ARCHITECTURAL HERITAGE AND CONSERVATION PRACTICES

Editor

Assoc. Prof. Dr. H. Hale Kozlu

LIVRE DE LYON

2022

Architectural Sciences

Architectural Heritage and Conservation Practices

Editor

Assoc. Prof. Dr. H. Hale Kozlu

LIVRE DE LYON
Lyon 2022

Architectural Heritage and Conservation Practices

Editor

Assoc. Prof. Dr. H. Hale Kozlu

LIVRE DE LYON
Lyon 2022

Architectural Heritage and Conservation Practices

Editor •. Assoc. Prof. Dr. H. Hale Kozlu • Orcid: 0000-0001-6711-3139
Cover Design • Motion Graphics
Book Layout • Mirajul Kayal
First Published • December 2022, Lyon

ISBN: 978-2-38236-492-5

Publisher • Livre de Lyon
Address • 37 rue marietton, 69009, Lyon France
website • http://www.livredelyon.com
e-mail • livredelyon@gmail.com

LIVRE DE LYON

PREFACE

Studies in the field of documentation and conservation of architectural heritage vary in different countries depending on many factors such as building types, damage levels, legal and administrative structures of countries. It is a process that needs to be planned, producing projects and integrating the implementation with the projects for the protection of these artifacts, which are described as cultural assets. With this study, it is aimed to reflect the methods followed in the preservation and documentation of historical buildings and areas in Turkey by examining examples from different periods, building types and regions.

In this context, this book is fictionalized as a selection representing four different themes. For these themes, "*Documentation and Conservation of Monumental Buildings*", "*Documentation and Conservation of Civil Architecture", "Documentation and Conservation Techniques of Historical Buildings" and "Documentation in Urban Design"* have been identified.

I would like to thank the authors who have contributed to the work formed by the scope of these themes with their valuable work, the valuable referees who have spent time along with their busy academic work and the staff of the Livre de Lyon publishing house and Assist. Prof. Dr. Mehmet Fatih Sansar for their support in the preparation and publication phases.

Assoc. Prof. Dr. H. Hale Kozlu

Editor

CONTENTS

CHAPTER I

BATTALGAZI (OLD MALATYA) WALLS THROUGH THE EYES OF EVLIYA ÇELEBI AND ALBERT GABRIEL

Leyla KADERLİ[1] & Nigar Ece DEĞİRMENCİ[2]

[1](Assist. Prof. Dr.) Erciyes University,
Faculty of Architecture, Architecture Department,
Kayseri, leylakaderli@erciyes.edu.tr
ORCID: 0000-0002-3497-6664

[2](MSc Architect/ PhD Student) Erciyes University,
Graduate School of Natural and Applied Sciences,
n.ece.degirmenci@hotmail.com
ORCID: 0000-0002-5103-322X

1. Introduction

The province of Malatya is located in eastern Anatolia, in the Upper Euphrates basin, in the transition area between the Mediterranean, Eastern Anatolia, Central Anatolia, and Southeastern Anatolia regions. Old Malatya (Battalgazi), established in the south of the Malatya plain, is surrounded by the Bey Mountains to the north.

In the written tablets found in Kültepe, the name Malatya is mentioned as "Melid", "Melita", and "Melidda" in the correspondence between Assyrian merchants and Hittite merchants (Oğuz, 2000: 1). The city, which was called "Melitene" during the Byzantine period, was referred to as "Malatiyye" during the Turkish Seljuk period (Metin, 2013: 5) and was known as Daru-r Rifa (City of superiority and nobility) (Ağaldağ, 2017: 875). The region, named Battalgazi after Seyit Battal Gazi, which is mentioned in the Battalname[1] saga, the first Turkish work written in Oghuz Turkish, has also given its name to the central district today (Kavruk ad. Durukoğlu, 2012).

1 The Battalname epic featuring Seyit Battal Gazi, which gives information about Turkish culture and is written in Oguz Turkish, is widely covered.

Malatya and its surroundings have been inhabited since the Pre-Pottery Neolithic Period. One of these, Cafer Höyük[2], is now under the Karakaya Dam (Cauvin, 1986 :39-49; 1989: 75-86). The other important settlement in the region, Aslantepe[3] (Frangipane, 2016: 1203; Frangipane, 2018: 71-104) , which gained importance since 5000 BC, on the other hand, was moved 4 km north of its location in the 1st century AD to today's Battalgazi (Aytaç, 2013: 15). Aslantepe was included in the UNESCO World Heritage list in 2021.

Until the 11th century, Battalgazi changed hands from time to time between the Byzantine and Islamic states and became one of the general headquarters of the Islamic armies marching on Anatolia (Honingman, 1988: 233). Turkish sovereignty was established with the conquest of the city by the Danishmends in 1102. Seljuk rule began in 1106 (Metin, 2013: 47). The city was definitively annexed to the Ottoman Empire in 1516 by Yavuz Sultan Selim and the Mamluk and Dulkadiroğlu domination in the region was ended (Darkot, 1997: 239).

The epidemics that started in the Battalgazi settlement in the late Ottoman period and the fact that Hâfız Mehmet Pasha, the commander of the region, moved his army headquarters here in 1838 caused the people of the region to leave Battalgazi and migrate to Aspuzu (Yeni (New) Malatya), which was previously used as a summer settlement (Çelebi, 1986: 426)[4]. With the migration of the people, the Battalgazi settlement has fallen into disrepair (Texier, 2002: 145).[5]

Figure 1. Historical development of settlement in Malatya

2 According to Cauvin: Remains of rectangular houses consisting of two or three rooms side by side, interconnected and made of mudbrick blocks were found.

3 According to Frangipane, Continuing until the 11th century AD, the formation of centralized societies with a hierarchical structure on the way to statehood can be seen in the Arslantepe Mound.

4 İn Evliya Çelebi travel book: "When spring comes, all the people of Malatya, small and large, rich and poor, migrate to the Aspuzu vineyards. Only outsiders, merchants, some Christians and about three hundred guards remain in the city."

5 Texier described Battalgazi's condition that day as "*abandoned caravanserais, empty bazaars and half-demolished houses*".

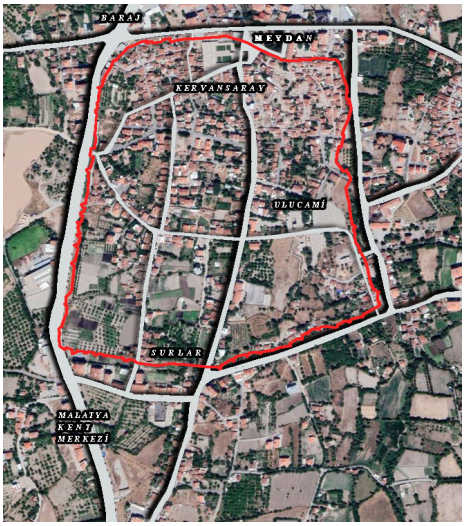


Figure 2. Satellite image of Battalgazi district and the boundary of the city walls (Url-1)

Many travelers, pilgrims, and merchants who visited Malatya and its surroundings in the historical process have conveyed their impressions. Along with the geography of the region, the travelers also mentioned its social structure and values, architecture, and monumental structures[6] (Bell 1909: 338; Grenard, 1901: 551) .

In the 17th century, Evliya Çelebi, a traveler, writer, and researcher who came to Malatya from Sivas, visited the region and gave extensive information about Battalgazi and its surroundings. In addition to the travelers and merchants who resided in the region for a short time, many researchers such as German soldier H. Von Moltke, French traveler Babtistin Poujoulat, French traveler Charles Texier in the 19th century, female traveler Gertrude Bell, French Archaeologist Albert Gabriel, French traveler Fernand Grenard, French Archaeologist Louise Delaporte, French geographer V. Cuinet visited Battalgazi in the 20th century. (Texier, 2002), (Çelebi, 1986), (Gabriel, 2022),

6 According to Gertrude Bell (1909), the city was completely destroyed except for a few mosques in ruins, but he described the Grand Mosque as *"one of the finest works of the later period". "The mosque is planned around a courtyard in the Semerra plan and there are old carpets and mulberry trees in the courtyard. Beautiful blue tiles and colored bricks are decorated with beautiful blue tiles and colored bricks inside the big arch."* and gave information about the architectural features of the Grand Mosque Grenard, F. (1901). In the 20th century, the traveler Fernand Grenard visited Battalgazi and published the inscription of the madrasah in the Journal Asiatique In the article, he translated the inscription as *"It was renovated by architects named Şemseddin Muhammed b. Osman el-Neccar and Tekfuroğlu Stefan during the reign of Melik Eşref Şaban (1363-1376)".*

(Getrude Bell, 1909), (Grenard, 1901). In the past, these travelers provided brief information and documents about some of the buildings that have taken place in the memory of the city. However, changing conditions and circumstances over time have also affected the settlement and architecture of old Battalgazi, and the structures and neighborhoods that existed in the past have disappeared over time and were partially replaced by new structures.

In this study, Evliya Çelebi (Çelebi, 1986: 419-426; Çelebi 2010: 6-24), who visited Malatya in the 17th century and gave detailed information, and Albert Gabriel (Gabriel, 2022), who came to the region about 280 years later, made observations about the settlement of Malatya and the city walls, and the information they conveyed in their books were evaluated with their current status in today's settlement.

2. Observations of Two Travelers: Battalgazi

The first original manuscript of Evliya Çelebi's Seyahatname[7] in the Topkapı Palace Library (İz, 1989: 709-734). The original title of the work is *Tarih-i Seyyah Evliya Efendi*. It was only in the nineteenth century, first in Europe and then in Istanbul and Egypt, that Seyahatname reached a wide audience[8] (Demir, 2015:193-212). In 1814-1816, Austrian Ottoman historian Hammer, published studies on the Kurdish, Hungarian, Tatar, and Dobruja vocabulary in Seyahatname, and translated the work into English for the first time in three books with extensive selections from the first four books. It was published for the second time in 1846 and for the third time in 1848. The book, the sale of which was later banned, was printed for the fourth time in 1862 (Tezcan, 2011: 79-80). The first 6 volumes of Seyahatname were published by Ahmed Cevdet and Necip Asım between 1896-1901[9], and Reşat Ekrem Koçu and Mustafa Nihat Özön published important simplified editions for the general reader in the 1940s (Tezcan, 2011: 91). The end of the 1980s was also the period when publications on Seyahatname increased (Tezcan, 2011: 100).

7 Accordin to İz, (1989): *The original manuscript was completed in Egypt in approximately 1685. It is possible that the book-loving Beşir Ağa took this copy to Egypt around 1715."*

8 According to Demir (2015): *"The pioneer was Joseph von Hammer. Hammer, who found Volume IV of Seyahatname in Istanbul, obtained Volumes I, II and III in 1802. In a promotional article he wrote in 1814, he announced the Seyahatname to the world of science with the words "the most interesting and most pleasing discovery among all Eastern manuscripts."*

9 Accordin to Tezcan: This publication was subjected to the censorship applied to book publishing of the period; in particular, some sections on pashas and celalis were removed and some sentences were changed.

Evliya Çelebi provided information about the architectural features, culture, social life, people, customs, beliefs, and history of the places he visited[10], in his book.

In the translation of Evliya Çelebi's "Evliya Çelebi's Seyahatname in today's Turkish", the information about the walls in the 1st Book of the 4th volume of the 10-volume work is included under the titles of *Güzel Rukbe Yurdu, that is, the features of Malatya Castle* [11]*, the shape of Malatya Castle* (Çelebi, 2010: 10). Battalgazi is covered in the book, which contains a lot of information about Battalgazi, along with the city walls, mosques, baths, fountains, churches, caravanserais, and their condition at that time is reflected (Çelebi, 2010).

In his Seyahatname (2010), Evliya Çelebi first mentions the history of Malatya castle (Çelebi, 2010: 6)[12]. The walls have been destroyed and repaired many times as a result of changing sovereignties and provide information about the neighborhoods and buildings in the settlement (Çelebi, 2010: 10). The traveler states that there are 32 neighborhoods and 12 mosques in the settlement, the most famous of which is the Grand Mosque. Çelebi also mentioned the names of the masjids, many of which do not exist today (Çelebi,

---

10 According to İz, (1989): Evliya Çelebi and his Seyahatname. *Belleten*, s.713." Volume 1 Istanbul and its region, Volume II Bursa and its region, Black Sea coast, Trabzon, Abaza country, Georgia, Crete, Erzurum, Kars, Azerbaijan, Ankara, etc. Volume III From Üsküdar, via Konya-Antakya, Damascus, Syria, Palestine, Acre, Urfa, Eastern Anatolia; Rumelia, especially Edirne, etc. Volume IV Diyarbekir, Bitlis, Van and its region; traveling to Iran as an embassy, Rumiye, Tabriz, Isfahan, Mosul, Baghdad, Hemedan, etc. Volume V Eastern Anatolia, Tokat and its region, from Istanbul to Özi Castle; Vama, Ismail, Akkerman, Bender, Hotin, Babadağı, Silistre; the uprising and end of Jalali Abaza Kara Hasan Pasha; Thrace, Çanakkale and its region, Boğdan, Wallachia, Belgrade, Belgrade, Hungary, Bosnia, Dalmatia. Volume VI Erdel, Hungary, Albania, Rumelia. Volume VII Hungary, Austria, Vienna with the embassy delegation of Kara Mehmed Pasha; Uyvar, Esthergon, Temesvar, Erdel, Hak, Boğdan, Crimea, Caucasus, Dagestan, Azov. Volume VIII From Azak to Crimea; return to Istanbul via Kefe, Bahçesaray, Kılburun, Akkerman, İsmail, Babadağ', Hasköy, Edirne; return to Chania by traveling all over Greece and Peloponnese via Edirne, Dimetoka, Komotini, Drama, Thessaloniki to participate in the Cretan Campaign; the siege and conquest of Heraklion; Albania: Ioannina, Tepedelen, Avlonya, Draç, Ilbasan, Ohrid, Resne, etc.; return to Istanbul via Manastı r, Ishtip, Tikveş, Cisr-i Mustafa Pasha, Edirne.

11 According to Çelebi (2010): In the title of Rukbe, Malatya Castle, he states the reason for the name of the castle by saying *"It is from the Greek land. It is called Rukbe in Greek, it is the old city. In the beginning, when Hazrat Yunus was in the city of Mosul, the kayser named Rukbe, who brought faith to him, liked the water and air of this Malatya place and built a castle so that it would be a safe home, so it became a big city."* in relation to Rakabe (Rukbe).

12 According to Çelebi, (2010): *It became a great city of the world's prestige called the "House of Rukbe".*

1986: 422). He stated that Silahtar Mustafa Pasha Caravanserai was a unique inn covered with domes, the bazaar market remained well maintained, and the residential buildings were single, two-storey, connected gardens and earth-covered (Çelebi, 2010: 11-13).

In 1932, French archaeologist, architect, and researcher Albert Gabriel, who visited the region via the routes of Istanbul, Harput, and Diyarbakır, included his observations in the provinces of Mardin, Hasankeyf, Bitlis, Malatya, Şanlıurfa, Harput in his book *Şarki Türkiye'de arkeolojik geziler*. He gave information about the city walls, the Grand Mosque, Silahtar Mustafa Pasha Caravanserai, and architectural drawings of Malatya and Battalgazi (Gabriel, 2022).

Albert Gabriel, who gave information about the settlement, first mentioned the features of the city walls and gave a sketch of the settlement plan in his work. The traveler touched on the architectural features of the Grand Mosque in detail, and also mentioned the ornaments of the building, its plan, and photographs. He also included drawings, photographs, and information about the Silahtar Mustafa Pasha Caravanserai (Gabriel, 2022: 231)

Whereas Evliya Çelebi was based solely on his own observations, Gabriel also quoted Louise Delaport[13], the head of the Aslantepe excavation, who had come to the region before him.

The Grand Mosque and Silahtar Mustafa Caravanserai, which both travelers emphasized, are cultural assets that have been preserved until today, while the city walls are partially preserved.

The name of the military headquarters (Roman legion) established in the Battalgazi district is Legio XII. Fulminita (Kaya, 2003). The city walls were also built during this period. It is known that the city was fortified with double walls during the Byzantine period during the reign of Emperor Justinian and the defense line was extended with a moat. The castle was destroyed in 575 during the reign of the Sassanid ruler Husrev I and was repaired in 757 during the Abbasid period. (Sevgen,1959:244). Byzantines made the second major destruction in 934 (Sevgen, 1959:244). In 1057-1067, Byzantine Emperor Contantinius X. Dukas had the inner and outer walls of the castle repaired and the moats cleaned (Sevgen, 1959: 244). During the Middle Ages (Byzantine-Turkish and Islamic periods), the city walls changed hands frequently as a result of wars and were destroyed and rebuilt many times. The defensive structure, which was reinforced with a high outer wall and a water-filled moat, and an

13

inner wall surrounding it, is mentioned to have 95 bastions and 11 gates. (Metin, 2013: 132), (Sevgen, 1959: 244). In the 20th century the ditches were filled with soil (Eskici, 2013: 36). The city walls, which were extensively used and repaired during the Turkish period, lost their importance in time and fell into disrepair, and were used as a quarry in time.

The walls, which have resisted many wars in the historical process and have not been transferred much to the present day, have been partially preserved. Evliya Çelebi and Albert Gabriel gave extensive information about the city walls, which still partially preserve their importance in the Middle Ages.

Regarding the architecture of the fortification walls, Evliya Çelebi described it as " *... it is a five-cornered, solid fortress built with smooth stones on the shore of the bridge of the river Deyr-i Mesih14 in a wide valley...*" (Çelebi, 1986: 420). The castle, which Evliya Çelebi described as five-cornered, consists of pentagonal bastions placed at intervals. Evliya Çelebi continued about the city walls with the words "*In 583, Mehmet bin Danişmend rebuilt this Malatya castle. Now it is a ramshackle place and its chiseled stones are very large. The length of its wall is twenty-six cubits... The length of its circumference is 5100 steps"* (Çelebi, 1986: 421). Albert Gabriel, who found Evliya Çelebi's statement that the length of the circumference of the city walls is 5100 steps exaggerated (Gabriel, 2022: 226), mentioned information about the condition and plan of the building at the time. Gabriel's description of the city walls as *"The walls have been destroyed in an area covering an area of 2-3 meters around the city"* suggests that the walls were severely damaged between the 17th century and the 20th century and that repairs were probably very limited. While Gabriel states that *"In the north, the wall first goes east for about 300 meters, but from the extreme end of this linear front, it joins the southeast corner of the walls with an irregular pointed line"*, he also states that he has limited results on the fortifications due to extensive destruction. He mentioned that it is not possible to determine the date of construction of the city walls because they have been destroyed and rebuilt many times (Gabriel, 2022: 225).

14 The stream in question is known as Derme stream today.

Figure 3. General condition of the city walls in 1932 (Gabriel, 2022: 400)

The outer walls of the castle mentioned by the travelers have a trapezoidal plan close to a rectangle. Both for the terrain conditions and to strengthen the defense, the eastern walls were built by the stream and narrowed towards the north in accordance with the shape of the Derme stream (Eskici, 2013: 28).

Regarding the entrance gates of the city wall, Çelebi also reported that *"The length of its wall is twenty-six cubits. Alacakapı, Susurkum gate, Mesak gate, Pazar gate are big gates. The north and other sides are moatless"*.

In support of Çelebi, Gabriel also mentioned four large gates belonging to the gate connected to the four main roads by saying *"Today, the four roads, which correspond to the four main points, extend beyond the borders of the castle. Indeed, these roads point to the four main gates of the castle, which Evliya Çelebi calls Aladja kapu, Süsürgün kapu, Bazar kapu"* (Gabriel, 2022: 226).

The city walls are known to have eleven gates, five in the east, one in the north, one in the west, and four in the south (Sevgen, 1959: 244). Alacakapı, one of the gates mentioned by the travelers, is on the northern city wall and also has an inscription. The inscription states that it was repaired on February 24, 1512 (Metin, 2013: 126). The Meşak gate is located to the south and the Süsürkem gate is to the west. The market gate, whose location could not be determined, is thought to be in the east due to the location of the market place (Metin, 2013: 126).

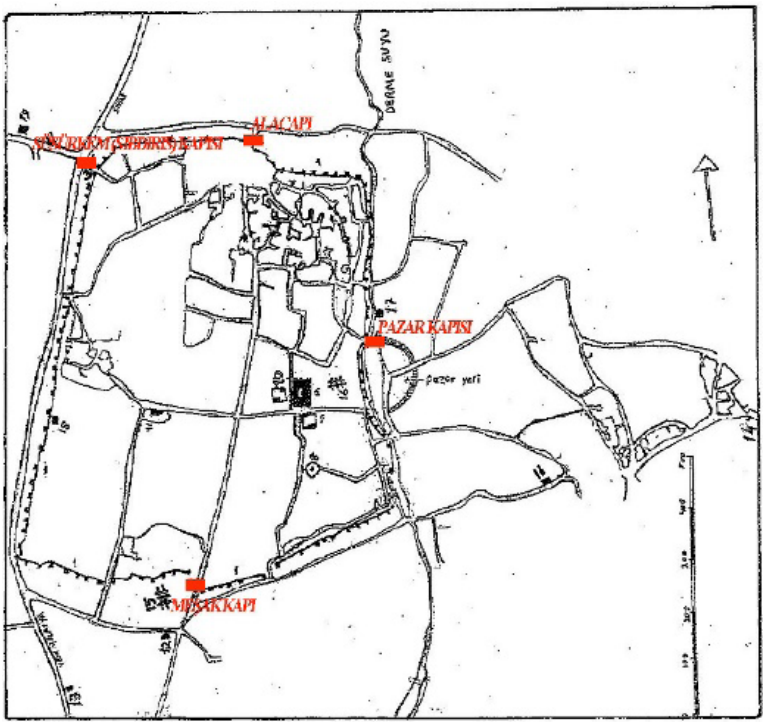


Figure 4. Wall gates, sketch (Metin, 2010: 241)

Albert Gabriel, by providing a sketch of the settlement in relation to the city walls, conveyed a construction that does not exist today.

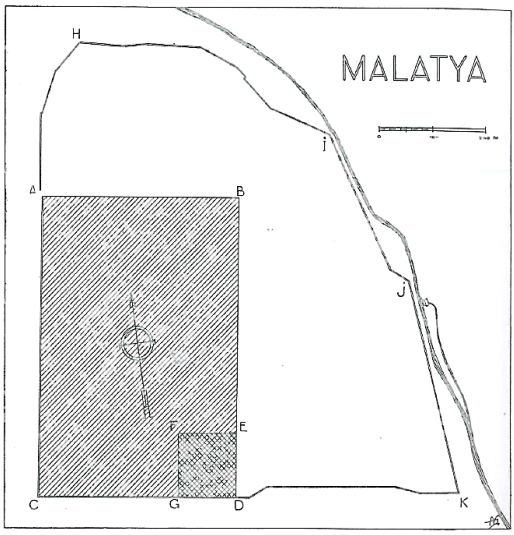


Figure 5. Battalgazi Walled city sketch (Gabriel, 2022: 230)

According to Gabriel, the city walls following the AHIJKD points are structures built later with the development of the city. Gabriel stated the existence of a fortress formed by the ABCD points; taking into account the remains of buildings. He also stated that the EFGD points could be an inner fortress belonging to the administration from the city walls. He reported that the medieval borders of the castle of the ancient city expanded and AHIJKD walls were added.

In the area of the EFGD walls in Gabriel's sketch, there are remains (Figure 6) with a wall thickness that can be defined as a monumental structure today. When Gabriel's sketch and the Seljuk period space formations are evaluated, the remains of the administration (Ahmedek castle) should be considered as a possibility in the settlement plans within the city walls.

Figure 6. East facade of the remains of the monumental building (Güngör archive, 2021)

In another sketch, the traveler shows the layout of the buildings inside the walled city (Figure 7). Gabriel showed 1; the city walls, 2; the Grand Mosque, 3; Şahabiyye-i Kübra Madrasa, 4; Melik Sunullah Mosque, 5; a monumental building (Unknown), 6; another monumental building (Unknown), 7; Halfetih Mosque Minaret, 8; Ak Minaret Mosque, 9; Silahtar Mustafa Pasha Caravanserai on the layout plan (Gabriel, 2022: 225). Except for the buildings numbered 5 and 6, all of the buildings mentioned by the traveler are registered cultural assets that have been preserved until today. The structures numbered 5 and 6 are located within the borders of the fortress belonging to the administration in the above-mentioned sketch (Figure 5) and there are remains of monumental buildings in the area (Figure 6). In Gabriel's plan, except for the fact that the city walls

curve more in the northeast direction, the locations of the existing buildings are generally correct.

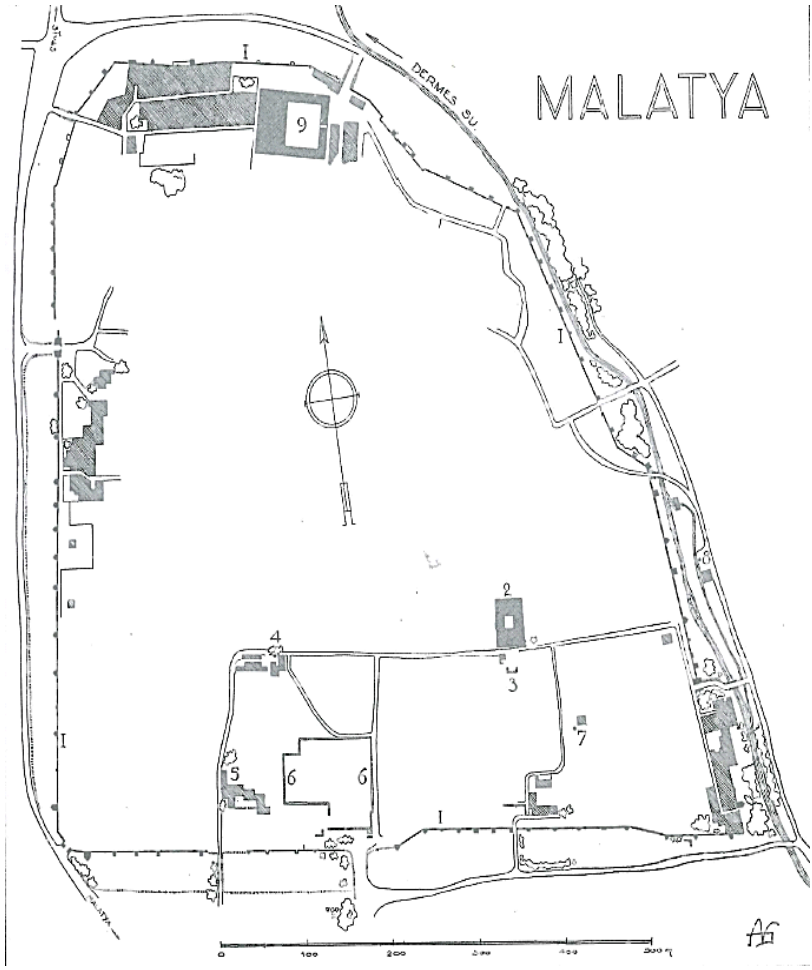


Figure 7. Gabriel, Walled city sketch 1940 (Gabriel, 2022: 225)

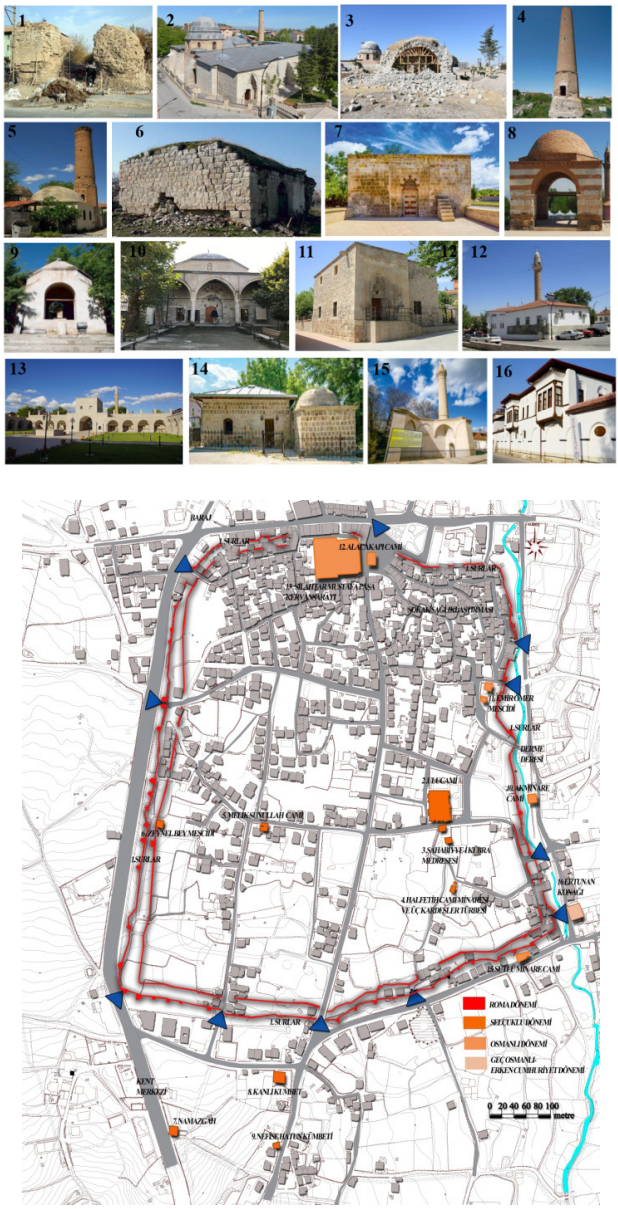
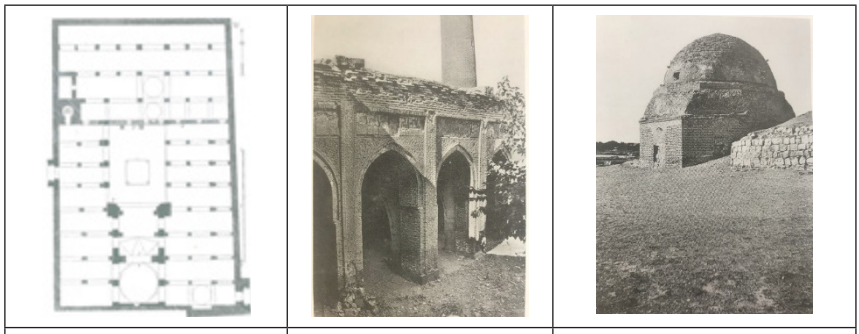


Figure 8. Today, the registered buildings in Battalgazi district are as follows; 1. Battalgazi Walls, 2. Grand Mosque, 3. Şahabiyye-i Kübra Madrasah, 4. Halfetih Mosque Minaret and Three Brothers Tomb, 5. Melik Sunullah Mosque, 6. Zeynel Bey Masjid, 7. Namazgâh, 8. Nefise Hatun Kumbet, 10. Akminare Mosque, 11. Emir Ömer Masjid, 12. Alacakapı Mosque, 13. Silahtar Mustafa Pasha Caravanserai, 14. Ahmet Duran Masjid, 15. Sütlü Minare Mosque, 16. Erturan Mansion, (Pictures from KUDEB archive, Layout plan updated from MBB)

Both travelers mention other buildings within the city walls, including the Grand Mosque and the Silahtar Mustafa Pasha Caravanserai.

Evliya Çelebi described the buildings within the walled city as *"Within the castle, there are mosques and masjids, an arsenal, supply warehouses, about three hundred houses, a marshal, and about seventy nephants since it is an inner city"* (Çelebi, 1986: 421). He also mentioned mosques and emphasized the importance of the Grand Mosque: *"It has 32 altars. Twelve of them are mosques. The most famous is the Grand Mosque. There are twenty neighborhood masjids, the oldest of which are as follows: Emir Ömer masjid in the castle, Karahan masjid, Saray masjid, Kızlar masjid, Hankah masjid, Bostancı masjid, Bektaşağa, Küçükmahalle and Kürtler masjids."* (Çelebi, 1986: 422).

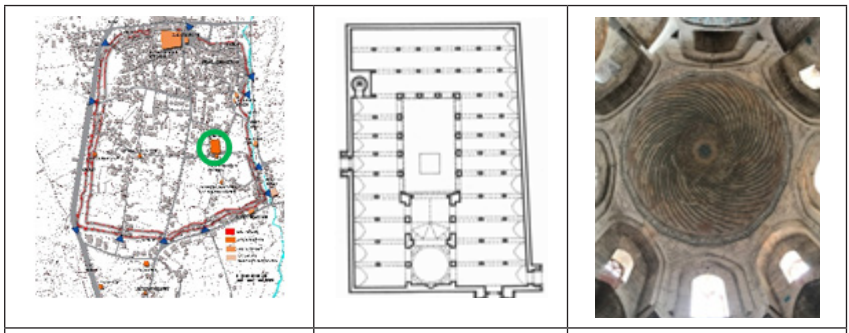
In his book, Albert Gabriel also included photographs of the Grand Mosque and a plan drawn by himself (Fig. 9). In Gabriel's mosque plan, the dome in front of the mihrab and the courtyard are indicated, and in the north of the courtyard, unlike today's plan, two domes and a closed space behind the minaret are shown.



a	b	c

Figure 9. Albert Gabriel's (1940) drawing of the Grand Mosque (Gabriel, 2022:228) b) View from the courtyard of the Grand Mosque Gabriel, 2022:403) c) View from the roof of the Grand Mosque to the dome Gabriel, (2022:401)

Battalgazi Grand Mosque is an Anatolian example of the mosque tradition of the Great Seljuk Empire in Iran. The elements that make it different from other mosques in the plan are its iwan, inner courtyard, and the dome in front of the mihrab. (Eskici, 2013: 193). It stands out with its Çarkıfelek dome, colored brick, and colored tile decorations. The mosque underwent repairs during various periods and was damaged by the Elazığ earthquake on January 20, 2020. Restoration works are currently underway at Grand Mosque and it is still used as a mosque.



a	b	c

Figure 10. Layout plan of the Grand Mosque (MBB, updated from 2022), b) Plan sketch (MKE, 2015), c) Dome in front of the mihrab (Değirmenci archive, 2019)

Another important structure that has been preserved to the present day, as reported by Evliya Çelebi and Albert Gabriel, is the Silahtar Mustafa Pasha Caravanserai. Evliya Çelebi emphasized the Silahtar Mustafa Pasha Caravanserai by saying "*The most beautiful one is the Silahtar Mustafa Pasha inn, the most honored vizier of Murad Khan. It has one hundred and seventy rooms with iron doors. It is covered with domes and is a unique inn.*" (Çelebi, 1986:422). In 1940, Albert Gabriel, who visited the region, included drawings as well as general information about the caravanserai.

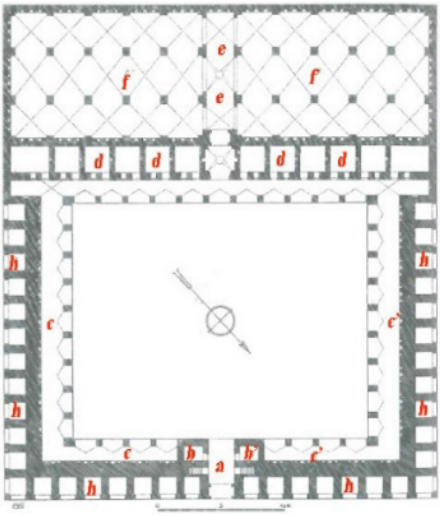


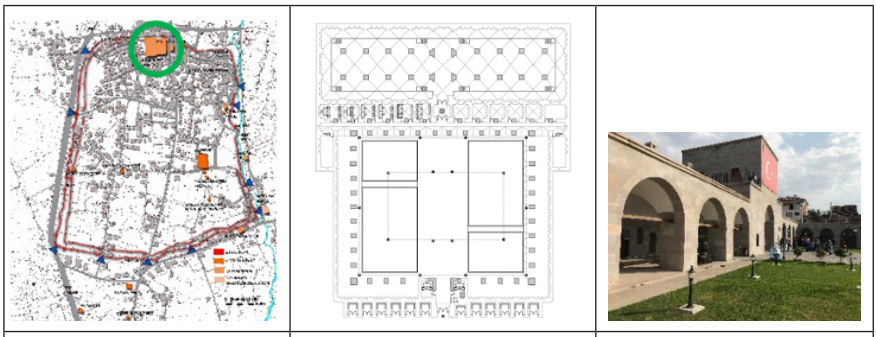
Figure 11. Albert Gabriel's plan sketch of the Silahtar Mustafa Pasha Caravanserai (Gabriel, 2022: 232)

Gabriel described the building as a gigantic caravanserai; "*This building was carefully constructed. The walls and the vaults of the portico are built in regular rows... a is the entrance and is barrel-vaulted; b and b' are the huts of the guards; c and c' mark the portico surrounding the courtyard. This courtyard has a continuous barrel vault and each pointed arch of this order has a junction corresponding to the gable over the courtyard. The sections marked d,d...,d',d' are barrel-vaulted rooms; each room has a door and window facing the portico and each room has a fireplace. At e,e,e,e the main court is covered with plain or starred closing vaults, on either side of which is the great hall wing (f,f').*" (Gabriel, 2022: 231) and shared photographs of the building (Figure 12) in his book.

Figure 12. Silahtar Mustafa Pasha Caravanserai 1940 (Gabriel, 2022: 400)

In Albert Gabriel's plan, there are seven shops on either side of the entrance, and shops are also lined up on the north and south sides of the courtyard (Eskici, 2013: 171). The shops surrounding the courtyard mentioned by Gabriel do not coincide with the actual plan of the building (Özbilgen, 1970: 94).

The Ottoman-era Silahtar Mustafa Pasha Caravanserai has a courtyard plan. A square courtyard surrounded by porticoes passes through the rectangular closed area called the winter house. The building was constructed using the traditional construction techniques and materials of the period. Cut rustication and rubble stone were used in the load-bearing system. However, the porticoes around the courtyard were destroyed over time and only the winter section was partially preserved. In 2010, the building was restored by the Directorate General of Foundations and is now used as a Culture and Art Center.



a	b	c

Figure 13. a) Its location in the Caravanserai settlement plan (updated from MBB, 2022) b) Plan sketch (MKE, 2015), c) View from the courtyard to the winter quarters (Değirmenci archive, 2021)

3. Conclusion and Discussion

The periods of construction (Roman-, Byzantine-, Seljuk-, Ottoman Period) of the remains of the fortifications that have survived to the present day are very difficult to comment on (Eskici, 2013: 35). The construction techniques and materials used in the multi-layered construction of the castle and the use of spolia materials preferred in accordance with the tradition of the time transformed the facades of the castle into a mosaic. The city walls continued to be used for a long time in the historical process, and as they lost their importance over time, they started to be damaged and gradually disappeared with the change of the city. The relatively recent (20th century) construction of dwellings on the city walls, and the now non-existent city walls make it difficult to read the boundaries of the settlement (Fig. 14 a and d). However, conservation concerns have led to the partial repair of the city walls. The gateway on the west side of the city wall and its surroundings were restored in 2011 (Fig. 14 b). Regarding the city walls and their surroundings, the survey, restitution, and restoration project of the 2nd stage Battalgazi city walls of the Ministry of Culture and the General Directorate of Museums continues.

