveled corners, there are 18 wooden columns attributed to Nezr-i Mevlana and commonly seen in Mawlawi lodges. However, the location of the semahane by the seaside has rapidly deteriorated the structure due to intense moisture and humidity. During the reign of Sultan V. Mehmet Reşad, various changes were made to the mass characteristics and interior organization of the building during the repair works carried out in 1910 (Azsöz, 2018). Having participated in the Mawlawi ceremony in 1907, Vicente Blasco Ibanez detailed his observations in his Oriente work. It states that ceremonies are held at the Bahariye Mawlawi Lodge on Wednesdays and at the Galata Mawlawi Lodge in Pera on Fridays. However, unlike his predecessors, Ibanez visited the Bahariye Mawlawi Lodge, which he

described as "a lodge lost among cemeteries and abandoned gardens." He described the Mawlawis as "dancing dervishes" and stated that "among the Muslim sects of the East, the dancing dervishes are the most aristocratic." (Ibanez, 2009, p.74).

Ibanez noted that on the Mawlawi Lodge's eastern facade, large windows are covered with glass cages and the Mawlawi Lodge pier. While waiting for the ceremony, he presented a picturesque scene by saying, "I watch the point where the azure waters of the Golden Horn meet the waters of Kağıthane, shimmering under the golden rain of the midday sun." In his work, he states that a gallery is hidden behind a thick cage on the upper floor of the semahane, similar to the choir area in churches. He added that this section, which he described as the mutrib gallery, is located above the entrance door, opposite the window overlooking the blue Golden Horn, next to the latticed gallery, and that the music ensemble sat on yellow mats (Ibanez, 2009, p. 62).

He explained that there is a tomb within the Ibanez Mawlawi Lodge: "A white and red railing joins the wooden columns supporting the upper galleries, and between the railing and the wall are the graves of dervishes who have reached the rank of sainthood and passed away." Additionally, it is mentioned that these railings surround the middle part of the mosque, separating the sema area from the visitors and creating a kind of large dance hall. He also mentioned that the flooring of the sema area is polished, spotless wood (Ibanez, 2009, p.64).

4.4. Kasımpaşa Mawlawi Lodge

The Kasımpaşa Mawlawi Lodge is located in the Sururi neighborhood of the Kasımpaşa district, which is part of the Beyoğlu district. The Mawlawi

Lodge, built between 1623 and 1632, is in the middle of the Kasımpaşa Stream Valley, surrounded by independent wooden houses with vineyards, vegetable gardens, and flower gardens. During the periods when the Galata Mawlawi Lodge was not in use, it became a popular spot for visitors. Having a two-story structure with a gallery, the Kasımpaşa Mawlawi Lodge has a plan layout close to a square rectangle. The corners of the sema area are arranged in a square shape, beveled at 45 degrees. The gallery on the upper floor continues above the mihrab and, with the ceiling decorations in the center of the prayer hall, gives the space a unique character. The ceiling decorations include classical elements of the Empire style, musical instruments depicting Mawlawi culture, and banners symbolizing Ottoman identity. These features reflect the Westernization movements that began during Mahmud II's reign in architecture (Tanman, 1990, p. 500-506).

E. Frossard mentions the dervishes in his work "The French Pastor at the Seat of War (Being Letters Written from the East)," During his eastern journey dated 1854-1855, he mentioned that he visited the lodge in Kasımpaşa to attend a gathering of dervishes who were seeking a celestial ecstasy in the intoxication of a mystical waltz and the horror of pain with fanatic cries and that he was received with great kindness there before leaving Istanbul (Frossard, 1856, p. 294). Frossard states that this lodge, built after the great Tophane fire that damaged the Galata Mawlawi Lodge, is a typical Turkish house within a clean garden filled with magnificent flowers. He also mentions a fountain carved from white marble and painted in various colors in the garden. Frossard, who describes the interior of the Tekke as "filled with the pleasant scents of rural life and a captivating

landscape," conveys that this scenery extends far beyond Kasımpaşa. They mention that they entered an octagonal hall after removing their shoes, where foreigners and visitors sat in the outer circle. At the same time, the dervishes gathered in a circular area designated for them. It states that the semahane has a gallery structure and a section on the upper floor where foreign visitors sit on a balcony, and a group of musicians perform music (Frossard, 1856, p. 294-295).

In his work titled "From Finland to Greece or Three Seasons in Eastern Europe," Harriet Cornelia Hayward mentioned watching the worship of howling and dancing dervishes and likened it to a pagan show. She noted that the Mawlawi Lodge is located in a valley. Based on the author's descriptions of the structure and location of the lodge, it is understood that she visited the Kasımpaşa Mawlawi Lodge. The author describes the sema area by stating that the musicians were in a gallery, while the dervishes performing their duty were sitting in an area surrounded by railings in the middle of the room (Hayward, 1892, p. 236-239).

4.5 Üsküdar Rifai Lodge

The ceremonies held at the Rifai Lodge located in Üsküdar on the anatolian, and the "burhan" (In the Rifai dhikr, it is described as a ritual where the sheikh, at the moment when the rhythm accelerates, pierces various parts of the dervishes' bodies with tools such as a sword, a spear, or a needle) rituals performed during these ceremonies have attracted the attention of travelers and artists, finding a place in various works. Guillaume Martin described the lodge of the Üsküdar dervishes performing dhikr in his work as a tiny, dilapidated mosque. Rilke, on the other hand, noted that this structure was smaller than the lodge in Pera. At

the same time, Harriet Cornelia Hayward described this lodge as indistinguishable from a simple hut, an old wooden house. She said they watched the ceremony held at the lodge from a gallery on the upper floor. Additionally, she mentioned a women's section surrounded by a cage on the upper floor (Hayward, 1892, p. 239-242).

A watercolor painting by an artist from the circle of Konstantin Kapıdağlı depicts a Mawlawi Sheikh visiting the Rifai lodge and Western visitors observing the ceremony. In the lodge, the wooden ceiling and flooring, which are in harmony with a rectangular floor plan, stand out, while the regularly arranged windows illuminate the space. The mihrab niche in the direction of the qibla emphasizes the worship function of the space; various tools and inscriptions used in dhikr on the walls stand out as details that strengthen the building's religious and mystical identity (Figure 16).

Figure 16. Rifai Dervishes Lodge, 1809 (collections.vam.ac, 2024)

Two Scandinavian travelers who visited Istanbul in 1842 also shared their observations about the dervishes. K. Hamsun refers to the Rifai dervishes as "the dervishes who chant Hu" and notes that the tekke he visited to observe these dervishes opened into a large hall with walls adorned with Quranic verses and decorative embellishments. Hamsun also stated that a

wooden screen separated the prayer area from the visitors' gallery and that he followed the service from a wooden bench located behind this screen (Hamsun & Andersen, 2024, p. 41). Hans Christian Andersen described the Rifai lodge, which he called "the dervishes who scream," as a poor and ordinary house. Andersen refers to the Rifai lodge not as a "lodge" but as a "temple" and mentions a gallery with a covered with lattice for women to sit in the upper part of the square-shaped hall. He noted that on the lower floor, a wooden curtain made of rough-hewn planks surrounded the area where the dance would be performed. He also mentioned that there was a mihrab niche in the center of the wall, and on the wall, there were framed Turkish inscriptions, tambourines, bells, and barbed iron whips (Hamsun & Andersen, 2024, p. 120).

The French traveler Gustave Flaubert mentioned in the Istanbul section of his work "Voyage en Orient 1849-1851" that he visited the Galata Mawlawi Lodge and the Rifaî Lodge. Flaubert described the Rifai lodge as a square room and mentioned that railings were running the length of the room and a prayer niche inside (Flaubert, 2018, p. 354).

Fernand Schickler reported that he watched the rituals of the dervishes performing dhikr in Üsküdar on Thursday. Schickler stated that the exterior of the tekke has no remarkable features and that the ceremony is performed in a single hall surrounded by wide columns and railings. Inside, he noted that they stood on a low platform and that the mihrab was located to the east; for women, there was a gallery covered with lattice above. Schickler described the music performed here as "wild" and expressed that he found this ritual, which he referred to as a "dance," "terrible" and "chaotic" (Schickler, 1863, p. 60).

Theophile Gautier, in the chapter "Zikr-performing Dervishes" of his work, shared his observations on the Rifai dervishes, their lodges, and their rituals. Gautier noted that the hall where the dervishes perform their dhikr is not round like the Mawlawi lodge in Beyoğlu but rather in the shape of a parallelogram, lacking any architectural features. He also reported that they watched the ceremony behind wooden bars and at the center of bare walls are as a mihrab and inscriptions, above the mihrab (Gautier, 1875, p. 144).

D'Ohsson, who served at the Swedish embassy in Istanbul, briefly mentions the Turks' fondness for music in his work "Tableau général de l'Empire Ottoman." Additionally, he included a painting in his book depicting the interior of the Rifai lodge in the 18th century, painted by a local artist from the Kapıdağı region (Zarcone, 2013, p. 56) (Figure 17).

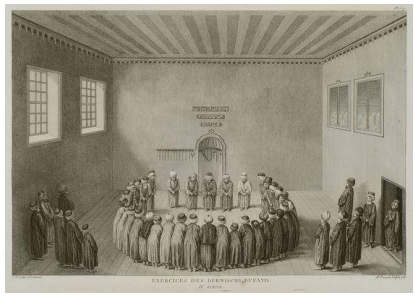

Figure 17. Rifai Lodge**,** Mouradgea D'ohsson (gzt.com, 2024b)

The work titled "Cérémonie des services hurlers de Scutari" (Ceremony of the Howling Dervishes of Üsküdar) by the French Orientalist painter Albert Aublet, who visited Istanbul and Bursa, and the painting he produced from this work in 1882, depicts the dhikr ceremony and healing ritual of the Rifai order. The work accurately reflects the spatial arrangement of the prayer hall, including architectural and decorative

elements such as the mihrab, carpets spread on either side of the mihrab, turned wooden railings, drums hanging on the walls, and the inscriptions commonly found in dervish lodges, as well as the tools used during dhikr. In this respect, the realistic depiction of the spatial formation of the work serves as an essential resource for researchers. Additionally, the East, seen as exotic and mystical by Westerners, holds great importance in transmitting Sufi practices (Tanman, 2023, p. 29) (Figure 18).

Figure 18. Ceremony of the Whirling Dervishes of Scutari, Albert Aublet (Tanman, 2023)

Court painter Fausto Zonaro found the picturesque nature, architecture, ceremonies, rituals, mosques, lodges, and convents of Istanbul and Üsküdar, which preserve the originality of the East, incredibly fascinating. For this reason, Zonaro participated in these events and documented his observations in his works. Rifai dervishes and lodges in Üsküdar have been among the subjects that attracted the artist's interest. Zonaro, in his memoirs, states that he saw the Rifai dervishes in Üsküdar during his early years in Istanbul and found himself at the lodge every Thursday at three o'clock (Sarıdikmen, 2021, p. 82). Four paintings by Fausto Zonaro related to the Rifai Lodge have been identified. The most famous of these is the painting titled "I Dervisci Rifai o Dervisci Urlanti" (Rifai Dervishes or

Howling Dervishes), dated 1890, in which the artist's wife, daughter, and himself are reported to be among the praying figures. In this work, which features a crowded composition set in an interior space, it is noteworthy that Zonaro distinguishes himself from foreign visitors and depicts himself as a dervish (Germaner& İnankur, 2002, p. 200). In the work, a schematic area with a square-rectangular plan and square-sectioned columns is observed. On the columns are inscriptions and oil lamps; on the right is a mihrab, and in front of the mihrab is a reading platform. In the east and north directions, there are spectator galleries. Additionally, the area with a lattice depicted to the right of the mihrab is thought to be the women's gallery. It is stated that Zonaro successfully conveyed the enthusiasm of the dhikr in this work but did not remain realistically faithful to the architectural elements (Tanman, 2023, p. 32) (Figure 19).

Figure 19. Rifai Dervishes or Howling Dervishes (Germaner & İnankur, 2002)

Zonaro created this famous work in his workshop located in Akaretler, Istanbul. His wife, Elisa, took a photo of Zonaro while he was painting the picture, and Zonaro created a second painting in the form of a self-portrait based on this photo (Sarıdikmen, 2021, p. 94).

Descriptions of the Rifai Lodge and its rituals can also be found in an English magazine published in 1876 and an unnamed newspaper in 1880. The engraving was published in the 1876 issue of The Graphic: Illustrated Weekly Newspaper, titled "The Eastern Question: Howling Dervishes at Scutari." It has been published under "From a sketch by our special artist at Constantinople." The other engraving published in 1880 is "The Howling Dervishes of Scutari Healing the Sick." In both engravings, the ritual performed by the Sheikh, walking over the patient accompanied by prayers, is depicted and referred to as "devsiye" or "shifa qiyam." From an architectural perspective, both engravings feature square-sectioned columns, a mihrab, wooden railings, and musical instruments hanging on the wall. In the first engraving, the wooden flooring on the ground and the balcony on the upper floor are observed, while in the second engraving, the gallery for the congregation, separated from the prayer area by wooden railings, is seen (Zarcone, 2012, p. 197) (Figure 20).

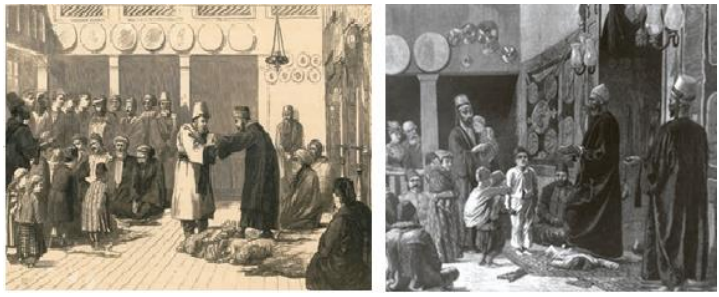

Figure 20. “The Eastern Question: Howling Dervishes at Scutari” (Left) and “The Howling Dervishes of Scutari Healing the Sick”. (Right) (Tanman, 2023)

Another work depicting the Rifai Tekke belongs to the Orientalist painter Rudolf Ernst, who visited Istanbul in 1880. Although the original version of this painting depicting daily life in the tekke is still being determined, a

black-and-white image of the work was published in the French magazine La Famille in 1897. The painting depicts dervishes eating around a circular elevation in the main hall of the Rifai Lodge. In the work, the mihrab with muqarnas, the candlesticks on either side of the mihrab, the square-section wooden columns, the wooden turned railings, the audience gallery on the upper floor, the inscriptions hanging on the wall, and the tambourines are noteworthy (Zarcone, 2012, p. 202) (Figure 21).

Figure 21. R. Ernst's 1897 engraving titled The Charity of the Üsküdar Dervishes (Zarcone, 2012)

Ibanez includes his observations on the Rifai dervishes and their lodges in the section on the dhikr ceremony of his work. He mentioned that the tekke is located in a Turkish neighborhood with the same name as the neighborhood, and it is situated in a vast plain shaded by sycamore trees lined with tombs. He also stated that the Rifai Tekke does not have a spacious and airy structure like the place known as the "tekke of the dancing dervishes," but rather a hall with a curved and low ceiling supported by wooden columns devoid of decorations (Ibanez, 2009, p. 122). It is reported that there is a women's gallery on Tekke's upper floor,

and European female travelers observed the dhikr from there (Ibanez, 2009, p. 123).

4. Conclusion and Suggestions

The tekkes, lodges, and Mawlawi Lodges, which are an inseparable part of the cultural and religious fabric of the Ottoman Empire, have attracted the interest of many European travelers and artists. With a curiosity towards the mystical atmosphere of the East, travelers, and artists who visited these places observed many elements, from etiquette and rituals to clothing, architectural details, and ceremonial practices, and conveyed them in their works. These works not only reflect the unique characteristics of architectural structures but also hold great value in providing essential clues for understanding the cultural fabric of the period. In this context, the study has examined the Mawlawi lodges and tekkes of Istanbul from the perspective of Europeans. It has provided unique information regarding the spatial organization of these structures. Galata Mawlawi Lodges and the Rifai Lodge in Üsküdar are among the most visited lodges. It is mentioned in various sources that when the Galata Mawlawi Lodges became unusable during specific periods or the ceremony days did not coincide with the travelers' visit times, the travelers alternatively visited the Kasımpaşa Mawlawi Lodges. Additionally, it has been documented that the Mawlawi lodges in Yenikapı and Bahariye were also visited from time to time. The Mawlawi lodges, frequently visited by European travelers, create a unique architectural typology and are generally located on large plots of land. In the works examined within the scope of the study, it is stated that the location of the Mawlawi lodges plays a decisive role in spatial organization and functional distribution. In terms of building mass,

it is emphasized that the Mawlawi Lodges bear similarities to traditional Ottoman residential architecture. The semahane, the central element in the design of a Mawlawi Lodge, is the main space where worship and rituals are performed. The spatial formation of the semahane has arisen from the performance of the ritual with circular movements and the necessity of using the structure as a place of worship. In this context, the standard view that emerged from examining travelogues and engravings from different periods is that the spatial organization of the semahane developed by the ritual order of the ceremony. In the works examined within the scope of the study, it has been reported that there are octagonal in the Galata Mawlawi Lodges, circular in the Yenikapı Mawlawi Lodges, square with chamfered corners in the Bahariye and Kasımpaşa Mawlawi Lodges, and rectangular sema areas in the Üsküdar and Beşiktaş Mawlawi Lodges. Among the elements frequently emphasized in travelogues and engravings, the musicians' gallery on the upper floor and the women's gallery covered with lattice, stand out. These sources convey that there are no Western elements in the internal arrangement of the semahane and that the spatial organization is shaped entirely in accordance with the sect's traditions. The wooden columns and railings surrounding the sema area create a physical boundary between the center of the space and the audience galleries. Due to the intertwining of the ritual with music and its theatrical element, European travelers have often described this spatial organization as resembling a theater stage or a dance performance. Similarly, the dhikr and healing rituals in the Rifai Lodges located in Üsküdar, known as "howling dervishes," have also been described in travelogues with a mystical and exotic narrative, emphasizing the impact

of the rituals on the space. Travelers have noted that the Rifai Lodge generally has a simple, unadorned, four-cornered room. The mihrab is among the elements conveyed in inscriptions hanging around the mihrab and musical instruments used during dhikr.

In conclusion, Mawlawi and Rifai dhikrs include music and rhythm. The Mawlawi ceremony, based on spinning movements, requires a circular spatial arrangement, whereas the Rifai dhikr, performed with standing movements facing each other, necessitates a rectangular space. As a musical ceremony, the movement in sema and dhikr has shaped the formation and function of the space in Mawlawi and Rifai lodges. In this context, the study exposes the Mawlawi lodges and Rifai lodges of Istanbul within the framework of Western perceptions and descriptions, offering a perspective on the architectural formation of these places. Therefore, the observations of European travelers and artists serve as an essential resource for understanding the architectural features of Istanbul's lodges and the spatial reflections of the sect rituals. The information obtained clarifies the spatial organization of these lodges as music venues specific to the Ottoman Empire.

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The article complies with national and international research and publication ethics. Ethics Committee approval was not required for the study.

Author Contribution and Conflict of Interest Declaration Information

All authors contributed equally to the article

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Conservation of Architectural Heritage: Traces of History

Chapter 19

Consolidation and Reinforcement Techniques for Restoration of Masonry Built Heritage: Practices and Problems

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1. Introduction

Today, deriving specific patterns by comparing the vast data produced by science and exploring the relationships and connections among them is a fundamental challenge. Similarly, it can be assumed that specific findings can be obtained by examining the relationship between theory and practice in conservation efforts. It is expected that cultural heritage conservation policies will identify appropriate tools, methods, and techniques that can preserve the context, authenticity, form, proportion, material, and technique of cultural assets while involving minimal intervention, thus ensuring sustainable conservation. Conservation methods and techniques vary in content at the urban or building scale. Interventions that ensure the long-term sustainability of monumental and civil architectural heritage should be determined according to the unique conditions of each building. It is essential to preserve the historical, artistic, aesthetic, authenticity, socio-cultural and folkloric, technical and technological, rarity and uniqueness, integrity, and documentation values that constitute the conservation criteria of the works (Şahin, 2004; Kıran Çakır & Bozacı, 2022).

There is a substantial theoretical accumulation produced by the international community and national legislation on this subject. Türkiye has a long-standing heritage of preserving historical artifacts dating back to 1869, during which many conservation projects have been carried out. Similarly, in the last fifteen years, there have been numerous ongoing or completed restoration projects at the national level. However, studies comparing the data resulting from restoration practices with theoretical knowledge or models are limited. In this context, this study addresses the

consolidation and reinforcement techniques related to the restoration of historical masonry structures and the challenges associated with their application.

To this end, international conservation documents and the legal framework in Türkiye were initially examined. Theoretical information regarding the scales of intervention for conservation, methods and techniques for restoration, and intervention processes were scrutinized to draw conclusions. Additionally, through archival and field studies conducted on selected examples from Istanbul and Edirne, the applications and problems of consolidation and reinforcement techniques in historical masonry structures were investigated. By analyzing the data obtained from international conservation documents, national legislation, archival, and field studies, relationships and connections among the data were explored. Thus, based on the relationship between theory and practice, the study aims to provide insights that contribute to developing more effective and sustainable solutions in the application processes of consolidation and reinforcement techniques. This work aims to identify practical challenges based on the national and international documents created regarding consolidation and reinforcement techniques but does not aim to present definitive solutions to these challenges.

2. Material and Method

The methodology of this study is based on document analysis, archival research, and field investigations. Initially, original documents related to international (UNESCO and ICOMOS) and national conservation texts, which serve as data sources for the conceptual and theoretical parts of the research, were collected and reviewed chronologically. In these

documents, theoretical information regarding intervention techniques for restoration was primarily examined. Subsequently, the definitions of consolidation and reinforcement techniques, along with their intervention approaches and processes, were investigated. The intervention process encompasses topics such as inspections, surveys, research and documentation, analysis and evaluation, diagnosis and preservation approaches, interventions, recording and documentation, and monitoring and maintenance

In the next phase, field and archival research was conducted on historical masonry structures that have been restored or are currently undergoing restoration over the past fifteen years, selected as samples. Five completed restoration projects and three ongoing projects in Istanbul and Edirne were chosen as the sample (Table 1). In the study, the applications of consolidation and reinforcement techniques involved in sample restoration practices have been examined. The findings were presented based on written, illustrated, and photographic document analysis from the archival research, as well as observation, examination, and documentation during the field investigations. In the archival research, various documents and visuals were examined, including project and report documents, material and conservation reports, minutes from scientific committees and consultants' meetings, inspection reports, site logs, implementation drawings and photographs, and videos. During the field research, observations and examinations were conducted, utilizing digital cameras, laser measuring devices, and traditional measuring tools for identification and documentation.

Finally, the findings identified through document analysis, archival research, and field investigations were interpreted and evaluated. Conclusions were drawn by exploring relationships, and comparisons between theoretical conservation documents and the findings from practical applications.

Table 1. Examined sample structures.

No	City	Building Name	Construction Year	Application
1	Istanbul	Bayezid II Bath	1500-1507	Completed
2	“	Darüşşifa Building of Süleymaniye Complex	1550-1557	Completed
3	“	Tabhane Building of Süleymaniye Complex	1550-1557	Completed
4	“	Fatih Sultan Mehmet High School	1873	Completed
5	“	The Building No. 5 of Haydarpasa Train Station	1908	Ongoing
6	“	Akşemsettin Primary School	1925-1926	Completed
7	Edirne	Macedonia Tower	M.S. 2.-10. yy	Ongoing
8	“	Edirne Reji Buildings	19. yy	Ongoing

3. Consolidation and Reinforcement Techniques in Restoration Practices According to International and National Documents

In the 19th century, different ideas regarding the approach to restoration practices were proposed by Viollet-le-Duc, Scott, Ruskin, and Morris (Viollet-le-Duc, 1866, 1990; Scott, 1850; Ruskin, 1889, 1909; Morris & Webb, 1877). Boito, who attempted to reconcile all these conflicting views, represents the transition between the classical restoration understanding of the 19th century and the modern approach to restoration (Boito, 1883, 1884). In addition to the restoration approaches proposed in the 19th century, a series of decisions concerning the protection, preservation, conservation, and restoration of cultural heritage were made by experts who gathered at international meetings in the post-World War

I period (IMO, 1931; CIAM, 1933; PAU, 1935). The destruction caused by the Second World War on Europe's historical and cultural heritage and the responsibility of restoring these structures led to the emergence of new ideas and different perspectives on protection, preservation, conservation, and restoration. However, the modern and scientific approach to restoration matured with the Roman school represented by Brandi (Brandi, 1963) and the Florence school represented by the works of Baldini and Casazza (Baldini, 1978; Casazza, 1981). Undoubtedly, the 1964 Venice Charter represents a significant milestone in this regard (ICOMOS, 1964). It made pioneering efforts for the protection of cultural heritage at the Council of Europe (COE, 1965, 1975). Taking all these efforts into account, the UNESCO conventions and ICOMOS charters established internationally accepted fundamental documents for the protection, preservation, conservation, and restoration of cultural heritage. In Türkiye, the first conservation texts were the Regulations on Antiquities (Âsâr-ı Atîka Nizamnâmesi) issued in 1869 and 1874, which were amended in 1884. Some deficiencies in the 1884 regulation led to the enactment of a new regulation in 1906 (BOA, İ..KAN., 4/17; İ..MF.., 12/14; Düstur, 1. Tertib, c. 8, s. 506.515). This regulation remained in force until the Historical Artifacts Law enacted in 1973 (Resmi Gazete, 6 Mayıs 1973, No:14527).

Currently, the fundamental framework for the conservation of cultural heritage is established by the Law on Conservation of Cultural and Natural Property No. 2863, which was enacted in 1983 and has been updated with amendments to date (Resmi Gazete, 23 Temmuz 1983, No:2863). Türkiye's conservation legislation consists of Law No. 2863

and the regulations, directives, circulars, and decisions from the High Council for the Conservation of Cultural Property published in its context. Additionally, Türkiye is a party to the fundamental documents accepted by UNESCO, ICOMOS, and the European Union related to the protection, preservation, conservation, and restoration of cultural heritage, including conventions, charters, and recommendations. This section is based on international documents and those that form the legal framework in Türkiye, in alignment with the objectives of this study.

3.1. Definitions and Explanations

According to these documents, different scales of conservation interventions are proposed to ensure the sustainability of cultural heritage while preserving its authenticity and characteristics in a holistic manner. Fundamental documents outline that conservation interventions can be classified into maintenance, rehabilitation, and restoration (UNESCO, 1972, 1976; ICOMOS, 1931, 1964, 1982a, 1982b, 1987, 1990, 1993, 1996b, 1996c, 1999a, 1999b, 2003a, 2003b, 2008, 2010, 2011, 2013a, 2013b, 2017, 2021; KTVKYK, 1999). Intervention scales must be determined based on the unique conditions of each work, ensuring the long-term sustainability of preservation and conservation.

Restoration is the practice of repairing and improving a damaged object, single building, or group of buildings to return it to its known condition from a previous time, based on reliable documents and information, with discernible minimum intervention. It involves any intervention aimed at rectifying the deterioration, damage, or impairment of the work to promote long-term and sustainable preservation. The purpose of restoration is to maintain and reveal the aesthetic and historical values of

the monument, grounded in respect for the original materials. The restoration process is highly specialized and should be conducted through interdisciplinary collaboration and scientific methods by a qualified team. Typically, multiple intervention techniques are used in restoration practices (KTVKYK, 1999; KTB, 2004; ICOMOS, 1964, 1982a, 1982b, 1987, 1999a, 1999b, 2003a, 2003b, 2008, 2010, 2011, 2013, 2021; UNESCO, 1972, 1976; Resmi Gazete, 16 Haziran 2022, No:31868). As the degree of damage increases, the scope of interventions expands (ICOMOS, 2013b) and their nature diversifies. The degree of intervention increases from the liberation of non-original additions that do not meet any conservation criteria to the reconstruction of materials, structural components, elements, or systems. Interventions should stop at the point where estimates begin; any indispensable additional work should differ from the architectural composition and bear a contemporary mark (ICOMOS, 1964).

Many national and international cultural heritage conservation documents address intervention techniques related to restoration. The intervention techniques for restoring cultural heritage include emergency measures, liberation, consolidation, reinforcement, reintegration, renovation, reconstruction, moving, and archaeological restoration (anastylosis) (Resmi Gazete, 16 Haziran 2022, No:31868; ICOMOS, 1931, 1964, 1982a, 1982b, 1996c, 1999a, 2003a, 2003b, 2008, 2010, 2013a, 2013b, 2017, 2021; UNESCO, 1976; KTVKYK, 1999; KTB, 2015).

In conservation documents, theoretical information regarding all intervention processes, methods, and principles, including consolidation and reinforcement techniques, is provided for post-application tasks. It is

often observed that consolidation and reinforcement are used interchangeably in these documents. The initial evaluations regarding consolidation techniques can be found within the restoration principles established at the end of the 19th century. According to Boito, consolidation is preferable to repair, and repair is preferable to restoration (Camillo Boito, 1883).

Consolidation refers to the processes aimed at preventing and slowing down the deterioration of cultural heritage by increasing the strength of materials, structural components, or load-bearing systems and improving their existing physical and mechanical properties. Based on reliable information obtained through the consolidation technique, a damaged structural component, element, or system can be improved through discernible minimum intervention, restoring it to its originally intended integrity (ICOMOS, 1931, 1964, 2003b, 2013b, 2017; KTB, 2015).