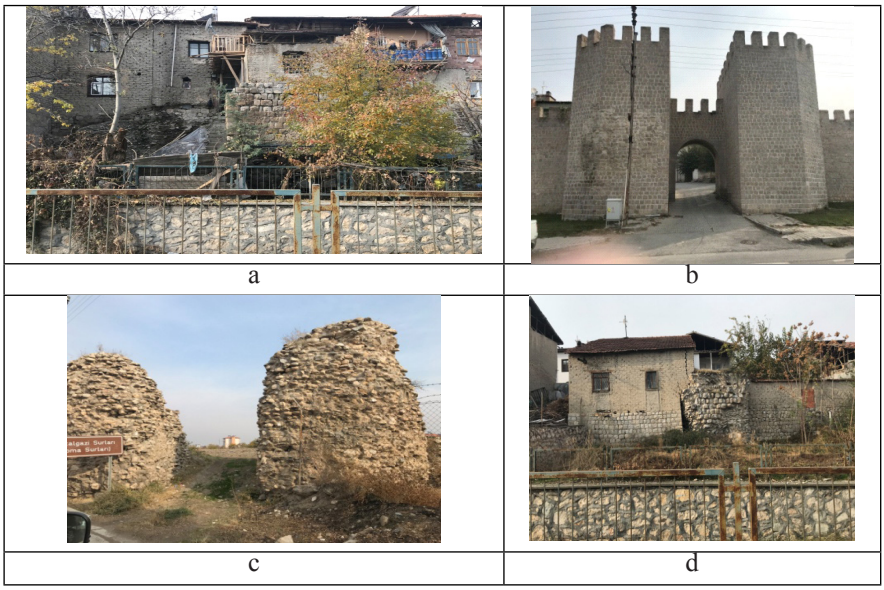


Figure 14. a) Structures on the eastern city walls) b) Restored western city wall c) Southeastern city walls d) Structures on the city walls by the stream (Değirmeci archive, 2021)

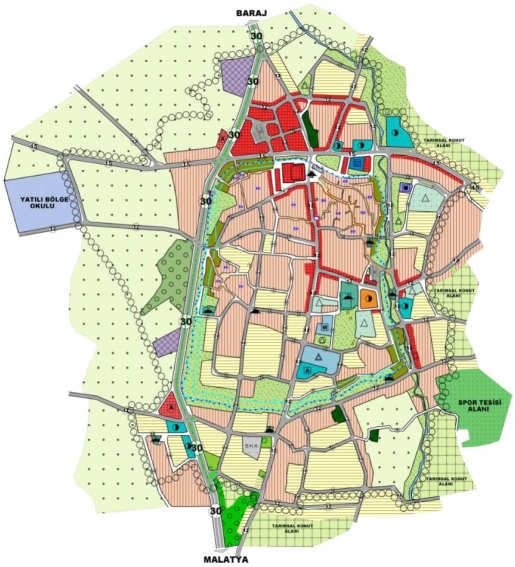


Figure 15. Conservation Development Plan (MBB, 2022)

The inner castle, the boundaries of which were defined by Albert Gabriel, remains within the boundaries of private property today and is seen as a

development and residential area in the conservation development plan (Figure 15).

Battalgazi has been under intense destruction between the past and the present and was partially abandoned as a result of the war and epidemics in the late 19th century. Today, negatively affected by socio-cultural and socio-economic developments, the settlement is faced with irregular migration and unqualified construction. The Conservation Development Plan (Figure 15) prepared for the settlement, which is within the boundaries of the Grade III archaeological site, allows low-rise construction in the area and preserves the existing agricultural areas in the settlement, while new concrete and unqualified buildings negatively affect the historical environment.

From Evliya Çelebi to Albert Gabriel and until today, the increasing level of destruction in Battalgazi erases the traces of the old settlement. Many buildings mentioned by Evliya Çelebi no longer exist today. The monumental Alaca Turkish Bath, Silahtar Mustafa Pasha Turkish Bath and fountain, pre-20th century residences, the market place, many city gates, and some of the inner and outer city walls are no longer included in the city memory.

Albert Gabriel, as for that, states that the city is largely in a bad condition and that it is very difficult to identify the remains of some buildings. The Grand Mosque and Silahtar Mustafa Pasha Caravanserai structures, which were partially mentioned by both travelers, have survived to the present day through conservation measures and repairs. Nevertheless, many buildings described by travelers have not survived to the present day and the city has suffered a loss of memory. However, registered cultural assets that still exist today and whose structural features are not mentioned by the travelers in their sources are also located within the city walls. These structures are the Minaret of Halfetih Mosque and the Tomb of the Three Brothers, Melik Sunullah Mosque, Namazgah, Kanlı Kumbet, Nefise Hatun Kumbet, Zeynel Bey Masjid, which are Seljuk period works, and Akminare Mosque, Emir Ömer Masjid, Alacakapı Mosque, Sütlü Minaret Mosque, which is Ottoman-era structures.

The settlement underwent many changes even between the two travelers, and the social and cultural changes it underwent were reflected in the buildings. It has recently been negatively affected by urbanization, new constructions, and unqualified migration. Nowadays, the remains of historical buildings are uncovered and investigated through scientific excavations. Excavations are ongoing at the Şahabiyye-i Kübra madrasah and conservation work is ongoing on the city walls.

Regarding Battalgazi, protecting the tangible and intangible cultural assets of the settlement will only be possible by conveying the historical importance of the area and information about cultural assets. Conservation awareness and the development of sustainable conservation strategies within a management plan are recommended here.

References

Ağaldağ, S. (2017). Yazılı belgelere göre Malatya'nın adı ve anlamı, *Geçmişten günüme Malatya Kent, Kültür, Kimlik*. Ankara: Atatürk Araştırma Merkezi.

Aytaç, İ. (2013). *Malatya Türk-İslam Dönemi Mimari Eserleri II*, İstanbul: Malatya Kitaplığı Yayınları.

Aytaç, İ. (2015). *Geleneksel Malatya Evleri Envanteri*. Malatya: Diltemizler Reklam ve Matbaa San. Tic. Ltd. Şti.

Baran, M. , Aykal, F. D., Kocaman, M. (2018). Battalgazi Ve Geleneksel Evlerinin Analizi . *Elektronik Sosyal Bilimler Dergisi*, 17 (67) , 1302-1316. DOI: 10.17755/esosder.408266

Bell, G. (1909). *Amurath to Amurath*, İstanbul: İstanbul Büyükşehir Belediyesi Atatürk Kitaplığı.

Cauvin, J. (1986). Les Fouilles 1985 a Cafer Höyük. VIII. Kazı Toplantısı Sonuçları. Ankara. 39-49.

Cauvin, J. (1989). La stratigraphie de Cafer Höyük-Est (Turquie) et les origines de PPNB du Taurus. Paléorient (15), 75-86.

Çelebi, A. (2021). Selçuklu Kent Mirasının Tarihsel Süreç İçinde Oluşum ve Değişiminin İncelenmesi Üzerine Bir Araştırma: Battalgazi (Eski Malatya) Örneği. (Unpublished Master's Thesis), İnönü Üniversitesi Sosyal Bilimler Enstitüsü, Malatya.

Çelebi, E. (1986). *Evliya Çelebi Tam Metin Seyahatnamesi*. (*3-4*, 419-426) İstanbul: Üçdal Neşriyat.

Çelebi, E. (2010). *Evliya Çelebi's Seyahatname in today's Turkish*. 4. V.1, Trans., Kahraman A.S., Dağlı Y., İstanbul: Yapı Kredi Publications.

Darkot, B. (1997). 'Malatya'. İslam Ansiklopedisi in (Cilt 7, 225-232). Eskişehir : Milli Eğitim Bakanlığı Yayınları.

Demir, U. (2015). Yasaklanan ve Sansürlenen Bir Kitabın Macerası: Evliyâ Çelebi. *Osmanlı Araştırmaları*, 193-212.

Eskici, B. (2013). *Malatya Türk-İslam Dönemi Mimari Eserleri I*, İstanbul: Malatya Kitaplığı Yayınları.

Erduran, A. arşivi, (2021). Malatya Büyükşehir Belediyesi KUDEB personeli kişisel arşivi.

Frangipane, M. (2018). Arslantepe The Rise and Development of a Political Centre: From Temple to Palace to a Fortified Citadel, *Arslantepe I. Uluslararası Arkeoloji Sempozyumu Bildirileri* 71-104. Malatya: İnönü Üniversitesi ve Roma Sapienza Üniversitesi.

Gabriel, A. (2022). *Şarki Türkiye'de arkeolojik geziler* (İ. Çetin, Çev., 2 b.). Ankara: Dipnot yayınları.

Grenard, F. (1901). Note sur les Monuments Du Moyen Age De Malatia, Divrighi, Siwas, Darendeh, Amasia et Tokat, *Journal Asiatique XVII/9.*

Honingman, E. (1988). 'Malatya'. İslam Ansiklopedisi in (232-239). İstanbul: MEB Yayınları.

Hunger, H. (1981). *Tabula Imperii Byzantini 2* (Kapadokia, Charsianon, Sebasteia und Lykandos, Verlag der Österreichischen Akademie der Wissenschaften.

Işık, A. (1998). *Malatya 1830-1919*, İstanbul: Kurtiş Matbaacılık.

İz, F. (1989). Evliya Çelebi ve Seyahatnamesi. *Belleten*, 709-734.

Kavruk H., Durukoğlu S. (2012). *Battalname.* Malatya: Malatya Kitaplığı.

KUDEB, (2022). Malatya Büyükşehir Belediyesi KUDEB Müdürlüğü Arşivi, Malatya.

MBB, (2022). Malatya Büyükşehir Belediyesi, İmar ve Şehircilik Daire Başkanlığı arşivi.

Metin, T. (2010). *Türkiye Selçukluları Devrinde Malatya*, Gazi Üniversitesi.

Metin, T. (2013). *Selçuklular döneminde Malatya*, İstanbul: Malatya Kitaplığı.

MKE. (2014). *Malatya Kültür Envanteri*, Malatya: T.C. Malatya Valiliği Yayınları.

Oğuz, M. (2000). *Malatya Tarihi ve Sosyoekonomik Durumu (M. Ö. 5500 - M. S. 1920)*, İstanbul: Tunç yayınları.

Özcan, K. (2005). Anadolu'da Selçuklu Dönemi Yerleşme Sistemi ve Kent Model (ler)i, Yüksek Lisans Tezi, Selçuk Üniversitesi.

Sevgen, N. (1959). *Anadolu Kaleleri*, Ankara: Doğuş Ltd. Şirketi Matbaası.

Texier, C. (2002). *Küçük Asya Coğrafyası, Tarihi, Arkeolojisi (Cilt 3)*, (A. Suat, Çev.) Ankara: Enformasyon ve Dökümasyon Hizmetleri Vakfı.

Tezcan, N. (2011). 1814'ten 2011 ,e Seyahatname Araştırmalarının Tarihçesi. *Evliyâ Çelebi: Doğumunun 400. yılında* 78-115. T.C. Kültür ve Turizm Bakanlığı.

Zengin, M. (2022). Şahabiyye-i Kübra Medresesi ve Kalıntılar. *Aktüel Arkeoloji* (84), 62-71.

Url-1, Google Earth, Battalgazi.

https://earth.google.com/web/search/ Battalgazi,+Malatya/@38.31146579, 38.4568877,1027.6519061a,73012.62579323d,35y,0h,0t,0r/data=CigiJgokCZi7 L QqrGzVAEZi7LQqrGzXAGXOU VWx Tt0FAIZOAP DDg5lDA

Url-2, *Getrude Bell Archive*, 05.05.2022 Retrieved from http://gertrudebell.ncl.ac.uk/photos.php.

CHAPTER II

A SECTION FROM TURKEY'S HISTORY OF CONSERVATION AND REPAIR: GÜLÜK COMPLEX RESTORATION*

Ayşegül AKŞEHIRLIOĞLU[1] & Can Ş. BINAN[2]

[1](Assist. Prof. Dr.) Erciyes University, Faculty of Architecture, Kayseri / Yıldız Technical University, Institute of Natural Sciences, İstanbul, e-mail: aysegul_pusat@hotmail.com, ORCID: 0000-0002-3009-6264

[2](Prof. Dr.) Yıldız Technical University, Faculty of Architecture, İstanbul, e-mail: binancb@hotmail.com ORCID: 0000-0002-5916-3352

1. Introduction

The fundamental components that make up the foundation of a nation's culture and social memory are monumental buildings. It is important to preserve the historical, architectural, and cultural values these buildings represent as well as their original attributes in order to preserve their ability to shed light on a variety of topics, including the architectural, artistic, technical, and sociocultural characteristics of the time in which they were built. Knowing the significant period intervals in the timeline of conservation and the crucial times that affect the process is the only way to evaluate the conservation approach and restoration work in monumental buildings.

* This study was produced under the supervision of Prof. Dr. Can Ş. BINAN from his PhD dissertation entitled "Conservation and Restoration History of Seljuk Period Social Complexes outside the Kayseri City Wall" in YTU Institute of Natural Sciences, Surveying and Restoration Program.

Only with a thorough examination of the historical process is it able to make an accurate assessment and wise conservation decisions for the repair of monumental buildings. Today's research on the preservation of monumental structures call for an understanding of both the conservation history and the architectural history of the buildings from their time of construction to the present. To choose the best restoration techniques and understand their applications, it is essential to understand the history of conservation and restoration. This requirement is also supported by identifying the flaws in the overall conservation system and improving the quality of restoration practices at the scale of single buildings also support this necessity. In this direction, defining the perspective on conservation and restoration as well as identifying significant historical junctures and turning points in the nation's conservation history help to develop the best strategies for preserving monumental structures and the values they hold for future generations.

The repairs that the Gülük Complex, an important complex constructed in the Seljuk style during the Principalities Period, have undergone over the course of its construction and up to the present are covered in the study. The fact that Gülük Complex, which is one of the most significant structures in the city and is situated in the heart of Kayseri, is still standing today is made possible by the upkeep and restoration work it has undergone ever since it was first constructed. It is a key component of urban perception and identity and has been etched into the collective memory of the city. In this context, a quick summary of the history of conservation and repair from the Seljuk period to the present is given first, followed by a brief description of the history and architectural elements of the complex. Based on thorough research, the complex's restoration and conservation process is shown chronologically. The goal of this study, which looks at the history of conservation and repair at the Gülük Complex, is to understand the building's repair process and lay the groundwork for future repairs while taking into account historical developments in conservation and repair as well as the circumstances of the time.

2. A Brief Overview of the History of Conservation and Restoration from the Seljuk Period to the Present Day

The idea of conservation, which seeks to preserve and convey to the future the monuments built by cultures with hundreds of years of accumulation, has existed from antiquity to the present. The urban and architectural values that they have produced or that earlier civilizations produced have interested all

civilizations that have existed in historical continuity. Many reasons, including religious dread or respect, artistic worth, architectural value, economic value, utility value, historical significance, etc., have influenced interest in the works of ancient civilizations and influenced attitudes toward both moveable and immovable cultural assets (Madran, 1985, 503).

Prior to the Ottoman era in Anatolia, the Seljuks and principalities that dominated the area also formed a position on the preservation and use of these architectural and urban landmarks. This position derives from the utilization of immovable characteristics with the same function and the notion of "usefulness" rather than from a conscious infrastructure (Madran, 1985, 503). There are very few written documents from the Seljuk and Principalities periods that may be used to learn about conservation and restoration work. The building endowments and construction and repair inscriptions are the primary sources of information regarding the building's construction and repairs.

Immovable cultural assets were treated from a utilitarian point of view depending on the understanding and attitude of the time, and more importance was placed on the "utilization" value of the buildings, even though maintenance and repair work during the Classical period of the Ottoman Empire was not carried out with today's understanding of conservation (Madran, 1985, 513). According to al (1990, 30), the fundamental justification for the Ottoman conception of antiquities was that the majority of them served the same purpose as a component of daily life and that repair methods should be assessed in light of the circumstances of the time. According to Binan (1994, 281), before the Tanzimat, repairs in the Ottoman Empire were typically made with the intention of removing the sources of degradation. The Ottoman conservation strategy is respected with the intention to preserve the past rather than the worry of transferring old works to the future, and it is not consciously designed with today's concept and movement of restoration.

When the Ottoman Empire's general approach to the idea of architectural conservation is analyzed, it becomes clear that until the 19th century there was neither a theoretical framework nor a purposeful effort on this topic (Binan, 2005). On the other hand, the Ottoman Empire was able to form powerful organizations in the field of repair and develop very efficient systems and procedures for the upkeep and repair of numerous ancient monuments that have endured to the present day (Madran, 1996, 59). The foundation institution has been the most effective component in defining the buildings that make up Turkish architecture, preserving the continuation of these buildings/building groups through routine

maintenance and repair, and assuring their survival to the present day (Madran, 2004, 37).

The institution of architecture, like all governmental institutions, underwent major alterations and revolutions during the last quarter of the 18th and early 19th centuries as part of the process of westernization (Madran, 2002, 6). In the domains of architecture and conservation, it can be observed that legalization and institutionalization efforts increased, and numerous regulations were created in this context. The Tanzimat Edict of 1839 and its companion, the Reform Edict, are recognized as marking the first important commencement of the Ottoman Empire's renewal activities (Tahirolu, 1985, 589).

In the Ottoman Empire, the first legal regulation on ancient monuments was Article 133 of the Penal Code, which was enacted in 1840 and finalized in 1858 (Çal, 1997, 391). With the 1st Ebniye Regulation enacted in 1848 and the 2nd Ebniye Regulation enacted a year later, construction works were handled as a whole for the first time and tied to certain rules; the criteria for construction, maintenance, repair procedures and operations were determined (Batur, 1985, 4017). The first regulation directly related to antiquities and defining the existence of an institution related to antiquities was the First Asar-ı Atika Regulation, which entered into force on November 13, 1869 (Çal, 1990, 12). The inadequacy of the first regulation in terms of protection necessitated a new study. In this context, on April 4, 1874, the Second Asar-ı Atika Regulation, consisting of 36 articles, four chapters and a conclusion, entered into force (Madran, 2002, 24). Osman Hamdi Bey's appointment as museum director after Dethier's death in 1881, when the Second Asar-ı Atika Regulation was in force, constitutes an important turning point for the protection of antiquities. The first important event of the period was Osman Hamdi Bey's enactment of the Third Asar-ı Atika Nizamname on February 21, 1884, seeing that the 1874 dated Nizamname in force was insufficient (Mumcu, 1969, 73). The last legal regulation made during Osman Hamdi Bey's time was the IVth Asar-ı Atika Regulation, which entered into force on April 24, 1906 (Mumcu, 1969, 75). Another statute that should be mentioned that was created during this period is the Conservation of Abidat Regulation, which entered into force on July 28, 1912 and remained in force until 1936 (Mumcu, 1969, 75). The Nizamname is the first legal regulation of the Ottoman Empire only on immovable antiquities (Madran, 2002, 72).

The most important legacy left from the Ottoman Empire to the Republic in the field of antiquities and conservation is the legal regulations and

institutionalization efforts carried out during the Westernization Period. In the last period of the Ottoman Empire and during the War of Independence, not much activity could be realized in the field of conservation and repair, and the speed and scope of repairs gradually decreased (Madran, 1996, 63). One of the most important reasons for this was the successive wars (Madran, 2002, 99), and when the situation is analyzed in terms of foundations, it can be shown that there were two different foundation administrations for a certain period of time and important regions for foundations remained under enemy occupation (Öztürk, 1995, 87).

In the early years of the Republic and the World War II period, Turkey was in a state of poverty, which was reflected in construction and repair practices, and in this period there was a slowdown in conservation and repair practices. One of the most important developments that gave a great impetus to the conservation activities of the Republican period and contributed to institutionalization was the telegram sent by Atatürk to İsmet İnönü during his Konya trip on 19.02.1931 (BCA.030.10.213.445.12, Önder, 1989, 1839). Following this telegram, important experts of the period such as Albert Gabriel, Ali Saim Ülgen and Erol Yurdakul began to work on the buildings and continued to intensify in the process.

In 1950, there was a transition to multi-party democracy in the country, the institutions established for conservation began to be reshaped and different policies and approaches began to be exhibited in conservation. The establishment of the Supreme Council of Real Estate Antiquities and Monuments (SCREAM) in 1951 is an important turning point. SCREAM is the first institution established by law that both sets principles and takes decisions for implementation. Until the Law No. 1710 on Antiquities, which was adopted in 1973, the Asar-ı Atika Nizamname, which was last updated in 1906, remained valid in the field of conservation in the Ottoman Period, and the biggest deficiency in conservation work until this date was that a new conservation law could not be enacted despite many studies. The most important development in this direction was the enactment of the Law No. 1710 on Antiquities, which had been lacking for nearly 70 years (URL 1). The first and most important development in the process from 1983 to the present day is the new conservation law dated 1983 and numbered 2863, which was prepared to correct the deficiencies of the Antiquities Law No. 1710 in terms of protection and implementation.

It is seen that there have been significant developments and breaking points in terms of legislation and the view of conservation in our country

over the years in terms of the protection of cultural assets and the transfer of architectural heritage to future generations. The last point reached today in the evaluation of the history of conservation and repair is the approach that respects the original condition of cultural assets, and that the original features of the buildings should not be harmed in conservation and repair practices. The correct design and implementation of this process requires a good command of the repair chronology of the monumental building.

3. Architectural Features and Restoration History of Gülük Complex

3.1. History and Architectural Features

A mosque, a madrasah, a bathhouse, and a later-added fountain make up the Gülük Complex, as it is known and utilized as a mosque today. It is situated outside the city walls in the Gülük Şemseddin Neighborhood to the west of Kayseri castle. The complex's mosque and madrasah were constructed as a unified unit, but the bath building was constructed independently and placed to the complex's north. After a major earthquake in 735 AH/1334 AD that severely damaged the structure, Gülük emseddin, Alameddin's son, renovated it, and the structure bears his name (Eldem, 1982, 60, Kuran, 1969, 12).

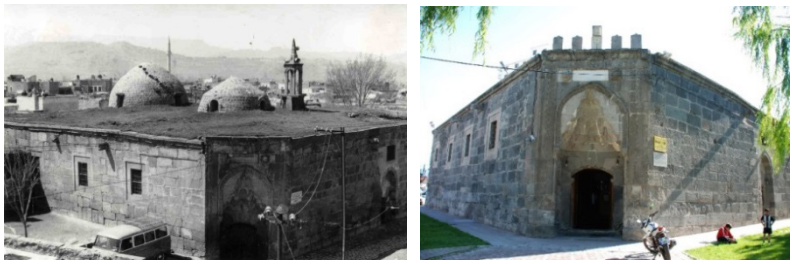


Figure 1. General view of Gülük Complex 1960-2021 (GDFA, Akşehirlioğlu,2021)

There is no concrete information regarding the building's construction date and there are conflicting accounts of the dates and stages of construction of the buildings that make up the complex because the construction inscription that contained the complex's construction date has not survived to the present. While Kuran (1969, 12) claims that the building was constructed between 1135 and 1142, when Kayseri was the Danishmendli capital, Gabriel (1954, 38), Sözen (1970, 93), and Kuban (2002, 133) disagree. While Yurdakul (1996, 23) concurs with Kuran that it was constructed between 1135 and 1142, Aslanapa (1991, 17) speculates that it might have been constructed during the reign of Nizameddin Yagnbasan (1142-1164).

The complex is a group of buildings made up of a mosque, a two-story madrasah next to the harim to the west, and a separate bathhouse to the north. One of the structures that makes up the complex is the mosque, which adheres to the multi-legged mosque typology and has a plan type in the Great Seljuk mosque tradition. The mosque is composed of five stages that are parallel to the mihrab wall and cover a 34 m by 25 m rectangular area. The center stage is broader and higher than the other stages. The front of the mihrab sits next to the south wall, forming the first of the central court's five sections, and the skylight makes up the third unit. The north façade's crown doors and the north-east corner's crown door serve as entrances to the mosque (Figure 2).

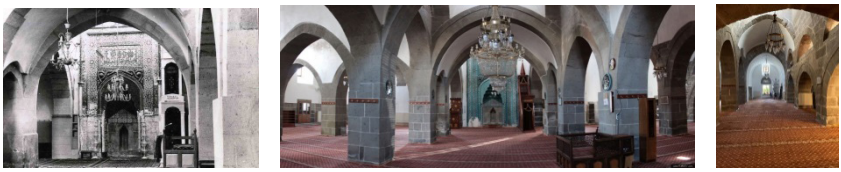


Figure 2. *Gülük Madrasa Interior Photos (Akşehirlioğlu, 2021)*

The madrasah, which is connected to the west side of the mosque with three arches with simple profiles, has a two-storey, closed courtyard scheme type within the closed madrasah group. The entrance of the madrasah is located on the north façade of the mosque, west of the mosque entrance. The two-story madrasa consists of a narrow and long portico-shaped corridor and rooms. The entrance door of the madrasah opens to the courtyard with simple profiled pointed arches and there is a staircase leading to the upper floor on the west side of the door.

The complex is of great importance as it is the earliest dated example designed within the integrity of mosque and madrasah. If the building is accepted as a Danishmendli period building, it will be accepted as a Danishmendli building in which a mosque and madrasah were thought together for the first time, and there are no other examples of this type of formation in this period (Sözen, 1970, 94).

3.2. Date of Restoration

3.2.1. Seljuk Period

The date of the first construction of the Gülük Complex is not clear and no foundation information from that period has been found. The earliest source of information about the Gülük Complex during the Seljuk period is the repair inscription on the crown gate in the northeast corner. According to the inscription;

the building was repaired by Atsız Elti Hatun, daughter of Mahmud, son of Yağıbasan, in 1210, which coincides with the time of Keykavus, son of Keyhüsrev.

This inscription clearly states that Atsız Elti Hatun had the building repaired in 1210-11, but it does not contain any information about the scope of the repair and where it was made. There are different opinions on this subject; Kuban (1965, 136-137) assumes that improvements were made on the collapsed western section of the mosque during these repairs. Kuran (1969, 14), on the contrary, thinks that changes were made to the eastern part of the building and a crown door was added to the north-eastern corner of the mosque during these repairs. In his building plan drawn at the time, Kuran showed the madrasah as a single storey, 1.5 meters higher than the mosque, and included the madrasah iwan and courtyard in the mosque section. Sözen (1970, 93) thinks in parallel with Kuran on this issue. Aslanapa (1991), based on research during the 1968 restoration works, stated that the plan was in accordance with the mosque and madrasa plan type. However, Yurdakul (1996, 70) stated that during the repair of the association in 1968, works were carried out on the mosque side, and the ground floor of the madrasah was uncovered as a result of excavations in the 1970s.

Yurdakul (1974, 167) stated that these approaches were important studies on the structure, but that these suggestions were hypotheses since detailed research had not been carried out until that day. Erol Yurdakul conducted detailed studies on Gülük Mosque and Madrasah starting in July 1965 (Yurdakul, 1996, 10). As a result of these studies, the repairs made by Atsız Elti Hatun in 1210 are thought to be the reconstruction of the walls, arches, domes and vaults of the eastern section, which were destroyed or in danger of collapse. During the repairs, the mosque was enlarged by one axis in the eastern direction and the crown gate positioned at an angle of 45 degrees was added to this section (Yurdakul, 1974, 173) (Figure 3).

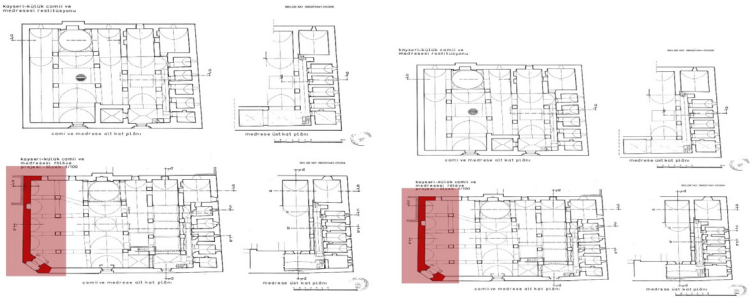


Figure 3. Restitution- survey drawings made by Yurdakul (GDFA)

Gülük Mosque has a foundation dated H.735 / M. 1335, which is recorded on pages 252-254 of book 584 in the General Directorate of Foundations Archive (GDFA). Yurdakul (1996, 9) states that only the mosque is mentioned in this waqf and the madrasah is not mentioned at all. Even if the hammam is considered to have been a flow, it is noteworthy that the madrasah is not mentioned at all. This is because, in order for the madrasah to continue its functioning, the appointment of the muderris and other officials, as well as the students' sustenance and worship expenses had to be covered from the foundation revenues.

Yurdakul (1996, 9-10) attributes the absence of any administrative or legal provisions on these issues to two reasons. These are that in 1335, when the foundation was established, the madrasah was completely ruined and only the mosque could have been repaired, and the madrasah was repaired with the mosque, and during these repairs, the iwan and courtyard of the madrasah were included in the mosque and the madrasah expenses could not be included in the foundation expenses.

It is understood from the foundation deed that the second intervention of the Gülük Complex during the Seljuk period took place in 1335. Gülük Mosque collapsed as a result of an earthquake in 735 A.H. / 1335 A.D., and it is stated in the foundation that it was repaired by Külük Şemseddin and a bathhouse was built to the north (Kuran 1969, 14). This repair is also mentioned in the foundation of Külük Şemseddin in February 1335 (Yurdakul, 1996, 74). Although the details of the applications and regions made during these repairs are not known with certainty, it is thought that the covering part of the mosque, arches, walls, the dome in front of the mihrab were renewed and the tiled mihrab was added (Çakmakoğlu Kuru, 1998, 205).

3.2.2. Ottoman Period

The earliest Ottoman period information on the külliye is the income sources available in the 1584 foundation records. According to this information, the annual income of the mosque totaled 2020 akçes (Demircan, 1992, 68). There is a lot of information about the Gülük Complex in Kayseri Sher'iyye Registers. Although no conclusions can be drawn from this information about the repairs of the mosque and madrasah, it can be inferred that the use of the building continued and that regular maintenance and repair work was carried out, which should have been carried out under the auspices of the foundation.

In H.1135/M. 1722, Matbah Emir Hacı Halil Efendi had the fountain next to the northeast gate repaired (Ahmed Nazif, 1987). The exact date of construction

is unknown, but there is an inscription on the repair inside the fountain niche. Another record of the repair of the fountain is found in the Ankara Vilayet Salnamesi for the years 1900-1901 (Aydın, 2013, 375). According to this document, the fountain underwent another repair in 1887-1888 (Kocabaşoğlu, Ulutekin, 1998, 139). The fountain was completely dismantled in 1905 and moved to its present location (Denktaş, 2010, 422) (Figure 4).

Figure 4. Gülük fountain old new state (GDFA, Akşehirlioğlu, 2019)

As a result of an earthquake in 1251 A.H. / 1835 A.D., the northern wall of the mosque was bent and some parts were repaired in 1273 A.H. / 1856 A.D. (Ahmet Nazif, 1987, Denktaş, 2010, 421). While this information cannot be found in the archival documents, it is not possible to determine exactly which parts of the wall were repaired.

Although there is no written repair record of the building from the Ottoman period in the archives, information about the repairs of the building can be found in the inscriptions on the building. In the two-line inscription on the western corner of the northern facade, it is stated that the building underwent a repair in H.1301/M. 1883. This repair can be considered as a continuation of the repairs made after the earthquake in 1835.

Another inscription that we have repair information about the building is on the underside of the siege arch of the entrance door on the mihrab axis on the north façade. According to this repair inscription, the building underwent another repair in H. 1325 / 1907. The repair dates are given in the inscriptions, but there are no written documents on where these repairs took place and their details.

After these documents, Halil Edhem Bey, the Director of Istanbul Museums of the period, carried out a study on the building for the first time in 1918 in his book “Kayseriye City” and recorded that the mosque had a flat roof covered

with earth and that it rested on 32 arch pillars. However, when the plan diagram of the mosque is examined, it is seen that there are 16 arch pillars, and it should be assumed that Edhem made a mistake in counting.

3.2.3. Republican Period

The early years of the Republic were a time of increased interest and work on old monuments that had fallen into disrepair during the late Ottoman period. Photographs of the building in these years and various accounts clearly show that the building was in need of repair. Gabriel, who observed the building in the 1930s, stated that the madrasah and the hammam section of the building were not in good condition and had become ruins due to long neglect (Gabriel, 1954, 43) (Figure 5).

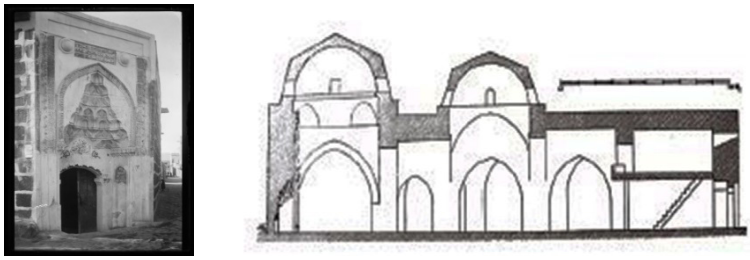


Figure 5. The portal of the building and the cross-section of the building during Albert Gabriel's observation period (URL 2, Gabriel, 1954)

Gabriel attributed the plan's inconsistency to earlier restorations. He speculates that Külük Şemseddin's restorations may have resulted in the dome over the central entrance being closed (Gabriel, 1954, 44). Gabriel mentioned that the wooden mahfile over the gate was newly constructed and that there was a minaret in the area of the mosque's north façade that was to the right of the gate. As Halil Edhem stated, the roof was covered with thick soil and the dome was covered with stones. He also stated that the photograph of the door he gave belongs to the 1920s and mentioned that the door was painted together with the interior of the mosque in 1927 (Gabriel, 1954, 44).

The General Directorate of Foundations' archives contain the earliest known record of the Gülük Complex, a translation made by Abdullah Tanrkulu on December 11, 1941. (Figure 4. 150). The Külük emseddin foundation, dated 735 AH, is translated in this text (GDFA). The fields, structures, and crops that Gülük Şemseddin endowed are listed in this paper. It was specified that no one has the authority to alter or revoke the terms of the endowment and that the

proceeds from these endowed properties should be used to support the mosque's imamate and oratory.

In order to assess the state of Anatolian Seljuk structures and oversee their renovations after the republic, Ali Saim Ülgen was given the task of visiting numerous structures in Kayseri. The images that are thought to be from that time period were collected from the Salt Galata Archive. The majority of his work in Kayseri is dated between 1950 and 1960. However, only photographs rather than studies or drawings by Ali Saim Ülgen on the Gülük Complex were discovered (Figure 6).

When the photographs in the Ali Saim Ülgen Archive are examined, it is clearly seen that the Gülük bathhouse was partially standing at that time, the upper cover of the mosque was covered with soil and there were buildings adjacent to the mosque. Gabriel (1954, 44), during his observations in the 1930s, stated that the vaults of the building were covered with soil, thus preventing the building from taking in water, and that the wall joints were unorganized and covered with mortar plaster. It can be seen in the photographs that this situation continued at this time.

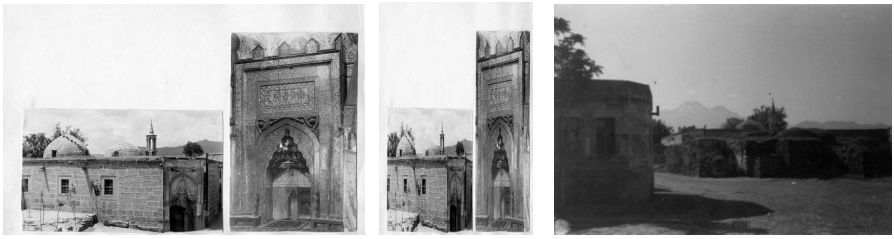


Figure 6. Photos by Ali Saim Ülgen (ASÜA- TASUH2991, ASÜA- TASUH238001-2)

Another detail that draws attention in the photographs of the complex in this period is the structures built adjacent to the east and south walls. There is a drawing prepared for the expropriation of these structures adjacent to the complex in the Archive of the General Directorate of Foundations. However, there is no information on when exactly these buildings were expropriated (Figure 7). In the drawing, the structures to be expropriated in the first phase are shown in red, while the areas to be expropriated in the second phase are hatched in blue. These structures must have been removed after the acceleration of the zoning movement after the 1950s. Since the survey drawings of the building prepared by Erol Yudakul in the 1970s show that there are structures adjacent to the south wall, it can be inferred that this process was carried out after the 1970s.

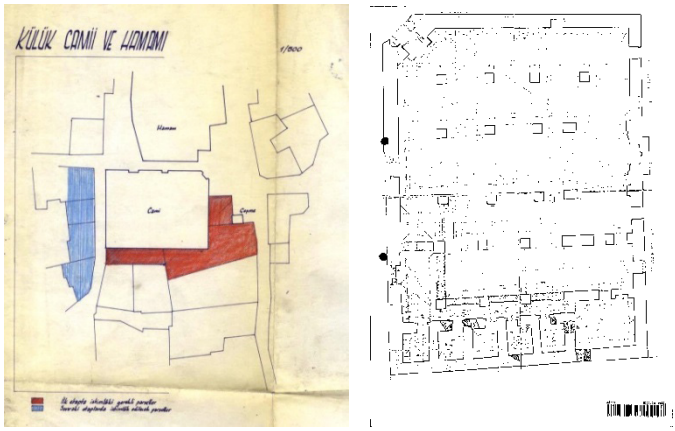


Figure 7. Drawing Showing Areas to be Expropriated (GDFA)

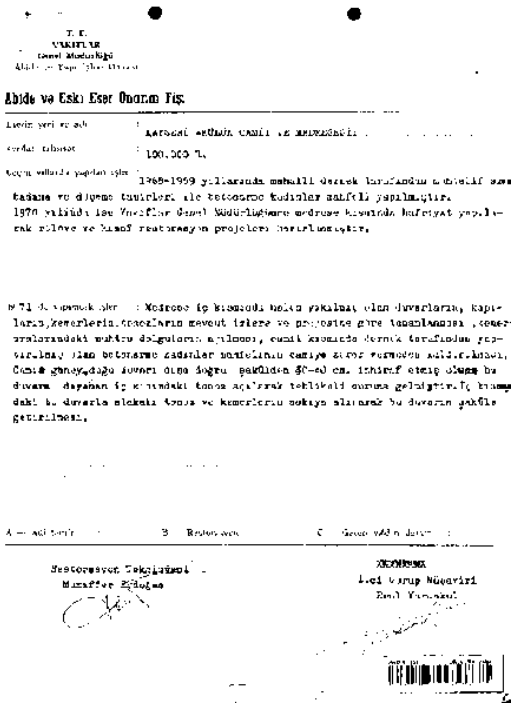
In the General Directorate of Foundations' Archive, the first records of the repairs that Gülük Complex underwent during the Republican Period are found in the Old Restoration Receipts documenting the registration of the building. In 1966, İlhan Akçay stated that the Gülük Bath was a double bath and that the changing places had become a pile of soil. It was noted that it was an antiquity and should be protected and repaired (GDFA). However, it was not until 1977, 10 years after this document, that the restoration work could begin.

The first comprehensive restoration of the Gülük Complex was started by Erol Yurdakul and his team in July 1965. During these first works, detailed examinations were made in the complex and data on previous repairs were tried to be identified. In this context, it was observed that there were significant changes in the mosque part of the work, while the madrasah part preserved its original form. In the mosque section, there are changes such as a tile mihrab different from the date of construction of the building, a second dome in the direction of the mihrab, arches offset from the axis on the east side and defects in the tonzos on the left side of the mihrab. In the madrasa section, although the architectural formation of the cell rooms reflects the Seljuk style, there is a nearly meter difference in elevation between the madrasa floor and the mosque floor (Yurdakul, 1996, 10).

During the surveys of the complex at the time, the door at the southern end of the western wall was noticed, but the connection between the door and the building could not be determined due to the current condition of the building. In order to obtain definitive information on this subject, it was necessary to carry out excavations in the ground part of the submerged madrasah and drilling and

research excavations in the mosque part (Yurdakul, 1974, 167). In this context, during the repairs carried out by the local association in 1968, the original traces of the building were identified and plan surveys were prepared according to this data (Yurdakul, 1996, 10) (Figure 4. 153).

The 1968 repairs carried out by the local association are confirmed by the "Monument and Antiquities Restoration Receipt" in the General Directorate of Foundations' Archive. In the document prepared by Erol Yurdakul, Group 1 Consultant and Muzaffer Erdoğan, Restoration Technician in 1968-1969, it is stated that various plaster, whitewash and flooring repairs and a reinforced concrete women's cloister were made by the local association. In 1970, excavation was carried out in the madrasah section by GDF and survey and partial restoration projects of the madrasah were prepared. It was noted that an appropriation of 100.000 TL was allocated for these repairs (GDFA) (Figure 8).


T. C.
VAKIFLAR
Genel Müdürlüğü

Abide ve Eski Eser Onarım Fişi

Restorasyon Sekreterliği
Muzaffer Erdoğan

Grup 1 Müşaviri
Erol Yurdakul

Figure 8. Repairs made by Erol Yurdakul in 1968-70 (GDFA)

The works to be carried out in the madrasah section of the complex were also included in the restoration program for 1971. In this context, excavations were carried out between June 19, 1970 and July 20, 1970 and a

survey of the madrasah building was made (Yurdakul, 1974, 167). In 1971, the completion of the collapsed walls, arches, vaults, vaults and doors in the interior of the madrasah according to the existing traces and projects, and the opening of the fills between the arches were noted. It was also stated that the reinforced concrete women's mahfil built by the association in the mosque should be removed without damaging the mosque. It was also noted that the south-east wall of the mosque slopes outward by 30-40 cm and that the vaults resting on this wall are in a dangerous situation by opening (GDFA). The restoration works started in 1971 and continued until 1977 (Yurdakul, 1996, 12) (Figure 9).

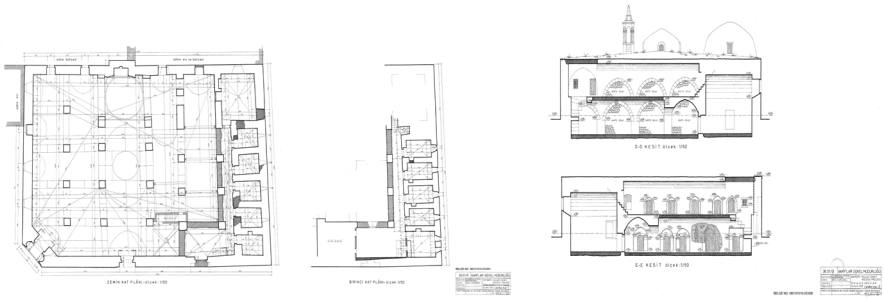
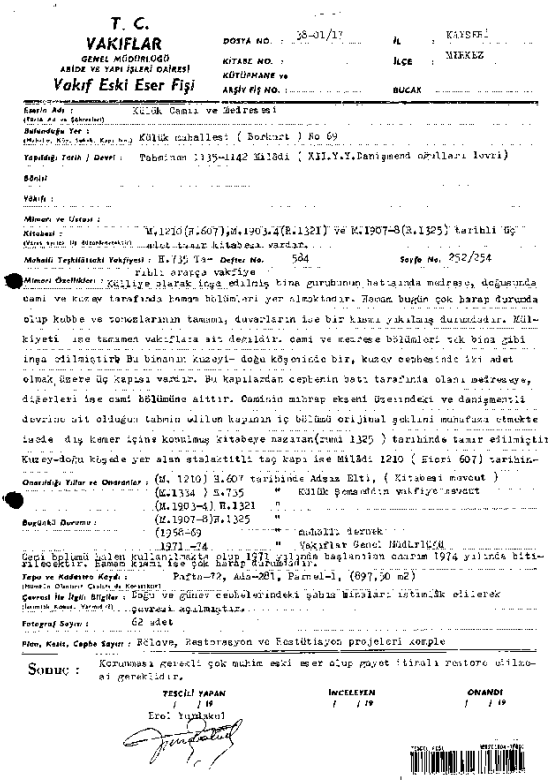


Figure 9. Survey drawings by Erol Yurdakul (GDFA)

In the drawings prepared during this period, E. Yurdakul, N. Kıraç, H. Yeniokutan took measurements, E. Yurdakul drew them and Ekrem Demirtaş, who was the Head of the Department of Monument and Building Works at the time, approved them. When the drawing technique of the projects is examined, it is seen that there is no additional information other than the current situation, it is closer to the quality of a survey, and measurement and elevation information are given (GDFA).

Documents related to the repairs carried out in the 1970s can also be found in the General Directorate of Foundations Archive. In the Foundation Old Antiquities Receipt filled out by Yurdakul, after the identification information and architectural features of the work are given, the years when it was repaired are noted and its current status is conveyed. Accordingly, it is noted that the mosque section is in use, that the repairs started in 1971 will be completed in 1974, and that the private buildings on the eastern and southern facades have been expropriated. In conclusion, it was decided that "It is a very important old monument that needs to be preserved and should be restored very carefully" (GDFA) (Figure 10).



T. C.
VAKIFLAR
GENEL MÜDÜRLÜĞÜ
ABİDE VE YAPI İŞLERİ DAİRESİ
Vakıf Eski Eser Fişi

DOSYA NO. : 38-01/17 İL : KAYSERİ
KİTABE NO. : İLÇE : MERKEZ
KÜTÜPHANE ve ARŞİV FİŞ NO. : BUCAK

Eserin Adı : Külük Camii ve Medresesi
Bulunduğu Yer : Külük mahallesi (Borkart) No 69
Yapıldığı Tarih / Devri : Tahminen 1135-1142 Miladi (XII.Y.Y.Danişmend oğulları devri)
Bânisi :
Vâkıfı :
Mimarı ve Ustası :
Kitabesi : M.1210(H.607),M.1903-4(R.1321) ve M.1907-8(R.1325) tarihli üç adet taşınır kitabesi vardır.
Mahalli Teşhiltaki Vakfiyesi : H.735 Ta- Defter No. 584 Sayfa No. 252/254
Fahri arasça vakfiye
Mimari Özellikleri : Külliye olarak inşa edilmiş bina gurubunun batısında medrese, doğusunda cami ve kuzey tarafında hamam bölümleri yer almaktadır. Hamam bugün çok harap durumda olup kubbe ve tonozlarının tamamı, duvarların ise bir kısmı yıkılmış durumdadır. Külliyeti ise tamamen vakıflara ait değildir. cami ve medrese bölümleri tek bina gibi inşa edilmiştir. Bu binanın kuzeyi- doğu köşesinde bir, kuzey cephesinde iki adet olmak üzere üç kapısı vardır. Bu kapılardan cephenin batı tarafında olanı medresye, diğerleri ise cami bölümüne aittir. Caminin mihrap ekseni üzerindeki ve danişmentli devrine ait olduğu tahmin edilen kapının iç bölümü orijinal şeklini muhafaza etmekte iseda dış kemer içine konulmuş kitabeye nazaran(rumi 1325) tarihinde tamir edilmiştir Kuzey-doğu köşede yer alan stalaktitli taş kapı ise Miladi 1210 (Hicri 607) tarihin-
Onarıldığı Yıllar ve Onarımlar : (M. 1210) H.607 tarihinde Adsız Elti, (Kitabesi mevcut)
(M.1334) H.735 " Külük Şemseddin vakfiye mevcut
(M.1903-4) H.1321 "
(M.1907-8)H.1325 "
Bugünkü Durumu : (1958-69 " muhtelif derecik
1971 -74 " Vakıflar Genel Müdürlüğü
Geri kalanı halen kullanılmakta olup 1971 yılında başlanılan onarım 1974 yılında bitirilmiştir. Hamam kısmı ise çok harap durumdadır.
Tapu ve Kadastro Kaydı : Pafta-72, Ada-281, Parsel-1, (897,50 m2)
Çevresi ile İlgili Bilgiler : Doğu ve güney cephelerindeki çoğu binaları istimlak edilerek çevresi açılmıştır.
Fotograf Sayısı : 62 adet
Plan, Kesit, Cephe Sayısı : Röleve, Restorasyon ve Restütüasyon projeleri mevcut
Sonuç : Korunması gerekli çok mühim eski eser olup mayet itibarı restore edilmesi gereklidir.
TESCİLİ YAPAN / / 19 İNCELEYEN / / 19 ONANDI / / 19
Erol Yurdakul

Figure 10. Foundation Old Antiquities Receipt (GDFA)

As part of the detailed restoration carried out by Yurdakul in the 1970s, the cladding of the south façade wall was replaced and the foundation of this section was found to be different in terms of elevation (Yurdakul, 1974, 168). The door on the west façade wall, which provides access to the room in the southwest corner of the madrasah, was found to be a defunct door and was closed (Figure 11). The difference in the stone masonry around the windows on the upper side of the west façade wall indicates that interventions were made to enlarge the windows (Yurdakul, 1996,13). Since the north façade wall is also the front façade wall of the madrasah and the mosque, the original entrance doors of the building are located on this façade. It is understood that the masonry around the arch of the mosque door and the window above it and the type of stones used are different from the original character and that this part was built later. The madrasah gate on the west side of the north wall has been completely changed with the repairs made in recent years. In June 1970, during the excavations, the threshold, facade profiles and arch stones belonging to the original madrasa door

were found and the dimensions of the arch stone are the same as those of the mosque door (Yurdakul, 1974, 168, 1996, 26).

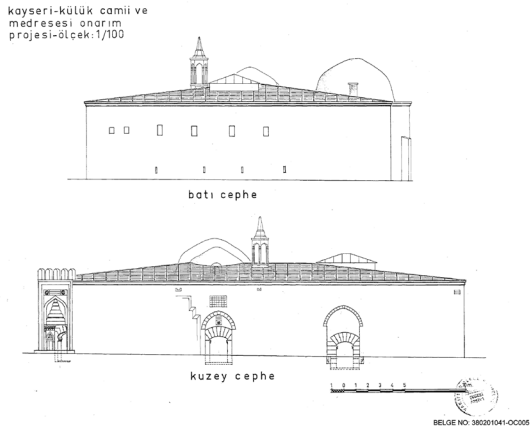


Figure 11. The Western Facade wall closed in the repair project (GDFA)

The keystone of the freshly built madrasa door was placed in the incorrect location by the master during the repairs made by them, according to Yurdakul (1996, 100), and this error was left uncorrected. This circumstance still exists today (Figure 12). For a long time, the cross-vaulted space to the east of the madrasa's main entrance hall—which Gabriel identified as the location of the collapsed minaret—was thought to be a component of the mosque. However, the room's door jambs, threshold, and arch were discovered during excavations, and they were added to the madrasah while it was being repaired. The stairs leading to the upper floor on the right side of the hall and the arch on these stairs were also

Figure 12. Repairs to the mosque and madrasah door on the north facade (GDFA, Akşehirlioğlu, 2021)

The madrasah courtyard is bounded by an iwan to the south and piers to the east, west and north, and is covered with a barrel vault. During the research period, it was observed that the skylight in the middle of the vault was closed and the top was plastered and whitewashed. Therefore, it is perceived as a single vault. During the repairs in this direction, the plaster was scraped and the vault was demolished to reveal the original skylight. However, since it was not possible to leave it open due to weather conditions, the skylight was covered with an iron constructed glass screen (Yurdakul, 1996, 33) (Figure 13).

Figure 13. Skylight interior before and after plaster scraping (GDFA)

The arch on the west side of the madrasa iwan was built in two floors, and behind these arches is a narrow corridor. The door and window openings in the six rooms opening to this corridor in the form of a portico have been altered (Yurdakul, 1974, 169, 1996, 37) (Figure 14). Built in 1968 by the local association, the reinforced concrete women's mahfili was removed during the restorations carried out by Yurdakul (Yurdakul, 1974, 169, 1996, 50) (Figure 15).

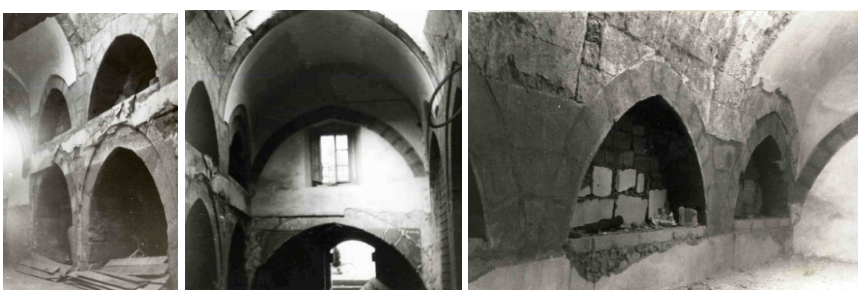


Figure 14. View from the madrasa courtyard,
entrance iwan and upper floor corridor (GDFA)

The section in the center stage of the mosque, which was originally thought to be a skylight, was transformed into a square with additional arches in the east and west directions and covered with a dome. Under this domed section, a trace of a snow well was found during the excavation, but it remained under the floor after the repairs made by the local association (Yurdakul, 1974, 169, 1996, 51).

Figure 15. Reinforced concrete women's mahfili built by the local association (GDFA)

The outer part of the dome above the mihrab was later covered with rubble stone and the windows opening in four directions were added later. Steps made of rubble stone can be used to reach the top of the dome (Yurdakul, 1974, 169, 1996, 37) (Figure 4. 164). The mihrab, whose construction date and craftsman are unknown, is dated by art historians to the second half of the XIIIth century and has nothing to do with the date the mosque was built. As a result of the excavation and plaster scraping in front of the mihrab, the original stone mihrab was found. It was determined that the tile mihrab was dressed like a shirt over the stone mihrab (Yurdakul, 1974, 169, 1996, 37) (Figure 16).

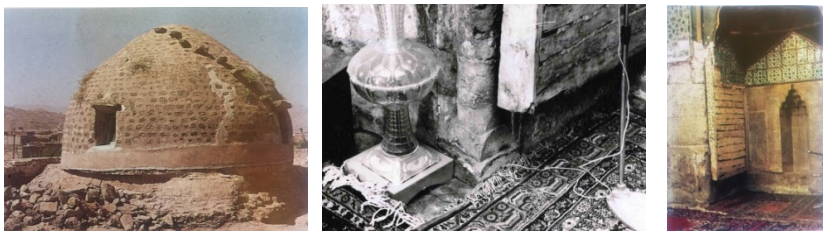


Figure 16. Original stone mihrab excavated under plaster rasp (GDFA)

According to the research conducted in the section to the left of the entrance to the madrasa, which was accepted by Albert Gabriel as the place of the destroyed minaret, it was revealed that the complex was built without a minaret. The complex preserved this feature for centuries, and a pavilion minaret was built to the northwest of the section, which was later covered with a dome on the roof (Yurdakul, 1996, 66).

During the 1973 excavation, it was observed that the upper levels of the vault stirrups were covered with large raft stones and this technique prevented the vaults from being overloaded. In addition, four dentils made of stone were found during the excavation of the roof. These dentils are thought to belong

only to the section above the crown gate (Yurdakul, 1996, 67). The complex is covered with a flat earth roof. At the time when the works were started, it was completely covered with grass due to lack of maintenance and was leaking inside the mosque. This earth cover was removed and replaced with a wooden roof covered with copper.

A remarkable drawing from this period in the General Directorate of Foundations' Archive is the minaret project that was planned to be added to the Gülük Complex. In the drawings made by Erol Yurdakul in the 1970s, the location of the minaret is seen as the eastern side of the northeast crown gate. The minaret is planned to be built at a height of approximately 25 meters, and the pedestal plan, cube plan, and nosing plan were prepared in 1/20 scale. The drawings include the dimensions and bay information, and the relationship with the façade is shown. Although the drawings of the minaret were realized in this period, it was not realized, and the construction of the minaret was brought back to the agenda at the end of the 1990s (Figure 17).

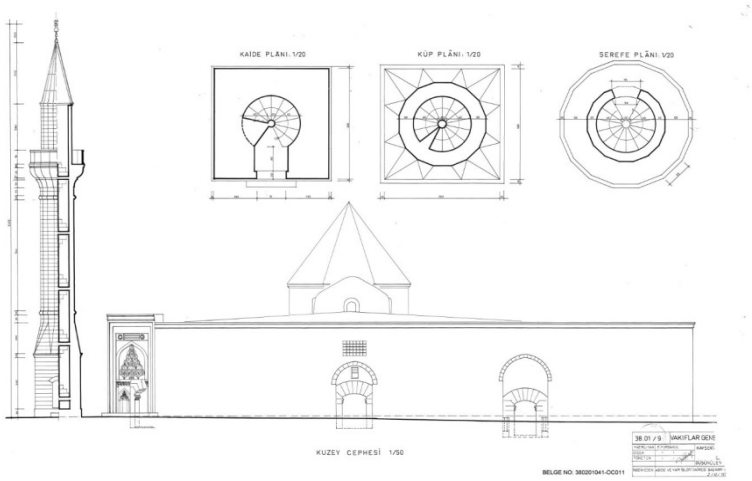
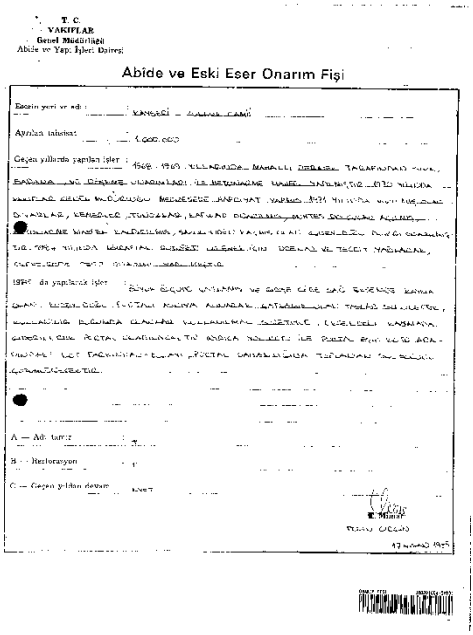


Figure 17. Minaret drawings to be made (GDFA)

The next document on the repair of the building was prepared about 10 years later. The 1985 repair program includes Kayseri Gülük Mosque. In the repair fiche prepared by Perin Girgin, it is noted that in 1984, drainage was carried out to prevent dampness in the mihrab and joint repairs were carried out on the facades. In 1985, it was stated that the crown door at the northeast corner of the mosque was slipping and that the slippage would be corrected according to the axis. It was also stated that the problem of water collected due to the

elevation difference with the road would be solved. The total amount of funds allocated for these works was noted as 1,000,000 liras (GDFA) (Figure 18). During these repairs, the survey drawings of Gülük Fountain were also made in early 1986.


T. C
VAKIFLAR
Genel Müdürlüğü
Abide ve Yap. İşleri Daireşi

Abide ve Eski Eser Onarım Fişi

Eserin yeri ve adı :

Ayrılan tahsisat : 1.000.000

Geçen yıllarda yapılan işler :

1985 da yapılacak işler :

A — Ad. tamir :

B — Restorasyon

C — Geçen yıldan devam

Figure 18. Restoration receipt for 1985

In 1997, a serious intervention was made to the building and a minaret with two balconies made of cut stone was built adjacent to the northeast crown gate of the building. The minaret, which was built almost twice the height of the minaret proposed by Erol Yurdakul in his drawing, not only failed to establish architectural integrity with the building, but also caused ground settlements and posed a danger to the mosque as a structure since it was built very close to the body wall of the mosque (GDFA-Damage Assessment Sheet) (Figure 19).

Figure 19. The minaret added to the Gülük Complex in 1997 (GDFA)

Examining the restoration papers for the building reveals that the 2002 Conservation Board judgments were used to prepare the survey, restitution, and restoration projects for the fountain, whose exact construction date is unknown (GDFA). The Gülük Mosque Administrative Files folder of the General Directorate of Foundations contains further details regarding the Gülük Complex repairs. The copper coating repair cost 24.348.00 TL in 2004, according to this record (GDFA).

Barut Construction and Engineering Ltd. was hired in 2007 by the Kayseri Regional Directorate of Foundations to prepare the building's survey, restitution, repair, static, and electrical projects (Figure 20). Legends with colors and textures were constructed for the survey drawings, and 1/20 scale detail drawings of the crown doors, window holes, minbar, and mihrab were made. The northeast crown door's dentils were added, the upper cover was depicted as having an earthen roof, and the minaret, which was not in the building's original state, was not portrayed. The drawing depicts the center aperture and the tops of the front mihrab as a stone-covered dome. It is remarkable that the fountain is depicted in its current placement despite having been relocated from its original site in the restitution drawings.

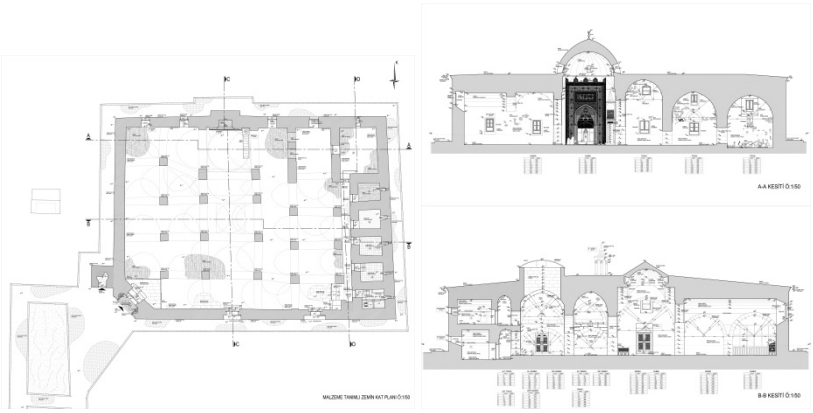


Figure 20. 2013 survey drawings of Gülük Complex (GDFA)

Drawings containing intervention decisions for the restoration of the building were made, a restoration intervention legend was prepared, and the interventions to be made were shown in colors. In this context, it was decided to build a pavement around the mosque to solve the ground water, to fill the joint gaps on the exterior walls with the original mortar, and to clean the cement mortar on the interior walls. It was also stated that the cut stone surfaces should be cleaned with appropriate cleaning methods and the wooden joinery and iron

railings should be renewed. Static strengthening projects and electrical projects were also prepared within the scope of detailed repairs (Figure 21).

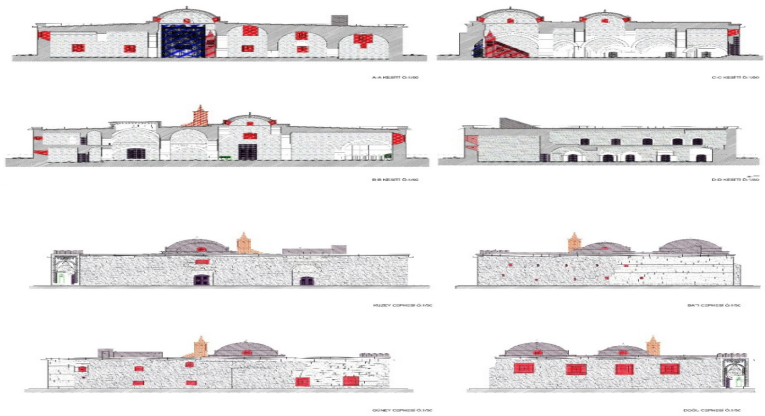


Figure 21. Restoration and Intervention Drawings (GDFA)

After detailed repairs, the upper cover repair was brought to the agenda in 2013 due to the problems in the upper cover of the building. In 2013, with the decision of the Kayseri Regional Board for the Protection of Cultural Assets dated December 13, 2012 and numbered 864, the request to cover the upper cover of Gülük Mosque with lead was rejected because the building is a Seljuk work and lead covering is a technique specific to Ottoman works (GDFA).

In the decision of the Kayseri Regional Board for the Protection of Cultural Assets dated March 9, 2017 and numbered 2550, the building group of Gülük Mosque, registered as an immovable cultural asset in need of protection, was determined as "Group I". In the same decision, it was decided that the request to cover the roof cover of the dome with lead was not appropriate, but that it was appropriate in principle to cover the other parts of the roof other than the dome with lead and that detailed drawings should be prepared for this (GDFA). Approximately four months after this decision, with the decision dated July 25, 2017, and numbered 2750, it was decided that the lead roofing project of Gülük Mosque was appropriate.

In 2017, the Kayseri Regional Board for the Protection of Cultural Assets decided to designate the bath structure as "Group I", and the issue of new structures to be built in the conservation area of Gülük Mosque and Gülük Bath was discussed in the board decision dated May 26, 2017 and numbered 2699. In 2018, the survey studies of Gülük Bath were submitted to the board, and the board evaluated these survey studies in its decision dated January 18, 2018 and

numbered 3052 (Republic of Turkey Ministry of Culture and Tourism, 2018). In the Board's decision dated August 27, 2021, and numbered 5409, the survey projects prepared for Gülük Fountain were examined (Republic of Turkey Ministry of Culture and Tourism, 2021).

4. Conclusion

The repair inscriptions and endowments of Külük Şemseddin, who had the Gülük Complex renovated some 120 years after its construction, provide evidence that the Gülük Complex was repaired during the Seljuk era. While the date of the repair may be precisely determined from this information, much later investigation will be necessary to determine the scope and depth of the operation. The building underwent major interventions, was nearly completely rebuilt, and had a bath structure erected by Atsz Elti in 1210 and Külük Şemseddin in 1335.

Since the technological circumstances at the time, the characteristics of the materials, the required skills, and the quantity of craftsmen are comparable to those in which it was built, the repairs must have used a similar procedure and strategy. It is safe to presume that any repairs and additions were made with the foundation's continuity in mind, while also taking into account the entire usage value, functional continuity, and utility. In this setting, it would be inaccurate to assess the repairs as a modern-day conservation concept and example; instead, it would be more accurate to assess them in the context of the time period.

The only way to access the repairs made to the Gülük Complex during the Ottoman Period is via the building's repair inscriptions; no records of these repairs can be discovered in the archives. The lack of maintenance documents from these times shows that the mosque was not at least comprehensively repaired during these times.

Since the beginning of the Republic, significant attempts have been made to preserve monuments, but only a small number of structures have received maintenance and repairs because of financial constraints, a lack of qualified employees, and a lack of institutional organization. Comprehensive conservation efforts started in the Gülük Complex after the 1950s and even in the 1970s.

Yurdakul conducted in-depth study, devised conservation projects, and carried out their execution during the renovations of the Gülük Complex in the 1970s. In his work, the mosque association's reinforced concrete women's cloister was demolished, the mosque's former skylight that had been closed was changed into a square with arches and covered with a dome, and the skylight in

the madrasah iwan that had been closed was opened and covered with an iron-framed glass screen. The building's missing components, particularly those in the madrasah section, were finished, and the doors and windows that had been closed were now open. The corner crown door and dentils discovered during the excavation of the roof were finished. In addition, a wooden roof that was clad in copper was constructed in place of the original mud roof. One of the significant projects completed at this time was the uncovering of the tile mihrab, one of the mosque's most significant components. This repair includes certain inconsistencies in practice, just like the examples by other names, and a concern for authenticity.

In the cases studied, it wasn't until the 1990s and even the 1990s' end that the issues brought on by the mid-20th century repairs conducted with cement-based materials started to be acknowledged and recognized. The 1997 addition of a minaret structure to the Gülük Complex serves as another example of the challenges associated with adhering to modern conservation guidelines. The mosque's structure was put at risk by the minaret, which also caused ground settlements. Although the application that caused separations in the corner crown door—the mosque's most original unit—was removed during the restoration work done in 2007, the fact that it was made possible at a time when current conservation discourses are gaining traction has led to new doubts about the method and perspective taken toward the imposing building.

Only ten years ago was it possible to complete the thorough investigation and description of the structure, one of the most significant specimens of Anatolian Seljuk architecture. The projects from 2013 that were accepted by the board are significant because they are the first thorough documentation studies in a lengthy historical process and because they were created in accordance with the specifications needed by the legal and administrative procedure.

The time of upkeep and restoration of the Gülük Complex, which serves as the city's defining architectural feature and is one of the most significant representations of medieval Anatolian heritage, is a crucial illustration of the evolution and change in our nation's conservation history. When the building's repairs are considered, they give the structure a layered character that accounts for its current state. This calls for extra care to be taken to prevent these structures, which might be regarded pieces of archaeological, cultural, and historical heritage, from losing their distinctive qualities as a result of poor maintenance.

Taking into account all of these circumstances, the conservation and repair procedures for the buildings should be properly carried out, and the procedures

carried out within this scope should not cause damage to the building's original plan, space, materials, or construction system. The restoration work that the Gülük Complex underwent during this process should be regarded as essential information and used as a guide for other restoration projects. Future projects should learn from past mistakes and be carried out by trained individuals with the requisite institutional coordination.

Bibliography

Ahmed Nazif Efendi. (1987). *Mir'ât-ı Kayseriyye*. M. Palamutoğlu (Haz.), Kayseri: Kayseri İli Özel İdare Müdürlüğü ve Kayseri Belediyesi Birliği Yayınları.

Aslanapa, O. (1991). *Anadolu'da İlk Türk Mimarisi Başlangıcı ve Gelişmesi,* Sayı:43, Ankara: Atatürk Kültür Merkezi Yayını.

ASÜA. TASUH2991, Kayseri Kölük (Gülük) Camii giriş kapısı.

ASÜA- TASUH2388001, Kayseri Kölük (Gülük) Camii.

Aydın, R. (2013). *Osmanlı* İmparatorluğu'nda *Onarım Faaliyetleri: Kayseri* Örneği (Doktora tezi). Erciyes Üniversitesi, Sosyal Bilimler Enstitüsü, Kayseri.

Batur, A. (1985). Batılılaşma Döneminde Osmanlı Mimarlığı, Tanzimat'tan Cumhuriyet'e Türkiye Ansiklopedisi, 4, 1038-1090, İstanbul: İletişim Yayınları.

BCA. Fon Kodu: 030.10.00 Kutu: 213 Gömlek: 445 Sıra: 11, Türkiye'de mevcut eski eserlerin korunması ve zarar görenlerin de tamir ettirilmesi için alınacak tedbirleri tespit etmek gayesiyle bir komisyon kurulması.

Binan, C. (1994). Türkiye'de Koruma Konusundaki Temel Çelişkiler ve Toplumsal Yansımaları Üzerine Saptamaları, *Ulusal Koruma Planlaması Semineri II*, *ICOMOS Türkiye Milli Komitesi*, İstanbul: YTÜ Mimarlık Fakültesi Yayını.

Binan, C. (2005). Cumhuriyet Döneminde Türkiye'de Mimari Koruma Üzerine Yorumlar, *Sinan Genim'e Armağan,* 197-208, İstanbul: Ege Yayınları.

Çakmakoğlu Kuru, A. (1998). *Fetihten Osmanlı Dönemine Kadar Kayseri'de Türk Devri Mimarisi*, Ankara: İlköz Matbaası.

Çal, H. (1990a). *Türkiye'nin Cumhuriyet Dönemi Eski Eser Politikası* (Doktora tezi), Ankara Üniversitesi, Sosyal Bilimler Enstitüsü, Ankara.

Çal, H. (1997). Osmanlı Devleti'nde Asar-ı Atika Nizamnameleri, *Vakıflar Dergisi,* 26, 391-400.

Demircan, Y. (1992). *Tahrir ve Evkaf Defterlerine Göre Kayseri Vakıfları,* Kayseri: Vakıflar Bölge Müdürlüğü Yayınları.

Denktaş, M. (2010). Gülük Hamamı. *Kayseri Ansiklopedisi*, C.2, 422-427, Kayseri: Kayseri Büyükşehir Belediyesi Yayınları.

Eldem, H. E. (1982) *Kayseri* Şehri, Kemal Göde (Haz.), No: 93, Ankara: Kültür ve Turizm Bakanlığı Yayınları.

Gabriel, A. (1954), *Kayseri'de Türk Anıtları*, A.A. Tütenk (çev.), Ankara: Güneş Maatbası.

Kocabaşoğlu, U., Ulutekin M. (1998). *Salnamelerde Kayseri, Osmanlı ve Cumhuriyet Döneminin Eski Yıllıklarında Kayseri*, Kayseri: Kayseri Ticaret Odası Yayınları.

Kuban, D. (1965). *Anadolu Türk Mimarisi Tarihi 1, (Anadolu- Türk Mimarisinin Kaynak ve Sorunları),* İstanbul: İTÜ Mimarlık Fakültesi Yayınları.

Kuban, D. (2002). *Selçuklu* Çağında *Anadolu Sanatı*, İstanbul: Yapı Kredi Yayınları.

Kuran, A. (1969). *Anadolu Medreseleri. I. Cilt,* Ankara: ODTÜ Mimarlık Fakültesi Yayınları.

Madran, E. (1985). Osmanlı Devleti'nde Eski Eser ve Onarım Üzerine Gözlemler, *Belleten Dergisi*, *49* (95), 503-546.

Madran, E. (1996). Cumhuriyetin İlk Otuz Yılında (1920-1950) Koruma Alanının Örgütlenmesi, *ODTÜ Mimarlık Fakültesi Dergisi*, Sayı: 16 (1-2), 59-97, Ankara: Ortadoğu Teknik Üniversitesi Mimarlık Fakültesi yayını.

Madran, E. (2002). *Tanzimat'tan Günümüze Cumhuriyet'e Kültür Varlıklarının Korunmasına* İlişkin *Tutumlar ve Düzenlemeler: 1800-1950*, Ankara: Ortadoğu Teknik Üniversitesi Mimarlık Fakültesi yayını.

Madran, E. (2004). *Osmanlı* İmparatorluğunun *Klasik* Çağlarında *Onarım Alanının* Örgütlenmesi. *16.-18. Yüzyıllar*, Ankara: ODTÜ Mimarlık Fakültesi Yayınları.

Mumcu, A. (1969). Eski Eserler Hukuku ve Türkiye, *Ankara* Üniversitesi *Hukuk Fakültesi Dergisi*, 26 (3-4), 45-78, Ankara.

Önder, M. (1989). Atatürk ve Müzeler, *IX. Türk Tarih Kongresi, Kongreye Sunulan Bildiriler (3)*, 1837-1841.

Öztürk, N. (1995). *Türk Yenileşme Tarihi* Çerçevesinde *Vakıf Müessesesi*, Ankara: Türk Diyanet Vakfı Yayınları.

Sözen, M. (1970). *Anadolu Medreseleri I; Selçuklular ve Beylikler Devri,* İstanbul: İTÜ Mimarlık Fakültesi Yayınları.

Tahiroğlu, B. (1985). Tanzimat'tan Sonra Kanunlaştırma Harketleri, *Tanzimat'tan Cumhuriyet'e Türkiye Ansiklopedisi*, 3, 588-601, İstanbul: İletişim Yayınları.

T.C. Kültür ve Turizm Bakanlığı. (2018). Kayseri Kültür Varlıklarını Koruma Bölge Kurulu Müdürlüğü, Kurul Gündemleri, 2012 Temmuz Kurul Toplantı Gündemleri, https://korumakurullari.ktb.gov.tr/TR-245864/2018-yili-kurul-toplanti-gundemleri.html, *Erişim tarihi: 24.11.2022*

T.C. Kültür ve Turizm Bakanlığı. (2021). Kayseri Kültür Varlıklarını Koruma Bölge Kurulu Müdürlüğü, Kurul Gündemleri, 2012 Temmuz Kurul Toplantı Gündemleri, https://korumakurullari.ktb.gov.tr/TR-294797/2021-yili-kurul-toplanti-gundemleri.html, *Erişim tarihi: 24.11.2022*

Yurdakul, E. (1974). Kayseri Külük Camii ve Medresesinde Yapılan Hafriyat ve Araştırma Sonuçları ile İlgili Yeni Görüşler, *Rölöve ve Restorasyon Dergisi*, C.I, 1, 167-208, Ankara: Pan Matbaası.

Yurdakul, E. (1996). *Kayseri Külük Camii ve Medresesi,* Ankara: Kültür Bakanlığı Yayınları.

GDFA (VGMA), General Directorate of Foundations Archive, (Vakıflar Genel Müdürlüğü Arşivi)

URL 1: https://www.tbmm.gov.tr/tutanaklar/KANUNLAR_KARARLAR/kanuntbmmc056/kanuntbmmc056/kanuntbmmc05601710.pdf

URL 2: https://www.pop.culture.gouv.fr/search/list?auteur=%5B% 22 Gabriel%2C%20Albert%20%281863-1972%29%22%2C%22Gabriel%2C%20 Albert%20%281883-1972%29%22 %5D&mainSearch =%22k%C3% BCl % C3% BCk%22

CHAPTER III

AN EVALUATION OF PAVILLION MINARET MOSQUES IN NEVSEHIR

Ahsen EĞRİDAĞ KADIOĞLU[1] & Leyla KADERLİ[2]

(Architect/ MSc Student), Erciyes University,
Graduate School of Natural and Applied Sciences,
e-posta: ahsenegridag@gmail.com
ORCID: 0000-0003-2707-7043

[2](Assist. Prof. Dr.) Erciyes University,
Faculty of Architecture, Architecture Department,
Kayseri, leylakaderli@erciyes.edu.tr
ORCID: 0000-0002-3497-6664

1. Introduction

The azan, which invites people to pray, which is obligatory in the Islamic belief, was recited for the first time from the roof of a mosque in Medina. In the historical process, a minaret element was added to the architecture of the mosque in order to mark the location of the mosque and to convey the azan further and to more people. The minaret has developed and differentiated according to the geography in which the building was constructed, the period in which it was built, and the characteristics given to the building.

Within the scope of this study, the pavilion minaret type, which is started to be used with the acceptance of Islam and which is generally encountered in the Central Anatolia region, is discussed. This minaret type consists of the pavilion section supported by columns on a pedestal and a spire in different forms upon it surmounted by an alem element made from a range of different materials. In this context, 20 pavillion minaret mosques, which are cited in the literature in Nevşehir center and its districts, have been examined and documented. Among

* This study was supported within the scope of Erciyes University BAP project FYL11569.

these mosques, 10 mosques, namely Orta Mahalle Mosque, Orta Bekdik Mosque, Kızılköy Mosque, Zelve Kaya Mosque, Köşk Minareli Mescit, Çavuşin Mosque, Zelve Kaya Mosque, Çukur Mosque, Çat Küçük Kaya Mosque and Kasapoğlu Mosque, are unfortunately closed to worship today. These unused structures are vulnerable to natural and human-induced destruction. It is thought that these 20 monumental mosques, which have witnessed the historical process and have been examined, will provide a framework for the protection of these structures by evaluating their current status (Güney, 2008;6).

Firstly, in this study, all kinds of printed and electronic sources and literature were searched and data were obtained through on-site observation and digital photography as a current documentation method. In the study conducted specifically for the city of Nevşehir, in the Cappadocia Region, which shows its unique architecture and development from a more general framework, and then the important monumental architectural structures that are chronologically in the historical process of the Nevşehir City were examined. In Nevşehir, 20 mosques with pavillion minarets were examined on religious architecture, and these pavillion minarets, which are architectural elements, were detailed and evaluated.