Reinforcement refers to the processes carried out to enhance the structural performance and safety of a structural element, the assembly of elements, or the entire building. In this context, it encompasses all structural interventions made to improve or increase the safety level of an existing structure in accordance with functional changes or standard requirements. Structural reinforcement is executed using modern techniques that have been validated by scientific data and experiments in situations where traditional methods are insufficient during conservation and construction processes. These interventions can encompass a specific part of the structural components or the entire load-bearing system and aim to elevate the safety level of the building to the minimum level provided during the initial construction phase. Additionally, these

interventions should be designed in a way that optimally preserves the relationship between authenticity and safety, without compromising the architectural integrity of the structure (ICOMOS, 1964, 2003a, 2013b, 2017).

3.2. Intervention Process

The intervention process consists of inspection, survey, research and documentation, analysis and evaluation, diagnosis and preservation approach, interventions and principles, recording and documentation, as well as monitoring and maintenance activities. The extent and frequency of intervention should rely on transparent and defined intervention processes, supported by feasibility studies, and aligned with planning decisions (ICOMOS, 1964, 1996d, 1999a, 1999b, 2003b, 2011, 2013a, 2013b; ICOMOS & TICCIH, 2011). The research, examination, documentation, evaluation, and definition of conservation interventions for cultural heritage must reflect the unique characteristics of each structure (ICOMOS, 1982a, 1987, 2013b). All activities should be conducted by a specialized team from various disciplines, acknowledging that change and development are inevitable while respecting the cultural identity of society (ICOMOS, 1999b; UNESCO, 1970, 1972).

- **Inspection, Survey, Research and Documantation**

The purpose of conservation is to reveal the cultural values of a structure by enhancing the readability of its original design and historical integrity, staying within the framework defined by existing historical data (ICOMOS, 1964). All conservation efforts require an interdisciplinary approach, comprehensive scientific studies, systematic research, and a process of proposal development due to the unique characteristics and

complex histories of cultural assets (ICOMOS, 1993, 1999b, 2003a, 2003b, 2011; ICOMOS & TICCIH, 2011, 2013b; UNESCO, 1972).

Conservation efforts should be based on scientific research and evaluations, and research methods should be as non-destructive as possible. Detailed investigations should consider the form, construction technique, structure, material, and components of the cultural asset, as well as the technological, formal, cultural, and socio-economic aspects of its creation process and history. Knowledge of the asset's initial state, changes over time, events experienced, and current condition is also required. Before any intervention, the current state of the site should be documented in detail, and information and documentation that support conservation efforts should be produced at the necessary scale and quality. To lay a foundation for the methods of intervention required, it is essential to examine the intrinsic and extrinsic causes and problems of deterioration and damage. The information, documentation, and reports from the research and investigation findings should be recorded and archived (ICOMOS, 1964, 1987, 1993, 1996d, 1999a, 1999b, 2003a, 2003b, 2013b; ICOMOS & TICCIH, 2011). Identification, research, documentation, preservation, conservation, and appreciation of the meaning and values of cultural heritage are essential for the recognition and appreciation of its significance as cultural heritage (ICOMOS & TICCIH, 1993, 2003a, 2003b, 2011; UNESCO, 1972).

- **Analysis and Evaluation**

Conservation requires the combined application of skills in observation, inspection, survey, research, analysis, evaluation, and synthesis (ICOMOS, 1993, 2003a, 2003b, 2013b). The reliable identification of

appropriate treatment methods depends on the analysis and evaluation of both qualitative and quantitative research. Qualitative and quantitative analyses such as assessments of structural damage and material degradation, material and structural tests, inspections, and monitoring should be conducted. Analyses should also include historical and archaeological research, historical modifications, extensions, and past restorations. Multiple risks, both natural and human-induced, that could impact the cultural asset must also be analyzed. Data to inform diagnosis and treatment are obtained from historical documents, direct analysis of the structure, tests, and physical measurements conducted on-site or in laboratories, as well as experimental and numerical analyses. Non-destructive testing and experimental methods should be used in on-site work. This includes assessing the load-bearing capacity of the structural system, foundation conditions, and ground properties. Recommendations for intervention should be based on studies that clarify the causes of damage and structural deterioration (ICOMOS, 1999a, 2003a, 2003b, 2013b, 2017; Resmi Gazete, 13 Ocak 2024, No:32428).

The diagnosis must be reliable, and a foundational approach should be developed to guide interventions based on the analysis and evaluation of research findings (ICOMOS, 1995, 2013b). An analysis and evaluation report, supported by drawings, copies, photographs, and maps, should accompany the study. It should include information on the necessary tools, guiding principles, and intervention techniques to be applied (ICOMOS, 1964, 2003b, 2013b, 2017). Based on the findings, a work program and action plan should be developed, and relevant projects should be implemented accordingly. Project planning, implementation,

and monitoring processes related to the protection of architectural heritage should be evaluated within the specific legal framework of this system (ICOMOS, 1995, 2003a, 2013b). Documents, reports, and projects should be archived. Archives should be accessible for review and use by all experts and linked with the national cultural inventory, while adhering to copyright requirements (ICOMOS, 1993, 1996b, 1999b, 2013b).

- **Diagnosis and Conservation Approach**

Evaluations that determine the necessity, form, and quality of intervention should be based on qualitative and quantitative analyses. Direct observation, historical research, physical measurement, as well as numerical and experimental analysis results should be reconciled with each other (ICOMOS, 2003a; KTVKYK, 1999). The intervention approach and scope must consider the unique character of the cultural asset, the cultural and political significance attached to it, and the specific qualities of the site (ICOMOS, 1982a, 1987). All issues should be resolved in a manner that respects the structure's aesthetic and historical values as well as its physical integrity, adapting to current conditions and requirements (ICOMOS, 1999a).

When determining intervention options, the structure should be considered as a whole, with the diagnosis based on reliable data and thorough physical examination and analysis. Intervention should be minimized, aiming to best preserve the structure's cultural significance and importance (ICOMOS, 1999a). No action should be taken without first assessing the potential benefits and harms to the cultural asset (ICOMOS, 2003a, 2017). Changes made throughout history should be

respected and evaluated as architectural records (ICOMOS, 1982a, 1994, 1999b). All information obtained, including safety assessments, should be compiled into an explanatory report forming the basis of the conservation Project (ICOMOS, 2003a). Intervention should result from a strategy, action plan, and conservation/restoration project that adequately addresses architectural, structural, utility, and functional aspects (ICOMOS, 2003a, 2013b, 2017; UNESCO, 1976).

Conservation/restoration projects and applications should be carried out by a team of experts with the necessary knowledge and skills, with those responsible for administrative decisions designated, and official institutional approvals obtained (ICOMOS, 2003b, 2013b). To ensure sustainable conservation of heritage, authenticity and integrity should be preserved as much as possible, and an appropriate function should be assigned. If it does not harm the authenticity or require excessive intervention, the original function of the structure should be maintained (ICOMOS & TICCIH, 1987, 2011, 2013a, 2017; UNESCO, 1972).

- **Interventions**

The primary purpose of preservation and conservation is to protect the historical document value, authenticity, historical periods, aesthetic, physical, and historical integrity of a cultural asset in all its dimensions (ICOMOS, 1994, 1995, 1996a, 1999a, 2003a, 2013b, 2017). The spatial, formal, and structural characteristics, as well as the original position of the structure within its environment, which constitute its socio-cultural and historical identity, must be preserved (KTVKYK, 1999). Removing original components or elements of the structure, erasing or altering traces that have historical document value, is contrary to conservation

standards. Respect should be shown to original materials, techniques, and textures, avoiding any destruction, distortion, or damage to historical elements (ICOMOS, 1995, 2003a, 2013b, 2017).

Contributions from different historical periods attributed to the monument should be respected. Unless absolutely necessary, no period's elements should be removed to reveal those of another (UNESCO, 1976; ICOMOS, 1982a, 2013b). Proposed interventions should adhere to traditional methods and should not prevent access to traces embedded in the structure. Interventions should not mislead future research and studies or hinder future conservation efforts. Whenever possible, interventions should be reversible and renewable, allowing for replacement without damaging the original structure as new information becomes available (ICOMOS, 1992, 1995, 1996a, 1999a, 2003a, 2013a, 2013b, 2017; ICOMOS & TICCIH, 2011).

Interventions should consider the historical structure as a whole, paying equal attention to all materials, including supports and other components (ICOMOS, 1999a, 1999b, 2003a). Avoid, as much as possible, removing or altering any historical material, structure, or architectural element. Commitment to original materials, construction techniques, and surface textures is essential, with craftsmanship and application technology aligning as closely as possible with the initial construction, and traditional techniques and crafts should be preserved. The physical, chemical, and mechanical properties of materials used should be compatible with the existing structure, and new elements or parts should be distinguishable from the originals. The primary principle should be minimal intervention to retain existing materials and elements in situ as

much as possible (ICOMOS, 1992, 1995, 1999a, 1999b, 2017). Treatment should focus on the causes of damage rather than merely the symptoms. No action should be taken unless absolutely necessary, with the least invasive and most compatible technique selected between traditional and new methods (ICOMOS, 2003a, 2003b).

Each intervention must respect the original design, construction technique, and historical value of the structure and all its components, making efforts to preserve traces that will allow it to be understood in the future. Deteriorated structures should be repaired as much as possible rather than replaced unless absolutely necessary. Safety and durability should be ensured with minimal harm, and the condition of the structure after intervention should be analyzed (ICOMOS, 2003a). Dismantling and reassembling should only be used as an additional option when alternative conservation methods are not feasible or could potentially cause harm due to the condition of the structure and materials (ICOMOS, 2003a; ICOMOS & TICCIH, 2011).

Natural wear should be respected as evidence of time. If removing these elements would cause harm, it should be accepted that irreversible physical and chemical changes must be preserved in their existing state (ICOMOS, 2003b). Conservation work requires adherence to scientific principles, craftsmanship, a high level of professionalism, and skilled experts. Collaboration between specialists from various disciplines should be possible (UNESCO, 1976; ICOMOS, 1982a, 1993). When necessary, emergency safety measures and systems should fulfill their purpose without compromising cultural values. Emergency safety measures should be implemented by a team of experts to prevent

irreversible damage to the structure (ICOMOS, 1987, 2003a, 2003b). Mechanisms for regular, measurement-based monitoring should be established during and after implementation to assess the effectiveness of the interventions (ICOMOS, 2003a, 2003b, 2013b).

- **Present-day Materials and Technologies**

Contemporary interventions should respect the cultural values and traditional character of structures (ICOMOS, 1999b). The properties of materials and technologies used in interventions and their compatibility with existing elements must be examined to prevent undesirable side effects. The use of new materials and methods requires thorough scientific research and positive results from experiments conducted both on-site and in laboratories. However, since the long-term effects of new materials and methods are unknown, their potential for harm should be considered (ICOMOS, 1995, 2003a, 2003b, 2013b, 2017; UNESCO, 1976).

New intervention techniques, such as structural reinforcement using contemporary materials like steel, should only be implemented after the durability and structural behaviour of these materials and techniques have been sufficiently tested and proven over time. Moreover, the use of modern construction chemicals must be strictly controlled and monitored; they should only be preferred if they provide clear benefits, do not adversely affect public or environmental safety, and have a high probability of long-term success. Installations such as heating, cooling, ventilation, lighting, as well as fire warning and prevention systems, should be designed with consideration for the historical and aesthetic significance of the structure (ICOMOS, 1999a, 1999b, 2017).

- **Recording and Documentation**

Every phase of implementation, including all interventions, materials, and methods used, should be recorded and documented. Removed elements and other components of the historic structure should be cataloged, with representative examples preserved as part of the documentation (ICOMOS, 1995, 1999a, 1999b, 2003b, 2013b, 2017). These records should be archived by the responsible public authority, with a copy stored at the historic site and made accessible to all relevant experts for review and use. Ensuring the longevity and future accessibility of these records is essential. Publication of the project outcomes is also recommended. Materials, techniques, inspections, and monitoring processes used during implementation should be carefully documented and preserved as part of the cultural heritage's history and for future reference (ICOMOS, 1995, 1999a, 2003a, 2003b, 2013b, 2017; UNESCO, 1976).

- **Monitoring and Maintenance**

To ensure sustainable preservation of structures, a consistent strategy involving ongoing monitoring and maintenance must be implemented following interventions. Monitoring should be conducted during and after any intervention to assess the effectiveness of the methods, techniques, and materials used over the long term (ICOMOS, 1999a, 2017). Post-restoration, conditions should be established to minimize deterioration, and the success of interventions should be verified through regular monitoring (ICOMOS, 2003a, 2003b). Records related to maintenance and monitoring should be preserved as part of the documented history of the structure (ICOMOS, 2017).

4. Findings

All sample projects included in this study have approved restoration projects in compliance with legal regulations. The firms conducting the restoration work, awarded through public tender, hold certification from the Ministry of Culture and Tourism. All restoration projects reviewed, selected as samples, involve public buildings, and the interventions are inspected by public authorities in line with legal regulations. Therefore, the processes of project preparation, implementation, and supervision are carried out within a legal framework. Documents, reports, and projects are approved and archived by the relevant Regional Council for the Conservation of Cultural Property.

Additionally, it has been observed that reports containing laboratory experiments and physical measurements related to the original material and ground conditions have been prepared either alongside the project for some buildings or during the restoration application for others. Not all consolidation and reinforcement applications in the examined restoration practices were included in the research. Only example interventions relevant to the scope of the study have been included. It appears that during the preparation of restoration projects, sufficient qualitative and quantitative analyses, such as physical, mechanical, and chemical measurements and tests for identifying the degradation and damage of the load-bearing system, building components, and materials, were not adequately conducted. Legal permissions may be required to conduct scraping or exploratory excavation to detect unseen issues in the structure and to access the original building component or material. Some damages

and degradations can only be addressed after the liberation of non-original additions that do not meet any conservation criteria.

Therefore, it is understood that the approved projects often lack adequate damage assessment and intervention proposals, and do not fully reflect the current condition of the structure. Conservation Boards have had to take additional decisions to address this issue. For example, according to the decisions of the Edirne Regional Council for the Conservation of Cultural Property, if new data emerges during implementation that necessitates changes to the intervention decisions, it is requested that restoration projects based on the analysis of these data be prepared and resubmitted for board approval.

Scientific committees have been established by the Ministry of Culture and Tourism for the restoration works of the Darruşşifa Building and Tabhane Building of the Süleymaniye Complex, as well as for the restoration of Building No. 5 at Haydarpaşa Train Station. Scientific advisors are involved in the restoration works of the Macedonia Tower. During the implementation in the Darruşşifa, Tabhane, and Building No. 5, new findings and issues have been identified. The identified problems, related to deterioration and damage, have undergone qualitative and quantitative analyses, including tests and experiments on the load-bearing system, building components, and materials, as well as inspections and monitoring. Additionally, historical documents and past interventions have been re-examined. In this context, intervention decisions and approaches have been developed, leading to revisions of the restoration projects for all three buildings. The process has continued with the approvals of the Conservation Board.