2. Cappadocia and Nevsehir's Brief History

Nevşehir, which is located in the Cappadocia region, which has been inhabited by many civilizations since prehistoric times, has been under the domination of the Hittites, Persians, Macedonians, Roman and Eastern Romans (Terzioğlu, 2018;8).

With the raiding expeditions that the Turks started to organize in Eastern Roman territory in Anatolia from 1067 onwards, the entire region up to Nevşehir and its surroundings, Ankara, Sivas and Sakarya in 1072 was ruled by Turks. The Anatolian Seljuk State was established in the region in 1175 where Danishmends had ruled from 1086 (Gökhan, Koçak ve Saraç, 2016;110-111, Erçin Koçer, 2015;8).

After the Danishmends and the Anatolian Seljuks, respectively the İlhanlı, Eretna, Karamanoğulları, Dulkadiroğulları Principalities ruled the region. In the 14th century, the Cappadocia Region, was the scene of many struggles between the Karamanoğulları and the Ottomans, and it first joined the Karamanoğulları and then became a part of Ottoman territory in the late 14th century (Öztürk, 1998;10, Okyar, 2002;29, Erçin Koçer, 2015;7).

Today known as Nevşehir, in the Cappadocia Region, the village of Muskara, witnessed the struggle between the Karamanoğulları and the Ottomans. the village came under Ottoman rule in second half of the 15th century. The Muskara village, which was one of the 80 villages of the Urgup district of the Nigde sanjak until the Ottoman period, was built up during the reign of III. Ahmed's grand vizier Damat İbrahim Pasha, after it was turned into a district connected to the Niğde sanjak, and its name was changed in 1725, to 'Nevşehir', which means new city, (Şıkoğlu, 2017;103-104, Çiğdem, 2019; 33, Hakman, 2019; 285).

In the last period of the Ottoman Empire, Kırsehir became a sanjak in 1870 and Nevsehir was connected to this sanjak until 1902. Nevsehir, a district connected to the Nigde sanjak after the Kırsehir Sanjak, became a district of Nigde, which became a province with the proclamation of the Republic the Turkish-Greek population exchange in 1924 started a great socio-cultural and economic process of change, and while these changes were continuing, Nevsehir was declared a province in 1954 (Şıkoğlu, 2017;105).

Nevşehir, Nevşehir central district, Gülşehir, Ürgüp, Acıgöl, Avanos, Hacıbektaş, Kozaklı and Derinkuyu districts, with their villages and valleys acquired a protected status given by UNESCO in 1985 (Sezgin, 2002;7, Terzioğlu, 2018;26, Büyükçay, 2010;6).

2.1. Turkish Period Architecture in Nevsehir Settlement

With Turkish rule in the region, settlement activities started in Nevşehir and continued increasingly during the Seljuk period. There are 1 madrasah, 3 inns, 1 zaviye and 4 mosque structures dating from the Seljuk period. Avanos Sultan Alaaddin Mosque, Avanos Ozkonak Mosque, Karani Hatun Mosque and Ortahisar Sultan Aladdin Mosque are still in use today dating from the Seljuk period (Gökhan, Koçak ve Saraç, 2016;111-112).

During the Anatolian principalities period, the Karamanids dominated the region. Taşkınpaşa complex, which consists of a mosque, tomb and madrasah, is one of the most important works that reflect the architectural style of the Karamanids (Soybaş, 2019;8).

The bridge, which was built in the town of Ozkonak during the reign of Yavuz Sultan Selim, when Nevşehir definitively incorporated into Ottoman lands, is still standing and in use today (Çiğdem, 2019;38, Terzioğlu, 2018;27). unescoNevsehir, which gained the status of a city through Damat Ibrahim Pasha, has 18 mosques, 1 small mosque, 6 madrasahs, 2 baths and 14 inns belonging to this period (Koçer, 2015;496). One of the most important structures of this

period is the Damat Ibrahim Pasha Complex, which consists of a mosque, madrasah, primary school, soup kitchen, Turkish bath and inn (Ekiz, 2006;10, Çiğdem, 2019;41).

3. Mosque Architecture

The Masjid an-Nabawi, known as the first mosque built in Islam, surrounded by plain, open mud-brick walls and shaded by palm branches, influenced the plan schemes of later mosques (Baltacı, 1985; 228, Akın, 2016;182).

Firstly, the long aisle and courtyard mosque structure with minbar (pulpit) and mihrab (prayer niche) emerged during the Umayyad period, then the Abbasids used new materials and added the, sermon pulpit, muezzin mahfil, women's mahfill, and sultan's mahfill. The first minaret element appeared during the Abbasid period (Akın, 2016;182-183, Baltacı, 1985; 229).

It has been seen that windows were added in the mosques built during the Torunoğulları period in Egypt, and ornament elements began to be used on the facades during the Fatimids period. In the masjids built under the Karakhanids, a plan scheme that expanded transversely came forward (Baltacı, 1985;229, Akın,2016;183).

The Seljuks built mosques with columns and flat roofs in the early period and later used vault and dome elements. In last period, iwans, columns and ornamentation and, at times, marble facade cladding received emphasised. In the principalities period, the single dome, portico and marble facade cladding are the prominent features (Akın, 2016;184, Baltacı, 1985;231).

The Ottoman period can be seen as the most magnificent period in mosque architecture. In the early Ottoman period, the continuation of the Seljuk architecture, 'Reverse T' and 'Zaviyeli Mosque' are found. The classical period started with Mimar Sinan and in this period the domes were supported by half domes. In the last period of the Ottoman Empire, western influence dominated and columns embedded in the walls, capitals decorated with palmettes were used and circular curved windows were added (Baltacı, 1985;231-232, Akın, 2016;184-185).

The mosque structure, which was formed with the first simple architectural elements, obtained a different architecture with the elements added by civilizations over the course of time into the present day.

3.1. Minaret Element

Azan, which is thought to be derived from the Arabic verb 'Ezine' and means 'to know something', was used by the Prophet Muhammad in

the early years of Islam. It was given from the roof of the Prophet's house by turning towards the qibla, and from the doorway of the mosque, then it was given from the minarets in order to reach far and more people (Asfour, 1997;9, Güleç, 2006;13). In the early years of Islam, the Prophet Muhammad commissioned a person to call for prayer by climbing a pillar called 'mismar' on the roof of house, which located highest in city (Yurttaş ve Gökler, 2020; 119-120).

There are different inferences about the origin of the word minaret. In the early days, the minaret element was called "savma" and "mizane". Over time, the word 'Menare', which is derived from the Arabic words 'nur' or 'fire' and means 'the place where the fire burns', 'the place where the call to prayer is read' has been used (Güleç, 2006;14, Asfour, 1997;5, Nefes, 1996;17, Yurttaş ve Gökler, 2020;120).

During the expansion of the Masjid an-Nabawi, which is accepted as the first mosque in Islam, a tower was added to call the azan (Yurttaş ve Gökler, 2020;120). However, the first known minaret is from the Umayyad period. An angular 'savma' (minaret) element was added during expansion of Amr bin As Mosque in 672, which was built by the Umayyads in 641-642 (Güleç, 2006;13, Afour, 1997;10, Kılıç, 2011;255, Gündüz, 2020;98). In this period, minarets were added to the mosques in Medina (Yurttaş ve Gökler, 2020;120).). However, It was seen that only 20 of these mosques were given 200 mosques in the description of the city of Damascus. Gottheil (2010), therefore stated that the minaret was not a necessary element of the first mosque architecture (Gottheil, 1910;137).

Gottheil (1910), claimed that the first Muslims in Medina performed prayers without the adhan, but later on, Christians used bells and Jews used pipes and Muslims were influenced by them (Gottheil, 1910;134). It is thought to have been shaped by the influence of minarets, lighthouses, watchtowers, bell towers, ziggurats and Indian victory columns, which emerged with Islam and were shaped by local materials (Sağcan, 2006; parag.5, Gündüz, 2020;98). Hillenbrand (1985) stating that agree these analogies about the origin of the minaret, but suggest that the minaret was also built for a political purpose (Hillenbrand, 1985;41).

Adding a characteristic feature to mosques and masjids, which are one of the important elements of Islamic architecture, minarets have given these structures different identities with the effect of the period and style and have become a symbolic value in the city.

The construction of minarets by the Turks started with the acceptance of Islam by the Karakhanids in 926 (Güleç, 2006;14, Asfour, 1997;15). Many different minaret forms were tried until the Great Seljuk period. While the Iranian influence was observed during the Great Seljuks period, a minaret with a cylindrical and flat body was seen on the square base that they built with stone material adjacent to the structure during the Anatolian Seljuks period. While it remained the same formally in the principalities period, it differed in size and shape (Güleç, 2006;19-21, Asfour, 1997;16). The minaret found its shape in the Ottoman period and then continued its development with varied techniques and decorations (Güleç, 2006;22-23, Asfour, 1997;16-17).

Among the minaret types, the pavilion minarets, which are quite common in Anatolia and constitute the main subject of this study, employ columns, arches, spire and tip ornament sections and are generally seen in masjid structures (Güleç, 2006;38).

3.2. Pavillion Minaret

The pavillion minarets, which J. Schacht drew attention to as the minaret type seen in Egypt and Anatolia, are named as an 'archaic' type based on the Amr Mosque minaret, which is the first minaret example in Egypt (Elpe, 2014;478, Eyice, 1953;254, Güleç, 2006;38).

Pavillion Minarets in this form called Çardak Minaret, Kule Minaret, Minbar Minaret and Staircase Minaret (Güleç, 2006;38). Minarets are also called 'minbar minaret' because of their similarity to mosque minbars with their closed balcony in the form of four-columns and cone-shaped pavilion that is climbed up to with steps, which are mostly seen in mosques in Anatolia. It is thought that it may have been used as an open-air sermon pulpit, which has the same function where there are no minbars as the minbars in the mosques (Elpe, 2014;478, Sağcan, 2006;parag.12, Eyice, 1953;253).

Notwithstanding pavillion minarets have been identified with mosque architecture over time, it is thought that the starting point is more universal. Elpe (2014; 478), suggested that there may be an inspiration, considering the similarity of the pavilion minarets to the bell towers belonging to the Roman or early Christian periods.

It is thought that the bell towers seen in the structures belonging to the Christian periods in Nevşehir and the surrounding provinces are an inspiration for this minaret type and therefore it is quite common in this region.

Eyice (1953; 254), who showed the easy and simple construction of this minaret type seen in mosque structures, pointed out a few examples in Istanbul out of Anatolia.

The most striking of these minarets is the Sokullu Mehmet Pasha Mosque, built in the 16th century by Mimar Sinan, whose railing and arches form the serefe, which is reached by a stone staircase from the outside. In the following years, examples of minarets placed in the form of a bay window were found on the side wall, as in Tahtakale Timurtaş Masjid. In the 17th and 18th centuries, there is an example of Derviş Ali Mosque with a polygonal body on a square pedestal and an ornamented railing forming the serefe. An example of this type of minaret in the 19th century is the Babıali (Nallı) Mosque, which has a serefe with a protruding cover on a thin body. In Küçük Mecidiye Mosque, it is an example from the later period when the serefe was not covered (Eyice, 1953;254-257).

Figure 1. A. Sokullu Mehmet Pasha Mosque (Kıran, 2021)

B. Timurtaş Masjid (Dilekoğlu, 2021)

C. Dervis Ali Masjid (Köroğlu, 2020)

D. Küçük Mecidiye Mosque (Dileoğlu, 2019)

E. Nallı Masjid (Dilekoğlu, 2017)

Pavillion minarets are mostly located on a stone pedestal above the northern entrances of mosques and masjids or directly on the roof of the building, but there are examples where they are located in the northwest or northeast corners of buildings with portico (Güleç, 2006;39, Sağcan, 2006; parag.15). It has been seen that the kiosk sections where the minarets are on four or six columns and the columns are covered with a roof are similar to the minarets in some buildings in the earliest Agleb architecture (Elpe, 2014;478, Güleç, 2006;39). Above the pavillion section rises the spire, which has different forms, such as an octagonal prism with chamfered corners or an octagonal pyramid. On the spire section, it is seen that a copper tip ornament was placed in some examples (Güleç, 2006;39).

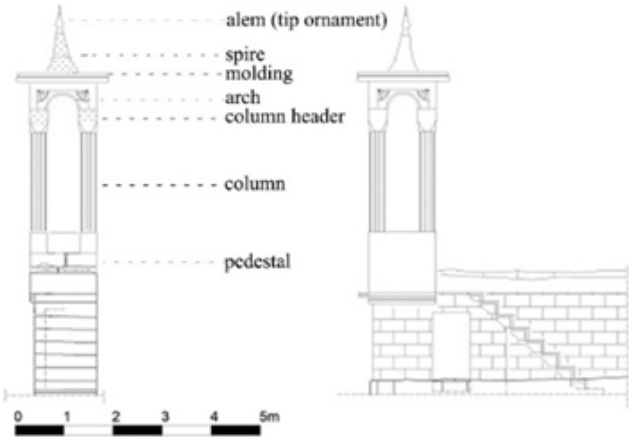


Figure 2. Esbelli Mosque Pavilion Minaret (Büyükçay, 2010;60), Reorganized.

Figure 3. Pavillion Minaret Mosques in Nevsehir (Google Earth, 2022)

Gülsehir Kızılkaya Village (Karrani Hatun) Mosque, which is the earliest among the pavilion minaret mosques identified in the city, was built by Karaani

Hatun in H.670, 1271-72, according to the inscription on the harim gate. The mosque, which was built with cut stone, has a rectangular plan with three aisles perpendicular to the mihrab. The pavilion minaret of the mosque is located on the northeastern main wall in the 19th century. The minaret four columns on a two-level pedestal and decorated with stone block eyebrow arches connecting these columns. The pavillion section of the minaret was completed with a molding and ended in a primidal spire.

The mosque has mosty preserved its plan scheme since it was first built. However, Ekiz (2006), argues in his thesis that the mosque was built as an inn with 3 aisles and a dome, and started to be used as a mosque at an unknown date (Ekiz, 2006;88). In one of the repairs the vault covers of the building and the domes were plastered with cement and covered with a gable roof. A minaret with a single balcony was added to the northwest in 1979. A portico with a built-in glass was added to the northern facade. The mosque, which after a major renovation in 1995, is open for worship today (Ekiz, 2006;89).

Figure 4. Kızılkaya village (Karani Hatun) mosque plan (Ekiz, 2006;245), Kızılkaya village (Karani Hatun) mosque pavilion minaret (Kadıoğlu, 2022)

Located in Sulusaray Town and built in H.761/M.1356/1360 according to its inscription on the door of the harim, the Alaeddin Mosque has a plan consisting of two parallel blocks with a single aisle in the north-south direction. The mosque, which used rock-carved in the reinforcement arches and rubble stone in the walls, is covered with plaster up to the basement level and today (Ekiz, 2006;92-93). The pavilion minaret, located on the top cover in the southwest corner, consists of octagonal four columns on a square pedestal, connected to each other by eyebrow arches. The eyebrow arched pavilion section on the columns was completed by separating it from the octagonal spire with a curve molding ‘kaval silme’.

The mosque, which is open to worship today, took its current form with the renovations it went through in 1990. With these repairs, the interior and exterior

surfaces were covered with plaster (Ekiz, 2006;92-93). The original door of the mosque was replaced with a metal single-wing door.

Figure 5. Sulusaray town Alaaddin Mosque plan (Ekiz, 2006;246), Sulusaray town Alaaddin Mosque pavilion minaret (Kadıoğlu, 2022)

Orta Bekdik Mosque which, located in the center of Nevşehir, was built in 1746 according to the records of the mufti. However, no source could be found to support this date. It is thought that it may have been built at the same time as the fountain dated 1727-1728 located in the northwest of the mosque. The mosque, which has a square plan with two aisles parallel to the mihrab, was built using rubble stone and is covered with plaster (Ekiz, 2006;164, Bayrakal, 2011;94, Sezgin,2002;39).

The pavilion minaret, which is reached by a staircase in the courtyard, is located on the courtyard main wall in the northwest of the building. The minaret has a pavilion section consisting of octagonal four columns with on a square pedestal and eyebrow arches connecting these columns. The octagonal spire and the minaret were completed on the pavilion section, which was completed with a curve molding (kaval silme) (Ekiz, 2006;166-167).

Figure 6. Orta bekdik mosque plan (Ekiz, 2006;256), Orta bekdik mosque pavilion minaret (Kadıoğlu, 2022)

Ascıbası Suleymanaga Mosque, located in the town of Gulsehir, was built by Suleyman Aga Ibni Ahmed during the reign of Sultan Mahmut I in H.1147 / M.1734 according to the inscription on the door of the harim (Budak, 2018;219,

Ekiz, 2006;131-132, Sezgin, 2002;80). The harim of the mosque is an example of rock-carved structures, with a square planned place carved into the rock in the north and a rectangular planned place perpendicular to the mihrab in the south (Budak, 2018;219). There is an inscription with the date of H.1158, M.1745-46 to the west of the rock place[2] (Budak, 2018;221-223). The pavilion minaret of the mosque is located in the northwest corner of the masonry place in the south. The minaret consists of octagonal four columns on a stone block with a rectangular prism, and a pavillion section with eyebrow arches connecting these columns. There is an octagonal petek and an octagonal pyramid stone spire on the pavilion section, which is completed with chamfered corners (Ekiz,2006;135, Budak, 2018;223, Sezgin, 2002;83).

The mosque was destroyed in 1964 and the vaulted entrance was destroyed (Ekiz, 2006;132). Then a windbreaker was placed at the entrance (Budak, 2018;219). While it was originally covered with a flat roof, a hipped roof was used in 1996 and covered with tiles. A square planned portico was added to the mosque at an unknown date and it was covered with a tile roof (Ekiz, 2006;132-133). The mosque is open for worship today.

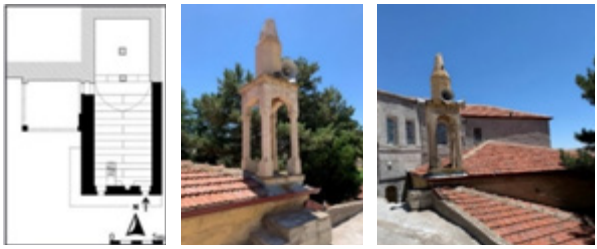


Figure 7. Ascıbası suleymanaga mosque plan (Ekiz, 2006;250), Ascıbası suleymanaga mosque pavilion minaret (Kadıoğlu, 2022)

Located in Gulsehir district, Kızıkoy Mosque, whose construction date and founder is unknown, could not be registered. The mosque, which was completely rock-carved, consists of a single harim and two places of unknown function. On the rock block at the entrance of the mosque, there is the pavilion minaret, which was built with cut stone, which was reached by steps that have not survived. The minaret consists of the pavilion section consisting of four columns and round arches connecting these columns, and a cylindrical spire on the pavilion section. On the column on the northern facade of the minaret, 'Sahibül hayrat vel hasenat imam çatlı Hafiz Fehmi Efendi 23 Kanuni Sani 936, (1)936'[3] was written (Budak, 2018;241).

2 According to Budak (2018) argues that the dates on this inscription in the rock-carved place are the dates when the rock-carved place was built.

3 According to Budak (2018) suggests from the text that the minaret was added in 1936 and based on this, the mosque may have been built in the early 20th century.

Figure 8. Kızılkoy mosque plan (Budak, 2018;242),
Kızılkoy mosque pavilion minaret (Kadıoğlu, 2022)

Esbelli Mosque, located in the town of Urgup, has the date of H. 1230 (M. 1814) to the west of the mihrab as a reference, and the year 1814 is mentioned as the year of construction in the Nevsehir cultural inventory and registration slip records. The top cover of the mosque, which has a square plan with a single aisle perpendicular to the mihrab, was leveled for the first time by keeping the elevation of the southern section lower than the elevation of the northern section (Büyükçay, 2010;50-51, Eravşar, 1993;48-50). The pavilion minaret of the mosque consists of four octagonal columns on a square pedestal, in the northwest corner of the harim, and the pavilion section that connects these columns with a gable arch and molding. The minaret is completed with a cone-shaped spire and an alem (tip ornament) (Büyükçay, 2010;60).

Esbelli Mosque has been interfered with from the date it was first built to the present day, in the form of knitting wall between the arches that make up the entrance portico and adding an ablution place to the back of this wall (Büyükçay, 2010;66). In his thesis, Eravşar (1993) mentions an inscription on the left of the mihrab, indicating that it was repaired in H.1311 (M.1895) (Eravşar, 1993;48). However, this inscription no longer exists today. The mosque is open for worship today.

Figure 9. Esbelli mosque plan (Büyükçay, 2010; 52),
Esbelli mosque pavilion minaret (Kadıoğlu, 2022)

Aladdin Mosque, located in Ortahisar town of Urgup district, consists of a rock-carved and masonry place. The rock-carved place was built in H. 1274 (M.1857), and the masonry place was built in H. 1256 (M. 1840) (Budak, 2018;51,

Büyükçay, 2010;90). The mosque is the earliest example where rock-carved place and masonry place were used together, and it differs from the plan schemes of other mosques with its aisles perpendicular to the mihrab (Eravşar, 1993;53). While the masonry place has a square plan consisting of two aisles perpendicular to the mihrab, the rock-carved space has an irregular rectangular plan.

The pavilion minaret of the mosque is located in the southeast corner of the masonry place. The minaret consists of four round columns on a square pedestal and geometrically ornamented sliced arches connecting these columns. The pavilion section, which consists of three-storey square column header on the columns, was completed with a pointed cylindrical stone spire and a metal alem (Büyükçay, 2010;100, Budak, 2018;257, Eravşar, 1993;52).

The date on the inscription on the rock-carved place suggests that the masonry place was repaired (Budak, 2018;252). The rock-carved place was covered with stone on the earthen roof in the 1960s and the stairs leading to this roof were closed with a wall in the 1980s (Budak, 2018;252, Büyükçay, 2010;106). It was stated that the rock-carved place, which was restored in 2012, was used as a municipal warehouse by Eravşar (1993), but it does not fulfill this function today and is closed to worship (Budak, 2018;252, Eravşar, 1993;51). The masonry place is still open for worship.

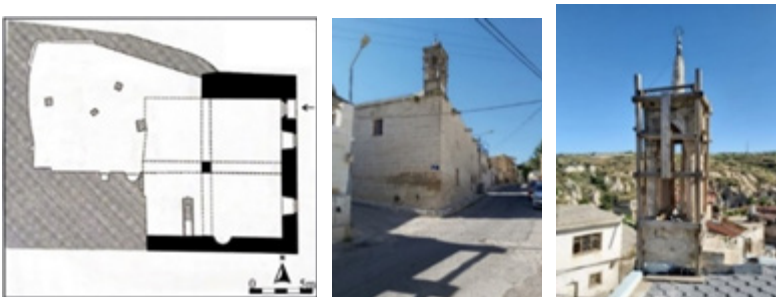


Figure 10. Aladdin mosque plan (Budak, 2018;253),
Aladdin mosque pavilion minaret (Kadıoğlu, 2022)

The construction date of the Çukur Mosque, which is a rock-carved and masonry structure in Ortahisar town, which is closed to worship today, is unknown[4] (Budak, 2018;268, Eravşar, 1993;63). The masonry place of the

4 ...'Due to the fact that the construction of the rock-carved sıbyan mektebi in the mosque was seen for the first time in the Nevşehir Damat İbrahim Pasha Complex (H.1139/M.1726-27)...', It was dated to the mid-18th century by Eravşar (1993).
According to Budak (2018), stating that the masonry section of the Alaaddin Mosque and the masonry section of the Çukur Mosque are similar, claims that the Çukur Mosque was built in the 19th century.

mosque was designed as three sections perpendicular to the mihrab and two aisles (Büyükçay, 2010;130, Budak, 2018;265, Eravşar, 1993;64). The pavilion minaret of the mosque is located in the northeast corner of the masonry place, which was built using esbelli stone (white stone). The minaret is located on a square pedestal with 12 steps built using cut stone. Four octagonal columns and the sliced arches connecting the columns are finished with a single molding. The spire of the minaret has not survived (Budak, 2018;266, Büyükçay, 2010;141).

The mosque, which is closed to worship today, has mostly preserved its originality. The inner walls of the masonry and rock-carved harim place are covered with whitewash (Büyükçay, 2010;148). In the thesis of Eravşar (1993), he stated that there are 2 windows on the south facade in the plan scheme. It is seen that windows were added to the north and west facades at an unknown date today (Eravşar, 1993;63-65).

Figure 11. Çukur mosque plan (Büyükçay, 2010;136),
Çukur mosque pavilion minaret (Kadıoğlu, 2022)

The harim of the Abdioglu Mosque, which was built in 1258 H. (1842-1843) using esbelli stone (white stone) in Ortahisar Town, has a square plan with three aisles perpendicular to the mihrab (Büyükçay, 2010;108-109, Eravşar, 1993;58). While the middle aisles is covered with three domes, the fact that the side naves are covered with barrel vaults in the north-south direction stands out as an original examples (Eravşar, 1993;58-62, Büyükçay, 2010;108-110). The pavilion minaret, which is the original minaret of the mosque, consists of four octagonal columns on a pedestal in the northeast corner and a section of the pavilion with a sliced pointed arch connecting the columns. The pavilion section is finished with semicircular ornamentation on the arches and a double molding. The minaret is completed with a stone spire and on its tip a tulip motif of brass (Büyükçay, 2010;117, Eravşar, 1993;60).

The mosque, which is known to have been repaired in 1909, was added in 1973 with a minaret with 2 balconies on a pedestal apart from the mosque

in the northwest (Eravşar,1993;59-60, Büyükçay,2010;108). The columns and their header in the 'son cemaat yeri' (or the latecomers potico) were replaced in the mosque, through comprehensive restoration work in 2008. The mosaic layer on the top cover was removed and cut stone was made. The courtyard floor was covered with stone and the fountain addition was removed. The pavillion minaret without a spire was renovated in according to the minaret examples, but the new minaret was not removed (Büyükçay, 2010;124). Today, the mosque is open for worship.

Figure 12. Abdioglu mosque plan (Büyükçay, 2010;112), Abdioglu mosque pavilion minaret (Kadıoğlu, 2022)

Aydınlı Mosque, located in Göreme Town and whose construction date is unknown, while some sources have accepted the date of construction as H.1303/M.1885 according to the inscription on the courtyard entrance door (Büyükçay, 2010;150, Dikmen ve Toruk, 2021;30)[5]. The mosque, which has a rectangular plan with a single aisle perpendicular to the mihrab, was built using cut stone (Büyükçay, 2010;152-164, Dikmen ve Toruk, 2021;30-31). The pavilion minaret, located in the northeast corner of the mosque, which can be reached from the 'son cemaat yeri' (or the latecomers portico), is formed by four round columns on a square pedestal and sliced arches connecting these columns. On the pavilion section, which was completed with a stone molding, the cylinder was finished with a spire and a alem (Büyükçay, 2010;156-157, Dikmen ve Toruk, 2021;31).

The mosque was mostly repaired in 2007. The most important intervention in this renovation was the abolition of the muhdes women's place (Büyükçay, 2010;164). Today, the mosque is in very good condition and is open for worship.

5 In the archive records, the date H1303/M1885 is stated as the construction date. Based on the expression 'it was built in 1303' on the inscription on the original entrance door of the mosque, Büyükçay (2010) dated the mosque to between 1883 and 1888.

Figure 13. Aydınlı mosque plan (Büyükçay, 2010;153),
Aydınlı mosque pavilion minaret (Kadıoğlu, 2022)

The date of construction and the builder of the Gaferli Mosque in Göreme Town are unknown[6]. The mosque, which is an example of the combination of rock carved place and masonry place, was shaped as two separate masses, different from the mosques in the region with the same characteristics. The masonry place with a rectangular plan scheme with a single aisle, built of cut stone to the north of the rock-carved place, is used as the portico of the mosque (Budak, 2018;213-214, Dikmen ve Toruk, 2021;28-29). The pavilion minaret, located on the courtyard wall in the northeast corner of the mosque, consists of four round columns on a square pedestal and sliced arches connecting these columns. The pavilion section with four-leaf flower motifs on the arches is completed with an octagonal spire (Dikmen ve Toruk, 2021;29).

During the repairs of the mosque, wooden frames were added to the windows on both sides of the door. In addition, the upper cover of the entrance section was covered with cut stone during these repairs (Budak, 2018; 213). Today, the mosque is open for worship.

Figure 14. Gaferli mosque plan (Budak, 2018;215),
Gaferli mosque pavilion minaret (Kadıoğlu, 2022)

6 Although the date of construction was written as M.1686 on the plaque placed on the courtyard entrance by the Nevşehir Mufti, no source could be found to confirm this date.

Halil Ağa Mosque, located in Göreme Town, was built in H.1253 (M.1837-38) according to the inscription on the entrance door of the harim (Büyükçay, 2010;68, Dikmen ve Toruk, 2021;35, Müderrisoğlu, 2011;414). The mosque, which has a rectangular plan with three aisles perpendicular to the mihrab, was built using rubble stone, except for the portico and the pavilion minaret. The pavilion minaret, which is on a square pedestal with geometric motifs in the northwest corner, is reached from the 'son cemaat yeri' (or the latecomers portico), was built using cut stone. The minaret has four columns and these columns are connected to each other by arches that have geometric motifs on them and are finished with a molding. It has a minaret, a stone spire and a copper alem (Büyükçay, 2010;82, Dikmen ve Toruk, 2021;38).

Until today, there has not been much intervention that changed the plan scheme of Halil Ağa Mosque, but the walls of the harim were covered with wooden paneling and the mihrab, pulpit, and sermon platform were added. While it is seen in the images in the thesis of Büyükçay (2010) that the arches of the portico were built, these walls have been removed today. In addition, today, a gable roof has been added to the mosque, which was covered with a flat earth roof when it was first built (Büyükçay, 2010;89).

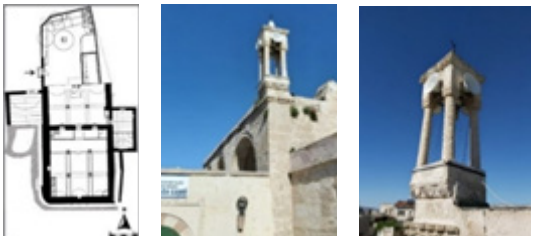


Figure 15. Halil aga mosque plan (Büyükçay, 2010;72),
Halil aga mosque pavilion minaret (Kadıoğlu, 2022)

The date of construction and the builder of Carsı Mosque[7], located in Urgup district, are unknown[8] (Büyükçay, 2010;27-28, Müderrisoğlu, 2011;407, Eravşar,1993;83). The mosque, which has a square plan with three aisles perpendicular to the mihrab, stands out as a unique example among similar plan schemes with the design of the mihrab niche in the south as protruding outward (Büyükçay, 2010;29-30, Eravşar, 1993;84). The pavilion minaret of the mosque is located on top in the northeast corner, which is reached from the women's

7 The mosque is also known as 'Yeni', 'Hacı Mustafa Ağa' and 'Çarşı' among the people.
8 In the archive records, the construction date of the mosque is shown as 1807 (19th century).

place added to the north. The minaret consists of a column with simple headers with four square columns on a square pedestal and sliced arches connecting these columns and a monolithic stone. The pavillion section is completed a spire and metal tip ornament on the pavillion section (Büyükçay, 2010;37, Eravşar, 1993;83, Sezgin, 2002;92).

The mosque, which is open to worship today, has been subject to interventions to the harim and its facades since its first construction. The closing of the entrance door on the north facade, which is seen in the archive records, by building a wall at an unknown date, and the additions of the women's place and imam's room removed the mosque from its original form. A single balcony minaret was added to the east of the original minaret of the mosque in 1966, and a fountain element was built in the courtyard of the mosque in 1967 (Büyükçay, 2010;47).

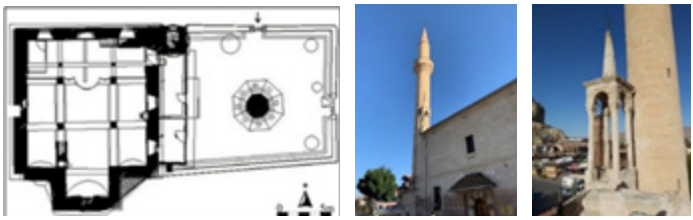


Figure 16. Çarsı mosque plan (Büyükçay, 2010;30),
Çarsı mosque pavilion minaret (Kadıoğlu, 2022)

Hasan Efendi Mosque, located in Nar Town, was built in H.1207/M.1792 from the inscription above the entrance door of the harim. It has a plan scheme consisting of two parallel rectangular masses with a single aisle perpendicular to the mihrab. In the examination carried out by the General Directorate of Foundations in 1982, it was determined that rubble stone was used for the main walls, and white cut stone was used on the top of the windows and doors. Today, it is seen that all facades, except for the entrance facade, are covered with cut stone. Cut stone was used on the entrance facade (Ekiz, 2006;155, Sezgin, 2002;64-65). The pavilion minaret, which is located in the northeast independent of the mosque, is reached by 12 steps from the ground. The minaret consists of four octagonal columns with volute headers on a square pedestal and combined eyebrow arches connecting these columns. The pavilion section, which is completed with a curve molding, has a pirimidal spire and a crescent alem tip ornament (Ekiz, 2006;158, Sezgin, 2002;66).

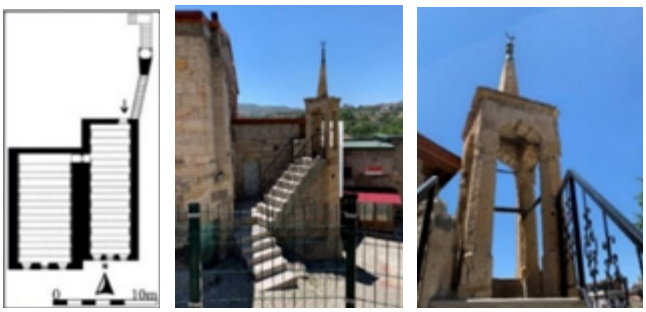


Figure 17. Hasan efendi mosque plan (Ekiz, 2006;254),
Hasan efendi mosque pavilion minaret (Kadıoğlu, 2022)

The date of construction and the builder of Cavusin Mosque in Avanos district are unknown[9] (Budak, 2018;173). The mosque has a plan scheme which merges with the rock carved place the rectangular masonry place with two aisles perpendicular to the mihrab, which was added after the repairs (Budak, 2018;170-172). The pavilion minaret, which can be reached from the exterior in the southwest corner of the masonry place of the mosque, consists of four round columns on a square pedestal, eyebrow arches connecting these columns and the pavilion section. The pavilion section of the minaret was renovated with a different material and completed with an iron tip ornamanent on the spire (Budak, 2018;173).

It is thought that the masonry part of the mosque, which was repaired in 1940, was added during these repairs (Budak, 2018;173). The mosque, where the wooden door was added at an unknown date and the minaret spire was renewed with a different material, is closed to worship today.

Figure 18. Çavusin mosque plan (Budak, 2018;170),
Çavusin mosque pavilion minaret (Kadıoğlu, 2022)

9 According to Budak (2018), the Çavusin Mosque was dated to the 18th century based on the motifs used in the building.

The inscription of the Orta Mahalle Mosque, in Avanos district has the date H.1230, in which several functions were used together with the additions made during the period. However, there is no source that provides the date of construction. The inverted 'T' plan scheme was created by adding an iwan to the south of the square planned harim, which is entered from the west side of the mosque (Müderrisoğlu, 2011;411).

The pavilion minaret, located in the northeast corner of the harim, is reached by the stairs in the northern courtyard surrounded by the building complex. The pavilion section, which consists of octagonal columns on a square pedestal and sliced arches connecting these columns, was completed with a single molding. There is an octagonal pirimidal spire and an iron tip ornament on the spire.

Figure 19. Orta mahalle mosque plan (K.V.B.M. 2022),
Orta mahalle mosque pavilion minaret (Kadıoğlu, 2022)

There is no archival record of Kasapoğlu Mosque in Gore Town, whose construction date and builder are unknown. The mosque has a plan scheme where the rock carved place and the rectangular planned masonry place with a single aisle perpendicular to the mihrab are combined. The minaret of the mosque, which was built with cut stone, is located on the top of the house located in the southeast, unlike the other examples. The pavilion minaret, built from yellow Nevşehir stone, is located on a square pedestal on the second floor of the house. It consists of four columns with chamfered corners and lozenge-slice headers and eyebrow arches connecting these four columns. The pavillion section of the minaret was completed with a molding and ended with a stone spire.

While the mosque was open to worship until 1984, it is not used today (Budak, 2018;188).

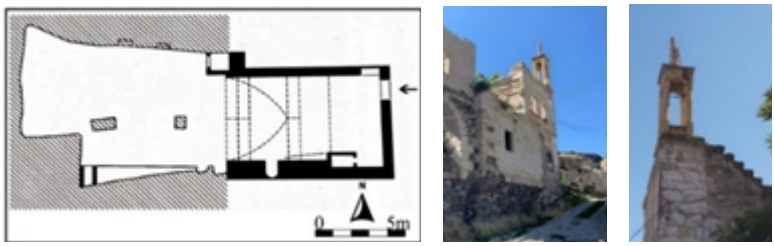


Figure 20. Kasapoglu mosque plan (Budak,2018;189),
Kasapoglu mosque pavilion minaret (Kadıoğlu, 2022)

Zelve Kaya Mosque, located in the southeast of the Zelve Valley in Avanos district and whose construction date is unknown, has a rectangular plan scheme with a single aisle in the east-west direction. A masonry place arranged in the form of an iwan was added to the west of the rock-carved space to the east of the building, using cut stone extending out from the facade. The building does not have a minbar. To the northwest of the flat roof of the iwan is the pavilion minaret of the mosque. The minaret consists of a square pedestal with four columns with gradual columns headers on a square pedestal and sliced arches connecting these columns. There is an octagonal spire with small niches on each side above the pavilion section, which was completed with moldings. There is no tip ornament (Budak, 2018;308-309, Tuncer, 2016;26-27).

Located in the valley, which was converted into the Zelve Open Air Museum in 1964, the mosque is closed to worship today.

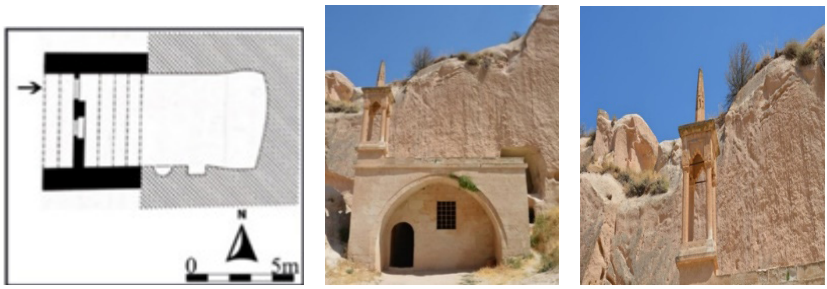


Figure 21. Zelve kaya mosque plan (Budak, 2018; 310),
Zelve kaya mosque pavilion minaret (Tuncer,2014; 124-126)

Located in Çat town, Çat Küçük Kaya Mosque, whose construction date and builder is unknown, has a rectangle plan scheme added to a rock-carved room. In the southeast corner of the mosque, there is the pavilion minaret, which can be reached from the exterior of the mosque. The pavilion minaret, which was built from stone blocks, consists of four square columns with chamfered

corners on a square pedestal, and the pavilion section that is completed with an eyebrow arched molding connecting these columns. Today, it does not have a spire or ornament (Budak, 2018;166).