4.1. Bayezid II Bath

Located in the Fatih district of Istanbul, the Bayezid II Bath is a component of the Bayezid II Complex. It was commissioned as a foundation by Gülbahar Hatun, the mother of Yavuz Sultan Selim and the wife of Bayezid II and was constructed between 1500 and 1507. After its last restoration, the building was repurposed and opened in 2015 as the Bayezid II Turkish Bath Culture Museum.

During the restoration, the primary intervention was identified as the structural strengthening of the building. In this context, cracks in the roof and issues with the building's foundations and ground were prioritized for intervention. The cracks in the main domes were reopened and repaired using stitching techniques. This area was further reinforced with fiber-reinforced bands and polymer-modified mortar (Figure 1). The missing sections of the domes in the warmth and hot sections were reconstructed according to the project, and the damaged areas were renewed (Figure 2). After the necessary consolidation applications, the domes were plastered with Horasan mortar, and then traditional lead-lining mortar was applied before covering it with lead.

The selection of the foundation reinforcement system for the bath was determined based on the analysis of data obtained from ground investigations using geophysical and geotechnical methods. The reinforced concrete strengthening work carried out to support the ground (Figure 3) was performed using 300x100x10 NPU steel elements, measuring 1.50 m in width, 4 m in depth, and 5 m in length (Figure 3). The foundations of the south facade wall that emerged during the road construction were reinforced with reinforced concrete bands on the inner

and outer sides. In line with the additional reports received, holes were drilled using specialized core machines for the use of steel connection bars for ground reinforcements. Two reinforced concrete shear walls were integrated horizontally with plates and anchor rods from the inner side of the original foundation wall. Epoxy injection was applied to the connection bars placed in the drilled holes (Figure 4). For the deterioration occurring in the outer facade walls of the structure, stitching was applied using original forms, techniques, and materials. The mortar that had lost its binding properties in the stone walls was removed, and consolidation work was carried out on the walls with the binding mortar recommended in the material report (Figure 5).

Figure 1. Repair of cracks in the right main dome of the Bayezid II Bath through stitching method, reinforcement application with carbon fiber tape in the left main dome, Restoration of the Bayezid II Bath, Istanbul, 2005-2014, (Osmanoğlu, 2008)

Figure 2. Integration of the eye-shaped openings in the warmth dome and lead covering application, Restoration of Bayezid II Bath, Istanbul, 2005-2014, (Osmanoğlu, 2008)

Figure 3. Reinforcement application using reinforced concrete for the foundations, Restoration of the Bayezid II Bath, Istanbul, 2005-2014, (Osmanoğlu, 2006)

Figure 4. Anchorage application with connection bars on the inner and outer sides of the foundation walls on the south facade, Restoration of the Bayezid II Bath, Istanbul, 2005-2014, (Osmanoğlu, 2007)

Figure 5. Stitching of the deterioration in the external facade wall masonry and consolidation application with binding mortar on the walls, Restoration of the Bayezid II Bath, Istanbul, 2005-2014, (Osmanoğlu, 2007)

4.2. Darüşşifa Building of Süleymaniye Complex

The structure located on Şifahane Street in the Süleymaniye neighborhood of the Fatih district in Istanbul was built by Mimar Sinan between 1550 and 1557. Darüşşifa Building was commissioned by Suleiman I as part of the Süleymaniye Complex. Restoration work began in 2009, with the second phase of restoration starting in 2019 and reaching the completion stage. One of the most significant issues facing the building was the removal of poor-quality additions and interventions.

Based on the data and issues identified during the application, intervention proposals were developed, and a new restoration project was prepared. Initially, interventions were made to the foundation, floor, and lower wall sections. During the repair of the domes, poor-quality additions were first removed, and stitching was applied with original bricks in areas needing repair (Figure 6). This was followed by a coating of Horasan plaster over the domes (Figure 7). According to the material and conservation report, hydraulic lime injection was applied to repair

some cracks on the domes (Figure 8). In necessary areas, reinforcement was provided with carbon fiber tape, and stitching was performed with original brick material to enhance the domes' strength (Figure 9).

The physical and mechanical properties of the cut stone material on the building's facades were consolidated through repairs made with minimum intervention, adhering to the original form, material, and technique (Figures 10-11). The same process was repeated in necessary areas for brick and rubble stone masonry facades (Figure 12). The binder mortars that had lost strength in the wall masonry were carefully removed. Subsequently, repairs were made to the wall masonry with the original binding mortar, according to the material report. Likewise, deteriorated joint mortars, plasters, and poor-quality interventions were removed from the structure. The original mortars, rough plaster, and finishing plasters were repaired to consolidate the walls (Figure 13).

Figure 6. Stitching applied with bricks produced in original form, technique, and content on the domes, Restoration of Darüşşifa Building of Süleymaniye Complex, Istanbul, 2009-2016, (Osmanoğlu, 2012)

Figure 7. Consolidation application with original plaster after injection and stitching work on the domes, Restoration of Darüşşifa Building of Süleymaniye Complex, Istanbul, 2009-2016, (Osmanoğlu, 2012)

Figure 8. Stages of hydraulic lime injection application for dome cracks, Restoration of Darüşşifa Building of Süleymaniye Complex, Istanbul, 2009-2016, (Osmanoğlu, 2012)

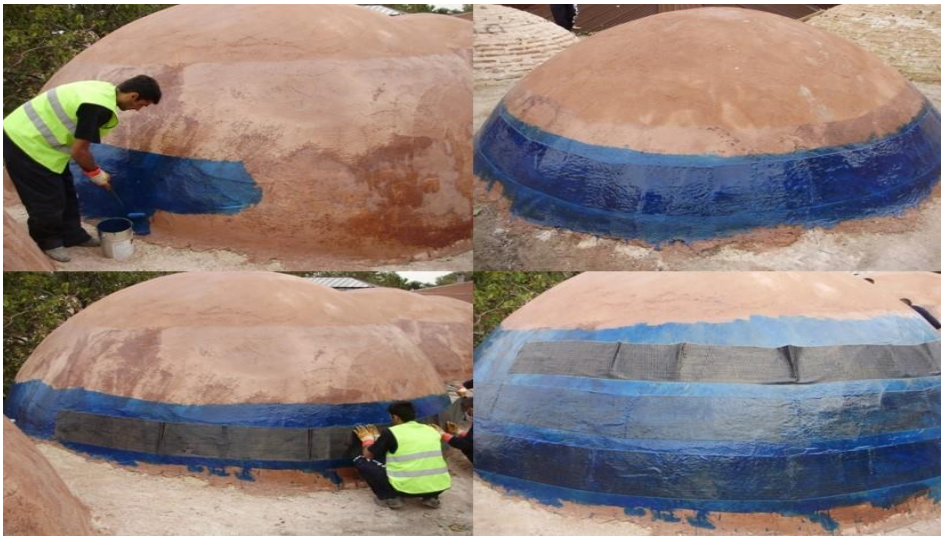

Figure 9. Reinforcement application using carbon fiber tape on the domes, Restoration of Darüşşifa Building of Süleymaniye Complex, Istanbul, 2009-2016, (Osmanoğlu, 2012)

Figure 10. The process of removing deteriorated stone walls, Restoration of Darüşşifa Building of Süleymaniye Complex, Istanbul, 2009-2016, (Osmanoğlu, 2010)

Figure 11. Stitching operation on stone walls, Restoration of Darüşşifa Building of Süleymaniye Complex, Istanbul, 2009-2016, (Osmanoğlu, 2010)

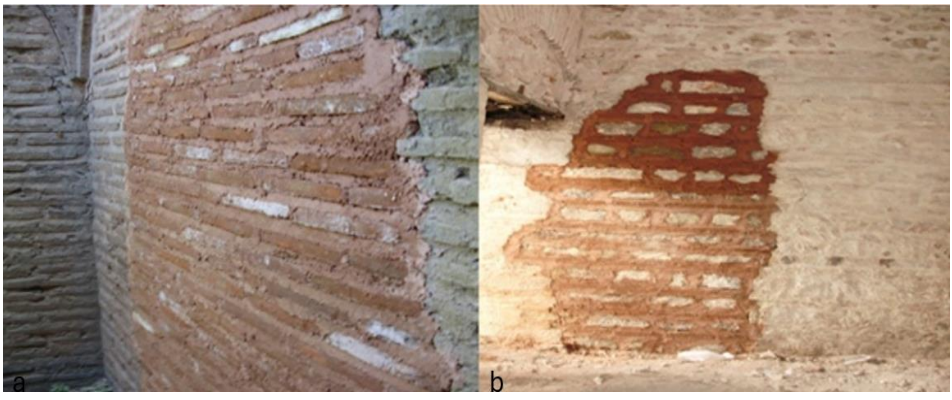

Figure 12. (a) Stitching technique applied to brick walls, (b) Stitching applied to rubble stone walls, Restoration of Darüşşifa Building of Süleymaniye Complex, Istanbul, 2009-2016, (Osmanoğlu, 2010)

Figure 13. Application of original rough plaster and finish plaster on plastered wall surfaces. Restoration of the Süleymaniye Complex Darüşşifa, Istanbul, 2009-2016, (Osmanoğlu, 2013)

4.3. Tabhane Building of Süleymaniye Complex

Tabhane Building, one of the significant structures of the Süleymaniye Complex, was initiated during the reign of Suleiman I in 1550. It is situated on Şifahane Street at the northwestern border of the complex, opposite the main entrance of the Süleymaniye Mosque courtyard, alongside Darüşşifa and İmaret buildings. After restoration began in 2012, the building was restored and opened for use as the Service Building of İstanbul Mufti.

In the Süleymaniye Tabhane, poor quality additions were initially removed from the structure. Subsequently, priority was given to reinforcement and consolidation applications to address the structural

system's issues. The structure was temporarily supported to repair the damage and deterioration observed on the column capitals of the arcade and the spandrel area of the arches (Figure 14). Damaged column capitals were consolidated using epoxy resin and steel, while completely deteriorated capitals were replaced. The repaired column capitals were reinstalled according to the appropriate technique (Figure 15). The deteriorated joints and connection details of the column capitals were also recreated in accordance with their original technique and form (Figure 16). The rings located in the cross-section between the column capitals and the shaft and base were filled with lead for consolidation purposes (Figure 17).

The iron ties connecting the column capitals, which prevent the arches from spreading, were preserved after being cleaned and treated with an anti-rust protective coating (Figure 18). In some brick-arched structures, deteriorated bricks were removed. New bricks, produced with original content, dimensions, and techniques as per the material report, were installed using epoxy resin and steel rod anchoring, thereby reintegrating the arches (Figure 19). This process strengthened the structural integrity of the load-bearing arches that had sustained damage. Hydraulic lime injections were prepared and applied to repair cracks in some of the domes and walls of the building (Figures 20, 21). A portion of the stone materials in the wall structure of the façade that had sustained damage and lost its strength was removed by careful dismantling (Figure 22). The stones that were partially removed were repaired and consolidated with original forms, techniques, and materials (Figure 23).

In the stone walls of the structure, mortar and joint mortars that had lost their binding properties and physical and mechanical characteristics were carefully removed from the building. New applications of original mortar and joint mortar, as recommended in the material and conservation report, were made in their place. Deteriorated joint mortars, plasters, and poor-quality interventions in the eyvans and other cells facing the interior and courtyard were removed. The repair of original mortar, coarse plaster, and finishing plaster, as suggested in the material report, was completed, consolidating the walls (Figure 24).

Figure 14. Application of suspension for the repair of the columns in the porticoes of the courtyard, Restoration of Tabhane Building of Süleymaniye Complex, Istanbul, 2012-2018, (Osmanoğlu, 2014)

Figure 15. Installation of the repaired column capital, Restoration of Tabhane Building of Süleymaniye Complex, Istanbul, 2012-2018, (Osmanoğlu, 2014)

Figure 16. Placement of the keys on the column capital and pouring of lead into the key socket, Restoration of Tabhane Building of Süleymaniye Complex, Istanbul, 2012-2018, (Osmanoğlu, 2014)

Figure 17. Application of pouring lead into the column rings (Restoration of Tabhane Building of Süleymaniye Complex, Istanbul, 2012-2018, (Osmanoğlu, 2014)

Figure 18. Cleaning and painting the ties with anti-rust paint, Restoration of Tabhane Building of Süleymaniye Complex, Istanbul, 2012-2018, (Osmanoğlu, 2014)

Figure 19. Removal of bricks that have lost their strength in the arches and application of anchorage with epoxy resin and steel rods for the installation of newly produced original bricks, Restoration of Tabhane Building of Süleymaniye Complex, Istanbul, 2012-2018, (Osmanoğlu, 2013)

Figure 20. Preparation for hydraulic lime injection, Restoration of Tabhane Building of Süleymaniye Complex, Istanbul, 2012-2018, (Osmanoğlu, 2013)

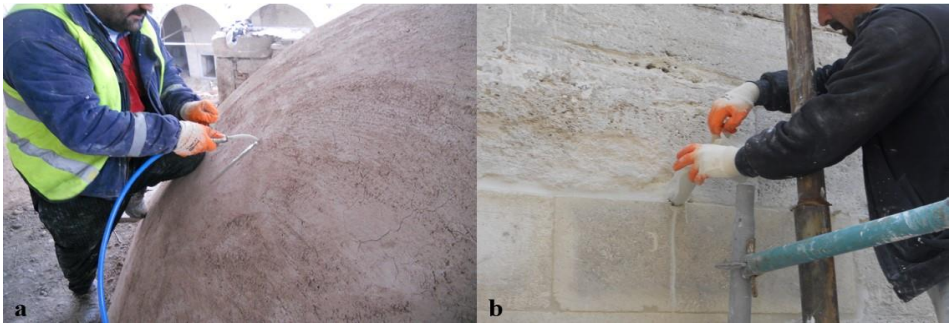

Figure 21. Application of hydraulic lime injection to cracks in the domes (a) and walls (b), Restoration of Tabhane Building of Süleymaniye Complex, Istanbul, 2012-2018, (Osmanoğlu, 2013)

Figure 22. Removal of damaged material from the stone walls using the decay method, Restoration of Tabhane Building of Süleymaniye Complex, Istanbul, 2012-2018, (Osmanoğlu, 2012)

Figure 23. Repair of stone materials after the decay process, Restoration of Tabhane Building of Süleymaniye Complex, Istanbul, 2012-2018, (Osmanoğlu, 2012)

Figure 24. Repair of the iwan walls with the original mortar, rough plaster, and finish plaster as recommended in the material report, Restoration of Tabhane Building of Süleymaniye Complex, Istanbul, 2012-2018, (Osmanoğlu, 2015)

4.4. Fatih Sultan Mehmet High School

Fatih Sultan Mehmet High School, formerly known as Darüşşafaka High School, is located in the Fatih district of Istanbul and was constructed in 1873. Restoration work was carried out between 2010 and 2017. Following damage assessment studies conducted on the supporting columns and arches in the basement (Figure 25), the structural system was suspended for intervention (Figure 26). Consolidation was applied to the suspended arches using original techniques and materials (Figure 27). Damaged and weakened wooden structural elements and lath were partially renewed (Figure 28). The building's masonry walls were reinforced with stainless steel elements (Figure 29). To consolidate the voids and cracks on the inner surfaces of the walls, hydraulic lime injection was applied (Figure 30). Due to structural damage, unusable bricks were removed through decay. The walls were repaired using stitching techniques made with original forms, materials, and methods (Figure 31). To strengthen the walls, steel profile beams were placed along the wall beneath the supporting steel beams of the arch ceiling (Figure 32). The iron beams of the arch ceilings, which had lost their

load-bearing capacity and suffered cross-section loss, were remanufactured according to the original details and dimensions, thereby reinforcing the ceilings. Bricks that had lost their load-bearing capacity were replaced, and the infill above the bricks was consolidated with original materials to enhance strength (Figure 33).

Figure 25. Damage assessment studies on the supporting columns in the basement, Restoration of Fatih Sultan Mehmet High School, Istanbul, 2010-2017, (Osmanoğlu, 2010)

Figure 26. Suspension works of the basement supporting columns for repair procedures, Restoration of Fatih Sultan Mehmet High School, Istanbul, 2010-2017, (Osmanoğlu, 2010)

Figure 27. Before and after conditions of consolidation and reinforcement works on the basement columns, Restoration of Fatih Sultan Mehmet High School, Istanbul, 2010-2017, (Osmanoğlu, 2010-2017)

Figure 28. Repair of damaged and weakened wooden structural elements and lath, Restoration of Fatih Sultan Mehmet High School, Istanbul, 2010-2017, (Osmanoğlu, 2012)

Figure 29. Application of stainless steel ties to strengthen the walls of the building, Restoration of Fatih Sultan Mehmet High School, Istanbul, 2010-2017, (Osmanoğlu, 2016)

Figure 30. Hydraulic lime injection applications to cracks and voids in the walls, Restoration of Fatih Sultan Mehmet High School, Istanbul, 2010-2017, (Osmanoğlu, 2012)

Figure 31. Removal of damaged and unusable bricks due to structural damage and stitching applications made with original forms, materials, and techniques, Restoration of Fatih Sultan Mehmet High School, Istanbul, 2010-2017, (Osmanoğlu, 2012)

Figure 32. Reinforcement along the length of the wall beneath the supporting steel beams of the arch ceiling, Restoration of Fatih Sultan Mehmet High School, Istanbul, 2010-2017, (Osmanoğlu, 2015)

Figure 33. Reinforcement and consolidation applications on arch ceilings with reduced load-bearing capacity due to section loss in iron profiles and damage to the bricks forming the arch, Restoration of Fatih Sultan Mehmet High School, Istanbul, 2010-2017, (Osmanoğlu, 2016)

4.5. The Building No. 5 of Haydarpaşa Train Station

Haydarpaşa Station, located in the Kadıköy district of Istanbul, was constructed in 1908 and underwent restoration due to a fire in 1917. Most recently, after a fire on its roof in 2010, restoration works for the station and its auxiliary service buildings began in 2016 and are still ongoing today. Building No. 5, which serves as an auxiliary service building for Haydarpaşa Station, was constructed using a mixed technique of masonry and reinforced concrete in the first half of the 20th century. Before making any interventions to the structure, building elements, and materials, comprehensive research and examinations were conducted. After analyses based on research, tests, and experiments, it was determined that both the ground and the structural elements were not safe in terms of load-bearing performance and needed reinforcement. The identified liquefaction effect in the ground caused excessive settlements. An effective drainage system was implemented to control and remove the groundwater from the site.

As a result of ground drilling, the inadequacy of the ground safety stress was observed, and it was determined that pressures in the loose zone needed to be increased to prevent liquefaction. Structural reinforcement projects prepared based on the recommendations of the Scientific Board were approved by the Conservation Board, and work began. It was suggested that micro-piling be applied to increase the load-bearing capacity of the weak ground, prevent settlements, and strengthen the structure against earthquakes.

During the reinforcement works initiated according to the project, drilling was first performed at specified intervals at the ground level

using a drilling machine. After drilling, the prepared steel reinforcement was lowered into the borehole. Before the injection process, existing groundwater was removed from the borehole. Micro-pile applications were completed by injecting concrete through the injection hose lowered into the borehole (Figure 34). To improve the ground, cement injection was made into the intermediate areas of the micro-piles. The piles were connected to the existing continuous foundation and the steel reinforcements of the raft foundation constructed above it at the upper level. The raft foundations created to remain under the existing slab level and above the existing foundation were anchored to the existing foundations (Figure 35). The foundation surface was expanded with additional reinforced concrete raft foundation to cover the entire structure beneath (Figure 36).

The damaged cement-based plaster on the interior and exterior wall surfaces was removed by scraping. Subsequently, the damaged and weakened masonry mortars of the walls were removed. The masonry walls were consolidated using the mortar proposed in the material report. Additionally, it was determined that the wall's load-bearing function was reduced due to cracks caused by horizontal and vertical forces, as well as the ground problem. The large cracks in the brick walls were carefully dismantled and rebuilt using original techniques and materials (Figure 37). To address issues such as repairing cracks thinner than 3 mm in the walls and preventing cracks that may form at the junctions of wall elements, glass fiber-based reinforcement mesh was used on all plastered surfaces (Figure 38).

Figure 34. Strengthening the building foundation through micro-pile applications, Restoration of the Building No. 5, Haydarpaşa Train Station, Istanbul, 2017-2024, (Osmanoğlu, 2017)

Figure 35. Anchoring of the piles and raft foundation reinforcements created to remain above the existing foundation, Restoration of the Building No. 5, Haydarpaşa Train Station, Istanbul, 2017-2024, (Osmanoğlu, 2017)

Figure 36. Pouring concrete into the raft foundation reinforcements constructed to strengthen the existing foundation, Restoration of the Building No. 5, Haydarpaşa Train Station, Istanbul, 2017-2024, (Osmanoğlu, 2017)

Figure 37. Stitching applications using original materials and techniques to repair cracks and material deterioration in the walls, Restoration of the Building No. 5, Haydarpaşa Train Station, Istanbul, 2017-2024, (Osmanoğlu, 2018)

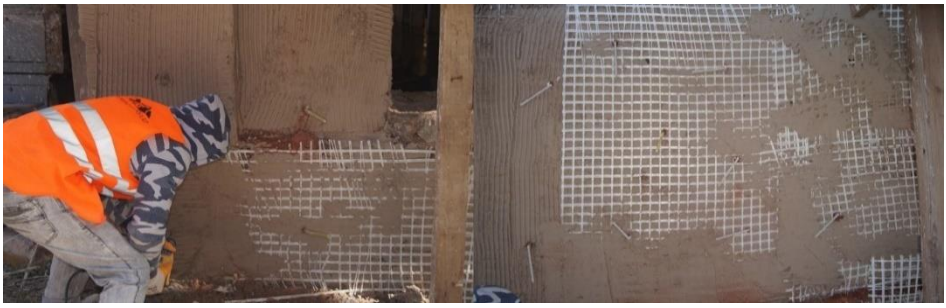

Figure 38. Strengthening works for walls and plasters using glass fiber-based reinforcement mesh, Restoration of the Building No. 5, Haydarpaşa Train Station, Istanbul, 2017-2024, (Osmanoğlu, 2020)

4.6. Akşemsettin Primary School

Akşemsettin Primary School is located in the Fatih district of Istanbul. The restoration was completed between 2013 and 2016. One of the primary tasks was to excavate and reveal the foundations for inspection. The load-bearing capacities of the ground, structural elements, foundations, and walls were analyzed for resistance to horizontal and vertical forces. It was found that there were no issues with the load-bearing capacity of the ground. However, it was determined that the

foundations and walls had deteriorated due to the effects of earthquakes, irregular loads, and various other factors, leading to material degradation and damage. Deterioration and losses in the masonry of the foundations resulted in voids within their internal structure.

Consequently, issues with the load-bearing capacity and safety levels of the foundations and walls were identified. Therefore, it was necessary to reinforce and deepen the foundations to ensure the structural safety of the building. Initially, the binding agents in the masonry of the foundation walls, which had lost their adhesion, were removed. The surfaces were cleaned using pressurized water. Controlled injection of polyurethane and silicate-based resin mortar was performed in cracks and voids. The damaged masonry was replaced with a unique mortar mixture recommended in the material report. To prevent the cement used in the wall construction from coming into contact with the foundations and body walls, a unique plaster and liquid membrane were applied to the foundation surfaces.

Subsequently, to increase the load-bearing capacity of the foundations and reduce soil tensions, a reinforced concrete band wall and beams were constructed partially beneath the existing masonry foundations, thus enlarging the foundation sections (Figure 39). To connect the band wall that extends beneath the foundation with the existing foundation, stainless steel bars anchored with epoxy were used at specified intervals, allowing the load to be transferred to the band wall, beams, and ground. To prevent groundwater from damaging the existing and additional foundations, a double-layer waterproofing using polymer-bitumen coating was applied to the band wall. This method created new

foundations that could safely carry loads and improved the behavior of the foundations by distributing the loads.

The significantly damaged masonry load-bearing walls also needed to be reinforced to regain their load-bearing capacity and safety levels. Vertical and horizontal connections were established with shotcrete walls added to the wall surfaces and vertically placed anchors. Reinforcement was provided by spraying concrete onto the steel mesh reinforcements anchored to the wall surfaces with epoxy (Figure 40).

Figure 39. Strengthening the existing foundation by widening it with the construction of an additional reinforced concrete band wall, the Restoration of Akşemsettin Primary School, Istanbul, 2013-2016, (Osmanoğlu, 2013)

Figure 40. Application of sprayed concrete onto the steel mesh reinforcements anchored to the existing load-bearing walls, the Restoration of Akşemsettin Primary School, Istanbul, 2013-2016, (Osmanoğlu, 2013)

4.7. Macedonia Tower

Macedonia Tower, also known as the Clock Tower, is one of the towers of the city walls of Edirne, constructed during the reign of Roman Emperor Hadrian. According to its inscription, it is understood that the tower was rebuilt in the 10th century on the foundations from the Hadrianic period, dating back to the 2nd century. During the Ottoman period, a clock tower was constructed using wooden construction techniques in 1866-1867. This clock tower was demolished in 1894 and reconstructed using masonry techniques. The exterior facade of the tower lost much of its authenticity due to a restoration carried out in the 1990s. Additionally, it was found that repairs were made with stone materials and imitation bricks that were not suitable in terms of dimensions, shapes, and techniques, and included cement additives. Restoration of the structure and the subsequent archaeological site began in 2023. Research conducted through an excavation inside the tower revealed rubble stone masonry foundations. Deterioration and losses were observed in the masonry and joint mortars of the foundation walls. Ground-penetrating radar scans identified void areas in the wall masonry caused by the collapse of internal mortars over time. The mortar joints that had lost their binding properties were removed using mechanical cleaning methods. Surfaces were cleaned with high-pressure water (clean). Hydraulic lime-reinforced injection mortar was injected into the voids and cracks in the inner structure through fine tubes placed in the joint areas identified on the walls (Figure 41). The original mortar mixture recommended in the material report was applied to replace the deteriorated and eroded joint mortars.

High-dose Portland cement-based joint fillers found in the interior and exterior walls were removed from the structure using mechanical-chemical methods. Deterioration and losses were also observed in the masonry and joint mortars of the walls. The damaged and binding-lost masonry and joint mortars were removed using mechanical cleaning methods. In the repair of the masonry and joint mortars, joints were first cleaned using tools such as brushes, trowels, or crowbars, depending on the joint thickness. The cleaned joint and stone surfaces were moistened with water to ensure adhesion with the new mortar. The moistened surfaces were filled with masonry mortar. After the masonry mortar gained its strength, joint (surface) mortar application and cosmetic repairs were carried out (Figures 42-43). The mixture of the masonry and joint mortars was determined based on material analyses conducted in laboratory conditions. With the injection and mortar reinforcement carried out, the structural elements were consolidated to reach their load-bearing capacities.

Figure 41. (a) Cleaning of the foundation walls with high-pressure water and (b) application of hydraulic lime injection to the walls, the Restoration of Macedonia Tower, Edirne, 2024, (Osmanoğlu & Köse, 2024)

Figure 42. Consolidation of the masonry and joint mortars in the walls, the Restoration of Macedonia Tower, Edirne, 2024, (Osmanoğlu & Köse, 2024)

Figure 43. Consolidation applications in joint mortars, the Restoration of Macedonia Tower, Edirne, 2024, (Osmanoğlu & Köse, 2024)

4.8. Edirne Reji Buildings

The buildings that served as tobacco warehouses for the French company "La Société de la Régie co-interestée des tabacs de l'Empire Ottoman" were constructed in the 19th century. After the capitulations ended following the establishment of the Republic, these structures were transferred to the Tekel Administration and continued to be used as tobacco warehouses. Today, they are allocated to the Ministry of National Education. Restoration of the buildings, located in the center of Edirne, began in 2017. During their use as warehouses, the buildings underwent numerous poor-quality repairs. The Portland cement-based plasters

applied to the interior and exterior walls were carefully removed from the structures. On the stripped rubble stone wall surfaces, cracks measuring 1-2 cm in width, deterioration and losses in the masonry mortars, and voids in the internal structure of the walls were observed. The joint fillers based on cement that had lost their binding properties, along with other masonry mortars, were removed from the structure using mechanical methods. To repair the cracks and fillers, hydraulic lime-reinforced injection mortar was injected into the walls through fine tubes placed in the joint areas (Figure 44). After cleaning the joints and rubble stone surfaces, they were moistened with water, and the joint areas were filled with masonry mortar to consolidate them. To address issues such as the repair of existing cracks and the prevention of cracks that may occur at the junctions of wall elements, glass fiber-reinforced mesh was used on all plastered surfaces (Figure 45). This procedure not only prevented cracks due to horizontal and vertical loads but also increased the walls' and plasters' resistance to stresses and strengthened them.

Figure 44. Consolidation of the perimeter walls through injection, the Restoration of Reji Buildings, Edirne, 2017-2018, (Osmanoğlu, 2017)

Figure 45. Application of plaster reinforcement with glass fiber mesh, the Restoration of Reji Buildings, Edirne, 2017-2018, (Osmanoğlu, 2018)

5. Discussion

The findings obtained from the examinations conducted within the scope of this study include some fundamental observations and recommendations regarding the processes of consolidation and reinforcement interventions in masonry structures. Identifying the existing problems in practice by comparing intervention techniques for restoration with the theoretical information found in fundamental conservation documents is an important step. These documents propose quite basic approaches and techniques for interventions aimed at conservation. Depending on the condition of the artifact, the methods and techniques for intervention can vary to ensure that the cultural property preserves its originality, integrity, historical and aesthetic value, and original form, technique, and materials. In restoration applications, multiple intervention techniques are generally used together; as the

degree of damage to the artifact increases, the scope of interventions expands, and their content also changes.