The date of 1948 written on the sign on the eastern facade of the building is thought to belong to a repair it went through. The eastern facade of the mosque, which is open to worship today, was covered with cut stone during its restoration (Budak, 2018;165). In addition, a minaret with a single balcony was added at an unknown date.

Figure 22. Çat küçük kaya mosque plan (Budak, 2018;166), Çat küçük kaya mosque pavilion minaret (Kadıoğlu, 2022)

The pavillion minaret masjid, located in the Cumhuriyet neighbourhood in the center of Nevşehir, and its construction date are unknown. While the eastern part of the masjid has two aisles perpendicular to the mihrab, the western part consists of two aisles opening to the eastern part in the same direction with the arches placed on the wall pier in the east-west direction. The mosque, which was built with cut stone, has a rectangular plan scheme. On the eastern section, traces of wooden beams in the north-south direction are visible. The western section is covered by vaults supported by four arches. The house, located adjacent to the north facade, has been demolished today and is damaging the statics of structure. The south facade was graded because of the difference in level.

The pavilion minaret, located in the southwest of the mosque, consists of four round columns with stepped column headers on a square pedestal and eyebrow arches connecting these columns. The pavillion section, which was completed with a curve molding, was finished with a tetragon pyramidal cone. The tip ornament, alem, of the minaret is no longer *in situ*.

The mosque, which is not used today, is in a rather neglected condition. The biggest change seen when looking at the archive photos of the building is that the mansion minaret, which was built as a metal construction on the southeast

facade, was rebuilt from stone on the southwest facade with the intervention. In addition, it is understood from the archive photos that a molding was added to the structure. The grilles on the windows of the mosque and the double-winged wooden door have not survived. The wooden roof of the selamlık section at the entrance has not survived. However, traces of wooden beams are still visible on the vaults. While in Ekiz (2006)'s thesis, a copper gable roof is seen in the photographs of the mosque, today the top of the mosque is open (Ekiz, 2006;429).

Figure 23. Pavilion Minaret Masjid plan (K.V.B.M.),
Pavilion Minaret Masjid pavilion minaret (Kadıoğlu, 2022)

4. Conclusions

The minaret element, which adds characteristic features to mosques and masjids, which are one of the most important elements of Islamic architecture, has a symbolic value. The minaret example, which was built for the first time in Egypt, has changed and developed in the historical process (Güleç, 2006;13, Afour, 1997;10). While the minarets built in Anatolia in the early period under the influence of the east, they developed and differentiated with the local styles in the course of time (Güleç, 2006;19, Asfour, 1997;16).

Unlike the classical minarets in Anatolia, which consist of foundation, pedestal, body, balcony, şerefe, petek, spire and tip ornament, there is another simple type of minaret that is mostly seen in mosques (Kılıç, 2011;255). The minaret type, which can be reached by a staircase directly on the main wall, on the courtyard wall or on the roof of the building, are the minarets called 'minbar minaret' and 'pavillion minaret', which are quite common in Nevsehir, Kayseri and surrounding cities (Büyükçay, 2010;187).

In Nevsehir, examples of pavilion minarets are generally seen in the northwest and northeast corners of the building. However, the pavillion minaret

of the Çavuşin Mosque, Sulusaray, Ortahisar Alaaddin Mosque, among the mosques identified in the city, is located in the southwest corner of the building. In Çat Kücük Kaya Mosque and Gore Kasapoğlu Mosque, the pavilion minaret can be seen in the southeast corner. In Nevsehir Pavilion Minaret Masjid, while the pavilion minaret was in the southeast corner of the building, it was rebuilt with a different material at an unknown period in the southwest corner. In Kızılkoy Kaya Mosque, unlike all other mosques, the pavilion minaret element was added to the west of the building.

Among the 20 mosques examined, the pavilion minarets of 3 mosques, namely Avanos Orta Mahalle Mosque, Ortahisar Aydınlı Mosque and Pavilion Minaret Masjid, were located on a different facade, while the pavilion minarets of other mosques were placed on the same front as the entrance. Considering that the location of the original minaret of the Pavilion Minaret Masjid is on the entrance facade, it can be argued that the common reason for all these location differences is for the purpose of dominating the road passing the entrance facade.

It is thought that the pavilion minaret type, also known as minbar minaret, may have been built to fulfill the minbar function in the examined Zelve Kaya Mosque, Kızılkoy Kaya Mosque and Pavilion Minaret Masjid structures.

In mosques, the pavilion minarets are generally accessed from the mahfils or with stairs in the latecomer's portico. However, it has been seen that this practice differs in some mosques. The pavilion minaret of Hasan Efendi Mosque and Kızılkoy Mosque can be reached by steps independent of the mosque. The pavilion minaret of Çat Kuçuk Kaya Mosque, Orta Mahalle Mosque, Çavusin Mosque and Gaferli Mosque can be reached by the steps on the exterior. Çukur Mosque, Nevsehir Pavilion Minaret Mosque, Zelve Kaya Mosque and Süleymanaga Mosque can be reached from the road level. The pavilion minaret of Gore Kasapoğlu Mosque is located on the house located right next to it, so it is located in a very exceptional way.

The pavilion minarets examined are located on a high square pedestal. However, Orta Bekdik Mosque is located on the courtyard body wall, Kızılköy Kaya Mosque is located on the rock outcrop, and Aşçıbaşı Süleymanağa Mosque is located on a rectangular stone block. While some minarets use ornamental pedestals and ornamentation on the column headers, some minarets are designed simply. The columns were made in rectangular, octagonal and round in section forms. The columns are connected to each other by pointed, eyebrow or sliced arches. The pavilion section of the minarets was completed by using a molding

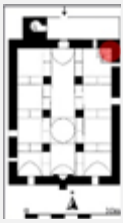
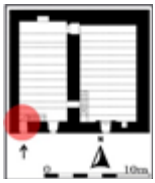
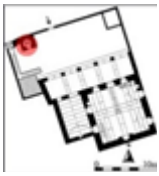
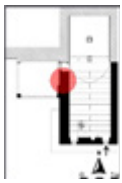
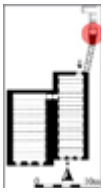
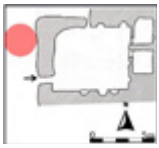
on the arches. While there is a spire and a tip ornament on the pavilion section, on some mosques these features have not survived to the present day.

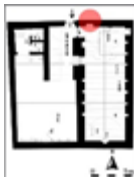
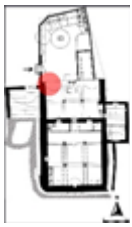
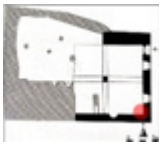
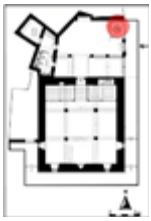
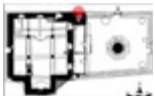
A new minaret element was added to the seven mosques in the study in different periods and it was seen that the original pavilion minaret of the mosque not used. It is known that the two minarets are not used today, as the Orta Bekdik Mosque is closed to worship today. Zelve Kaya Mosque, Nevşehir Pavilion Minaret Mosque, Çukur Mosque, Alaaddin Mosque, Esbelli Kaya Mosque, Kızılkoy Mosque, Kasapoglu Mosque, among the mosques that do not have new minarets, are closed to worship today. The pavilion minarets of these mosques are not used.

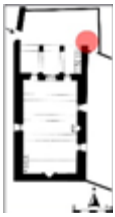
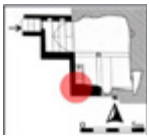
Among the mosques examined in the scope of the study, only Çat Kuçuk Kaya Mosque and Kızılkoy Mosque were built with the rock carved technique as a whole. Çavuşin Mosque, Zelve Kaya Mosque, Aşçıbaşı Süleymanağa Mosque and Kasapoğlu Mosque are examples of mosques where the rock-cut place and the masonry place are used in the combined construction technique. Among the rock-carved mosques, Ortahisar Alaaddin Mosque, Ortahisar Çukur Mosque and Gaferli Mosque consist of a rock mosque and a masonry mosque joined to it. Gaferli Mosque, which has this plan scheme, is different from the other two mosques, with ıits rock carved place and masonry place shaped independently. In the Çukur Mosque and Alaaddin Mosque, the pavilion minaret is located on the upper cover of the masonry place, while the pavilion minaret of Gaferli Mosque is located on the courtyard wall.

The construction date, location, material information, size, pavilion section and spire detail, of the examined mosques evaluated in Table 3.1. When the mosques that are close in their construction dates are examined, some similarities are seen in the ornamentation. However, there was no development in the historical process and no data could be obtained to create a typology in minarets. The pavilion minaret element, which was used in small-scale worship buildings in many cities of Anatolia in the past, is not preferred in large-scale mosques that are built today and enable many people to worship at the same time. In the historical process, new higher minaret elements were added to the structures or pavilion minaret mosques lost their function. The pavilion minarets, which are more exposed to natural and human-induced destruction than other architectural elements of the mosque, have become a part of our cultural heritage, which should be documented, preserved and transferred to the future. In order to preserve these architectural elements, first of all, it is important to record the structures, create an archive, and examine and document them.

Table 1. Pavilion minarets of Nevşehir mosques

Name	Plan	Location	Material-Size	Pavilion Section	Spire
Kızılkaya Karaani Hatun Mosque AD.1271-72		in northeastern main wall	cut stone	*four square columns with chamfered corners *eyebrow arches	primidal spire alem not extant
Sulusaray Kasabası Alâeddin Mosque AD.1356/1360		on the top cover in the southwest	cut stone rubbel stone 4 m	*octagonal four columns *eyebrow arches *curve molding	octagonal spire Metal alem
Orta Bekdik Mosque AD. 1727-1728		on the courtyard main wall in the northwest	cut stone rubbel stone 4.5 m	*octagonal four columns *eyebrow arches *curve molding	octagonal spire Metal alem
Aşçıbaşı Süleyman ağa Mosque AD.1734		on top cover in the northwest corner	cut-rock stone 4 m	*octagonal four columns *Eyebrow arches	octagonal petek octagonal spire alem not extant
Hasan Efendi Mosque AD.1792		in the northeast	rubble stone cut stone 3 m	*four octagonal column *volute headers *eyebrow arches *'kaval silme' (curve molding)	pyramidal spire metal alem
Kızılköy Kaya Mosque AD.1936		on block stone in west	Rock cut stone block stone	*cylindrical four columns *round arches	cylindrical spire

Ürgüp Esbelli Mosque M. 1814		on top cover in the northwest corner	esbelli stone 4.5 m	*four octagonal columns *gable arch *molding	cone-shaped spire Metal alem
Avanos Orta Mahalle Mosque AD. 1815		in the northeast corner	cut stone 4.5 m	*octagonal four columns *sliced arches *single molding	octagonal primidal spire iron alem
Göreme Halil Ağa Mosque AD.1837-38		in the northwest corner	rubble stone cut stone 4 m	*cylindrical four columns *eyebrow arches *molding	cylindrical spire copper alem
Ortahisar Alaaddin Mosque AD.1840-57		on the top cover in southeast.	rock cut stone 4.5 m	*cylindrical four columns *sliced arches *three-storey square column header	cylindrical spire metal alem
Ortahisar Abdioğlu Mosque AD. 1842-1843		on northeast corner	esbelli stone 4 m	*octagonal four columns *sliced pointed arch *double moldings	tetragon pyramidal spire brass alem
Ürgüp Çarşı Mosque AD. 1807		on the top cover in the northeast corner	cut stone 4.5 m	*four square column *sliced arches *double moldings	cylindrical spire metal alem
Ortahisar Çukur Mosque -		on northeast corner	cut stone-rock 3 m	*octagonal four columns *sliced arches *single molding	spire and alem not extant

Ortahisar Aydınlı Mosque AD. 1885		on northeast corner	cut stone 4.5 m	*cylindrical four columns *sliced pointed arch *molding	cylindrical spire metal alem
Göreme Gaferli Mosque AD.1686		on courtyard wall in northeast corner	cut stone-rock 4 m	*cylindrical four columns *sliced pointed arch *single molding	octagonal spire brass alem
Avanos Çavuşin Mosque -		in the southwest corner	cut stone rock 4.5 m	*four circular columns *square column header *eyebrow arches molding	cylindrical spire iron alem
Göre Kasapoğlu Mosque -		in the Southeast corner.	cut stone 3.5 m	*four octagonal columns with chamfered corners *lozenge-slice headers *eyebrow arches *molding	cylindrical spire alem not extant
Nevşehir Köşk Minareli Mescit -		in the southwest corner	cut stone 3 m	*cylindrical four columns eyebrow arched *molding	tetragon pyramidal spire alem not extant
Zelve Kaya Mosque -		İn the northwest	cut stone 3 m	*cylindrical four columns gradual *columns headers *sliced arches *molding	octagonal spire alem not extant-
Çat Küçük Kaya Mosque -		in the Southeast corner.	bloke stone 3 m	*four square column *eyebrow arched *molding	spire and alem not extant

References

Adıbelli, R. (2002). *Kapadokya Bölgesi'ndeki Hristiyanlık Tarihi.* (Yüksek lisans tezi). Selçuk Üniversitesi Sosyal Bilimler Enstitüsü, Konya.

Akın, A. (2016). Tarihi Süreç İçinde Cami ve Fonksiyonları üzerine Bir Deneme. *Hitit Üniversitesi İlahiyat Fakültesi Dergisi*, 15(29), p.179-211.

Arslan, M. (2017). *Anadolu'da Selçuklu Çağı Cami ve Mescit Mimarisi (Plan-Mimari-Süsleme).* (Doctoral thesis). Atatürk Üniversitesi Sosyal Bilimler Enstitüsü, Erzurum.

Asfour, A. (1997). *Emevi Devrinden Osmanlılara Kadar Suriye Minareleri.* (Unpublished master's thesis). Ankara Üniversitesi Sosyal Bilimler Enstitüsü, Ankara.

Baltacı, C. (1985). İslam Medeniyetinde Cami. *Marmara Üniversitesi İlahiyat Fakültesi Dergisi,* 3, p.225-241.

Bayrakal, S. (2011). Nevşehir Kalesi ve Çevresindeki Osmanlı Mimari Dokusu. *Erdem,* 59, p.84-106.

Budak A. (2018). *Mimarsız Mimarlık Kapadokya Bölgesi Kaya Oyma Camileri*. Konya: L-T Academia Yayınları.

Bulut, E. (2015). İlkçağ'da Nevşehir ve Çevresi Yerleşimleri. (Master's thesis). Selçuk Üniversitesi Sosyal Bilimler Enstitüsü, Konya.

Büyükçay, H. (2010). *Nevşehir ve Çevresindeki Geç Osmanlı Dönemi (19. yy) Camilerinin Mimari Özellikleri.* (Master's thesis). Selçuk Üniversitesi Fen Bilimleri Enstitüsü, Konya.

Çiğdem, S. (2019). *Nevşehir Damat İbrahim Paşa Külliyesinin Sosyal ve Kültürel Hayata Katkısı.* (Master's thesis). Nevşehir Hacı Bektaş Veli Üniversitesi Sosyal bilimler Enstitüsü, Nevşehir.

Dikmen, Ç. ve Toruk, F. (2021). Somut Kültür Mirasının Korunması Kapsamında Göreme Anıtsal Yapıların İrdelenmesi. *Amasya Üniversitesi Sosyal Bilimler Dergisi,* 10, p.11-54.

Dilekoğlu, A.O. (2017). *Nallı Masjid* (Photograph). https://kulturenvanteri.com/yer/?p=7789.

Dilekoğlu, A.O. (2019). *Küçük Mecidiye Mosque* (Photograph). https://kulturenvanteri.com/yer/?p=7628.

Dilekoğlu, A.O. (2021). *Timurtaş Masjid* (Photograph). https://kulturenvanteri.com/yer/?p=7784.

Ekiz, M. (2006). *Nevşehir'de Türk Dönemi Mimari Eserleri.* (Unpublished doctoral thesis). Ankara Üniversitesi Sosyal Bilimler Enstitüsü, Ankara.

Elpe, E. (2014). Kayseri Yapıları Örneğinde Köşk Minareler. *Akademik Sosyal Araştırmalar Dergisi*, 8, p. 477-493

Eravşar, O. (1993). Ürgüp ve Çevresindeki Türk-İslam Devri Yapıları. (Master's thesis). Selçuk Üniversitesi Sosyal Bilimler Enstitüsü, Konya.

Erçin Koçer, S. (2015). *Nevşehir'de Geç Dönem Dini ve Sosyal Yapılar.* (Doctoral thesis). Erciyes Üniversitesi Sosyal Bilimler Enstitüsü, Kayseri.

Eyice, S. (1953). İstanbul'da Bazı Cami ve Mescid Minareleri. *Türkiyat mecmuası*, 10, p.247-268.

Gottheil, R. J. (1910). The origin and history of the minaret. *Journal of the American Oriental Society*, p.132-154.

Gökhan, İ. Koçak, K. ve Saraç, H. (2016). Anadolu Selçukluları döneminde Nevşehir, Niğde, Kayseri ve Aksaray çevresinin siyasi, sosyal, ekonomik ve kültürel tarihi. *Cappadocıa Journal Of* Hıstory End Socıal Scıences, Vol.7, p.83-117.

Güleç, E. (2006). *Kayseri Minareleri (Cumhuriyet dönemine kadar).* (Master's thesis). Erciyes Üniversitesi Sosyal Bilimleri Enstitüsü, Kayseri.

Gündüz, F. (2020). "Minare", *TDV İslâm Araştırmaları Merkezi*, Vol.30, p.98-101, İstanbul.

Hakman, M. (2019). *Kapadokya: Hafıza, kimlik ve kültürel miras.* Arkeoloji ve Sanat Yayınları, p.360, İstanbul.

Hillenbrand, R. (1985). Architecture in Continuity, edited by Sherban Cantacuzino, *The Mosque in the Medieval Islamic World*, p.33-51, New York: Aperture.

Karakaya, M. (2007). *Seyahatnamelerde Nevşehir.* (Master's thesis). Niğde Üniversitesi, Sosyal Bilimler Enstitüsü, Tarih Ana Bilim Dalı, Niğde.

Kılıç, S. (2011). Anadolu Türk İslam Minareleri ve Diğer İslam Ülkeleri Minarelerinin Genel Karakteristikleri ve Birbirleri ile Etkileşimleri. *II. Uluslararası Ahmet Yesevi'den Günümüze İnsanlığa Yön Veren Türk Büyükleri Sempozyumu,* p.252-273.

Kıran, İ. (2021). *Sokullu Mehmet Pasha Mosque* (Photograph). https://kulturenvanteri.com/yer/?p=7708.

Köroğu, F. Y. (2020). *Dervis Ali Masjid* (Photograph). https://kulturenvanteri.com/yer/?p=12042.

Nefes, E. (1996). *Minarenin Cami Minaresine Katılımı ve İlk Minare Örnekleri.* (Master's thesis). Ondokuz Mayıs Üniversitesi Sosyal Bilimler Enstitüsü, Samsun.

Müderrsioğlu, M. F. (2011). Nevşehir ve Çevresindeki Osmanlı Camilerinden Örnekler. *1. Uluslararası Nevşehir Tarih ve Kültür Sempozyumu*, p.405-421.

Okyar, M. C. (2002). *Cumhuriyet Döneminde Nevşehir'in Sosyo-Ekonomik Tarihi (1955-2000).* (Doctoral thesis). Marmara Universitesi Sosyal Bilimler Enstitüsü, İstanbul.

Öztürk, M. K. (1998). *Nevşehir İlinde Yerleşme ve Nüfus*. (Doctoral thesis). Ankara Üniversitesi Sosyal Bilimler Enstitüsü, Ankara.

Sağcan, F. (2006). Kapadokya'da Köşk Minareler. *Nevşehir Kültür Araştırmaları Dergisi,* (6), p. 23-28.

Sezgin, U. (2202). *18. Yy. da Nevşehir ve İlçelerindeki Osmanlı Dönemi Dini Mimari Eserler.* (Unpublished master's thesis). Yüzüncü Yıl Üniversitesi Sosyal Bilimler Enstitüsü, Van.

Şıkoğlu, E. (2017). *Nevşehir Şehir Coğrafyası.* (Doctoral thesis). Fırat Üniversitesi Sosyal Bilimler Enstitüsü, Elazığ.

Soybaş, N. (2019). Ürgüp Keşlik Manastırı Begeleme Çalışmları ve Koruma Önerileri. (Master's thesis). Erciyes Üniversitesi Fen Bilimleri Enstitüsü, Kayseri.

Tuncer, H. (2014). *Zelve Açık Hava Müzesi'nde bulunan Balıklı ve Üzümlü Kilise›nin Mimarisi ve Resim Programı*. (Master's thesis). Anadolu Üniversitesi Sosyal Bilimler Enstitüsü, Eskişehir.

Uysal, A. O. (1990). Anadolu Selçuklularından Erken Osmanlı Dönemine Minare Biçimindeki Gelişmeleri. *Ankara Üniversitesi Dil ve Tarih-Coğrafya Fakültesi Dergisi*, 33(1-2), p.505-533.

Terzioğlu, E. E. (2018). *Kapadokya Yerleşim Tarihi İçerisinde Nevşehir*. (Master's thesis). Gazi Üniversitesi Sosyal Bilimler Enstitüsü, Ankara.

Yurttaş, H. ve Gökler, B. M. (2020). Bir Minare İki Usta. *Doğu Esintileri*, (13), p.117-158.

CHAPTER IV

REFLECTION OF SOCIO-CULTURAL STRUCTURE ON ARCHITECTURE: SİNOP TANGALOĞLU HOUSES

Derya MERT KAHRAMAN[1] & Seda IŞILDAK[2]

[1](PhD. Student), Erciyes University,
Graduate School of Natural and Applied Sciences,
e-mail: derya.mert.mim@gmail.com
ORCID: 0000-0002-6354-1651

[2](PhD. Student), Erciyes University Graduate
School of Natural and Applied Sciences,
e-mail: sedakucukkatrc@gmail.com
ORCID: 0000-0001-6636-8973

1. Introduction

Tangaloğlu village is one of the important rural areas connected to Sinop Centre, where most of the buildings in the architectural texture have been preserved to the present day as they were when they were first built. The rural architectural values of the region were revealed through on-site investigations, survey-restitution-restoration projects, conservation proposals, typology and periodisation studies based on comparative examples. During the documentation studies, interviews were conducted with the owners of the houses and the people of the village and evaluations were made about the structure social life relations. In addition to the documentation of the traditional texture, which takes its basis from local life dynamics and natural materials, it has been ensured that it is transferred to future generations by making conservation recommendations and sharing sample typological data for similar studies.

2. Rural Architectural Heritage and Conservation

Rural architecture is a product of architecture in which buildings shaped according to user needs are created with local materials and local construction systems are reflected. The relationship between man and nature is also one of the important factors in shaping rural architecture. According to Cengiz Bektaş, the study of local settlements is important in terms of recognising the topography and climate of the geography, building materials and techniques, culture and traditions (Bektaş, 2001).

Rural architecture is defined as the architectural language of people with its origin, regional and local dialectics (Oliver, 2006). Although we encounter concrete data when we look at this architectural language, traditions, customs, human-human relations, human-nature relations that enable the emergence of rural architecture can also be characterised as part of this heritage.

The beginning of the process of recognising rural architecture as a cultural asset in the world can be considered to have started in 1790 with Karl Viktor von Bonstetten's idea of collecting farmhouses in a park as tangible data of past culture (Eres 2013).

According to the definition of the *World Encyclopaedia of Vernacular Architecture,* rural architecture; [...]all forms of folk architecture are intended to meet certain requirements; it bears the traces of the culture, lifestyle, economic activity and values behind these requirements." In line with all these definitions, if we look at the influences on the emergence of rural architecture, we come across the Arts and Crafts Movement. William Morris is one of the pioneers who drew attention to folk architecture. Emerging in the second half of the 19th century in England, the movement advocates eliminating the distinction between art and craft and reviving production based on manual labour (Rural Architecture in Anatolia, 2012).

When it comes to rural areas in our country, the population living on agriculture comes to mind first and foremost. Apart from this, in studies conducted by geographers and sociologists, it is emphasised that other rural functions other than the population engaged in agriculture should also be addressed. It is understood that there is a relative consensus on the appropriateness of looking at factors such as the weight of agricultural activity, natural environmental conditions, and dependence on land along with population (Avcı, 2012). The main four factors shaping the buildings in rural areas other than agricultural production dynamics and population can be listed as follows:

- Environmental factors such as climate, topography, natural texture, human texture, materials in the environment, etc.
- Cultural factors such as world view, cultural values and norms, religion, language, family, relatives and community relations, lifestyle, norms related to the use of environment/space-housing, the basic function and meaning of housing
- Family size, family socioeconomic status and social sphere of influence, family worldview and social attitudes, family structure/family roles, family lifestyle, family self-perception, expectations and hopes, social factors based on family housing experiences
- Individual factors such as the benefit relationship and emotional relationship that the individual establishes with the dwelling, the individual's interpretation of cultural norms, education, life intensity of the individual, housing experience, and self-perception (Şengül, 2005).

The massive destruction of many European cities after the Second World War was important for the development of the concept of conservation. In 1962, the "Conference on the Protection of the Identity and Attractiveness of Settlements and Natural Environments" organised by UNESCO was one of the early measures taken for the protection of the countryside and the related natural environment (Eres, 2013).

In the 1970s and afterwards, various international symposiums have been organised in order to find solutions for rural heritage within the scope of cultural heritage in need of protection. Problems related to rural architecture and its conservation are linked to multidimensional problems related to rural areas. People living in rural areas and rural architecture are directly affected by the transformations brought about by globalisation. Similar problems are experienced not only in Turkey but also in many developed countries (Çekül Foundation, 2012). When we evaluate the conceptual approaches and implementation methods in the conservation of rural architectural heritage in Turkey, it is possible to talk about a common understanding in accordance with international principles and standards. In recent years, academic studies on civil and rural architecture have been increasing. Especially the inclusion of Cumalıkızık Village of Bursa Province in the UNESCO World Heritage List as of 2014 has been an important achievement (Muşkara, 2017).

3. Tangaloğlu Village History and Development of Sociocultural Life

3.1. Location and History

The information provided by Evliya Çelebi (1996) in the 17th century and P. Minas Bıjıskyan (1998) in the 19th century on Sinop, which has been the subject of travelogues since the ancient period, is very important. The information given by the travellers on the standing or known buildings and their inscriptions and the existing urban texture and demographic structure, together with archival documents, provided important data in revealing the physical structure of the city. It is not possible to say that Sinop has a rich accumulation of visual documents. We do not have any possible maps of the city from the Ottoman period and before. Limited number of engravings and 19th century

From the photographs, it was possible to trace the areas where the housing texture has partially survived to the present day and some of the destroyed buildings, and to make interpretations by evaluating them together with other sources (Üstün and Tuluk, 2012).

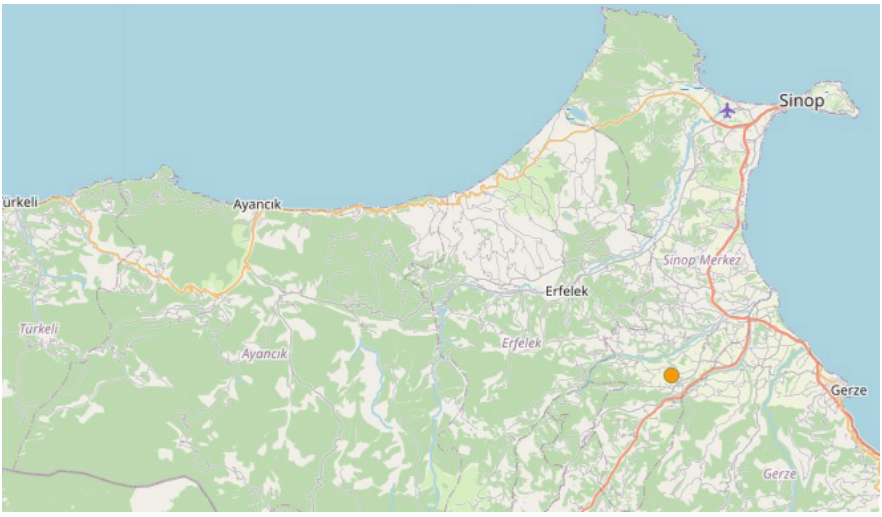


Figure 1. Location map of Tangaloğlu village, Sinop province

The name of the village is mentioned as Tangal in the records of 1925 (URL-1). After the Ottoman-Russian War of 1877-1878, the village was founded in Artvin kaza of Artvin sanjak. Nadzvia Some of the Georgians who migrated from the village settled in this village (URL-2). Tangaloğlu village, a village in the central district of Sinop province, is a settlement showing the characteristics

of Middle Black Sea Traditional Architecture. In the village, which has a natural land formation, the buildings positioned according to the Sinop-Kastamonu highway, which used to be actively used in the past, attract attention. Due to the landforms in Sinop, examples are also seen in Ayancık and Türkeli districts, which are located along important roads (Figure 1).

Figure 2. Houses built between the district centres of Ayancık-Tureli (along the State highway) facing this road; Düzköy (Siyem Mh.) and Keşköy (Kestane Mh.) (Yılmaz, 2013).

3.2. Sociocultural and Economic Situation

It is said that there used to be a market in Tangaloğlu village on Thursdays and Fridays, this market was very big and crowded and there were 56 shops. There used to be a grocery store, tailor's shop, bread bakery, texting shop, umbrella repair shop, coffee shop, restaurant, butcher, barber, cinema hall, radio repair shop, shoemaker, currier, stove maker, tinsmith, blacksmith, carpentry shop, etc. It is told by the residents of the village that there were inns and a hotel in addition to the shops. While the economic development was very good in Tangal between 1960-1980, the economy declined due to the migration from the village to the city and thus this location lost its former importance (Report, 2019). Founded in 1966, the Tangal Village Development Cooperative sent members to Europe, which can be counted among the reasons for economic development during this period. However, after the changing Sinop-Kastamonu road, the region lost its old vitality. Only the elderly population has become permanent in the village, which has also lost its social living environment due to the decline in economic opportunities, inability to evaluate production dynamics, zoning and road change activities.

When we look at the condition of the buildings, especially the houses in Tangaloğlu village, it can be said that they show a generalisation from specific to general. According to the information obtained from oral history data, it is known that when the buildings were first built, women worked in the fields during the day and took care of household chores in the evenings. In this sense, rooms, sofas and service spaces were sorted according to their usefulness. Depending on the socio-economic status of the local people engaged in trade, the lower floors of the houses were built as shops close to the road. Apart from the spatial organisation, it has become important to obtain building materials easily from nature. Privacy and not blocking the view of other building owners are other important building criteria. In the village of Tangaloğlu, while economical buildings have been built due to the use of natural materials, a simple architectural style in harmony with the environment has also emerged.

4. Tangaloğlu Houses Typological Data

Oswald Spingler, in his book The Decline of the West, says: "A race is embodied in its purest form in the home. Because the house is shaped in the power process of existence". While today's building layouts include complexity and different tastes, in the long period of purification of traditional forms in pre-industrial revolution societies, houses are closely related to life. The form of the house, its orientation, the reflection of the plan layout on the exterior space and the relationship established with the street and the street, the materials used, the ornamental elements are the features that shed light on the period in which the house was built and the environmental order. When one comes across a house whose historical texture has been preserved, it appears as a direct response to ecological requirements due to its simple functionality (Kuban, 1995).

As mentioned by Spingler and Kuban, the dwellings in the village of Tangaloğlu are buildings that adopt the traditional materials and construction style that can respond to the needs in the simplest way. The layout of the houses, which are aligned linearly along the road and access to the shops is provided from the road level, can be clearly understood on the site plan (Figure 3).

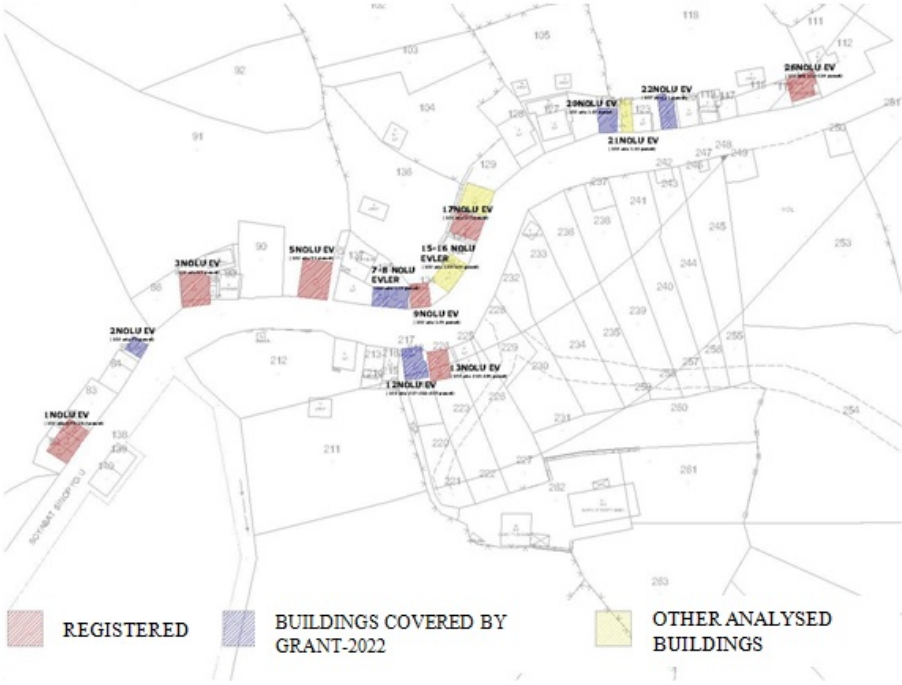


Figure 3. Site plan of Tangaloğlu village

In the light of the data in Table 1, the number of shops, number of storeys, entrance layout and direction, and the number of storeys differing according to the facades are the determining factors in the typological grouping. According to the distinctive elements determined, the expression forms of the houses were formed (Table 2).

Table 1. Typological grouping of registered buildings in Tangaloğlu village

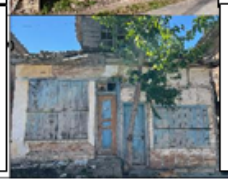
LIST OF REGISTERED BUILDINGS IN TANGALOĞLU VILLAGE STATUS OF USE OF THE STORE- ACCORDING TO THE ENTRANCE LAYOUT AND NUMBER OF FLOOR TYPOLOGICAL DATA			
HOUSE NO 1 *multiple shops *shop+ 1 house *Side entrance *front 2 floor, rear 1 floor		**HOUSE NO 13** *multiple shops *shop+ 1 house *Rear entrance *front 2 floor, rear 1 floor	
HOUSE NO 2 *single shop *shop+ 1 house *Rear entrance *front 2 floor, rear 1 floor		**HOUSE NO 15-16** *multiple shops *shop+ 1 house *Rear entrance *front 2 floor, rear 1 floor	
HOUSE NO 3 *shop converted to house *shop+ 1 house *Rear entrance *front 2 floor, rear 1 floor		**HOUSE NO 17** *multiple shops *shop+ 1 house *Rear entrance *front 2 floor, rear 1 floor	
HOUSE NO 5 *multiple shops *shop+ 1 house *Rear entrance *front 2 floor, rear 1 floor		**HOUSE NO 20** *single shop *shop+ 1 house *Side entrance *front 2 floor, rear 1 floor	
HOUSE NO 7-8 *multiple shops *shop+ 1 house *Rear entrance *front 2 floor, rear 1 floor		**HOUSE NO 21** *single shop *shop+ 1 house *Side entrance *front 3 floor, rear 1 floor	
HOUSE NO 9 *multiple shops *shop+ 1 house *Rear entrance *front 2 floor, rear 1 floor		**HOUSE NO 22** *single shop *shop+ 1 house *Side entrance *front 2 floor, rear 1 floor	
HOUSE NO 12 *multiple shops *shop+ 1 house *Side entrance *front 1 floor, rear 2 floor		**HOUSE NO 26** *multiple shops *shop+ 1 house *Side entrance *front 2 floor, rear 1 floor	

Table 2. Distinguishing features used for typological grouping

EXPRESSION OF DISTINCTIVE FEATURES USED IN TYPOLOGICAL CLASSIFICATION OF BUILDINGS					
GROUPING ACCORDING TO PLAN CHARTS		GROUPING BY INPUT LAYOUT		GROUPING ACCORDING TO THE NUMBER OF FLOOR	
GROUND FLOOR CONDITION					
TOP FLOOR CONDITION		SIDE ENTRY	[]	ONE FLOOR	1
ONE SHOP	D	REAR ENTRY	=	TWO FLOOR	2
MULTIPLE SHOPS	D*	"When we look at the general layout of the buildings in Tangaloğlu village, the entrances to the shops are made from the road, since the transit route is considered important. In the houses above the commercial houses, the entrance order is designed from thee side or the back side instead of front."		MORE THAN TWO FLOOR	3
PLAN TYPE				"While grouping according to the number of floors, the road front is taken as a basis. Because the number of floors on the road front and side-back facades varies according to the quota seating of the building."	
OUT SOFA	A				
MIDDLE SOFA	B				
SIDE SOFA	C				

4.1. Plan features

Plan types

The Turkish house is a house type that has been located within the borders of the Ottoman state, has continued its continuity by developing for centuries, and has been characterised by its period characteristics. The Turkish house, which can be encountered in the historically preserved parts of Anatolia, has manifested itself even in the Rumelia lands conquered by the Ottomans (Eldem, 1968).

The "life" space, which is one of the specific characteristics of the Turkish house, appears as a semi-open gallery space and provided the relationship of the Turkish house with the outdoor space. While the house with life was prominent in the Turkish house in periods when urbanisation was not dominant, with the effect of urbanisation, an introverted life was started and the plans also changed. With this change, the Turkish house lost its "life". At this point, the common space in the Turkish house turned into a sofa space (Kuban, 1995).

While the sofa plan type progressed the fastest in Istanbul, where urbanisation progressed the fastest, Anatolian houses reacted more slowly. According to Sedad Hakkı Eldem, the Istanbul house is the Turkish house and Anatolian houses are its provincial relatives. As a result, plan types have been formed according to the sofa, which has a critical place in the Turkish house. The plan types of the Turkish house are analysed in 4 sections: without, outer, inner and middle sofas (Eldem, 1968).

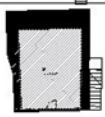
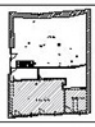
Sofa

The sofa, which provides access to the rooms that contribute to the plan layout, undertakes the main task in determining the plan layout of the house in the centre position (Eldem, 1968). The sofa, which forms the core of the closed spaces in the house, shows itself again in the houses in Tangaloğlu, although the function of shop and house are used together. In the 8 buildings analysed within the scope of the documentation studies, there are 2 outer sofas, 5 middle sofas and 1 side sofas. In some houses, places such as latrines and kitchens were added to the sofa space, but traces from the building show that these spaces were added later and the original plan scheme of the buildings was extracted.

The houses examined have 2 or three storey plan layouts and the number of storeys seen on the rear and front facades differ due to their settlement on sloping topography. This situation is reflected on the facade and plan layouts. One of the important design criteria of the buildings facing the main street of Tangaloğlu village is the front facades facing the road; defining the entrance, which is one of the typical features of the Turkish house, highlighting the front facade with architectural richness, bay window, jihannüma, protrusions are the remarkable details in some of these houses. In terms of façade layout, shop entrances are provided from the ground floor and facing the road. Only in Selamettin Yılmazer house, the façade facing the road is single storey except for the jihannüma, and the shop, sofa and room spaces are used together on a single floor. This house has a plan type with a side entrance and a centre room. The two functions of the building are separated by setting up shops on the front façade of the sofa space and room space on the back façade. Vehbi Kahveci and Şenel Akıllı houses are the other mid-table buildings that were documented within the scope of the grant support. The 1st floor plan of the Şenel Akıllı house is in the plan type of a central sofa; the sofa has a "+" shaped scheme in the central position in the middle section of the four facades. Sofa space is located in the middle section of 4 facades in the 1st floor layout and divides the facade into three separate sections. Since the building is located on a sloping topography, it has a 1-storey rear façade and the entrance is provided from the central part of this façade. Sofa receives light from every facade and its importance is emphasised. The ceiling wooden beams used in the houses examined were left visible in Şenel Akıllı house without being covered with any wooden cladding boards. As in the Selamettin Yılmazer house, wooden cladding material was used as floor material in Şenel Akıllı house. In Vehbi kahveci house, which is another building with a centre hall plan type, the entrance to the centre hall in the 1st floor layout

is provided from the side. There are rooms for household needs on both sides of the centre hall. The floor of Vehbi Kahveci house is covered with concrete screed in the pabuçluk part of the sofa and the transition to the washbasin. A small stove can be seen on the wall adjacent to the sink. The wooden guillotine window facing the left side facade is original. It has wooden mouldings and iron bars on the exterior. All doors opening to the hall are wooden. The ceiling of the sofa is wooden veneer and the floor is wooden floor board except for the mentioned parts. There are deterioration in these wooden elements. The roof wooden exit door is on the upper side in front of the kitchen door. The wall paints have started to fall off. In the Şenel Akıllı and Selamettin Yılmazer house, which has a centre-floor plan type, the staircase connecting the ground floor and upper floor plan in the sofa space draws attention. While Selamettin Yılmazer house has a two-armed "L" shaped staircase, Şenel Akıllı house has a single-armed staircase. At the same time, the one-armed staircase leading to the cihannüma space in the Şenel Akıllı house is reminiscent of typical staircases in other Tangaloğlu houses (Table 3).

Table 3. Plan schematics of 5 buildings within the scope of 2022 Grant

BUILDING NAME	ACCORDING TO THE PLAN DIAGRAM	
	GROUND FLOOR	TOP FLOOR
VAHDETTİN ERDEM HOUSE		
VEHBİ KAHVECİ HOUSE		
ZEKİYE KESKİN HOUSE		
ŞENEL AKILLI HOUSE		
SELAMETTİN YILMAZER HOUSE		

In the Zekiye Keskin house, which has a plan type with a side hall, the entrance to the hall is provided from the side. Sofa space has an "L" form which starts as a narrow corridor and then grows in area. The room door facing the rear facade of the building opens to the aforementioned large sofa section.

Vahdettin Erdem House forms a long façade to the road front together with the additional building added to the building later. The entrance is provided from the rear façade of the building; and the building has an exterior room plan type. It is noteworthy that the buildings documented within the scope of the grant programme have a long rectangular form. While the short surface of the rectangular form faces the road in the other houses except Vahdettin Erdem house, the building provides maximum benefit from the road facade with the addition made in Vahdettin Erdem house. In this case, it is noteworthy that it has a large living room on the rear façade.

In the 3 building examples analysed outside the scope of the grant, 1 building is in the plan type with an exterior living room, while the remaining 2 buildings are in the plan type with a central living room. The entrance to the first floor level of the house numbered 15-16 is provided from the rear façade and the sofa occupies a large space on the rear façade as in Vehbi Kahveci house. In the house numbered 21, the entrance to the building is provided from the side and two spaces are located on both sides of the sofa. The building draws attention with its 3 storeys and there is also a single-arm staircase in the sofa. This staircase provides vertical circulation between the 1st and 2nd floors. The sofa space on the upper floor is also used as a kitchen. Among the buildings examined, the staircase element in the sofa space is also noteworthy in Şenel Akıllı and Selamettin Yılmazer house.

Rooms

The rooms are located in different numbers and areas in each house analysed, and are located around the sofa to meet the housing needs. Except for the Selamettin Yılmazer house, the room spaces are located above the shop. In Selamettin Yılmazer house, both shop and room spaces are designed in the floor layout on the road level, and the room space along the rear façade draws attention with its size. The space is divided only by the pillars and wooden beams in the centre of the room, and this division is supported by two doors. Cabinet and hearth elements are located in this room. The cihannüma space, which is also another room space and the only one in the region, draws attention as the space that provides the view of the house section to the road facade. There are 4 rooms around the sofa in Şenel Akıllı House. These rooms are located at the corners of the building, close to square form, with approximately similar areas. In the two rooms on the rear façade, the combination of hearth and cupboards on both sides attracts attention. Arched niches in the chimney walls consisting of

firebrick walls are among the architectural riches. In the room spaces facing the front facade of the building, there is a wooden cupboard in one space, while in the other room, a wooden ottoman that provides a view of the front facade draws attention. All room ceilings of these rooms in the building are covered with slatted wooden veneer board and the importance of the rooms is emphasised in this way.

Vehbi Kahveci house, which has another mid-table plan type, has a room on the front façade and service spaces on the rear façade. In the plan scheme, the design of room spaces on the front façade is one of the remarkable design criteria in this house.

In the Zekiye Keskin house with a side hall, the entrance is provided from the side and the rooms face the front façade as in the Vehbi Kahveci house. There are two rooms on the front façade of the house. Wooden cladding board was used to divide the spaces of the building and it was covered with wallpaper over time, which caused the wall to become damp. Wooden cladding board was used on the ceiling and floor of the spaces. Wooden ceiling moulding on the ceiling of both spaces draws attention. The pvc windows in the two rooms, which were added later to the front facade of the building, are located in two rooms and are among the non-original features. The wooden guillotine window of the room on the right facade of the building provides information about the original window form of the building.

In the first period restitution of Vahdettin Erdem house, which has an exterior sofas plan type, there are two rooms on the front façade. In the 2nd period restitution, there are two rooms in the annex building, one of these rooms also faces the front façade; the other space is used as a kitchen and faces the rear façade. The ceiling and floor materials of these three rooms are wooden cladding boards, and together with the wooden material used on the dividing walls, the building reflects the potential of wooden materials in the architecture of the region.

In house no. 21, which is not within the scope of the grant programme, the room spaces are approximately the same size on both the front and rear facades and continue on both floors. The original cupboard and hearth are noteworthy on the rear façade of the building. The windows in the room space of the building are not original because they are PVC windows and this material does not reflect the period tradition. The rear room windows on the side façade of the building are preserved in their original form as guillotine windows. In the unregistered building example, as in the Şenel Akıllı house, there are room

spaces in the corner areas of the house.15-16 numbered outer sofa house has 5 rooms around the sofa. In addition, the hearth in the sofa space draws attention. There are examples where elements such as cupboard, hearth, bathroom cabinet (gusülhane) in the rooms come together in different ways. Visuals expressing the typological situations related to these examples are attached (Figure 4, Figure 5, Figure 6, Figure 7).

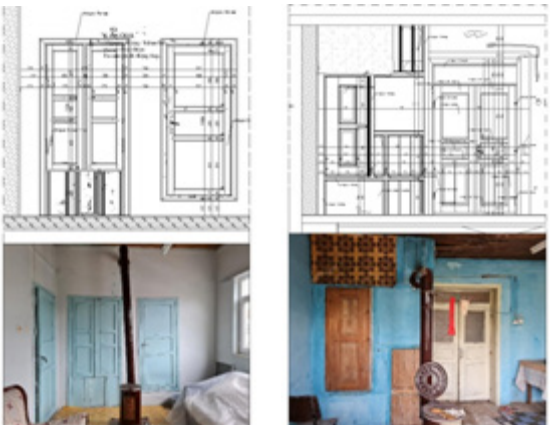


Figure 4.-5. Vahdettin Erdem House and Vehbi Kahveci House cupboard-gusulhane-cooker

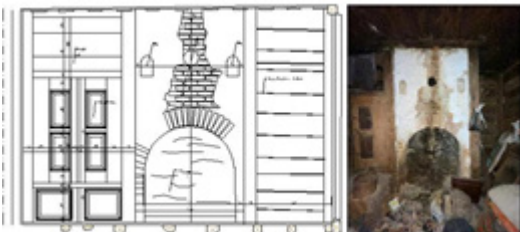


Figure 6. Şenel Akıllı House cupboard-cooker-cavity

Figure 7. Selamettin Yılmazer House cupboard-cooker

Shops

All shops in Tangaloğlu village face the road front and the windows of the shops are large guillotine windows with wooden materials. The entrance to the shops is also provided from the front façade. According to the number of shops of the buildings, the facades differ and unique appearances emerge. In some houses, stone steps for access to the shop elevation are noteworthy, and stairs in front of the doors to reach the shop elevation are seen in some examples.

In the Selamettin Yılmazer House, only the shop fronts and the cihannüma form the front façade, and in this case, the house is the only house of this type in the area. There are two shops in the house and the ownership of these shops belonged to people named Selamettin Yılmazer and Ahmet Erdal. The house belongs to Selamettin Yılmazer. Since the spaces of the shop and the house are on the same floor, the separation was provided with a wooden walled storage space added later to prevent the transition from the shop belonging to Ahmet Erdal to the house section. There is access to the house from the back of the shop belonging to Selamettin Yılmazer. The shops have wooden guillotine windows as in other houses. There is one shuttered window in the shop of Ahmet Erdal and two shuttered windows in the shop of Selamettin Yılmazer. One of these windows is located on the left side view. When the reason for this is examined, it can be thought that this is because the building is slightly ahead of the neighbouring buildings on the road facade and it is desired that the users perceive this facade clearly. Entrance to the two shops is provided by two doors on the facade.

In Şenel Akıllı House, there are two shops on the front façade, one small and one large. The entrance to the big shop is provided by two doors, which leads to the thought that the building has 3 shops in the interior, but it can be thought that this design decision was made because it has a very large facade surface. At the same time, there are two shuttered windows that can be considered as a continuation of this logic. The small shop has a door and a shuttered window. As in the Selamettin Yılmazer house, the shop windows and doors have been preserved in their original form.

Vahdettin Erdem House has 2 shops in the first period restitution and 3 shops with the addition. All shops have an entrance from the front facade. The analysed Tangaloğlu houses have a rectangular plan in general. The front façade of the building is attached to the road façade with a wider surface unlike the houses within the scope of the other grant programme, and with this situation, the building has three shops on the front façade. Entrance to the shops is provided

by three separate doors. The shop of the annex has two shuttered windows while the other shops have one shutter each. The fact that the windows of the annex are also large and made of wooden material gives the impression that the annex was built shortly after the first time it was built. There is only one shop on the front facade of Vehbi Kahveci House. The shop does not have any storage section. The entrance to the shop is provided from the central part of the facade and there are 2 large windows with original shutters on both sides of the door. Zekiye Keskin House has a shop on the ground floor as in Vehbi Kahveci House. The entrance to the shop is provided from the central part of the façade, and on both sides of the door there are windows with wooden frames added later. The shutters of the windows have also been lost over time.

Warehouse and other requirement units

In the analysed buildings, apart from rooms, sofas and shops, there are additional need spaces such as warehouse, kitchen and latrine. Warehouse spaces are the spaces that serve the shops and meet the storage needs. Only Vahdettin Erdem house, Selamettin Yılmazer house, Ahmet Erdal shop and Şenel Akıllı house have storage rooms. Vahdettin Erdem house has a storage room in the building section added later. In Şenel Akıllı House, there is a warehouse space that draws attention with its size close to the area of the shop spaces. The entrance to the storage room is provided with a wooden door from the right side façade. The transition from the shop to the storage room is provided by a stony space. At the same time, there is a door gap that provides access to this stony space from the outside, which is understood to be a door in its original state. In the basement floor plan of Selamettin Yılmazer's house, the rear façade and most of the side façades are buried in the ground; the basement floor receives light from the rear façade and the entrance is provided from the left side façade. In the basement floor plan, firstly the stony space is entered and from this space there is a passage to two storage spaces. There are window openings in the storeroom and gizzard spaces, which were later closed with briquette brick material. These gaps have approximately the same dimensions as the guillotine window gaps of the room on the upper facade. In order to disconnect the Ahmet Erdal shop in the Selamettin Yılmazer house from the house, a storage space was added to be used for the needs of the shop belonging to Selamettin Yılmazer.

In some buildings, kitchen spaces and elements were added as a result of the needs that developed over time during the period of use. As mentioned before, the Selamettin Yılmazer house has a centre hall plan type, the original

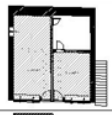
guillotine window on the left side façade at the entrance to the hall was used as a kitchen window, and the space was divided by a wooden cladding wall.

In Şenel Akıllı House, the kitchen space was not divided by any divider, and the kitchen space was created by adding a countertop to the left side of the sofa, which is quite large. In this way, the sofa space was not divided for the kitchen space and the original state was preserved. In Vehbi Kahveci house, the room space with a stove and a 2-door wooden cupboard on the back façade was transformed into a kitchen by adding a countertop over time. In this way, the plan layout was not damaged.

In Vahdettin Erdem House and Zekiye Keskin House, just like in Vehbi Kahveci House, the room space on the rear façade was converted into a kitchen. In Vahdettin Erdem House, the room on the rear façade of the annex was converted into a kitchen. The stove on the inner wall of the kitchen is original and still in use. A ceramic-coated worktop was built next to the stove. The preference of the kitchen on the rear façade indicates that the positioning of the room spaces on the front façade is important in Tangaloğlu residential architecture.

The last space added to the buildings is the latrine. In Selamettin Yılmazer House, the space accessed through the corridor formed along the wall of the single room space, which is accessed from the sofa space, was added as needed. In Şenel Akıllı House, a latrine space with wooden coverings was added to the kitchen arm of the sofa space adhering to the room space. Concrete screed material was added to the floor to avoid the dampness caused by the wooden material over time. In Vehbi Kahveci house, there is a latrine section adjacent to the kitchen space in the rear façade section.

Table 4. Plan schemes of 3 buildings other than registered buildings

BUILDING NAME	ACCORDING TO THE PLAN	
	GROUND FLOOR	TOP FLOOR
HOUSE 15-16 NUMBER		
UNREGISTERED HOUSE		
HOUSE 21 NUMBER		

3.2. Facade features

Along the main street of Tangaloğlu village, the traditional houses on both sides are located on the sloping slope and have architectural layouts shaped according to this slope. The buildings built on the slope have at least one storey difference in level between the front and rear facades; some of the basement floors are buried in the ground. Tangaloğlu houses are two or three storey houses with a combination of shop and house functions. The road façade, where pedestrian traffic is intense, is very important for trade; for this reason, the shops in the buildings have large windows dominating the façade. On both sides of the road, the road façade is emphasised and bay windows, pediments, guillotine windows of different sizes and decorated doors form the architectural order (Table 5).

Table 5. Façade formations and silhouettes of the buildings located in relation to the road

Şenel Akıllı House and the registered building on block 102, parcel 223-224 are noteworthy with their pedimented bay windows on the upper floor, which carry the living room to the exterior. The transition to the residential function is not provided from the front façade in any house. The phenomenon of privacy, which draws attention in Turkish houses, is also noteworthy here. The

entrance is designed as a side or rear entrance; the two functions are separated from each other. The transition of the buildings located on the upward sloping side of the road level to the residential function is provided by the natural slope and the stairs reaching the upper level. On the downward sloping side of the road level, it is seen that the transition to the houses is provided by the natural slope and stairs descending to the lower level. Except for Şenel Akıllı house within the scope of the grant programme and house no. 15-16 outside the grant programme, all the houses examined have side entrances (Table 6).

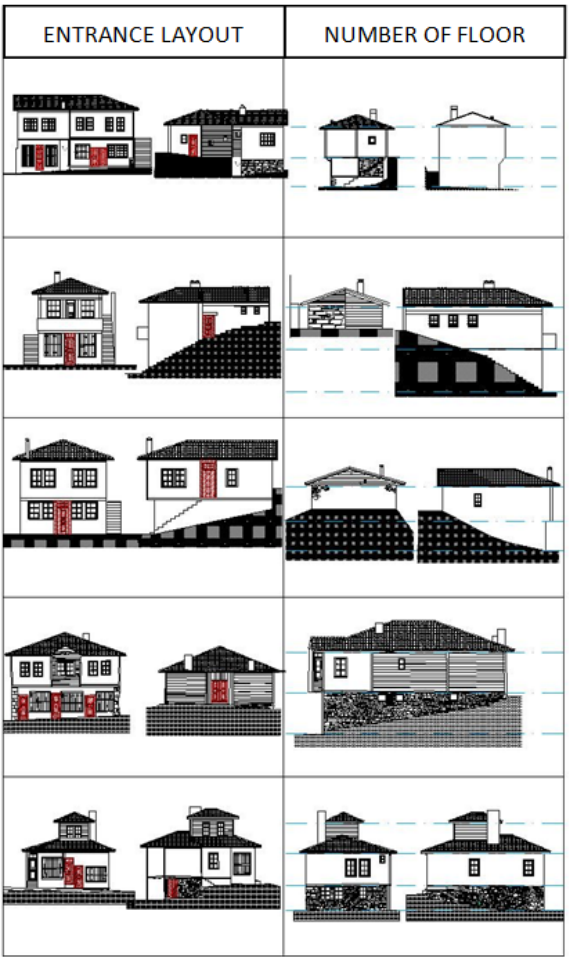


Table 6. Façade typology of the buildings drawn within the scope of the grant

Another façade feature is that the rear facades of all the houses on the upward sloping side of the road elevation have a one-storey layout and the

remaining part is buried in the ground. The rear facades of the buildings on the downward sloping side of the road level are designed in a way that their rear facades are one storey higher than their front facades. Selamettin Yılmazer House, which draws attention with its jihannumas, has a single storey layout just like the rear façade of the houses on the opposite side of the road. The slope of the site was effective in this design decision. However, due to the importance of the front façade throughout the area and the fact that none of the rooms of the Selamettin Yılmazer House face the front façade, a jihannama space was added to the upper floor of the building and the house function established a connection with the road. In the neighbouring registered building located on block 102, parcel 223-224 next to the Selamettin Yılmazer House, the two-storey layout on the road façade has caused it to have a three-storey layout on the rear façade. For this reason, the building draws attention with its large surface area on the rear façade. All the houses on the downward sloping side of the road elevation have this feature and it appears as a typological data.

Windows

The windows, which have an important place in the traditional architecture of the area, are wooden guillotine windows reflecting the period tradition. The fact that the buildings contain shop and residential functions at the same time has created different combinations and added richness to the facades. The large windows on the ground floor of the façade are generally composed of two guillotine windows combined with suitable wooden frames or wooden posts (Figure 8).

Figure 8. Vahdettin Erdem House shop windows

The windows are closed with wooden shutters for the safety of the shops. Shutters are two-winged building elements formed by positioning wooden veneer elements of certain dimensions perpendicular to the ground and fixing

them with metal clamps. In all the houses examined, shuttered windows are located on the front façade. Only Selamettin Yılmazer House has an additional window on the right side façade. The reason for this situation can be seen as the fact that the house is more protruding from the neighbouring buildings towards the road façade, enabling the shop function to be performed on that façade (Figure 9).

Figure 9. Selamettin Yılmazer House shop entrance door and shuttered windows

There are examples where wooden windows are used above the doors on the facades where integrity is provided with the doors that provide access to the shop. In these examples; it can be said that efforts were made to obtain proportional views by creating window and door lengths on the same level. Vehbi Kahveci, Zekiye Keskin and Selamettin Yılmazer House and house numbered 21 have this façade feature (Figure 10).

Figure 10. Vehbi Kahveci House shop entrance door and shuttered windows

In the analysed buildings, wooden guillotine windows were used in all of the spaces belonging to the residential function. There are rooms with a maximum of three windows, with at least one window in each space. The sofa space, which forms the core of the plan in the Turkish house, was considered important and windows were also used in these spaces. Although guillotine window sizes do not vary much; they have ¾ or ½ ratios. The sills were used as wood, brick, marble, stone or concrete; and it is thought that they were originally

made of wood, stone or brick. It is noteworthy that the guillotine windows in the buildings have worn out over time. Guillotine windows, which are a period tradition, are generally more common in rural areas. Therefore, it is important to protect these windows (Figure 11).

Figure 11. Selamettin Yılmazer House double guillotine window usage

If we look at the windows throughout the façade; the original visual formed by the combination of large windows with shutters and guillotine windows on the front facades appears as an important historical data. On the rear façades of the houses on the downward sloping side of the road elevation, guillotine windows in each storey arrangement are generally arranged rhythmically on the façade. At the same time, two rows of windows are not seen on the side facades buried in the ground, while two rows of windows are seen on the non-buried examples (Figure 12).

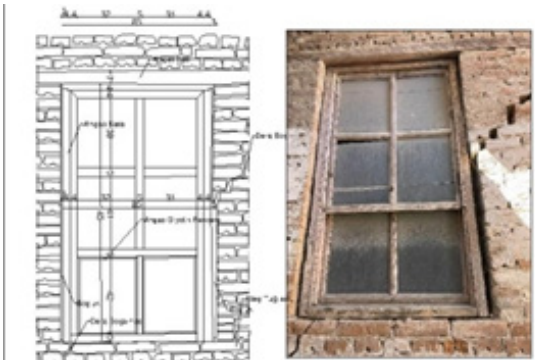


Figure 12. The use of guillotine windows in the residential part of Selamettin Yılmazer House

While double combinations of guillotine windows positioned close to each other are common in the area, it is also possible to come across a single guillotine window. **Şenel** Akıllı House is a typical example with the use of double windows in both the sofa space and the room spaces on the front façade (Figure 13).

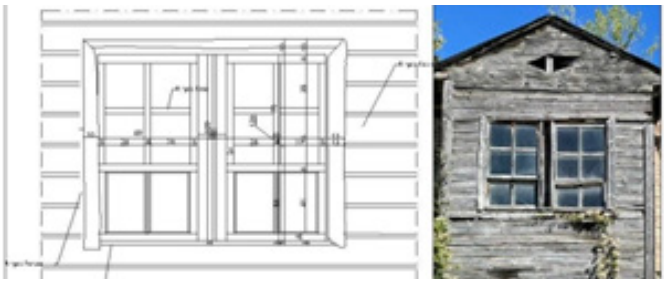


Figure 13. **Şenel** Akıllı House sofa double guillotine window usage

Doors

Decorated doors, which can also be found in Tangaloğlu and other villages of Sinop, can be found both on shop doors and interior doors. The front and back designs of the doors differ. In the front views of the doors consisting of three separate spars, in the rear views of the doors, the spars were fixed to the wooden records with the help of nails. Although the shop doors have different proportions, they belong to this door class (Figure 14).

Figure 14. Vahdettin Erdem House shop entrance door

Shop doors are combined with shuttered windows to form a system. Architectural richness is increased with different door-window combinations. For example; on the façade of Selamettin Yılmazer house, there is a combination system consisting of window-door-door-window respectively. On the shop façade of Şenel Akıllı House, the system formed by the combination of door-window-door-window-window-door-window stands out. In Vehbi Kahveci, Zekiye Keskin and Vahdettin Erdem houses, the shop facade is formed with a window-door-window combination (Figure 15).

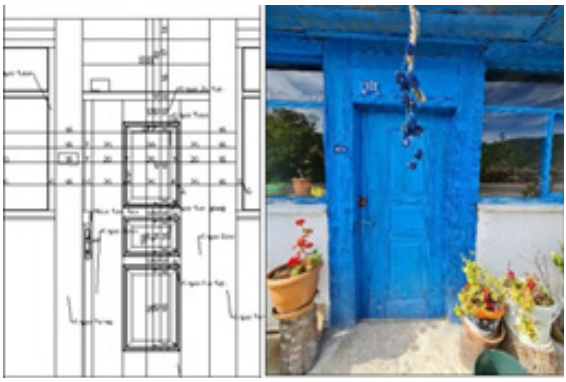


Figure 15. Zekiye Keskin House shop entrance door

Apart from the aforementioned decorated doors, the other doors were fixed with wooden veneers perpendicular to the floor complementing the door opening in their front views, and with horizontal wooden records in their rear views and fixed with the help of scratches. The artistic quality of the doors added to the buildings emphasises the importance of the space (Figure 16, Figure 17).

Figure 16. Vehbi Kahveci House side façade residential entrance door

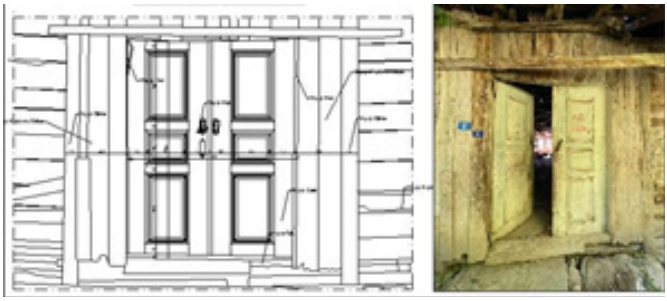


Figure 17. Şenel Akıllı House rear facade residential entrance door

Roofs

Since the village of Tangaloğlu receives rainfall in all seasons, the wooden hipped roof technique was used in the buildings. In the houses with hipped roofs, some examples were built with gable walls made of firebrick on the side facades. Vehbi Kahveci, Vahdettin Erdem and Zekiye Keskin houses have hipped roofs with gable walls, while Selamettin Yılmazer and Şenel Akıllı houses have hipped roofs. In the Selamettin Yılmazer House, the jihannumma rising from the centre of the hipped roof also has a hipped roof. The wooden frame of the roof can be seen from the upper flooring of the single-armed staircase that provides access to the jihannumba and the upper openings. In Şenel Akıllı House, the roof frame is completely visible in the sofa area. Onduline and Marseilles type tile coverings can also be seen in the recently modified ones. Vehbi Kahveci House is the only building with Marseilles type tiles among the buildings analysed within the scope of the grant. In Zekiye Keskin House, sheet metal material is used on the entire roof, in Şenel Akıllı House on the bay window and on the rear façade eaves added later. In the other houses, the roof cover is covered with tiles.

In every building, eaves were used to prevent the building from getting water, but they are generally not suitable because they do not have sufficient distance from the body wall. In all the houses examined, the chimneys of the stoves that meet the cooking needs are seen on the roof. It is noteworthy that all of the chimneys are worn out and have lost their functionality. Although wooden fascia boards and eaves coverings are unique to each building, there are at least 12-15 cm fascia boards in standard forms. Generally, the facades facing the backyard are left with gable walls (Table 7).

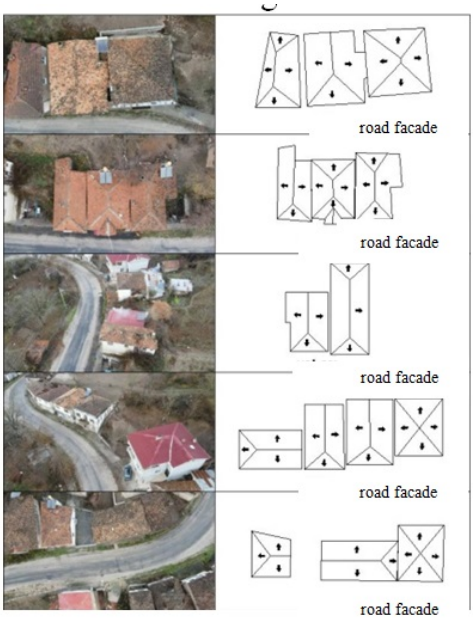


Table 7. Images and drawings created for roof typology

4.3. Building Materials and Techniques Used

When the traditional buildings in the settlement are examined; it is seen that the majority are two-storey wooden carcass system residential buildings. In terms of construction system, plan schemes and details; it is understood that the residential buildings were built in the late Ottoman period and early republican period. The materials used and the building have been understood more easily thanks to the plasters falling off over time. In Tangaloğlu houses, brick filling between wooden carcasses, stone walls, brick walls and wooden walls with walls and studs were used in the body walls.

The embedded floor walls in the buildings were continued with stone walls along one floor, finished with wooden beams and other construction systems were used in the upper floor wall. The stone body walls are 60-80 cm thick with varying dimensions and are not plastered throughout the area except for the front façade. Since the stone walls are embedded, they generally occupy less space on the facades and other construction systems are more prominent. The use of different materials creates differences on the facades and represents the richness of the regional architecture. Today, Zekiye keskin house is completely plastered except for the rear facade. Vehbi Kahveci, Vahdettin Erdem, Şenel Akıllı, Selamettin Yılmazer houses are among the examples where wood cladding material is used on the facade wall. However, this preference was used on the side facades or rear facades in all houses except Şenel Akıllı house. The wooden cladding material draws attention in the front façade bay window section of the Şenel Akıllı house; with the separation of the bay window from the roof system with pediment and gable walls, the wooden material is more prominent. At the same time, it is seen that the walls of the sofa space are wooden on all facades of Şenel Akıllı house.

As mentioned, in some houses, the wall system consisting of only brick walls and window beams without a wooden frame draws attention. For example, the rear façade of Selamettin Yılmazer house, all the facade walls of the later added building of Vahdettin Erdem house, and all facades of Vehbi Kahveci house except the rear façade were built with this system. Fired brick wall filling between the wooden carcass is one of the basic construction systems encountered in all buildings.

Walled wooden cladding walls, wooden partition walls with uprights, brick walls were used in the interior walls. Generally, it is aimed not to put too much load on the flooring by using wooden walls. Karosiman veneer and wood

veneer are found as original flooring materials in the interior. While karosiman veneer is found in latrines and some shop floors, wooden veneer board is used in the residential function. The woods obtained from the trees in the region are combined in different sizes to form different textures on the floor. The wooden coverings were covered on the wooden beams superimposed on the body wall along the x or y plane. Optionally, wooden cladding boards were fixed under the wooden beams as ceiling tiles, but it is possible to see wooden beams on the ceiling in some spaces. The wooden coverings fixed to the ceiling beams were preferred with slats and wooden mouldings in some places of the building, while in some places they were left with wooden beams. At the same time, the eaves were covered with wooden cladding boards in all the buildings examined, so that the wooden skeleton could not be seen.

In the residential part of the houses, there are arched hearths built with firebrick material, generally on the deaf walls of the rooms. On one side of these hearths there is a wooden cabinet, which may be open or closed, plain or decorated. In some examples, the combination of cupboard-cooker-cupboard stands out, while in some examples the cupboard-hearth system is observed. Wooden cupboards are generally built with wooden doors; only Selamettin Yılmazer's house has two hearths, and there is no trace that the cupboards next to the hearth are open cupboards and were previously closed. At the same time, in this house, there is a stone-walled hearth and a small-scale cupboard in the space used as storage in the basement. The aforementioned hearth is special as it is the only hearth built with a stone wall in the examined examples.

In the large shop area of Şenel Akıllı House, there is a simple hearth without a cupboard built with arches and firebricks, while the combination of cupboard-cupboard-hearth-cupboard is noteworthy in the two residential rooms. Arched niches on the hearth walls are important architectural elements. The cupboards are serrated and decorated as in the door system.

The use of bathroom cabinet (gusülhane), which is used in Turkish traditional residential architecture and is also encountered in Boyabat, another village of Sinop, is found only in Vahdettin Erdem House among the buildings examined in the area. In Vahdettin Erdem House, there is a large gusulhane next to the wooden cupboard, while there is no hearth element.

In the room space of Vehbi Kahveci House, which was later converted into a kitchen, a cupboard-cupboard-cupboard combination is observed, as in **Şenel** Akıllı House. In the Zekiye Keskin House, on the other hand, there is no hearth-cabinet combination. The rooms with cupboards and stoves are considered

important; their ceilings are designed with wooden mouldings or slats. In **Şenel** Akıllı House, the wooden cedar appears as a traditional building element. Wooden ottomans are positioned in the room space and bay window space facing the front facade, strengthening the relationship with the front facade.

5. Decisions taken during the Conservation and Documentation Works in Tangaloğlu Village

As a result of the on-site investigations carried out in Tangaloğlu village, it is seen that most of the buildings are standing. However, the buildings that have lost their functionality are the majority. Most of the buildings, which were built as residential + commercial centres, have not been used for many years due to lack of maintenance. They have been used only as houses from the period they were built until today. Today, it is seen that some plan schemes have been intervened, some room doors, windows and cupboard doors are not available. There have been deteriorations in the outdoor staircases that will cause them to lose their function, and the location and material of most of the stairs have been changed. As a result of such deterioration, there is a structural weakening of the buildings. Structural problems, material deterioration and unqualified intervention additions were observed in the buildings. The problems observed throughout the building can be categorised under four headings; problems observed in the original material, structural problems, problems arising from interventions and environmental problems.

Tangaloğlu houses are Early Republican Period buildings and were built in the 19th century. For the general opinions about the plan and façade layouts in the period when it was first built, some historical houses built in the same year, which have not lost their originality, and which can be considered as twin buildings (they can be called twin buildings with their plan scheme, architectural style and façade layout) are taken as a basis. The registration and monument fiche creation works carried out in the village of Tangaloğlu were analysed.

In the light of the data obtained, the restitution studies consist of two periods in most of the houses:

1st Period: Early Republican Period (19th century) - Date of Intervention

2nd Period: Intervention History - Present

The dates of intervention vary depending on situations such as the change of users, the loss of function of the trade houses, the emergence of structural problems, and the time of wear and tear. Generally, interventions were carried out after the change of the road route and migration after the 1980s. Four

important data were used for the restitution of the buildings. These can be listed as information from written sources and photographs, traces from the building, comparative studies and verbal sources and architectural necessity (fiction / logic).

According to the degree of the sources, the degree of reliability in the studies was determined.

1. Information from written sources and photographs;

Archive of the Regional Directorate for the Protection of Cultural and Natural Assets, Samsun, 2019.

2. Traces from the building; when looking at the dwellings, it includes the elements whose material, form and detail of the parts that have partially or completely disappeared, comparatively understood from the remaining parts - similar elements within the building. These elements are completed in original form, material and detail.

3. Comparative studies and information from verbal sources; includes architectural elements that have completely disappeared. Although there is no information about the material, form and detail of these elements from the general building or written sources, they were completed in simple form and detail by making comparative studies with the buildings belonging to the same period and with the information obtained from local users who used the house in certain periods.

4. The information in terms of architectural necessity covers the interventions that are completely destroyed or needed in a way not to disturb the originality of the façade layout and plan scheme. Architectural elements whose location, material, form and details are not known but which should be in terms of architectural necessity have been completed in simple form and detail.

In the light of the investigations and researches carried out, the residential + commercial buildings in the village of Tangaloğlu, as a reflection of the sociocultural and economic life, have started to lose their original quality with the interventions and repairs they have undergone.

The buildings have functional and continuity value due to the fact that they are still standing. In order for these values to continue for future generations;

- Repairing the buildings in a way that does not disturb their originality as a dwelling or using them by giving them a new function,

- Elimination of problem sources causing material deterioration and structural problems by necessary interventions,

- Responding to the needs of the users while restoring the original character of the building,

- Using contemporary materials and construction techniques to create a unity of language in the interventions required by the use,

These are some decisions taken in principle. These decisions set an example for the conservation works to be carried out in the same or similar rural areas. Because one of the factors that threaten these buildings in the first degree and cause destruction is the wrong interventions made during repairs. In addition, necessary precautions should be taken to stop material deterioration on the basis of the building and effective protective interventions should be made. The interventions to be carried out must be carried out by expert teams based on contemporary conservation methods and must be in accordance with scientific criteria. The main goal should be to avoid unnecessary and inappropriate applications that will damage the building and to preserve the original material and texture with the utmost care. After the applications to be carried out by considering social relations and local living habits on the basis of a single building, culture, traditions, customs, customs, daily life practices, economic dynamics will also be preserved as a part of intangible heritage.

As stated in the basic conservation approaches, in order to maintain the values of most of the houses in the village, it was decided to continue the residential function in line with the needs and due to its location in the residential area, and also to continue the function of the shops used as commercial centres. In line with the main goal determined, the project designs were mainly aimed at eliminating the useless additions of the building and taking measures against structural and material deterioration. Studies have been carried out for the future use of the buildings as “Residential + Commercial Building”.

6. Conclusion and Recommendations

Tangaloğlu village, which is 34 km. away from the centre of Sinop, is about to lose its original values as a result of the change in production dynamics, relocation of the transportation route, insufficient conservation awareness, climatic conditions, migration from the village to the city and abroad, developing living standards and wrong interventions indirectly affected by these reasons. It has the appearance of a traditional texture with a natural landscape, where mountain activities can be carried out and shaped with houses

positioned according to the road. Compared to similar examples, the fact that many buildings are still standing despite the wear and tear is an advantage in terms of sustainability. The village, which has an existing potential in terms of local language, should be documented and a digital archive should be created with efficient studies. Thanks to the ministries, museums, conservation boards and offices in the sector, it is necessary to draw attention to the social dimension as well as the architecture of the houses that are being designed. Because, as mentioned in the section on rural architecture, it is the local materials and living practices that provide architectural shaping. For this reason, the primary way of conservation is the continuation of the users of the buildings. In order for the existing users to continue or new ownerships to be created, it is important to increase the protection binc and provide comfort.

One of the important criteria is the transportation problem. In the current situation, transportation from the centre of Sinop to the village can be provided directly. Although there is no problem in this sense, it can be said that the old Sinop-Kastamonu road is one of the advantages of the area. In 2019, 14 of the 26 buildings for which inventory work was carried out by the Samsun Regional Board for the Protection of Cultural and Natural Assets were registered. Within the scope of Providing Grants to Cultural Assets, the survey-restitution-restoration projects of 5 buildings included in the grant programme for 2022 were drawn, and photo albums and reports were prepared.[1] When looking at the surroundings of the buildings, which were built by considering the road route, no squaring was found. The buildings on a linear line are located on both sides of the road, left and right. For this reason, car parking areas should be planned in the following years.

Traditional dwellings in rural areas should be subjected to conservation interventions similar to the construction methods. While trying to avoid material loss in material sense, degradation is caused as encountered in some examples. The primary objective in these areas should be to protect architectural buildings with their intangible values. In doing so, on-site applications should be adopted with materials in the size and form appropriate to the original. When it is considered only as a loss of population and not worth preserving, the life in these rural areas, the rural landscape as well as the diversity of living things disappear.

1 The drawings of the buildings applied by the project author Architect Hülya ANDAÇ in 2021 were prepared by Master Architect Derya MERT KAHRAMAN and Master Architect Seda IŞILDAK within the scope of grant support.

References

Rural Architecture in Anatolia (2012). Çekül, Historical Cities Union, Bursa Metropolitan Municipality.

Avcı, S. (2012). Şehirsel *Yerleşmelerin Belirlenmesinde Kullanılan Kriterler ve Türkiye* Örneği, Istanbul University, Faculty of Literature, Journal of Sociology, 3(9), 9-28.

Bektas, C. (2001). Halk yapı sanatı: Literatür, Istanbul.

Çekül Foundation, (2012).

Eldem, S. H. (1968). Türk Evi Plan Tipleri, ITU Publications, Istanbul.