In the consolidation studies of the examples, various interventions were identified, including the injection of pozzolanic hydraulic lime into the voids and cracks on the inner surfaces of the walls; stitching applications performed with original forms, materials, and techniques for cracks in the walls; replacement of damaged and unusable bricks and stones in the wall masonry with original materials; completion of structurally weakened materials in arches and other elements with epoxy resin and steel rod anchorage; and the removal of deteriorated masonry and joint mortars, rough plasters, and finishing plasters, followed by repairs using the original materials recommended in the material report.

Additionally, structural components, elements, or systems that have lost their original load-bearing capacity or composition due to deterioration or damage from internal and external factors were aimed to be restored to their originally designed integrity and load-bearing capacity with minimal intervention. In this direction, all damaged materials, masonry or joint mortars, and damaged areas of the building, such as wall cracks, were consolidated using original materials (brick, stone, mortar, plaster), forms, and techniques. It was noted that after the injection and stitching applications in some domes, consolidation was applied with original mortar and plaster.

A significant number of reinforcement interventions were also encountered during the examinations. It was determined that the bearing capacity of weak soils was increased through the application of micro-piles and cement-based injections, aimed at preventing settlements. It

was observed that groundwater was drained away through a drainage system. Several different applications were identified where the foundational loads of the buildings were distributed to deeper and more solid levels, thereby increasing the bearing capacity of the foundations. In one example, the foundation loads were transferred to solid ground using the micro-pile method. It was frequently noted that additional reinforced footings or pedestals were manufactured under the existing foundations. In addition to the new footings, it was determined that ring beams and raft foundation applications were made to widen the cross-sections of the existing foundations.

One of the interventions aimed at strengthening the load-bearing system was the application of shotcrete to walls reinforced with steel mesh to ensure the safe bearing capacity of masonry walls, thus creating additional load-bearing walls. To eliminate safety vulnerabilities and increase resistance, carbon fiber strips were wrapped around the outer surfaces of some domes in appropriate directions. It is understood that the aim was to increase the load capacities and system ductility of curved roofs under existing loads or potential seismic loads. The large cracks in the masonry walls and domes were stitched with original materials and techniques. To address issues such as repairing hairline cracks and preventing cracks at the junctions of wall elements, some plastered surfaces were reinforced with fiberglass mesh.

There are also applications aimed at strengthening not only the load-bearing system but also the structural elements. In areas where traditional techniques and materials proved insufficient, structural reinforcement applications using contemporary techniques and materials were observed.

It was found that damaged bricks in arches were removed, and new original bricks were anchored in place with epoxy resin and steel rods. Additionally, steel ties were installed in place of the metal ties in marble column capitals that had lost cross-section and capacity. The interventions aimed to raise the safety level of the buildings to or above the level present at the time of their initial construction.

When comparing the consolidation and reinforcement applications with the definitions and processes of interventions described in conservation documents, it has been identified that there are not only positive results but also some fundamental issues. The consolidation and reinforcement interventions carried out are largely compatible with the content of the intervention definitions attempted in the conservation documents. In the examined examples, consolidation interventions are generally aimed at preventing or slowing down the degradation process of the cultural heritage. In this context, it has been found that applications were made to improve the existing mechanical, physical, or chemical properties of the material, structural components, or structures and to increase their durability. All structural interventions aimed at improving the structural behavior of an element, the whole of elements, or the system and enhancing its safety were evaluated as reinforcement practices. According to the examples, reinforcement techniques can be categorized into four main headings: strengthening of the ground, foundations, load-bearing systems, and structural elements.

In addition to these findings, there are also fundamental problems regarding the preparation process and content of conservation/restoration projects. It is a fact that the processes involved in public projects are

specific and transparent. However, it is understood that many conservation/restoration projects are not conducted by a specialized team with an interdisciplinary approach, nor are they based on comprehensive scientific studies, systematic research, and examinations. Information about intervention proposals and techniques in projects is often limited. Although the reliable determination of diagnosis and appropriate treatment methods depends on the analyses and evaluations of qualitative and quantitative research, these analyses and evaluations are often insufficient. In many cases, the qualitative and quantitative analyses, including physical, mechanical, and chemical measurements and tests aimed at detecting the materials, degradation, and damages, are found to be inadequate during project preparation. These insufficient studies in projects need to be carried out during the restoration process. However, it is essential to analyze and evaluate the data resulting from the removal of poor-quality interventions and poor-quality additions during implementation. There have been very few examples of analyzing the vertical and horizontal load-bearing capacity of the load-bearing system, including foundations, and the properties of the ground. The High Council for the Conservation of Cultural Property emphasized the necessity of conducting these analyses with its decision numbered 2878, taken after the recent earthquakes in Türkiye.

Therefore, due to the inadequacy or incorrect assessment of historical research, direct observation, physical examination, physical measurement, numerical, and experimental analyses, situations have been encountered where the intervention proposals developed do not align with the field data. As seen in the restoration of the Haydarpaşa Train

Station's Building No. 5, Süleymaniye Darüşşifa and Tabhane, or the Macedonia Tower, there has been a need for new and reliable research and analyses based on the recommendations of scientific boards or scientific advisors. In this direction, revisions of the projects have been made and implementation has continued. As recommended in fundamental conservation texts, having teams consisting of experts from various disciplines, such as scientific boards and scientific advisors, is an important gain for the scientific restoration of these structures. The destruction, alteration, or distortion of the traces of the original materials, elements, and historically significant evidence of the building is, to the extent possible, prevented by scientific boards or scientific advisors. However, the ability of scientific boards or scientific advisors, who meet periodically to observe the applications, to identify and prevent all problematic interventions is limited. The responsibility for interventions is largely related to the expertise, awareness, and ethical attitudes of the professionals involved in the implementation and monitoring process. Furthermore, as mentioned in fundamental conservation texts, there is a need to promote professional expertise training so that interventions can follow and preserve traditional methods, techniques, and crafts. Restoration sites should not become areas where architects, craftsmen, or construction masters lacking sufficient expertise are tested.

Although structural reinforcements are largely designed to ensure an optimum balance between originality and safety without damaging the architectural integrity of the structure, problems can still arise due to a lack of control during implementation, technical skills, or insufficient levels of expertise. A similar situation applies to consolidation

applications. In cases where both consolidation and reinforcement techniques need to be applied, it has often been observed that preferences for renewal as a method are also frequently made. These techniques, which require detailed information, expertise, highly precise application, labor-intensive work, and a meticulous approach, are often perceived by practitioners as challenging, time-consuming, and economically disadvantageous. Additionally, the institutions undertaking the application, aiming for maximum profit, may often neglect the principles of minimal intervention and the preservation of historical integrity and originality. These approaches pose potential threats to the originality and historical identity of the cultural heritage. Reconstruction processes can jeopardize the preservation of the criteria required for a building to be considered cultural heritage, as they may lead to the irreversible loss of the aesthetic and historical values, original forms and materials, traditional techniques, and crafts of the structures.

Fundamental conservation documents recommend interventions based on key principles such as minimal intervention, preservation of original materials, techniques, and forms, ensuring that any additions are distinguishable, and maintaining the historical and aesthetic integrity of the building. Additionally, it is desired that interventions be carried out using reversible and renewable techniques, allowing for the replacement of less suitable elements with more appropriate ones without damaging the original structure when new information is acquired. However, processes such as applying sprayed concrete to walls reinforced with steel mesh to create additional load-bearing walls, or reinforcing existing wall sections with reinforced concrete elements, bring certain issues.

Interventions that completely cover existing walls can diminish the visibility of the building's originality, aesthetic, and historical integrity. To ensure that such applications are reversible, it is necessary to place separating materials between structural reinforcements containing concrete and the original structural components. Another commonly encountered issue is the lack of coordination and reconciliation between installation projects such as heating, cooling, ventilation, lighting, fire warning, and prevention systems with restoration projects.

One significant deficiency is the failure to record and document each stage of the application, including the methods, materials, techniques, and tools used in the interventions, and to preserve these records in public archives. There is a need for documentation and archiving as part of the cultural heritage's history for potential future operations. Inadequate continuous maintenance following restoration is another shortcoming, as is the frequent failure to create suitable conditions that minimize deterioration. Furthermore, it has been observed that the compatibility, success rate, and environmental effects of contemporary materials, technologies, and construction chemicals used in the interventions have not been monitored or tracked concerning original materials. A legal, administrative, financial, and technical infrastructure should be established to ensure continuous maintenance and monitoring of cultural heritage after interventions. The necessity of equipping cultural heritage with functions that are appropriate to their identities and do not require excessive intervention to ensure sustainability in conservation is also emphasized in conservation documents. Among the examined examples, it has been noted that Tabhane and Darüşşifa

buildings have been allocated for public administrative services. Fatih Sultan Mehmet High School, “, and the Edirne Reji Buildings have been left for public educational purposes. The Bayezid II Bath and the Macedonia Tower have been designated for museum functions. The Haydarpaşa Station continues to maintain its original function. In this context, it is unnecessary to hesitate in stating that, as recommended by conservation documents, the buildings discussed in this study have been assigned functions that will sustainably preserve their originality and integrity.

6. Conclusion and Suggestions

It is crucial to identify the problems present in the application of commonly used consolidation and reinforcement techniques in restoration practices by comparing them with the theoretical information found in fundamental conservation documents. This study includes some essential findings and recommendations regarding the application process of consolidation and reinforcement interventions in masonry structures, as well as the processes before and after implementation. The definition, methods, and techniques of the intervention can vary based on the characteristics of the cultural heritage and its condition, and these efforts must be specific to the relevant structure. In restoration practices, multiple intervention techniques are often used together, and it has been observed that as the degree of damage to the artifact increases, the scope of interventions expands.

In the examined examples, some fundamental problems related to the preparation process and content of conservation and restoration projects have been identified. Projects are often not conducted by expert teams

with a multidisciplinary approach based on comprehensive scientific studies, systematic research, and investigations. In many projects, information about intervention proposals and techniques is limited. Although the reliable identification of diagnoses and appropriate treatment methods depends on the analysis and evaluation of qualitative and quantitative research, these efforts are frequently inadequate. Another significant shortcoming is the rarity of examples analyzing the vertical and horizontal load-carrying capacity, safety level, and ground characteristics of the load-bearing system, which are absolutely essential for reinforcement interventions. The developed intervention proposals often do not align with the data in the field.

The presence of teams comprising experts from various disciplines, such as scientific boards and consultants, as recommended by conservation documents during the application, is a significant asset. With their recommendations and oversight, the revision of restoration projects based on qualitative and quantitative analyses and evaluations that correspond to the field situation can prevent numerous problematic interventions. The destruction, alteration, or damage to the historical integrity of the building's original materials, components, and documentary evidence is prevented as much as possible by scientific boards or consultants. While the responsibility for interventions largely depends on the professionals involved in the application and supervision process, their expertise, awareness of conservation, or ethical stance significantly affects how the process is conducted.

It has been observed that many problems arise due to a lack of control during the applications or due to the insufficient technical skills or

expertise levels of the craftsmen and artisans carrying out the work. Restoration sites can often become places where architects, craftsmen, or construction masters without sufficient expertise are tested. Therefore, as mentioned in conservation documents, there is a need to promote professional training to enable interventions to follow and preserve traditional methods, techniques, and crafts.

When comparing the consolidation and reinforcement applications in the sample structures with the conservation principles, intervention definitions, and processes outlined in conservation documents, several key issues, in addition to positive outcomes, have been identified. Some of the applications are significantly compatible with the fundamental conservation principles, as well as the definitions and contents of the interventions. However, certain consolidation and reinforcement interventions may reduce the visibility of the structure's originality, aesthetic, and historical integrity. Some interventions also lack the qualities of being reversible and removable without damaging the original structure when new information becomes available. It has also been observed that, in cases where consolidation and reinforcement techniques are required, there is a frequent tendency to prefer renovation methods.

Interventions based on fundamental principles such as minimal intervention, preservation of original materials, techniques, and forms, distinguishable additions, and maintenance of originality, historical, and aesthetic integrity are often viewed by contractors as demanding, time-consuming, and economically disadvantageous. Another frequently encountered issue is the inability to coordinate projects related to

installations with restoration projects. It is another positive finding that functions that sustainably protect the originality and integrity of the examined structures without requiring excessive intervention have been assigned, as recommended by conservation documents. However, a significant shortcoming is the lack of documentation and archiving of every stage of the application, including the methods, materials, techniques, and tools used in the interventions.

The inability to ensure ongoing maintenance after restoration and the failure to create appropriate conditions to minimize deterioration is another serious problem. Furthermore, it has been observed that the effectiveness, success rates, and environmental impacts of the interventions are not monitored or followed up on after restoration. Establishing legal, administrative, financial, and technical infrastructure to ensure ongoing maintenance and monitoring of interventions on cultural heritage would be advisable.

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Conservation of Architectural Heritage: Traces of History

Chapter 20

The Visibility of A Structure Throughout of Its History: Kalenderhane Mosque

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1. Introduction

The cities we inhabit today can be likened to living organisms shaped by various factors. This comparison becomes more significant when we consider cities that have existed for centuries, observing their growth, change, and at times, their decline. The cultural heritage elements significantly impact the formation of these organisms' identities. It is essential to safeguard and maintain the cultural heritage of cities to preserve their unique identities as they evolve over time. This involves tracing the gradual transformation of these identities within their natural contexts and ensuring that they endure for future generations.

ICOMOS (2013) defines cultural heritage in the Architectural Heritage Protection Declaration of Turkey as follows: “All tangible and intangible assets that have survived from the past to the present and are depicted as a reflection of people’s values, beliefs, knowledge and traditions that are in constant change without any ownership bond. Cultural heritage includes all the characteristics of the environment resulting from the interaction between people and places over time.” Architecture is also included in the scope of tangible assets and constitutes architectural heritage which is defined in the same declaration as follows: “Buildings and building groups that are the common property of humanity and that need to be transferred to the future with their original qualities that have survived to the present day, that are of different scales and qualities and that need to be protected with all their values according to the principles of integrated protection.” The structures encompassed by architectural heritage hold special significance as they represent the city's identity. It is seen that monumental structures, examples of civil architecture, streets

and topography form a whole and the identities of the city. However, it is seen that conservation is often limited to the architectural heritage elements that remain on the surface, and this whole is not evaluated (Tanaç Zeren, 2010. Therefore, preserving them solely as a structure is insufficient. In order to prevent their loss within the urban fabric and to enhance their perceptibility, they should evaluate and arrange these elements in conjunction with their surroundings.

In the case of historical structures, changes in their identity are quite common as they are a natural part of their processes. The changes in users, which we can characterize as the primary actors of the buildings, and environmental factors over time cause differences in the buildings themselves and how they are used. Revealing these transformation stories of historic buildings is essential in constructing the historical contexts of settlements. When we look carefully at the places we live in, it is possible to see many structures in between whose stories date back to old times. In addition, constructing the historical context in settlements includes the stories of change in individual buildings and how their immediate surroundings differed in this process.

Kalenderhane Mosque is situated in the Kalenderhane Neighborhood of the Şehzadebaşı district in Istanbul's Fatih district, and it stands as an important example of Istanbul. Many of its features have changed from the late Roman period to today, from how it is called, what it is used for, and how it looks. This building complex, originally a palace bath and later transformed into a Byzantine church, zawiya, soup kitchen, and mosque, eventually became a shantytown during the decline of the Ottoman Empire before its restoration. It is a significant example

illustrating the complex changes in Istanbul's urban structure. C. L. Striker and D. Kuban carried out a series of excavation and restoration works at Kalenderhane Mosque in cooperation with Dumbarton Oaks and Istanbul Technical University from 1966 to 1978. These studies are crucial as they have uncovered hidden details and clarified the building's historical context. Excavations have revealed six distinct construction stages in the area (Ousterhout, 2019).

Kalenderhane Mosque shows how a structure has evolved and endured over centuries, illustrating the changes and multi-layered urban structure of Istanbul and contributing to shaping its identity. For this reason, the study aims to trace the historical process of Kalenderhane Mosque in written sources, the transformation of the structure and its surroundings, and its current situation.

2. Material and Method

Although the name of the Kalenderhane Mosque, which is the subject of the study, was not confused in the Ottoman Period, the sources have many different opinions regarding the Byzantine Period. For this reason, a literature review was first conducted to trace the structure's identity in previous periods. The second part of the study deals with the physical changes it has undergone. The most utilized work in this section was the reports, drawings, and visuals produced due to the excavations. Also, since the study aimed to examine the structure not individually but with its place within the urban fabric, maps, satellite images, engravings, and photographs were used as the primary materials to reveal its changes, especially in the last century. Especially old maps are one of the most commonly referenced sources and hold great importance in

understanding and analyzing how these changes affect the physical structure of an area. The study utilized the following resources for understanding the transformation of the region: the German Blues of 1913, the 1918 Istanbul Guide Map from the Municipality Map Department, Pervititch's 1935 insurance plans, orthophoto, and satellite images from 1946, 1966, and 2024, as well as Matrakçı Nasuh's 16th-century Istanbul miniature.

3. Kalenderhane Mosque

Kalenderhane Mosque is the most important example of the cross-in-square church typology among the Byzantine religious architectural structures that have survived today in Istanbul. Many opinions exist in the literature about the building's name during its time as a church in the Byzantine period, such as Theotokos Kyriotissa Church and Akaleptos Monastery Church. Furthermore, its name was changed to reflect its function during the Ottoman Period, such as Kalenderhane, Medrese-i Kalenderhane, and Kalenderhane Mosque. This situation sometimes affected the visibility of the structure in written sources.

Along with the naming changes over time, the Kalenderhane Mosque has experienced various physical alterations since its construction. Excavations led by Striker-Kuban have revealed underlying layers of earlier structures. The data gathered from these excavations is crucial for understanding the historical processes and forming ideas about the area's appearance.

3.1. History of The Area

According to current zoning, the building is located in the Kalenderhane neighborhood in the Şehzadebaşı district of the Saraçhane region. However, it is possible to say that the city was first located in the 10th district, close to the Mese, during the Byzantine period. Mese, currently known as Divanyolu, served as the city's primary route, where large palaces and religious buildings were located and for being the venue of imperial ceremonies during the Byzantine period (Figure 1). In the Ottoman period, the road from Divanyolu to Beyazıt and from there to Edirnekapı was used for ceremonies (Kuban, 2001). In both periods, Kalenderhane Mosque maintained its proximity to the main road.

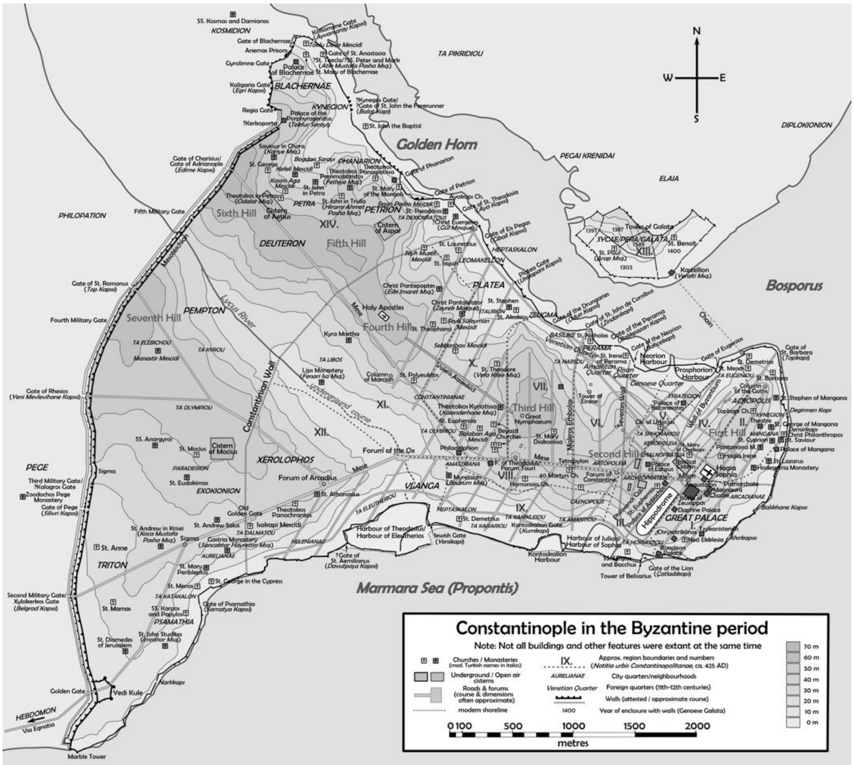

Figure 1. Istanbul in the Byzantine Period

During the Ottoman period, cities were composed of neighborhoods, which were self-governing administrative units instead of a single piece. Neighborhoods generally consist of a core of public structures such as mosques, masjids, baths, and residential structures around them. Sometimes, the name of the public structure that forms its core is also included in the records as the name of the neighborhood. Ayverdi (1958) states that following the city's conquest, the neighborhood where the structure was located was named Kalenderhane, which it is still called today (Figure 2).

Figure 2. Borders of Kalenderhane Neighborhood and Location of the Kalenderhane Mosque (Google Earth, 2024)

The Saraçhane Region, which came to the forefront as the first settlement area established in the city with the conquest of Istanbul, became a center where social and cultural life intensified with the construction of prominent structures of the period. The Şehzade Complex, Süleymaniye Complex, Damat İbrahim Paşa Complex, Bozdoğan (Valens) Aqueduct,

and Kalenderhane Mosque are described as the monumental structures of the region with urban scale importance (Figure 3). During the Ottoman era, the area remained significant not only for its religious structures but also for trade, educational, military, and administrative facilities.

Figure 3. Structures in the Sehzadebasi District: A. Kalenderhane Mosque, B. Bozdoğan Aquaduct, C. Şehzade Mosque, D. Süleymaniye Complex, E. Istanbul University Faculty of Law (Google Earth, 2024)

The area where Kalenderhane Neighborhood is located is known as the Şehzadebaşı region. The region, which is also a busy area of the historical peninsula, is a crowded area due to both its commercial function and the presence of some of the faculties of Istanbul University. The exit of the Vezneciler Metro Station, which is used intensively for transportation to the region, is also on Şehzadebaşı Street, and one of the first structures encountered when you come to the surface is the Kalenderhane Mosque.

3.2. Changes in the Area

The earliest known practice in the region, noted for its religious structures, to highlight these constructions, appeared during Selim II's reign due to an edict addressed to the Istanbul judge and Mimar Sinan. The edict of 1573 indicates that they petitioned the sharia court to identify and demolish the temporary structures next to the Zeyrek Mosque and Kalenderhane, which served as a zawiya-mosque then. During the inspection, the team discovered that houses with coops and barns built on foundation lands had damaged the monuments. Thereupon, the Sultan sent Mimar Sinan and the Istanbul judge to determine the damages personally. He ordered that the structures around the buildings be demolished to create empty spaces with five *zira*, a length used during the Ottoman period corresponding to approximately 75 cm, wide around each monument (Necipoğlu, 2013).

The area began to undergo transformation and lost significance due to the urban changes that started in the Republican period. During the 1950s, changes in zoning policies led to decreased visibility of the old architectural texture due to the increasing construction of apartment buildings. Eventually, the structure gradually disappeared from the city as new roads and large buildings were constructed, which were disproportionate to the area's size (Çevik, 2011). The construction of some large structures, such as municipal buildings, dormitories, and school buildings, has caused some of the distinctive features of the region to disappear and the general appearance of the region to change.

The Şehzadebaşı District was developed with the opening of boulevards during the Republican Period. In the 1950s, significant decisions were

made, such as the expansion of Şehzadebaşı Street, leading to the initiation of expropriation works. The Kalenderhane Madrasa is located on a separate island to the south of the Kalenderhane Mosque, as shown in Pervititch's plan (Figure 4). Over time, the region has undergone significant changes, such as the demolition of some building blocks or the madrasah, due to urban development.

Figure 4. Pervititich 1935 Vezneciler Insurance Plans combined by author (Salt Research, Jacques Pervititich Archive)

3.3. Changes in the Usage and Architecture of the Structure

It appears possible to date and define the church in terms of architecture based on its relationship with the building remains that extend towards the Bozdoğan (Valens) Aqueduct in the north. These remains, and the sequence of joining the bema to the building mass, are still visible today. Initially, Striker-Kuban's excavations concentrated on the building's north side, the western section, and the bema with these areas. Afterward, efforts moved south to confirm symmetry with the northern side. From the 5th to the 12th century, several distinct buildings with various

functions were discovered around the church. Notably, a Roman bath existed from the 4th-5th centuries and remained in use until the 6th century at the mosque's site. The first church building in the area, known as the North Church, is situated above the bath structure and dates back to the last quarter of the 6th century, as mentioned in the literature. Immediately after this, the Bema Church was built. Between the 10th and 12th centuries, the North Church was demolished, leaving only its apse. The naos and inner narthex sections were repurposed as a cemetery. On the other hand, Bema Church remained in use until the 12th century, and with the construction of today's church, it left its place to the present structure around the 13th century (Striker & Kuban, 1997).

Following the conquest of Istanbul, the building became a zawiya-mosque and was later restored by Beşir Ağa, the palace eunuch, in the 18th century. Subsequently, it was entirely converted into a mosque, and a minaret was built. It is unclear whether this building complex, serving religious and social functions, underwent any structural changes before its conversion into a mosque in the 18th century. However, a small mihrab niche was constructed in the apse to indicate the qibla direction. This mihrab remained intact when the site was used as a zawiya, and its foundations were found during the excavations. The apse of the building was likely destroyed during its conversion into a mosque by Beşir Ağa (Kuban, 1994). According to reports, a fire in 1837 caused the loss of some parts of its original design, including side corridors, narthex galleries, and much of the marble cladding. Extensive repairs were conducted in 1854 (Berger & Göyünç, 1997). The minaret collapsed due to a lightning strike on the mosque, which was in use until the 1930s. The

mosque was abandoned in the early 1930s after the Kalenderhane Madrasa, depicted on a nearby plot in the Pervititch, who drew insurance maps of Istanbul from 1922 to 1945, Vezneciler map was demolished (Berger & Göyünç, 1997). Due to these reasons, the area, abandoned until 1965, fell into ruin (Figure 5). After the excavation and restoration works by Striker and Kuban between 1966 and 1978, it was reopened as a mosque. The church entrance had to be demolished because the road was elevated during restoration. A new entrance was built at road level, and an external staircase was added to the mosque's minaret (Kuban, 1994).

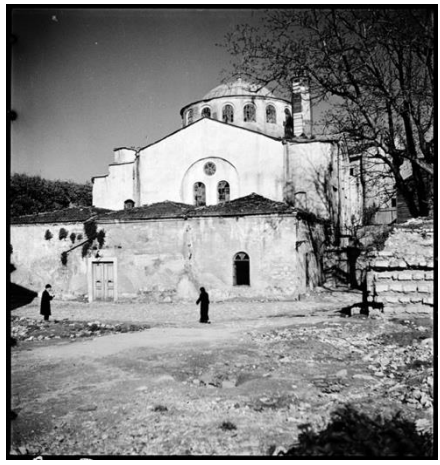

Figure 5. Kalenderhane Mosque in 1935 (Dumbarton Oaks Nicholas V. Artamonoff Collection)

3.4. Visibility of The Structure

Preventing the loss of architectural heritage structures, which are an essential part of cities, is as important as protecting them. This disappearance may occur due to dense urbanization or in the literary

environment as a result of confusion that may arise due to changes in the way the structure is expressed in literature.

Unfortunately, this situation is seen in both of them for the Kalenderhane Mosque, which is the subject of the study. Due to its very old history, the multi-layered nature of the building may affect this situation. In addition to the confusion in the literature regarding the name of the building, which has different physical and functional phases, it is also lost in the urban fabric due to its location in a densely populated residential area of Istanbul. For this reason, in this part of the study, the visibility of the structure will be discussed in two parts: written sources and urban texture.

3.4.1. In Written Sources

Literature studies are invaluable in preserving cultural heritage elements more accurately, as it is possible to obtain various important information about the structure. For this reason, the study includes the names by which the structure is referred to in the literature, to assist in future studies on the Kalenderhane Mosque.

When considered chronologically, it is known that the building was constructed on a small bath dating back to the 4th and 5th centuries. However, the name of the bath during that time cannot be determined from the sources. Given that it was likely a small-scale, private bath, the absence of this information is expected. On the other hand, opinions vary regarding the name of the church built on the bath structure at that time. Van Millingen (1912) cites Paspates in his research, discussing the church’s possible name and construction date. He believes it was constructed before Justinian's time, referencing Paspates' expressions,

'Valens and Daudatus Monastery' or 'monastery near the aqueduct’. Then he mentions that the church cannot be the Valens and Daudatus Monastery dedicated to St. John the Baptist because that building is close to the Holy Apostles church located west of the Bozdoğan (Valens) Aqueduct. Considering the architectural features of that building, he refutes Paspates' argument by stating that the Kalenderhane Mosque, The Church of St. Mary Diaconissa cannot belong to the period of Justinian and also notes that Mordtmann identified the building as the Theotokos Church in the Deaconess region. He argues that the mosque's site aligns with the historical church's location. The rich and beautiful decorations of the building also indicate its importance. Taking this into account, Van Millingen (1912) also mentions the church's role in the imperial processions from the Great Palace to the Holy Apostles.