Eres, Z. (2013). *Türkiye'de Geleneksel Kırsal Mimarinin Korunması: Tarihsel Süreç, Yasal Boyut, Mimari ve Kentsel Koruma Prof. Dr. Nur Akın'a Armağanı,* ed. K.K. Eyüpgiller- Z. Eres, Istanbul: Yem Yay. 457-469.

Kuban, D. (1995). Türk 'Hayat'lı Evi, Istanbul.

Regional Board Directorate of Protection of Cultural and Natural Assets Registration Decisions Report (2019). Samsun.

Muşkara, Ü. (2017). *Kırsal* Ölçekte *Geleneksel Konut Mimarisinin Korunması:* Özgünlük, SEFAD, (37),437-448.

Oliver, P. (2006). Built to Meet Needs Cultural Issues in Vernacular Architecture, Oxford:Elsever.

Şengül, Ö. G. (2005). Rural Architecture in the Eastern Black Sea Region, Milli Reasürans T.A.Ş.

Üstün, F. and Tuluk, Ö. İ. (2012). *Eflatun'un ''Kurbağa''sı Sinope'den Sinop'a: Kaynaklara Göre Sinop Kentinin Fiziksel Gelişimi*, METUJFA, 29(1), 45-68.

Yılmaz, C. (2013). " *Yurtdışına Göçün Kırsal Mimarideki Değişim* Üzerine *Etkileri; Ayancık-Türkeli Yöresi* Örneği *(Sinop*)", Sinop Province Values Symposium.

URL-1, *https://nisanyanmap.com/?yer=29385&haritasi=tangalo%C4%9Flu* Access Date:08/12/2022.

URL-2, *https://dspace.nplg.gov.ge/handle/1234/181510* Access Date:08/12/2022.

CHAPTER V

TRACES OF CLIMATE IN TRADITIONAL ERZURUM HOUSES

Serap FAİZ BÜYÜKÇAM[1] & Semiha İSMAİLOĞLU[2]

[1](Asst. Prof. Dr) Ondokuz Mayıs University,
Faculty of Architecture, Department of
Interior Architecture, Samsun, Turkey,
e-mail: serap.faizbuyukcam@omu.edu.tr
ORCID: 0000-0003-4263-1671

[2](Asst. Prof. Dr) Recep Tayyip Erdoğan University,
Faculty of Engineering and Architecture,
Department of Architecture, Rize, Turkey
e-mail: semiha.ismailoglu@erdogan.edu.tr
ORCID: 0000-0002-1006-6279

1. Introduction

During the design and construction stages, there are several different types of restrictions for the buildings. Environmental conditions are one of the most important issues in terms of building design (Ahmed et al., 2015). Traditional architecture has existed under the influence of natural conditions and resources. Factors such as culture, climate, local materials, topography of the settlement area, defense obligations and the protection and efficient use of the surrounding agricultural fields are the main determining factors. On the other hand, local, regional and international differences seen in traditional architectures are influenced by economic and cultural formations.

In traditional architectures, the residential unit stands out. Housing is a multi-purpose system with different meanings beyond a shelter. It has important meanings from a sociocultural point of view as well as physically (Zorlu, 2010).

Economic conditions, culture level, number of individuals in the family and their areas of interest, environmental factors and climate characteristics determine the shape, type and dimensions of residential architecture. Traditional residences reflect the material elements of the culture that emerge as a result of cultural accumulation and interaction with neighboring cultures (Gök and Kayserili, 2013). According to Rapoport (1969), the cognitive scheme shared by any cultural group is effective in the emergence of a number of visible patterns of behavior in that culture, and the culture and lifestyles formed in this way shape the dwelling.

The concept of culture, which stands out as an important factor in the shaping of traditional houses, is sum of physical and social components. The social components of culture are elements such as belief, system of values, social structure, lifestyle, habits, interaction between individuals, social relations, and physical components are elements such as climate, topography, materials, construction technique and technology (Zorlu and Keskin, 2017). Climatic parameters and physical environmental conditions created by topography are the first determining factors in the selection of the settlement location. The reflections of climate differences on traditional buildings differ according to cultural approaches, as well as selection of materials and methods of use. Solutions developed against climatic factors such as precipitation, wind, the sun and humidity make it possible to monitor the traces of the climate in the shaping of traditional dwellings.

1.1. Climate and Traditional Architecture

Climate is one of the important physical elements that determine the creation of different architectural forms and the relation with the topography besides the form of the topography and the distribution of the population. With various measures taken in relation to the settlement, building envelope and the layout, it is aimed to ensure appropriate climatic comfort conditions in the interior by preventing the negative effects of the climate (Okan, 2010; Tandoğan and Şişman, 2018; Oral and Manioğlu, 2005). Climate-sensitive architecture refers to the effective consolidation of local climate elements to achieve thermal and visual comfort with little or no use of nonrenewable energy sources (Vatan Kaptan, 2020). Climate has been an important determining factor that has an effect on everything, from selection of the location to the distance between buildings, from the mass of the buildings to their orientation and location of buildings with regard to each other, from materials to the construction system and the layout. The amount and angle of solar radiation to which the structure

is exposed, the location and direction of the airflow, the settlement texture and opaque or transparent properties of the building shell are effective on indoor conditions. In the layout, various solutions are found to ensure the desired conditions such as the locations of the venues that produce and emit heat, their relationship with other venues for the spread of heat, and them being surrounded with buffer zones (Dörter, 1994). There are solutions developed by people with traditional methods in different regions and areas against the climate. In traditional architectures shaped by unique local solutions, the reflections of climatic effects such as precipitation, wind, humidity and sun are clearly observed.

The most important factor determining the construction of the outer walls of the buildings is the temperature (Sümerkan, 1990). Different architectural solutions are observed in the regions where there is cold or warm climate. In warm climate regions, houses are positioned close to each other to minimize sun facing surfaces, so that shaded areas are created (Zor, 2012), stone materials with low thermal conductivity, mud bricks and stones with heat storage properties are preferred for the outer walls (Yılmaz, 2013). Forms with courtyards are observed that minimize heat gains. Few small size windows are placed opposing one another in order to ensure airflow. Light color use on surfaces to reflect and to send away the sunbeams, sunblinds, window lids and various bamboo and reed grilles that provide shade are seen in warm climate regions (Günel, 2004; Koca, 2006). The location and direction of the rooms are determined according to the sun; there are open and semi-open spaces surrounded by walls and various venues. Basement solutions create cool spaces. (Bektaş, 2020). In the courtyards, pools and fountains are used to strengthen the cooling effect, while shade areas are created around the houses with non-evergreen trees.

In cold climate it is important to ensure minimum heat loss and to get protection against wind and precipitation effects (Zeren, 1978). In these climates, the houses are very close to each other, adjacent and densely located and partially buried in the ground. Compact forms are seen that can minimize the façade area to minimize heat losses (Egan, 1975). The entrances and primary living spaces are positioned in the south so that the houses can benefit from sunlight at maximum level. The basic principles of the Turkish house, suitability, the series and orientation of the rooms preserved by being pulled back in the open central area, are clearly seen both in the arrangement of the whole structure and the layout of the rooms in the harsh climatic conditions (Küçükerman, 1988). The heat insulation of the building shell is increased with deaf façade walls reaching a thickness of 50-150 cm. Dark color is used on wall surfaces to increase heat

insulation on facades by keeping the floor height low. The windows are small size and as few as possible and in the south direction. Additional measures are taken to prevent heat loss from the windows such as shutters and blinds (Sümerkan, 1990). The living space is surrounded by different spaces and the heat in the interior is maintained. In warm regions on the other hand, thin walls and a large number of openings are observed. Efforts have been made in order to ease the negative effects of the humid climate with natural ventilation by scattered settlement, opposite and large window layouts and openings under eaves and roofs (Yılmaz, 2013). In addition, stones were used between the ground floor and the soil or the structure was completely raised from the ground on stone feet, providing airflow under the floor. On the living floors, light wooden materials are used which do not store heat or moisture. On the other hand, in areas where humidity is low, efforts are made in order to increase the humidity rate by afforestation and by placing elements with water. In hot humid climates, in order to benefit from natural ventilation, the long-front ins directed towards the prevailing wind and thin long rectangular forms are preferred (Günel, 2004).

The effect of wind on the buildings depends on the characteristics of the climate. In hot and humid climates, the wind has positive effect on buildings while it has a negative effect on buildings in cold and dry climates. In settlements the directions, ridges and passageways receiving winds are avoided unless there is a necessity (Gürel, 2010). Slopes close to the valley are preferred because they provide protection from the wind. Planting evergreen trees in the side of houses open to unwanted wind, making deaf walls on this façade or burying part of the building in soil are measures taken against the wind (Sümerkan, 1990). On the other hand, various solutions are seen on the roofs of houses that direct the wind in. The construction type is determined by the precipitation, roof slope, fringe width and cover material. In areas with heavy rainfall, the basement is usually built high or the house is built on piles. The roof is simple in shape, its slope is steep and covered with sheet metal. People avoid making rainspouts on the roofs. Besides all these effects, summer and winter rooms are observed that are built using different construction styles and materials. These rooms are used only at certain times of the year. Because in many climatic regions in Anatolia, significant temperature changes are encountered even in the same season. Most of the time, both winter and summer rooms and spaces are arranged in the same building. Winter rooms have smaller windows, while summer rooms have larger windows. In addition, the aspects and structural organizations of the rooms are of a type to support this principle (Küçükerman, 1988; Küçükerman and Güner, 1995).

Turkey has seven geographical regions with different characteristics in terms of topography, climate, social-cultural-historical values, local materials, etc. These different features are considered as specific elements that make changes to the design and construction principles of traditional architectural examples in different parts of the country (Yazıcıoğlu and Alkan, 2020). There are several different climatic zones in Anatolia. For this reason, the Turkish House in each different climatic region varies in terms of its form of establishment. However, these changes are seen in the relations between the rooms and the common areas between the rooms (Küçükerman, 1988). Eldem (1984) classified traditional architectural examples in Turkey in 7 groups taking into account the impact of the climatic characteristics of their region. Küçükerman (1988) stated that the climatic regions of Anatolia are divided into 5 regions as North Anatolia, Central Anatolia, South and Southwest Anatolia, Southeastern Anatolia and Eastern Anatolia. Şensoy and his friends (2008) divided Turkey into 4 regions according to climatic characteristics. Both classifications include the Eastern Anatolia Region. In Eastern Anatolia, winter is quite cold, snowy and long, and summer is cool. The cold climate prevailing in the region raises the concept of a winter city. In winter cities, the temperature is below 0°C or 0°C for long periods of time; there is usually snow, daylight is seen for limited periods and strong seasonal transitions are observed. In this study, Erzurum province is determined as the study field where the distinguishing effects of climate is strong and which is mentioned as a winter city in literature (Dursun et al., 2016). The reason why the city of Erzurum was chosen is that it is a metropolitan city in the Eastern Anatolia Region, that it has a central location in the region and that it has had an active role in the region throughout history, so it is home to traces of historical texture. The aim of the study was to discuss the effects of the climate in the shaping of traditional Erzurum houses.

2. Materials and Method

2.1. Materials

The city of Erzurum is a border city located at an altitude of about 2000 in the northeast of the Eastern Anatolia Region. The south and north of the city are mountainous. Low annual average temperature and harsh winters in the city result from being located at high altitude and mountainous region, being separated from the sea by mountain chains and receiving sunlight at narrow angles. The average annual temperature of the city, where typical characteristics of continental climate are observed, is about 6oC. In Erzurum, 6 months of the

year are snowy and the number of snow-covered days of the city is about 115 days. Southwestern winds prevail in the city where humidity is low, increasing temperature values and accelerating melting of snow (Aru, 1998; Karpuz, 1984; Gündoğdu, 1997; Kayserili 2011; Kırbaş and Hızlı, 2015).

Erzurum, which was home to various civilizations in its 6000-year settlement history, came under the rule of the Ottoman Empire in the 16th century and the Republic of Turkey in the 20th century; it was briefly invaded by Russian invasions in the 19th and 20th century (Yurt Ansiklopedisi, 1982; Karpuz, 1984; Aru, 1998; Şahin and Yavuz, 2007; Gök and Kayserili, 2011; Kulözü, 2016; Küçükuğurlu, 2018; İsmailoglu and Sipahi, 2021). Located on the Silk Road, the city has become one of the important settlement centers in Anatolia in commercial and strategic terms. The oldest residential area of the city is the area where the Castle of Erzurum, built during the Roman period in the 5th century, is located. The city (Aru, 1998), built on a sloping but neat land in and around the castle, continued to develop around this historical core during the Ottoman period also (Kulözü, 2016).

2.1.1. Traditional Erzurum Houses

Traditional houses concentrated in and around Erzurum Castle are mostly attached buildings, in square or rectangular form and have a flat roof and are single or two storey houses. The floor furnace room and the courtyard are distinctive in shaping the layout. The entrance to the house is from a closed courtyard and one can enter the floor furnace room, the rooms, the barns and the toilets from this courtyard. The floor furnace room which shapes the layout of the house in connection with the courtyard is a venue where family members come together in long and cold winter conditions, serving functions such as cooking, eating, resting, storing, sitting and sleeping. The floor furnace room is the largest venue on the ground floor, where there are kitchen elements such as floor furnace head, the small stove, the shelves where kitchen cups are placed, the sink, as well as the (platform) that meets the needs such as sitting and resting. In some examples, the floor furnace room also serves for passages to places such as rooms, the cellar and the warehouse (Karpuz, 1987; Pavilion and Tali, 2010; Kırbaş and Hızlı, 2015). Another ground floor venue, the barn, has a rectangular or square plan and opens to the garden or the courtyard of the house (Karpuz, 1984).

Access to the first floor is provided by stairs in the courtyard and/or floor furnace room. On this floor, there are usually a sofa and two rooms, as there is no room over the floor furnace room. In Erzurum houses, sofas are places that

provide the passage between the rooms, where people sometimes sit and cook coffee (Karpuz, 1984).

Rooms on the other hand are equipped with facilities for storage, bathing and sitting. The room(s) both on the ground floor and on the first floor are customized according to their location and size. In houses with separate venues for men and women rooms that open directly to the floor furnace room are considered as winter rooms, while at the same time they are used for women (Karpuz, 1987). Those that open to the courtyard on the other hand are used as guest rooms. The venue for men on the other hand is on the first floor and is the so-called ayvan room, which is located so as to oversee the street.

The building materials of the Erzurum houses are usually stones. Three types of stones were used in the houses: blackstone, grizzlystone and camberstone; and they are used as bearing at corners and door and window edges and as rubble stone in other parts in wall textures. The blackstone is a basalt type stone that is nearly dark black and is resistant to moisture. It is preferred in the foundation and basement of houses. The grizzlystone, on the other hand, is a light limestone and has been widely used in the walls of houses. The camberstone which is a fine-grained sandstone and is rather light is not common, but it has been used on the front façade, especially in the homes of wealthy families (Karpuz, 1993; Gündoğdu, 1997). Another use of the stone is seen in the flooring of the courtyard and floor furnace room. The use of bricks is also common in the houses in the region and they are often used on the façade of the first floor, on the inner walls and chimneys. Soil on the other hand is used as a binder on the top layers and the walls. Another building material commonly seen in Erzurum houses is wood. The wood, which is used in many points such as binding beam in façade walls, joinery, flooring, stairs, seki, doors and cupboards is obtained from pine trees usually around Sarıkamış (Karpuz, 1993).

Kuban (1996) defined the architecture of the region as stone architecture with wooden beams. The beams integrated in the stone wall texture in order to increase the elasticity and strength of the walls against earthquakes were used especially over the doors and windows, and their number and frequency varied according to the financial power of the house owner. Stone wall thicknesses are around 90-70 cm on the facades and 50 cm in the inner walls, and the wall thickness is thinner where brick is used. In addition to stone, the interior walls also contain brick and/or lathing walls (Karpuz, 1984).

In the houses there are three types of ceiling tiles and associated roof shapes, flat, swallow and rust (Karpuz, 1984). There is a flat cover over the courtyard

and rooms, while the rooms with no windows on the walls because it remains in the interior of the house, and especially in the barn, there is a sloping matte cover with an opening in the middle (Gök, 1992; Ünal, 1994). Swallow cover is seen in the floor furnace room, which is a venue with no window opening on its walls. The lighting and ventilation in this venue is provided by the opening left at the top of the swallow cover (Karpuz, 1984; Gündoğdu, 1997). A simple and massive image prevails on the facades of traditional Erzurum houses, and the houses open to outside with only small and few windows (Kukaracı and Aktemur, 2003)

2.2. Methods

The aim of the study is to emphasize the impact of climate in shaping traditional houses. Regions dominated by cold climate stand out with various structural measures taken especially in living areas to protect against the negative effects of the climate. In this study, which aims to reveal the distinctive characteristics of the cold climate, Erzurum, which is a winter city has been designated as the study area (Figure 1). The cold period is predominant in the Erzurum climatic zone and low temperatures and especially snowfalls are intense. It is important to keep heat loss to a minimum and to get protection from the negative effects of precipitation. This significant effect of the climate has been the most important factor driving the construction, function and form relations of Traditional Erzurum Houses.

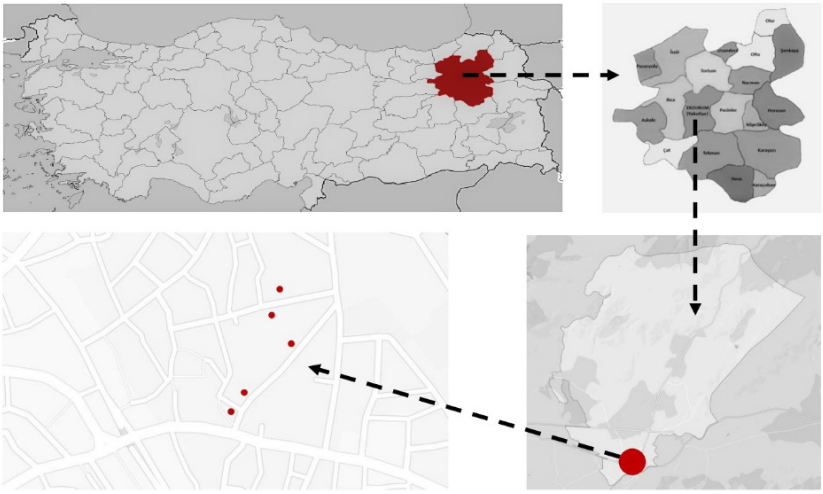


Figure 1: Yeğenağa Neighborhood in Yakutiye District of Erzurum City

The study is based on situational analysis. In the first phase of the study, literature was examined on the traditional houses and cultural and physical determinants that are effective in shaping these houses and the relation between climate and traditional architecture. Literature review was used to establish the framework of the study and to establish the method. In the second stage, Mahoney Tables were examined in line with the information obtained from the literature and the method of study was designed in this context. In the third stage, a field study was carried out in Erzurum, which was selected as the sample. In the field work, traditional houses in the city center have been photographed. Traditional houses, which are considered as examples, were selected from the Yeğenağa Neighborhood, where houses that still stand in their original form today are the most. With the data obtained, traces of the cold climate on traditional houses were discussed (Table 1).

Table 1: Method Steps of The Research

Literature review
↓
Examining Mahoney Tables
↓
Creating titles from Mahoney Tables in accordance with "Table 6 Structural elements design suggestions"
↓
Fieldwork in Erzurum, Yakutiye district
↓
Identification and photographing of sample houses in Yeğenağa Neighborhood
↓
Examination of the photographs obtained during the fieldwork

Within the scope of the study, climate and the traditional housing were discussed through traditional houses in the Yakutiye district, which is the city center of Erzurum. From the past to the present, human beings have received support from artificial factors to control the climate in order to ensure optimum comfort conditions. The impact of climate on architecture is more common in the houses that provide accommodation that is the basic need of mankind in the transition to settled life. In ancient times, people spent most of their lives

especially in their homes and living spaces (Oral and Manioğlu, 2005). In this context, Mahoney Paintings were examined to reveal the impact of climate on traditional housing (Çelik, 1973). The Mahoney Tables were created by Carl Mahoney, John Martin Evans and Otto Königsberger to help design buildings in terms of climate in countries where meteorological data is limited. In the tables, monthly high and low temperature averages, average relative humidity values are used, data on wind and precipitation are also shown in the tables, while wind data are not mentioned in the design recommendations. Comfort conditions are evaluated by comparing temperature and humidity conditions (Mahoney et al., 1971).

The most important feature of the tables is its classification of climatic zones taking into account building needs and criteria such as orientation, distance between buildings, ventilation and openings. This classification system consists of 7 tables. 4 of the tables are tables where climate data is entered and the requirements for thermal comfort are compared. The other 2 tables are used to determine the appropriate design criteria. In the last table, more detailed recommendations are given from Table 5 and 6 according to the data in Table 4. In the study, the reviews were made in line with the "Table 6 Building Elements Design Proposals" which are suitable for the purpose of the research. In this table, recommendations are given regarding the dimensions of openings to be used, the direction of openings, protection of openings with elements such as eaves, heat storage properties of walls, flooring and roofs, and outer surfaces and materials of these surfaces. Accordingly, four titles have been created: Settlement and topography, form and layout diagram, façade character, materials and construction techniques. In the next section, these titles are explained in line with the characteristics of traditional Erzurum houses. After the explanations, the photographs obtained from the field study and orthographic drawings obtained from literature such as plans and sections were used to support the four titles set and their contents.

3. Results

In this part of the study, the findings on the traces of climate in traditional Erzurum houses are presented. After the field work carried out in Yeğenağa Neighborhood, the houses that preserved their historical texture were grouped according to these 4 titles. Since in the field study, the houses were not being used, they were grouped by making interpretations about the surroundings of the

building. For the information which could not be obtained from the photographs for the titles or for information that supported the photographs the plans of the houses not existing today found in Karpuz's archives (1984) were used. More than one house was selected in order to explain the group titles and to ensure diversity. The selected houses are the following top-down in Figure 2: Kömürcü Mehmet Efendi House, Kobazagiller House, Ali Bayram House, Hanağası House, Nusret Gedik House, Semih Bey House, Abdülhamit Bey House Harem, Asım Ünal House, İsmail Binici House, Ali Bayram House. Kömürcü Mehmet Efendi House has two floors and was built adjacent to it. The top floor has come off. Kobazagillerin House has two floors and has local characteristics in terms of facade and plan features. Ali Bayram House is a single storey and was built for the use of a small family. Due to the narrowness of the land, it has deep spaces. Hanağası House has two floors and has a rectangular area. The walls of the house were built with rubble stone. Nusret Gedik House has two floors and has a rectangular area with rubble stone masonry walls. Semih Bey House is a two-storey house with an unobtrusive facade and a large garden. Some of the façades are made of masonry, and some of them are faceted walls, and wooden beams are often used. Abdülhamit Bey House Harem is a two-story rubble masonry wall. Both floors of the building have facades. It has a rectangular area with a well garden. Asım Ünal House has a rectangular volume close to a square with two floors adjacent to it. İsmail Binici Evi, although it has two floors, has a small volume. Red spots were used to describe where the applications in the titles were seen on the plans and sections of the houses. In the next section, information is given on the 4 titles; then the table is examined.

3.1. Settlement and Topography Features

Erzurum houses are attached buildings in order to minimize heat loss, and the entrance facades of the houses are usually directed south for snow to melt quickly. On the other hand, part of the houses is buried on the ground in order to reduce the surfaces that will be exposed to cold wind and to take advantage of the temperature of the soil and thus create sheltered spaces. Attached buildings are seen in the house in Table 3, which is identified in the Yeğenağa neighborhood in the field study. The plan drawing of the Kobazagil's House in Figure 2 shows that the entrance door of the house and almost all the windows in the house are located to the south. In Ali Bayram House, it is seen that the house was built buried in the ground and an intermediate floor was made between it and the original floor.

3.2. Form and Plan Scheme

Houses are usually square and/or nearly square rectangular and closed to the outside. Thus the surface areas are kept as small as possible trying to prevent heat losses. In order to protect against the negative effects of the cold climate, an indoor space called a courtyard is entered directly from the outdoors and passage to other parts of the house is through this part. All the necessary venues for daily life, including the room, the barn and the floor furnace room are located on the ground floor. The most important location of this floor and the organizer of the plan scheme is the floor furnace room, which is the heat center of the house, where the family gathers in cold weather and the heating problem is solved to some extent. The floor furnace room is shaped as a closed and sheltered place on the ground floor since it has to be connected to the soil and buried in soil so as to prevent heat losses. This place includes the furnace/s where all kinds of cooking is done and used for heating purposes, as well as the stove. Heat control is provided with the rooms, which open to the floor furnace room and are often described as winter rooms. The barn space is directly accessible from the closed courtyard and/or from another part of the house and is adjacent to these, allowing people to care for the animals without going outdoors and to keep the warmth of the animals in the house. Compared to the central position of the floor furnace room and venues with different functions on the ground floor, the first floor is smaller. On this floor, the sofa, which provides passage to the rooms, has shrunk and become a transition unit. The rooms on the other hand are larger and have higher ceilings compared to the room/s on the ground floor. In these room/s, which are for men and which are usually used in summer there is a seki/fundment for sitting and lying down, a cabinet for storage and a furnace for heating and a wall-mounted fireplace-like heating system called a stove, barbecue or Russian stove. From the Hanağası house in Figure 2 and the photographs from the field work, it can be seen hat a form close to a square was used in the traditional houses. In addition, a closed courtyard system is used, as can be understood from the Hanağası House. As seen in Semih Bey House, the floor furnace room is one of the indispensables for kitchen and heating in traditional Erzurum houses.

3.3. Facade Character

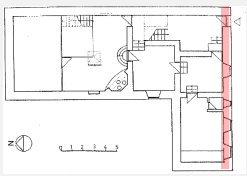
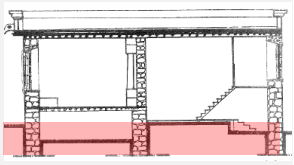
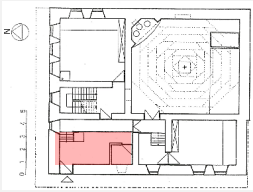
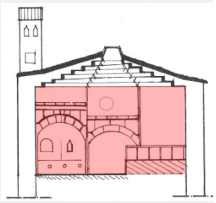
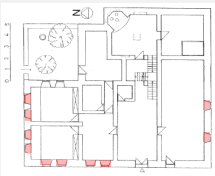
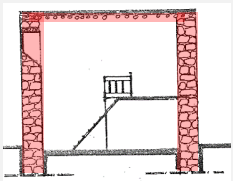
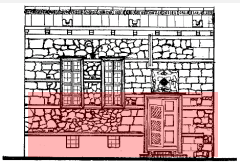
The cold climate has also had an impact on the facades of houses. As little opening as possible has been made on the facades to prevent heat loss. Houses

are opening outside at the ground floor level with the entrance façade, while other facades are usually solid. Upstairs on the other hand there are more the window openings and these openings are concentrated in the rooms. Window openings, which are kept as small as possible, are made in an outwardly expanding form to limit the contact with the cold exterior, while at the same time ensuring that there is more daylight inside. As seen on the façade of The Abdulhamit Bey House in Table 2 and the houses photographed, the dimensions are kept small in the window openings. In addition, not all facades have windows but one or two

3.4. Materials and Construction Techniques

Measures taken against the cold climate are also manifested in material use and construction techniques. Local houses stand out with thick stone walls and thick, flat and earthy top cover. Life in the house is enclosed in a thick shell. The floor height on the ground floor, which is used as a winter floor is kept low to reduce heat loss. The upper floor is preferred as a summer house and relatively thin walls and high ceilings are seen. The upper cover of the house is flat so that the accumulated snow can be cleaned with a shovel. The ventilation and lighting of the floor furnace room, which is the heat center of the house and closed to the outside, is provided by the opening left at the end of the swallow cover, which is made by placing the wooden beams on top of each other at an angle. The swallow dome, which creates a chimney effect with its shrinking form, is an effective solution in the prevention of heat loss. As seen in all the examples in Figure 2, stone is used as the building material of the houses; thicknesses are kept large in order to provide thermal insulation. It is also understood from the drawings of Ali Bayram House that the roofs are flat for cleaning the snow. However, it is also seen that the floor heights are kept low in general.

Table 2: Determining The Traces of The Climate in Traditional Erzurum Houses (Karpuz, 1984; İsmailoğlu, 2021)

Settlement and Topography Features	 **Adjacent layout**	 **Heading south**	 **Buried in the ground**
Form and Plan Scheme	 **Near-square form / Closed courtyard**	 **Near-square form**	 **Tandoori house**
Facade Character	  **Small and few windows**	 **Solid walls**	
Materials and Construction Techniques	 **Thick stone walls and flat earthen roof**	  **Low floor height**	

4. Discussion and Conclusions

Many factors such as urban developments, innovations in construction and technology, changes in socio-cultural life cause traditional houses to lose their originality or to disappear completely. While traditional houses can survive today with some structural additions and/or functional changes, most of them are ruined

after not being used. This makes it difficult to identify the original structures which have resulted from the environmental conditions. Erzurum Traditional Houses also have a place in the topography under given climatic conditions and shed light on the building culture and social life of the region. In these buildings, many of which have lost their original structural characteristics, which cannot survive to form a texture in urban centers, images obtained from field work and literature have been discussed together to investigate and detect the effects of the climate (Table 3). It was observed that the orthographic drawings obtained from literature and the photographs obtained in the field study set examples for the relationship between the climate parameters examined under the four main titles and the Erzurum Traditional House.

Table 3: Comparison of Field Study and Literature Data Exemplifying Climatic Parameters

Reflections of climate on architecture		**Fieldwork**	**Literature**
Settlement and topography Features	Adjacent layout	+	-
	Heading south	+	+
	Bried in the ground	-	+
Form and plan scheme	Closed courtyard	-	+
	Near square form	+	+
	Tandoori house	-	+
Facade character	Small and few windows	+	+
	Solid walls	+	+
Materials and construction techniques	Thick stone walls and flat earthen roof	+	+
	Low floor height	+	+

When the four main titles and ten sub-contents determined within the scope of Erzurum Traditional House and climate relationship are evaluated in the scope of images,

4.1. Settlement and Topography Features

Attached buildings: Traditional houses built as attached buildings to minimize heat loss are partially maintained, but they do not form an original texture. Heading south: It has been observed that the entrance fronts are often directed to the south, making it possible for the snow to melt more quickly with sunlight. It can be said that other factors such as urban developments, roads and the scenery are also effective in determining the direction. Buried on the ground: Houses are usually accessible on the same level or descending one step.

4.2. Form and Plan Scheme

Closed courtyard: It was seen that the closed courtyard, which provides the passage to the house, is linked to the outside with the entrance door and/or window and it can be said that this place is a buffer zone that furthers the living spaces to the interior of the house.

Form close to square: It was shown that in order to prevent heat loss, local houses had compact form close to the square, which is closed to the outside as much as possible and keeps the surface areas at a minimum.

The floor furnace room: The floor furnace room goes up two floors and plays an important role in the distribution of the heat generated within the house. This single-volume, outwardly closed space serves many functions with different action areas built at different elevations, keeping the family together and thus playing an important role in ensuring the control of heat during cold winter days.

4.3. Facade Character

Small and few windows: It is seen that the windows are few in number and small in size. It has been observed that the largest opening is at the upper floor level and on the entrance façade.

Solid walls: Houses are usually closed to the outside, except for the entrance facades. Attached buildings settlement is also a factor for the houses to be closed to the outside. On the other hand, the floor furnace room space connected with the exterior is not suitable for vertical openings in terms of volumetric relations.

A similar approach applies to the upper floor and it is seen that the openings are concentrated along the entrance façade.

4.4. Materials and Construction Techniques

Thick stone walls and flat earthen roof: Although thick walls and flat roofs are common in houses, the inner walls are relatively thin. It is understood that it is intended to prevent heat losses with the help of thick earth cover on flat roofs.

Low floor height: It is seen that the floor height is low in the rooms which are entered into walking up a few steps from the closed courtyard. On the other hand, a similar structure exists in the floor furnace room which is two floors high. The seki's in the floor furnace room are usually made so that they are raised from the floor. Thus, different areas for action were created and maximum benefit was obtained from the heated air.

Climate parameters play a role in the construction techniques and plan schemes in traditional Erzurum Houses. These techniques which are each a suggestion for the construction technologies of today are also sources allowing us to interpret the past. Each practice developed against the negative effects of climate can be evaluated within the framework of construction and material technologies and socio-cultural life practices of today and can be a guide in new building designs.

References

Ahmed, M.M.S., Abdel-Rahman, A.K. and Ali, A.H.H. (2015). Development of intelligent façade based on outdoor environment and indoor thermal comfort, *International Energy Journal*, (16), 97-106.

Aru, K. A. (1998). *Türk Kenti.* YEM Yayınevi, İstanbul.

Bektaş, C. (2020). *Türk Evi.* YEM Yayınevi, İstanbul.

Çelik, P. A. (1973). *İklimle Dengeli Bina Tasarımında Mahoney Tablolarının Türkiye'ye Uygulanabilirliği Yönünden Tartışılması*. TÜBİTAK Yayınları, Ankara

Dörter, C. H. (1994). *Konutlarda Isıtma Enerjisi Korunumu Amaçlı Mimari Tasarıma Yön Verici Ilkelerin ve Çözümlerin Belirlenmesinde Bir Yaklaşım Araştırması*, (Doctorate dissertation, İstanbul Technic University).

Dursun, D., Yavaş, M., ve Güller, C. (2016). Kış Kenti Erzurum'da İklim, Planlama ve Yerel Yönetim Politikalarının Etkileşim Düzeyi, *Planning*, 26(2), 147-159.

Egan, M., D. (1975). *Concepts in Thermal Comfort*, Prentice-Hall Inc., Englewood Cliffs, New Jersey.

Eldem, S. H. (1984). *Türk Evi Osmanlı Dönemi, Cilt I*, İstanbul, Türkiye Anıt Çevre Turizm Değerlerini Koruma Vakfı.

Gök, Y. (1992). *Eski ve Yeni Gerek Köyü Meskenlerinin Coğrafi Yönden Karşılaştırmalı Etüdü*, (Master dissertation, Atatürk University).

Gündoğdu, H. (1997). Genel Özellikleriyle Erzurum Evleri", The *Journal of Atatürk University Institute of Fine Arts*, (3), 27-37.

Günel, Ö. (2004). *Sürdürülebilir Bina Tasarımında iklim Verilerinin Değerlendirilmesi,* (Master dissertation, İstanbul Technic University). https://acikbilim.yok.gov.tr/handle/20.500.12812/655328

Gürel, S. (2010). *Geleneksel Konutların Biçimlenişinde İklim Öğesinin Etkinliği: Safranbolu Örneği*, (Master dissertation, Yıldız Teknik University).

İsmailoglu, S. (2021). Personal photo archive.

İsmailoglu, S. and Sipahi, S. (2021). Social Sustainability of Cultural Heritage: Erzurum Great Mosque (Atabey mosque), *Open House International*, 46 (4), 578-594. https://doi.org/10.1108/OHI-12-2020-0173

Karpuz, H. (1984). *Türk İslâm Mesken Mimarisinde Erzurum Evleri*, Kültür ve Turizm Bakanlığı Yayınları / Sanat Eserleri Dizisi, Ankara.

Karpuz, H. (1987). Eski Erzurum Evleri ve Korunmalarının Gereği, Tarihi Akış İçinde Erzurum Sempozyumu, 11-14 Mart 1987, Erzurum.

Kayserili, A. (2011). *Erzurum Şehri'nin Kültürel Coğrafyası (Maddi Kültür Öğelerine Göre)*, (Doctorate dissertation, Atatürk University). https://acikbilim.yok.gov.tr/handle/20.500.12812/534811

Kırbaş, B. and Hızlı, N. (2016). Learning from vernacular architecture: Ecological Solutions in Traditional Erzurum Houses, *Procedia-Social and Behavioral Sciences*, (216), 788-799. https://doi.org/10.1016/j.sbspro.2015.12.076

Koca, Ö. (2006). *Sıcak Kuru ve Sıcak Nemli Iklim Bölgelerinde Enerji Etkin Yerleşme ve Bina Tasarım Ilkelerinin Belirlenmesine Yönelik Yaklaşım,* (Master dissertation, İstanbul Teknik University).

Kuban, D. (1996). *Türk Hayat'lı Evi.* Eren Yayıncılık, İstanbul.

Kukaracı, İ. U. and Aktemur, A. M. (2003). Modernleşme Süreci İçerisinde Erzurum Konut Mimarisinin Geldiği Nokta, *Atatürk Üniversitesi Güzel Sanatlar Enstitüsü Dergisi*, (11), 45-62.

Kulözü, N. (2016). Bir mekânsal modernleşme öyküsü: Erzurum kenti ve kentsel mekânında ikili dokunun oluşumu, *İdealkent*, 18 (7),22-47.

Küçükerman, Ö. (1988). *Kendi Mekânının Arayışı İçinde Türk Evi*. Türkiye Turing ve Otomotiv Kurumu, İstanbul.

Küçükerman, Ö. & Güner, Ş. (1995). *Anadolu Mirasında Türk Evleri.* T.C. Kültür Bakanlığı Yayınları, İstanbul.

Küçükuğurlu, M. (2018). *Sorularla Erzurum Tarihi.* Çizgi Kitabevi, Konya.

Köşklü, Z. & Tali, Ş. (2010). Geleneksel Erzurum Evlerinde Tandır Evi (mutfak) ve Mimarisi, *Sanat Dergisi*, 0 (11), 97-111.

Mahoney, C., Königsberger, O. and Evans, J. M. (1971). *Climate and house design*, United Nations, New York, USA.

Oral, K. G. and Manioğlu, G. (2005). İklimle Dengeli Tasarım: Mardin, Antakya, *Tasarım*, 157, 136-142.

Rapoport, A. (1969). *Hause Form and Culture*, Prentice Hall International, INC., London.

Sümerkan, M. R. (1990). *Biçimlendiren Etkenler Açısından Doğu Karadeniz Kırsal Kesiminde Geleneksel Evlerin Yapı Özellikleri*, (Doctorate dissertation, Karadeniz Teknik University).

Şahin, E. and Yavuz, F. (2007). İngiliz The Times Gazetesi'ne Göre Erzurum'un Ruslar Tarafından İşgali (1916), *Atatürk Dergisi*, 5(3), 15-51.

Şensoy, S., Demircan, M., Ulupınar, Y. and Balta, İ. (2008). Türkiye İklimi, Meteoroloji Genel Müdürlüğü web sitesi http://www.mgm.gov.tr/FILES/iklim/turkiye_iklimi.pdf

Tandoğan, O. and Şişman, E. E. (2018). Yaşanabilir kış kentleri için kamusal açık mekân tasarımı ve bitkisel tasarım, *Megaron*, 13 (2), 334-346.

Ünal, Ç. (1994). *Pasinler İlçesinin Coğrafi Etüdü*, (Doctorate dissertation, Atatürk University).

Vatan Kaptan, M. (2020). Climate-Responsive Design Strategy for Erbil City, *Archnet-IJAR,* 14(1), 90-111. https://doi.org/10.1108/ARCH-04-2019-0089

Yazıcıoğlu, F. and Alkan, S. N. (2020). An Analysis on Building Elements of a Wooden Structured Granary: "Serender" in Turkey's Eastern Black Sea Region, *Archnet-IJAR*, 14 (1), 77-89. https://doi.org/10.1108/ARCH-04-2019-0087

Yılmaz, A. Z. (2013). Farklı İklim Bölgelerinde Enerji Etkin Tasarım Stratejileri: Türkiye'nin Sıcak Kuru ve Ilımlı Nemli İklim Bölgeleri için Örnek bir Karşılaştırma, *Mimarlık*, 373. http://www.mimarlikdergisi.com/index.cfm?sayfa=mimarlik&DergiSayi=387&RecID=3249#

Yurt Ansiklopedisi, (1982). *Türkiye Il Il, Dünü, Bugünü, Yarını*, Anadolu Yayıncılık, İstanbul.