Theophanes, who first mentioned the Diaconissa Church in literature, attributes the building to Patriarch Kyriakos (593-605). Therefore, although it is claimed that the building was constructed towards the end of the 6th century, Freshfield (1897), who visited the building in 1880, states that he believes the church was not earlier than the 8th century and not later than the 10th century, considering both the shape and character of the dome. On the other hand, Lethaby (1904) places the building between Justinian and the 11th century, claiming its similarity to a small cross-shaped church from the 10th century on Mount Athos. Considering these points, the Diaconissa Church referenced by Theophanes may not be the Kalenderhane Mosque. Instead, it might have been rebuilt, as St Mary's Diaconissa Church, a common transformation practice in the city (Van Millingen, 1912). Mamboury (1929), who accepts the building as

the Church of St. Mary Diaconissa, also mentions that the building was built between 593 and 605 in the name of Patriarch Kyriakos. Still, the date of the present structure can be traced back to the 9th century.

Based on the limited data in the sources published in the early 1900s, it seems that the structure of St. Mary Diaconissa church has lost its validity due to Striker-Kuban's excavations in the area. Two depictions of the Mary of Kyriotissa dated to the Palaiologos period of the 12th century were found during the excavations. Based on the Kyriotissa-type depiction of Mary and sources from the 6th to 14th centuries, Berger & Göyünç (1997) suggest that a district in Constantinople was named ta Kyrou during the reign of Theodosius II. They believe the Ta Kyrou church was initially in the city's southwest. Between the 6th and 10th centuries, it lost its function, and by the 12th century, the Bema Church, located where the Kalenderhane Mosque stands today, began to be called the Ta Kyrou church.

The building is also referred to as the Akataleptos Monastery Church in literature. Though undated, an Arabic document from the era of Mehmed the Conqueror lists the building as Akanalosos. Although Tahsin Öz named the structure Akanalosos, research later clarified its correct name as Akataleptos (Göyünç, 1984). Eyice (2001) also stated that the building could be the Akataleptos Monastery Church, based on unclear information in a foundation charter of Mehmed the Conqueror. At the same time, he mentions a monastery near the Bozdoğan (Valens) Aqueduct, which was first mentioned in sources from the 11th century. Considering the name Kyriotissa found during the excavations of Striker-Kuban, he describes the building as a church likely named after Mary of

the Akataleptos Monastery. With new data from historical sources and excavations, the building was eventually named Theotokos Kyriotissa Church.

Although the building's pre-Ottoman name remains uncertain, various names in literature refer to it. During the Ottoman Period, there were differences in the name of the building in line with the changes in its function. It is believed that a Byzantine church initially served as a Mevlevihane and a zawiya-Imaret for the wealthy, the poor, and dervishes, according to the foundation charters of Mehmed the Conqueror, explaining why it was named Kalenderhane. In the early 18th century, the building was repurposed as Kalenderhane Mosque. In addition, a place called Kalender Madrasa is mentioned in the sources, and it is debated whether the madrasa is the same building as the mosque. Göyünç (1984) noted that Pervititch, included the building south of Kalenderhane Mosque, separated by Kalender Madrasah Street, on the 1935 Vezneciler map as Kalenderhane Madrasa.

3.4.2. In Urban Fabric

Examining how its physical visibility has changed based on the architecture and urban arrangements in its close surroundings is crucial. Unfortunately, it is not possible to go too far back and make correct inferences in this evaluation due to the lack of sufficient visual resources on this subject and the fact that most of the available materials do not have the desired data. However, the structure is encountered in the Istanbul miniature of Matrakçı Nasuh, who lived in the 16th century. It is possible to conclude that it was important for the city at that time from

the presence of the structure in the miniature, where its relationship with the aqueduct is also revealed (Figure 6).

Figure 6. Kalenderhane Mosque and Bozdoğan Aquaduct in Matrakçı Nasuh's Istanbul Miniature (Wikicommons, 2024)

Apart from the miniature mentioned, the building could not be identified by us on old maps of Istanbul. For this reason, most of the evaluations were based on developments from the 20th century and beyond. The early plans of the region, such as the 1913 German Blues, the 1918 Istanbul Guide Map from the Municipality Map Department, and the 1935 Pervititich insurance plan, are examined. It is interesting that they include the Kalenderhane Madrasa, which no longer exists today. Additionally, the madrasa appears to have had relatively monumental features on the neighborhood scale compared to the dimensions of the surrounding buildings (Figure 7, Figure 8). Pervititich's work stands out because it displays detailed information about each building, differentiates important buildings by coloring them, and includes all streets and their names. In contrast, other works only display important buildings, building blocks, and some streets with limited detail.

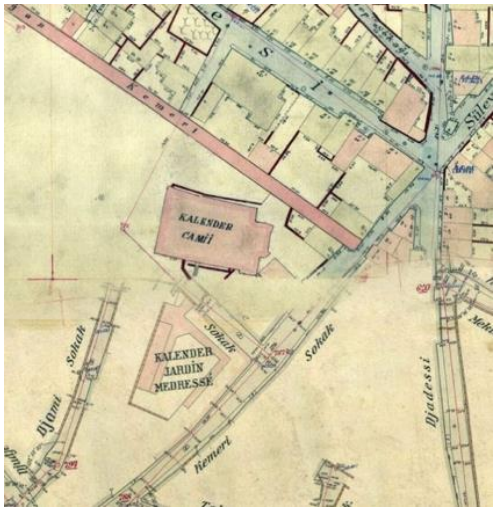

Figure 7. Kalenderhane Mosque and Madrasa in 1913 German Blues (URL-1)

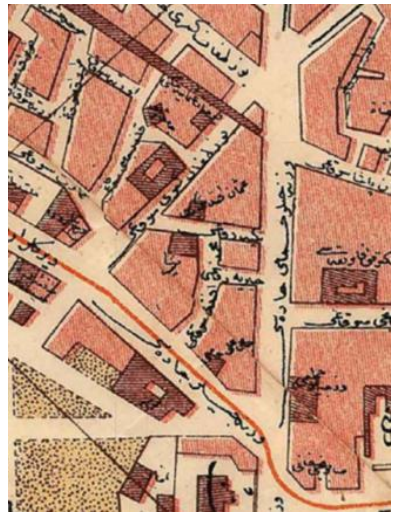

Figure 8. Kalenderhane Mosque and Madrasa in 1918 Istanbul Guide Map (URL-2)

The Pervititch plan shows that Kalenderhane Cami Street, which lies to the west of these structures, is not continued in the German Blues two separated drawing. In the Pervititch plan, it is seen that most of the structures in the city block between Kalender Mosque Street and Cüce Çeşmesi Street were demolished. Thus, an opening was created in front of the entrance of the mosque. The presence of this gap can be said to enhance the visibility of the structure. Also, the street between the mosque and the madrasah is named Kalender Madrasah Street in the plan, and the area in front of the madrasah is designated as a square (Figure 9).

Figure 9. Pervititich 1935 Vezneciler Insurance Plans (Salt Research, Jacques Pervititich Archive)

Considering the Ottoman Period city's neighborhood typology, the building that gave its name to the neighborhood, together with the other buildings and the square, constitutes the neighborhood's core. When you look towards Kalenderhane Mosque while passing through the main street, Şehzadebaşı Street, you see the square, a single-story madrasah building, and then the mosque. The mosque is probably quite perceptible due to the perspective created by the void and the low height of the madrasah. In addition, it is possible to reach the entrance of the building directly from Şehzadebaşı Street via Kalender Mosque Street, providing ease of access. From a low-resolution orthophoto from 1946, it can be seen that most of the structures in the area, including the madrasah, were destroyed, creating a big void (Figure 10). At the end of this situation, Kalenderhane Mosque started to be seen more clearly from Şehzadebaşı (Direklerarası), and 16 Mart Şehitleri Streets (Bozdoğan Kemeri).

However, this gap, which is still quite large compared to the size of the building, caused a change in the urban fabric. We believe that this disproportionate relationship of fullness and emptiness is not a very inviting image.

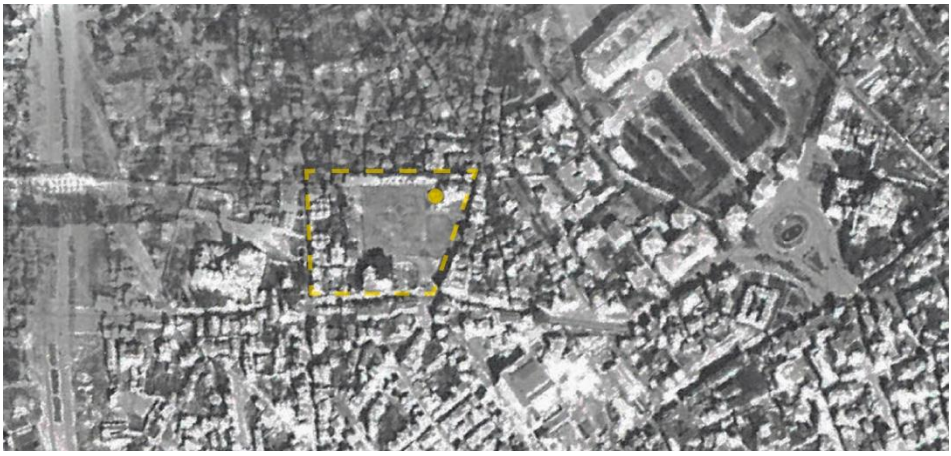

Figure 10. Kalenderhane Mosque and Surrounded Area in 1946 Orthtophoto (URL-3)

In the 1950s, intensive expropriation work was initiated in the region, and important urban decisions affected not only the Kalenderhane Mosque but also the general perception of the region's users. As a result of increasing migration to the region, usage patterns and needs began to change, and this situation caused some changes in the urban fabric. As a result of the expropriation works, a dormitory building, which is quite dominant in scale compared to the texture of the area, was built in the large space created by the demolished buildings between Kalenderhane Mosque and Delikanlı Street (Figure 11). In addition, the scale change in the region was not limited to this, but due to the changing zoning policies and the increasing apartment building, the mosque, which could not

come to the forefront in terms of its dimensions, started to get tighter in the urban fabric.

Figure 11. Kalenderhane Mosque and Surrounded Area in 1966 Orthtophoto (URL-4)

In the Ottoman period, the courtyard design in individual mosque examples or in complexes where several structures are designed together integrates the structure with the landscaping. In this way, these structures would have the opportunity to come to the fore, even if only slightly, with the influence of environmental factors. For example, in courtyard designs of varying sizes depending on the scale of the mosque, the space created by the courtyard increased the perceptibility of the building by passersby, at least in a congested urban fabric. The Şehzade Complex in the region is an example of this situation. On the other hand, the surroundings of Kalenderhane Mosque and Bozdoğan (Valens) Aqueduct are filled with unqualified structures, negatively affecting the perception and use of these monumental structures (Figure 12). In addition to all

these, the building, which is already stuck in the urban texture, has been well hidden by the elevation of the roads around it.

Figure 12. Kalenderhane Mosque and Bozdoğan Aquaduct in Urban Texture (Google Earth, 2024)

Finally, when it comes to the Vezneciler Metro Station, which is the most used for transportation to the region, the commercial spaces that close the front of the mosque as a horizontal strip strengthen the perception of the building (Figure 13). When you start to proceed on 16 Mart Şehitleri Street to reach the building, which only attracts attention with its minaret, the building completely disappears due to the wall extending on the left side of the road. When it comes to the lot where the mosque is located, the construction on the street side again creates an obstacle to the perception of the building.

Figure 13. Kalenderhane Mosque from Vezneciler Metro Station (Zorlu Başel, 2024)

4. Conclusion and Suggestions

With its multi-layered structure, Istanbul, like many other cities, has cultural heritage elements that allow for the tracking of historical continuity. It is possible to trace its traces from the first centuries, especially in the historical peninsula and its surroundings, where settlement began. For this reason, researching these areas and preserving the structures is very important for the city's history. In this way, it is possible to prevent the traces of history from being lost and to ensure that they are passed on to future generations. This study discusses Kalenderhane Mosque in Şehzadebaşı, one of the important historical areas of Istanbul. In this context, attention is paid to how it has come to the present day through written sources, how it has been used in functions until today, and how it has been shaped in the user's perception due to the physical transformations it has experienced and its immediate surroundings.

As a part of the cultural and architectural heritage, tracing and revealing the structure in written sources is as important as the physical preservation of the structure, and they complement each other. In this regard, there are various ideas in the literature about the name of the Kalenderhane Mosque before the Ottomans used it in the 15th century. There is no name found for the period when the structure was used as a bathhouse in the Roman period, and the names of the structure, St. Mary Diaconissa Church, Theotokos Kyriotissa Church, and Akaleptos Monastery Church, from the Byzantine period are discussed by various experts. However, after the excavations revealed a depiction of Mary of Kyriotissa, it was generally accepted that the structure's name was Theotokos Kyriotissa Church. During the Ottoman period, there was no confusion about the name of the structure, and the structure, which was called Kalenderhane due to its function, was mentioned in written sources as Kalenderhane Mosque after it began to be used as a mosque.

Although we know that the function of the structure has changed over time, the continuity of its use also forms a part of the region's cultural heritage. In this context, after the first church was built in the 6th century, it went through various phases until the Ottoman period, but it preserved its function. If we take into account the view that it could have been a stop on the imperial procession from the Great Palace to the Holy Apostles route due to its rich decoration. The importance of the church and its surroundings increases. After the conquest of Istanbul, it was used as a kalenderhane and then converted into a mosque in the 18th century, which shows that its use continued during the Ottoman period.

Despite the Kalenderhane Mosque itself having been used for centuries despite some structural changes, it is possible to say that the change in its surroundings is greater. Although this change did not change the structure itself, it changed its perception considerably. Especially in the 20th century, with the increasing migration to the region, the changes in the construction and social environment also changed the requirements. This situation led to the loss of the neighborhood's texture. Over time, factors such as the construction of a large dormitory compared to the surrounding buildings, the opening of commercial spaces in front of the mosque, and the rise in road level have caused the Kalenderhane Mosque to become buried in the surrounding topography. As a result, the visible parts of the mosque have decreased significantly, reducing its overall visibility.

In conclusion, this structure/area, which has existed for centuries in some way, even if its name, structure, or function has changed, is an important cultural heritage element in terms of its multi-layer. Indeed, it is vital that the structure, which is among the cultural properties as a monument, is actively used and protected today. However, the structure's visibility has decreased over time due to the rise in road levels, the construction of large-scale structures around it, and unconscious construction. For this reason, it is important to consider the structure and its surroundings together and make landscaping.

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The article complies with national and international research and publication ethics.

Ethics Committee approval was not required for the study.

Author Contribution and Conflict of Interest Declaration Information

All authors contributed equally to the article.

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Professor Günçe has been a member of Eastern Mediterranean University senate for an extended period and is currently serving as the elected professor representative senator. His primary research interests include architectural theory, design, environmental psychology, conservation, cultural heritage, traditional built environments and housing issues. He has also collaborated with researchers from various disciplines, exploring topics such as the role of technology in shaping the memory of architectural space, professional practices, tourism and education.

Professor Dr. Günçe has contributed numerous papers - articles to national and international journals and conferences. He has also participated in international research projects, some of which have been supported by the European Union. His academic achievements have been awarded and his scholarly works have been widely cited on the Web of Science platform.

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