Zeren, L. (1978). *Mimaride Güneş Kontrolü*, İ.T.Ü. Yayınları, İstanbul.

Zor, A. (2012). *Geleneksel konut yapılarının korunmasının ekolojik dengeye sağladığı katkılar üzerine bir inceleme*, (Master dissertation, Yıldız Technic University).

Zorlu, T. and Keskin, K. (2017). Kültür-Konut Etkileşiminde Mahremiyet Olgusu: Geleneksel Urfa-Akçaabat/Ortamahalle Evleri Üzerinden Karşılaştırmalı Bir Analiz. *Online Journal of Art and Design*, 5 (2), 72-89.

Zorlu, T. (2010). *Konut İç Mekân Örgütlenmesinde Kültürel Boyut*, 2. Ulusal İç Mimarlık Sempozyumu, Mekân Tasarımında Kültürel Yaklaşımlar, 20-22 Ekim 2010.

CHAPTER VI

DOCUMENTATION OF GESİ DOVECOTES AS AN AUTHENTIC CULTURAL HERITAGE EXAMPLE BY AERIAL PHOTOGRAMMETRY METHOD

Gonca BÜYÜKMIHÇI[1], Sultan ŞİMŞEK[2], Melikşah KOCA[3] & Derya MERT KAHRAMAN[4]

[1](Prof. Dr.), Erciyes University, Faculty of Architecture,
Department of Architecture,
e-mail: bmgonca@erciyes.edu.tr
ORCID: 0000-0002-4811-0984

[2](PhD. Lect.), Erciyes University, Faculty of Architecture,
Department of Architecture,
e-mail: simseks@erciyes.edu.tr
ORCID:0000-0003-1074-4188

[3](Res. Asst.), Erciyes University, Faculty of Architecture,
Department of Architecture/ Erciyes University,
Graduate School of Natural and Applied Sciences,
e-mail: meliksahkoca@erciyes.edu.tr
ORCID: 0000-0001-6783-9853

[4](PhD. Student), Erciyes University,
Graduate School of Natural and Applied Sciences,
e-mail: derya.mert.mim@gmail.com
ORCID: 0000-0002-6354-1651

1. Introduction

Historical buildings and textures reflect the culture, social life, economic opportunities of the period in which they were built, and the established relations with nature and building structures of the people who survived through that period. It is noteworthy to document the historical buildings and textures that have fallen into ruin over time so that they can be carried into future generations. Conventional and modern measurement techniques are used to document historical buildings. Remote sensing systems, which are one of the modern measurement techniques, are also among the frequently used documentation methods and allow measurements to be performed with a remarkable low margin of error.

Kayseri Gesi Dovecote, selected as the subject of the study, appear as cultural assets that need to be protected, representing an authentic building group belonging to the Ottoman Period. Today, the first step of transferring historical heritage structures to future generations and carrying out conservation studies through current situation analysis is deemed and acknowledged as accurate and effective documentation.

On the occasion of the developing technologies, up-to-date techniques are used instead of conventional methods for the documentation of cultural heritage. In this study, the photogrammetry method, which is one of the current choices, was introduced and its advantages and technique were conveyed through a case study. While discussing a method of documenting cultural heritage, the significance and promotion of Gesi Dovecote were also emphasized.

Remote sensing systems have been used for approximately hundred years. While the balloons, which were used as a detection system in the earlier stages, were replaced by airplanes; satellite systems have been replaced by unmanned aerial vehicles (UAVs). The UAV, which has been used mostly for military purposes, came into service in a whole range of new domains in recent years (Themistocleous et al., 2015; Vetrivel et al., 2015; Achille et al., 2015). One of these domains is the rapid and detailed documentation of archaeological sites or historical structures [Chiabrando et al., 2011; Fernandez-Hernandez, 2014).

In this article, the dovecote in the town of Gesi, which is a unique building community with its special form, function and structural features located in the Cappadocia Region of Turkey, were selected and designated as the field of application, considering that the ecological balances are tried to be maintained and organic agriculture is gaining importance, and these dovecote had been

documented by photogrammetry method using UAV and thus the creation of 3D data is provided.

2. Significance of Conservation and Documentation of Cultural Heritage

It contributes significantly to the preservation and restoration of any valuable architectural or other cultural monument, object or venue/site for fields such as the development of methods for the study conducted on historical monuments and sites, the recording and perception of cultural heritage, and the research carried out on architectural, archaeological and miscellaneous art history (Egels and Kasser, 2001). Cultural heritage management will be carried out effectively once cultural assets, which serve as a bridge which brings the past into the present, are transferred to the future by means of a preservation method in connect with their essence. In this sense, the structures should be documented in accordance with the statutes and contemporary conservation theory determined by prominent organizations such as the United Nations Educational, Scientific and Cultural Organization (UNESCO), the Council of Europe, the International Council on Monuments and Sites (ICOMOS).

Although historical documented sites are destroyed for various reasons, they must be documented in order to be able to be transferred to future generations, to be measured in compliance with their historical, social, cultural and architectural values incidental to their cultural significance, to carry out analyzes and to be included in urban conservation and protection plans.

Considering the lifestyles, values, spatial requirements and structural analysis of the societies living in the past, it is known that they carry an international cultural asset value well beyond merely a limited and a local significance.

2.1. Requirements for Documentation

Urban divisions and buildings which carry historical and cultural heritage value are the elements that shed light on the lifestyle of their own period. The point of departure for preservation and conservation of these sites and transferring them to future generations is perceived as documentation. In the event of the subject of documentation bring handled within the framework of cultural assets, the following documents are needed for a healthy restoration stage. These documents are sources that provide documentation such as photography, maps of the past, drawings, the social environment of the initial foundation and

establishment period, paintings, oral history data, travelers' notes and archives. The point of departure to successful conservation is based on detailed, clear and planned documentation. The requirements of documenting cultural heritage in similar studies are listed as transferring this heritage to future generations, adopting an attitude for conservation and sustaining the building a by including it in contemporary designs, collecting accurate data for future planning, and identifying problems in historical buildings, archeological sites or monuments (Yılmaz et al., 2007). Apart from such purposes aimed to be achieved in the documentation studies, we can summarize the reasons for the historical texture of Gesi Dovecote to addressed as the subject of the study as follows:

- Ensuring the intergenerational transfer of these building structures, which were designed as authentic commercial structures in their natural environment
- Providing the opportunity to breathe on a natural brink in the rapidly urbanizing and concrete city
- Teaching and explaining to future generations the texture that mirrors and reflects the cultural and commercial life of the period based on wealth, economy and traditionality as well as its historical scarcity values (Madran and Özgönül, 2005)
- Requirement for a properly specific construction manner in terms of construction system, typology and logic
- Setting an example for raising awareness towards organic architecture
- Creating a unique model for ecological agriculture studies.

The current situation of Gesi Dovecote will be determined with 3D data, and a base will be created for the protection and restoration implementations to be carried out on the site in the coming years.

2.2. Methods Used for Documentation

There are four techniques known as conventional, tachometric, laser scanner and photogrammetric methods to be preferred for documentation (Yakar et al., 2020). Traditional techniques appear in two forms as directly drawn sketches made by scaling in the field, and technical drawings made with clear and understandable scales. Tachometric drawings, on the other hand, are drawings with the same principle and step as technical drawings, made with microprocessor devices integrated with electronic systems instead of using direct measurement tools as measurement tools (Ovalı, 2015). Unlike traditional and tachometric methods, the terrestrial laser scanning technique can

be defined as a highly automated summation measuring hundreds of thousands of horizontal points. Although it is a very accurate and fast method to document any cultural or commercial site or object, it is rather expensive (Ulvi and Yiğit, 2019). There are also studies that emphasize the integrated use of terrestrial laser scanners and unmanned aerial vehicles in documentation studies and mention that these methods generate healthier and faster results than traditional measurement methods (Beg, 2018). Another method for fast 3D recording is the use of photogrammetric methods. It has been the preferred method of documenting most architectural and archaeological sites since the late 1990s and early 2000s. Two-dimensional correction techniques and three-dimensional techniques are grouped as stereo photogrammetry and multi-station monoscopic photogrammetry techniques (Ovalı, 2015).

There are certain parameters according to the purpose of choosing the above techniques for documentation. According to Patias (2006), these parameters are parameters such as object size, complexity, time and final/finished product (Patias, 2006). Simple topometric methods are preferred for partially or completely uncontrolled surveys, measurement and photogrammetric methods on the other hand are preferred for fully controlled surveys (Yılmaz et al., 2007). With respect to the documentation of Gesi Dovecotes, these parameters were analyzed, and the aeronautical photogrammetry method was found suitable for the study.

3. Case Study

The dovecote structures in and around Gesi which are nesting boxes of pigeons generally consist of two parts, the main bird's nest and the bushing. The main bird's nest is carved into the rock underground, providing protection for the birds from the climatic conditions and helping the birds for breeding. The hopper chamber is the section where the manure of the pigeons is collected. The bushing is located at the top of the hopper chamber. These bushings, where birds enter the nest and protect the chamber from raptors, are positioned and designed according to the slope of the land. The bushings have created a picturesque image in harmony with nature in the land with different plan types, height and construction technique (Büyükmıhçı, 2006; Albayrak, 2019) (Figure 2).

Pigeon manure, called Koga in the Ottoman period, was used in the cultivation of grapes in Cappadocia, watermelons in Diyarbakir, madder in Kayseri and buckthorn berry (Büyükmıhçı, 2006). In the late Ottoman period, foreign sales were also carried out with the demands of fertilizers from abroad (Bilici and Bilici, 2021). The buildings, in which local materials and methods are

used during their construction, portray valuable examples in terms of obtaining products that contribute to organic agriculture and ecological balance, as well as their architectural values. (Figure 1).

The dovecote which are nesting boxes of pigeons, which have lost their importance due to the changing trade understanding, are now inactive. However, in this period when carbon footprints are tried to be reduced, healthy and natural products and climatic balances gain importance, structures for the production of such organic materials stand before us as an important model that can be preserved with their original functions. For this reason, within the scope of the study, this historical texture, which has scarcity, group based, multitude, economic, traditional and documentary based values and represents the culture and trade of the period, has been properly documented (Madran and Özgönül, 2005).

Figure 1. General view of dovecote (Büyükmıhçı, 2006)

Figure 2. Bushing and underground nest of the dovecote (Albayrak, 2019)

4. Screening of Gesi Dovecote with Aerial Photogrammetry Method

4.1. Selected Equipment

DJI Phantom 4 Rtk was chosen as the equipment used for the study. The Global Navigation Satellite Systems (GNSS) system was used to determine the precise position of the DJI Phantom 4 Rtk and the photos taken during the flight. The mobile station was introduced to the DJI Phantom 4 Rtk, thus defining the "0" point in the coordinate system.

The DJI GS RTK app installed on the remote with built-in display offers photogrammetry (2D and 3D), numerous planning modes, terrain awareness, block segmentation and waypoint flight. Rtk, which is preferred as a measuring device, refers to the 'Real Time Kinematics' system used in the sense of real-time movement/position change. This system offers a highly accurate positioning solution by measuring the carrier-phase loss in order to minimize the unitary drift, since the position information coming from the satellite to the flight starting point causes drift due to the atmosphere and time difference during the flight (URL 1). Considering the non-leveled and inclined location of the study area and the size of the area, the equipment selection was made in this direction.

The camera used in the 40-minute flight in January 2022 is FC6310R_8.8_5472x3648 Red-Green-Blue (RGB). The average site/terrain sampling interval (GSD) is 1.71 cm/ 0.67 inches.

Figure 3. Layout plan

The data obtained in the measurement performed by determining the necessary automatic adjustments by the equipment are processed as 2D and the layout plan created is given in Figure 3.

Figure 4. Orthomosaic sparse Digital Surface Model (DSM) before densification and top view of the initial image position

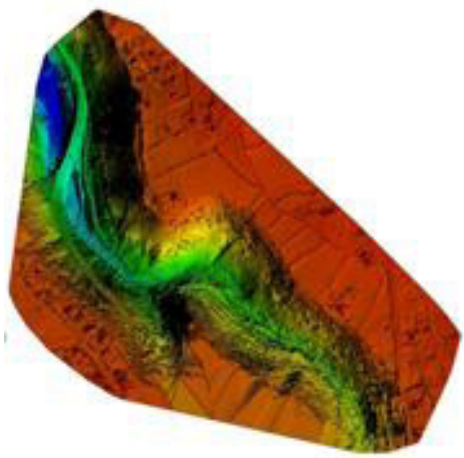


Figure 5. Corresponding sparse Digital Surface Model (DSM) before densification and top view of the initial image position

4.2. Data

In the aftermath of the flight, 1109 photographs were obtained. All of these photographs are calibrated. The absolute geographic variance is given in the

table below. The data processed in this table represent the mean of variance, not an error gap.

Table 1: Absolute Geolocation Variance

Min Error [m]	Max Error [m]	Geolocation Error X[%]	Geolocation Error Y[%]	Geolocation Error Z[%]
-	0.04	0.09	0.00	0.09
-0.04	-0.03	0.00	0.00	0.00
-0.03	-0.02	0.00	0.00	0.00
-0.02	-0.02	0.18	0.27	1.08
-0.02	-0.01	2.16	1.35	10.19
-0.01	0.00	46.98	47.07	37.69
0.00	0.01	48.78	50.23	38.86
0.01	0.02	1.62	0.99	10.91
0.02	0.02	0.09	0.00	0.99
0.02	0.03	0.00	0.00	0.09
0.03	0.04	0.00	0.00	0.00
0.04	-	0.09	0.09	0.09
Mean [m]		-0.000039	0.000006	0.000080
Sigma [m]		0.003959	0.003263	0.006941
Root Mean Square (RMS) Error [m]		0.003959	0.003263	0.006942

Minimum Error and Maximum Error represent ranges of geolocation error between -1.5 and 1.5 times the maximum accuracy of all images. The X, Y, Z columns show the percentage of images with geolocation errors within predefined error ranges.

The geolocation error is the difference between the initial and calculated image positions. It should be noted that the image positioning errors do not correspond to the accuracy of the observed 3D points (Table 1).

Table 2: 2D Keypoints Table

	Number of 2D Keypoints per Image	Number of Matched 2D Keypoints per Image
Median	66244	19058
Min	36580	303
Max	87441	39345
Mean	66309	19085

Looking at the 2D keypoints, a minimum of 36580 and a maximum of 87441 points are required per image for the area. The scanning remained within this range and 66309 points were obtained. Matching 2D points require a minimum of 303 and a maximum of 39345 points. In the scanning process, this range was again remained and 19085 matching points were obtained (Table 2).

4.3. Data Processing

Photogrammetric methods make use of two-dimensional image arrays for the reconstruction of 3D data and require internal orientation (focal length, main point position, distortion) elements and external (camera position and orientation) orientation elements, which are camera calibration elements (Beşdok and Kasap, 2006). The work consists of aligning the measuring device for flight over the site/terrain, performing step-by-step photography, transferring it to digital media, and combining the images and making 3D modeling for the texture.

After the site exploration for the area to be projected and the approximate elevation difference were determined, the departure point and flight altitude for the drone were decided.

A connection was established between the drone and the satellite with the Tusaga Active CORStr system of the General Directorate of Land Registry and Cadastre. Features such as flight area, altitude, direction, weather conditions and photo overlay rates are entered into the hand control. After the command given for the flight, the entire flight was carried out autonomously. The photographs taken during the flight were stored on the Secure Digital Memory Card (micro-SD) inside the drone. The photos taken were transferred to the computer environment and Pix4D photogrammetric software was used for merging and modeling. The resulting products were made ready for documentation by removing unnecessary data and lines in programs such as Photomodels, Autocad, Sketchcup and Blender, and 3D images were obtained (Figure 6). Details regarding the processing of the data after transferring the data from the device to the computer environment are shown in Table 3.

Figure 6. Rendered images from Blender and Sketchup programs

Table 3: DSM, Orthomosaic and Index Details

DSM and Orthomosaic Resolution	1 xGSD(1.71 [cm/pixel])
DSM Filters	Noise Filtering: yes Surface Smoothing: yes, Type: Sharp
Raster DSM	Generated: yes Method: Triangulation Merge Tiles: yes
Orthomosaic	Generated: yes Merge Tiles: yes GeoTIFFWithout Transparency: no Google Maps Tiles and Keyhole Markup Language (KML): no
Raster Digital Terrain Model (DTM)	Generated: yes Merge Tiles: yes
DTM Resolution	5 xGSD(1.71 [cm/pixel])
Contour Lines Generation	Generated: yes Contour Base [m]: 0 Elevation Interval [m]: 1 Resolution [cm]: 100 Minimum Line Size [vertices]: 20
Time for DSM Generation	29m:08s
Time for Orthomosaic Generation	01h:51m:19s
Time for DTM Generation	44m:32s
Time for Contour Lines Generation	10s
Time for Reflectance Map Generation	00s
Time for Index Map Generation	00s

5. Conclusion and Discussion

In the study, Dovecotes, which reflect the architectural understanding and space requirement of a period of the Kayseri Gesi Region, were documented with the DJI Phantom 4 Rtk drone. When the results obtained with this method are examined, it is seen that the photogrammetry method provides high accuracy

data in rough terrain, urban protected areas whenever weather conditions are selected under optimum conditions. The features such as the accessibility and usability of the programs used in the transfer of data to the computer environment make photogrammetry preferable as a method in creating a cultural heritage archive. In the photogrammetry technique, it is seen that the current situation of historical buildings, the digitization of these determinations, and the level differences that do not allow traditional measurement provide non-destructive measurement without touching the structure according to traditional methods, canceling out the interference. It is also a recommended method in terms of documentation for embroidered structures that require high resolution and detail. In addition to being the ideal documenting method with scattered settlements that do not harm ecology, some negative effects have also been observed. Following data processing, some extra lines and points need to be simplified so that the area can be perceived clearly in programs such as Autocad, Sketchup, Blender. The situation that arises in this sense can be considered as the slowing effect of the method. However, when compared to the measurement made with traditional methods in the field, it creates an advantageous situation in terms of maintaining a comfortable working environment and not damaging the tissue. Besides, with respect to the drone method, which gives good results in large sites, it is of crucial importance in terms of data quality to use it together with terrestrial scanning in case of single structure operation.

A flowchart has been reached for similar studies to be implemented in compliance with the stages carried out during the study (Figure 7).

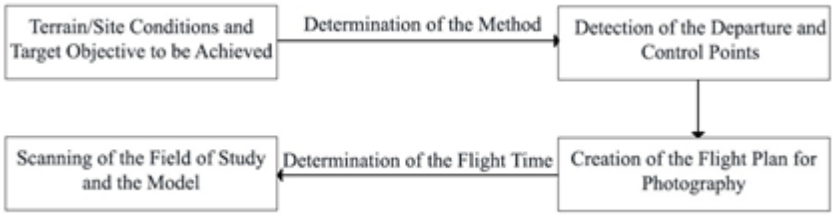


Figure 7. Flowchart Determined in Photogrammetry Method

As it can be understood from the diagram above, the most appropriate method should be researched primarily according to the land conditions and the target objective to be achieved. The importance of detecting the initial departure and control points during the measurement, the setting of the measuring device for photographing, and the calculation of the flight time required to fully view the area should be investigated. The margin of error between the targeted

objective and the final product at the beginning of the study should be close to the Absolute Geographical Variance as in Table 1.

Due to the fact that the results obtained as a result of the study are close to the margin of error in the specified absolute values, the photogrammetry method is seen as an advantageous technique in terms of documentation with low cost and high efficiency. The study is an example of methods that can be used in similar fields due to the successful achievement of its purpose, and it is a study that can be taken as a reference by revealing the importance of documenting the cultural heritage.

References

Achille, C., Adami, A., Chiarini, S., Cremonesi, S., Fassi, F., Fregonese, L., Taffurelli, L., (2015). UAV-Based Photogrammetry and Integrated Technologies for Architectural Applications—Methodological Strategies for the After-Quake Survey of Vertical Structures in Mantua (Italy), *Sensors*, 15, 15520-15539.

Albayrak, M., (2019). Gesi Güvercinlikleri Üzerine Tipolojik İnceleme ve Belgeleme Önerisi, *Erciyes Üniversitesi*, Fen Bilimleri Enstitüsü, Mimarlık Anabilim Dalı, Yüksek Lisans Tezi, Kayseri, 156 s.

Beşdok, E., Kasap, B., (2006). 3D Nesne modellemeye yönelik lazerli bir tarayıcı sistemin tasarımı ve gerçekleştirilmesi. *Eleco'2006, Elektrik - Elektronik - Bilgisayar Mühendisliği Sempozyumu ve Fuarı Bildirileri*, Bursa.

Beg, A., A., R., (2018). The Integration of Terrestrial Laser Scanning and Unmanned Aerial Vehicles in 3d Modelling: The Example of Kilistra Ancient City, The Graduate School of Natural and Applied Science of *Selçuk University*, Master Thesis, Konya, 65 p.

Bilici, K., Bilici, S., (2021). Bir Agro-Arkeolojik Mimarlık Örneği Olarak Güvercinlikler ve Gesi-Değirmendere Vadisi'ndeki Güvercinlikler Üzerine Bazı Gözlemler. *Ankara Üniversitesi Sosyal Bilimler Dergisi*, 12 (1), 199-238, DOI: 10.33537/sobild.2021.12.1.17.

Büyükmıhçı, G., (2006). 19. Yüzyıl Anadolu'sundan Günümüze Yansıyan Özgün Bir Tarımsal Ticaret Yapısı: Güvercinlikler, *Erciyes Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 21 (2), 97-119.

Chiabrando, F., Nex, F., Piatti, D., Rinaudo, F., (2011). UAV and RPV systems for photogrammetric surveys in archaelogical areas: Two tests in the Piedmont region (Italy). *Journal of Archaeological Science* – 38, 697-710.

Egels, Y., Kasser, M., (2001). Digital Photogrammetry, *CRC Press*, 506 p.

Fernandez-Hernandez, J., González-Aguilera, D., Rodríguez-Gonzálvez, P., Mancera-Taboada, J., (2014). Image-Based Modelling from Unmanned Aerial Vehicle (UAV) Photogrammetry: An Effective, Low-Cost Tool for Archaeological Applications. *Archaeometry-57*, 128-145.

Madran, E., Özgönül, N., (2005). Kültürel ve Doğal Değerlerin Korunması, *TMMOB Mimarlar Odası*, Ankara.

Patias P., (2006). Cultural Heritage Documentation, International Summer School, "*Digital Recording and 3D Modeling"*, Aghios Nikolaos, Crete, Greece, 24-29 April.

Ovalı, U., (2015). Three-Dimensional Photogrammetric Documentation of Cultural Heritage: A Case Study in Sagalassos, *Istanbul Technical University*, Graduate School Of Science Engineering And Technology, Department of Geomatic Engineering Geomatic Engineering Programme, M.Sc. THESIS, Istanbul

Themistocleous, K., Agapiou, A., Cuca, B., Hadjimitsis, D.G., (2015). Unmanned aerial systems and spectroscopy for remote sensing applications in archaeology. *ISPRS-The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, 11-15 May, Vol: XL-7/W3, 1419–1423.

Ulvi, A., Yiğit, A., Y., (2019). Digital Documentation of Cultural Heritage: 3D Modeling of Taşkent Sultan Fountain using Photogrammetric Techniques, *Photogrammetry Journal of Turkey*, 1(1); 01-06.

Vetrivel, A., Markus, G., Norman, K., George, V., (2015). Identification of damage in buildings based on gaps in 3D point clouds from very high resolution oblique airborne images, *ISPRS Journal of Photogrammetry and Remote Sensing*, Vol: 105, 61–78.

Yakar, M., Ulvi, A., Yiğit, A., Y., Kaya, Y., (2020). Production of 3-Dimensional Point Clouds and Models of Aksaray Kızıl Kilise by Using UAVs and Photogrammetric Techniques, *Journal of Geomatics*, 5(1); 22-30.

Yılmaz, H. M., Yakar, M., Gulec, S., A., Dulgerler, O. N., (2007). Importance of Digital Close-Range Photogrammetry in Documentation of Cultural Heritage, *Journal of Cultural Heritage*, Vol. 8, 428-433

URL 1: DJI Phantom 4 RTK, (2022). https://www.dji.com/phantom-4-rtk (Accessed 24 December 2022)

CHAPTER VII

THE NEIGHBORHOOD FOUNTAINS AS A SYMBOLIC COMPONENT OF THE CULTURAL MEMORY TRANSFORMATION– KAYSERİ CITY CENTER

F. Burcu BATUKAN DÖRDÜNCÜ[1] & H. Hale KOZLU[2]

[1](MSc. Architect) Kayseri Metropolitan Municipality,
Kayseri, Turkiye/ Erciyes University,
Graduate School of Natural and Applied Sciences,
e-mail: fbbatukan@gmail.com,
ORCID: 0000-0003-0913-5254

[2](Assoc. Prof. Dr.) Architecture Department,
Erciyes University, Kayseri, Turkiye,
e-mail: halekozlu@gmail.com,
ORCID: 0000-0001-6711-3139

1. Introduction

The most effective method of preserving cultural values, which are an integral part of social identity, is to keep urban spaces and traditions alive for generations. In ensuring this continuity, traditions, which are important representatives of intangible cultural heritage, are often accompanied by historical buildings and spaces. Memories experienced in living spaces are transferred to new generations through historical places as a part of cultural memory. Changing or destroying spatial experience also creates interruptions in cultural memory. Therefore, the preservation of intangible cultural heritage elements and tangible cultural heritage as a whole is a conservation method that should be adopted in order to make the ties established between the past and the future healthier. Historical buildings, represented by different functions and

forms, are rapidly disappearing with the effect of urbanization today. One of the important representatives of these lost historical values is the fountains where the water needs of the neighbourhoods are met.

Fountains, which reflect the socio-cultural characteristics, planning and architectural style of the period in which they were built, are among the building types that started to lose their original qualities with the changes they made according to the cultures, lifestyles, needs, wishes, tastes and economic conditions of the new users. As a result of changing living conditions, users have moved away from fountains were a part of social life in the past, and transitioned to a more introverted life. These buildings lost their place in the new context, were shaped in the urban memory of the individuals in the society when they were first built, together with the physical, social and economic conditions of the period, as well as other cultural elements around which they interacted, and gained a meaning in the collective memory with their function in the space. With the destruction of the cultural elements around the fountains to a large extent, these fountains have moved away from their physical context and their place in the collective memory has changed. Especially the fountains in the city centre were more affected by the zoning interventions and new planning decisions, many unregistered fountains were destroyed, some of the registered fountains were moved and placed in different areas. Fountains have also lost their former social and functional position due to the fact that new buildings with different functions or sizes were built in place of the destroyed buildings in the areas where the fountains are located. Although these fountains, which cannot be preserved in place, continue their function with the moving technique, they have been detached from their place and context in the cultural memory and have begun to create new meanings in the area they have been moved.

Although the relocation of the fountains could not be effective in maintaining the culture, it enabled these buildings to maintain their physical existence even in another region. For example, the differentiation of today's comfort and usage conditions in Kayseri (changes in living standards, high buildings, widening streets, taking the water system into the house, etc.) has inevitably negatively affected the fountain culture. Moving these buildings, which are at risk of being completely lost, to recreational areas such as parks, gardens, cemeteries or green areas, among high buildings, has created a positive situation, albeit partially, as one of the last methods to be preferred in terms of conservation theory.

Within the scope of this study, in order to determine the place and change in the cultural memory of these fountains, which are the components of collective

memory in Kayseri, after the move, the perceptual effects of this moving process, as well as the physical effects, were discussed. First of all, it is aimed to examine the context of place in cultural memory and the connection of the moving process with historical buildings. As the sample building type, fountains, which have an important place in Anatolian culture and where transportation is frequently applied in Kayseri, as in many cities of Anatolia, were selected. As a method within the scope of the research, first of all, the fountains that have survived to the present day through literature and archive scans and whose places have been changed were determined, and at the same time, the change of fountain culture and the effect of the moving process on this change were examined through oral history research. In this context, surveys and interviews were conducted with 50 people over the age of 65, whose ancestors and themselves lived in Kayseri, in order to determine the fountain culture and its importance. Thus, in order to determine the place and change in cultural memory of these fountains, which are components of collective memory, after the moving, the perceptual effects of the transportation process, as well as the physical effects, on these users living in the region are discussed. Simultaneously with these investigations, the original locations of the fountains and the locations they were moved to were determined within the scope of the field study, and the transportation routes were marked on the satellite images (Batukan, 2017)[1]. As a result of these investigations, it has been determined that most of the fountains in Kayseri, which took their place in the cultural memory transmitted until today, were moved and detached from their spatial context and lost their importance in the past.

2. The Concept of Cultural Memory

Culture, which can be defined as the social life style or knowledge of a society: it describes a wide area such as ideas, actions, recipes, tools, products, norms, values, beliefs, works of art (Allan, 1951, p. 4). The definition that Geertz describes as important links in which social profit is brought to the fore and individuality is put in the background, adds a different dimension to the term culture, which describes many concepts from high art to behavioural habits. According to this definition, culture is not a force, but a context to which social events, behaviours, institutions or processes can be attributed causally (Geertz, 1973, p. 5). Berger and Luckmann; stated that culture is produced as a result of the externalization of the reality of human nature to the environment and objectification through institutionalization, in the same way (Berger & Luckmann,

1 This study was produced from the master thesis completed by F. Burcu Batukan at Erciyes University Institute of Science under the supervision of Assoc. Prof. Dr. H. Hale Kozlu.

1967, p. 52), Schütz attaches importance to the objectification process in culture and defined culture as a system that produces a sense of intersubjectivity, is built on knowledge stacks and is widely accepted (Storr, 2010, p. 158).

The term culture has also been used at conceptually polarized extremes. On the one hand, it refers to tangible or intangible objects, and on the other hand, it is considered to be the epiphenomenon or the centre of the social system. It also functions as a symbolic reference system that produces and reproduces a meaningful, real world in people's actions and interactions (Allan, 1951, p. 4). While this function ensures the continuity of culture through intergenerational transmission, it emphasizes the importance of the concept of cultural memory.

In research on memory, collective memory is generally considered in two categories: communicative memory and cultural memory. Communicative memory is a memory that includes memories of the person's recent past, covers a limited period of human life, and therefore disappears over time, that is, limited to its carriers. In summary, communicative memory is living memory (Assman, 2001, p. 51). It is the process in which cultural, historical and social information transfer takes place between the oldest generation and the youngest generation. It spans approximately four generations, and each generation's involvement in the process is different. Although communicative memory is variable and dynamic, it plays a decisive role in the course shifts and formation of cultural memory (Depeli, 2011, p. 10). Contrary to communicative memory, in cultural memory, which is the place of remembrance of non-daily events, which continues even after a person's life is over, the feature of being shaped and ceremonial features are important (Öztürk 2012, pp. 5-10). While the culture is perceived through the activities, rituals, symbols, values and ideas jointly performed by the community, the individual marks himself or herself in these areas temporally and spatially (Depeli, 2011, p. 11).

In the formation of cultural memory, tangible objects such as buildings, streets, squares, statues, books, postage stamps, literature and works of art, as well as intangible values such as political oratory and commemoration days, are also important tools. While these tools carry material to the memory, they also constitute the raw material of the daily culture of that society. The management and orientation of the remembered past knowledge today is shaped through this main material that constitutes the content of cultural memory (Başaran İnce, 2010, p. 16). The continuity of this material is often provided by special carriers. These carriers, called memory transmitters or memory experts; This includes sages, scholars, shamans, priests, teachers, writers, philosophers, and all those who have been given the authority to carry knowledge, whatever their name (Öztürk 2012, pp. 5-10).

While the architectural community deals with cultural memory emerging as cultural heritage through text, painting and new visual forms, sociologists monitor the social and collective (cultural) dimensions of memory. The stages of the memory formation or reminiscence process are the formation of an image in the memory by visualizing the previously perceived object, the recognition of the image as an image of an object that forms a part of the rememberer's past, and the placement of the remembered object in a psychological or physical time frame (Cevizci, 1996, p. 84). This process shows that the concept of memory is in itself a relationship with a system based on perception, image and recollection, dependent on a physical time factor (Çakır & Yıldırım Gönül, 2015, p. 89). An important part of the system is spatial experiences embodied by historical buildings. Cultural memory components, which are defined as intangible cultural heritage elements experienced in the historical process, are sometimes shaped independently of time and space, but mostly display a continuity that integrates with spaces. Memories experienced in living spaces have been transferred to new generations through historical places as well as oral and written narratives throughout the ages, and these places have also been the representatives of collective reminiscence.

Many external factors are defined in the interruption of cultural memory. Especially in the cultural values that are strengthened and shaped by spatial experiences, the fact that these places are roads, change or deteriorate also seriously affects the cultural value associated with the place. For this reason, it is important to protect intangible cultural heritage elements and tangible cultural heritage as a whole, in terms of healthier ties between the past and the future.

3. Fountain Culture and Its Place in Cultural Memory

In the history of humanity, water has been one of the main determinants of civilizations since the earliest times. In addition to physical needs and sacred beliefs, due to the need for water in the development of agriculture and animal husbandry, which are the triggers of civilization, settlements were established near water sources and buildings were designed to benefit from water for different purposes. With the development of construction technologies, these architectural solutions have also developed, and the transportation and use of the public has been facilitated by the transportation of the water in the springs to different regions. The use of water has been effective in the formation of ongoing behaviours in terms of both functional and social traditions, and the places where these practices are carried out have been added to the cultural memory. With the development of

construction technologies, these architectural solutions have also developed, and the use of the public has been facilitated by the transportation of distant spring water to different regions. The use of water has been effective in the formation of ongoing behaviours in terms of both functional and social traditions, and the spaces where these practices are carried out have been added to the cultural memory. Anatolia's hosting many civilizations in various periods of history has led to the development of building types such as aqueducts, bridges, spas, fountains, baths in order to transmit water or use it for different purposes. These buildings, which are a part of daily life, have taken their place in urban and cultural memory.

Fountain is an object that highlights the terms such as street, monument and square in cultural memory and is one of the basic combinations of the concept of neighbourhood. These buildings, which are among the most common examples of water architecture, are sometimes independently located at different points in the neighbourhood, and sometimes they are designed as a whole with monumental buildings. These buildings went beyond architectural designs using only water and became an important meeting point in social life. These fountains, which were mostly built as charity, have also become a part of the traditions passed down through generations in the social memory with the sharing of the concept of "fountainhead" (Figure 1). In Kayseri, which is one of the cities where these traditions can be preserved until recent times, it has been researched whether these traditions can be transferred to the present day as a component of cultural memory through surveys and interviews in order to determine the fountain culture and its importance.

Figure 1. People waiting in line for water at the fountain outside Topkapı Palace-Soğukkapı (1888-1889) (Vural, 2008, p. 118)

Approximately 200 fountains, which were built on streets, squares and corners during the Seljuk, Principalities, Ottoman and Republican periods in the city centre of Kayseri, have survived to the present day (Yörükoğlu, 1987, p. 7). In the interviews, it was determined that 32 fountains in traditional neighbourhoods took place in the memories for at least 2 generations in the transfer of cultural memory, and were transferred to the new generations through oral narratives in this period. Of these buildings mentioned in oral history studies; while "Çatalpınarı, Hacımemiş Fountain, Hacışirin Fountain, Mıhlım Fountain, Sıtmapınarı Fountain, Büyük Fountain, Deliklitaş Fountain, Göllü Fountain, Çifteönü Fountain, Matra Fountain, Nazmi Toker Fountain, Kavaklı Fountain, Çatal Fountain, Çakaloz Fountain" are present and in place today, "Hasanbey Fountain, Kalencilerhane Fountain, Mahrem Fountain, Eskibahçe Fountain, Hamzaoğlu Fountain, Çakalkız Fountain, Akmazsokak Fountain, Havuççular Fountain, Hacıkılıç Fountain, Hunat Fountain, Cennet Fountain, İnönü Primary School Fountain, the fountain on the wall of Ahmetpaşa Primary School, Katıroğlu Fountain, Setenönü Fountain" have been demolished now. "Sahabiye Fountain (Figure 2), Seyitgazi Fountain (Figures 3, 4) and Gülük Fountain (Figure 5)" were moved from their original places.

Figure 2. Sahabiye Fountain

Figures 3, 4. Seyitgazi Fountain and Minaret in its old place (K.K.V.K.B.K. Archives) and at the point where it was moved

Figure 5. Gülük Fountain

It is seen that these fountains, which are transferred in cultural memory, are generally located in the square or near the mosque, and the people often spend time near or next to the fountain (Figure 6). It was emphasized by the users that "Çatalpınarı, Çakalkız and Çifteönü fountains are located near the mosque, Nazmi Toker Fountain is located in the square, Hasanbey Fountain is in the garden, Kavaklı, Hacışirin, Çatalpınarı and Hacımemis Fountains are located independently on the street". It has been stated that "*there are parks, roads, buildings, plots, fountains or new buildings in place of the moved or demolished fountains"*.

Figure 6. Neighbourhood residents pouring water in front of the fountain in Kayseri Danacılar District Sokubaşı St. (1993) (KKBKY 2007, p. 64)

The water flowing from the fountains was used by the residents for drinking water, cleaning (bathing, cleaning the house, washing the laundry and dishes), cooking, sprinkling on the earthen ground, caring for pets and flower care. The water accumulating in the fountain trough is used for animals to drink water, orchards, vineyards, gardens, etc. irrigation was evaluated. Some users gave the Çifteönü Fountain as an example and said that the water was collected in an area such as a pool and irrigated from there. Some users mentioned that there are detached pools such as Kirazlı, Tımarhane, Mahrem and Hasbağ and that vineyards and gardens are irrigated through these pools. It was explained that these fountains are connected to a pool, the water flowing from the fountain fills a pool (a lake) and when it accumulates, the villagers open the pool and water their gardens in turn. In addition, it is mentioned that the water accumulating in the trough is called haft, there are water tunnels in some fountains, the weeks' flow from the top, when this area is full, it flows to the next one and the gardens in the nearby areas are irrigated with that water.

The water comes from the fountain, both through people (copper pots and vessels, earth jugs, tins, buckets), ewes, water bowls, jugs, plagiarized containers (ıbrık, sulak, patlaki aşırma), and animals (mule, donkey, etc.) were reported. Although mostly copper jars are preferred for transportation, it is understood that other vessels are also used.

When the usage status, frequency and place of fountains in social life are examined, it is understood that in some regions, men and women go at different times during the day, in some regions, men bring animals to the

fountain at noon, and women go early in the morning and in the afternoon. It was emphasized by all users that, in addition to the conversation while waiting in line, the fountainhead has an important place in social life, especially as a place to meet and chat. It was also stated that people passing by on the street washed their hands and faces, quenched their thirst, made ablutions, children played games, did housework (washing laundry/carpet-rug, boiling bulgur etc.), and especially women made gossip. Due to the prohibition of washing clothes in some fountains, so-called "meadow landlords (çayır ağaları)" checked the fountains and warned users when necessary. It is stated that the people around the fountain are generally young people between the ages of 15-30 and middle-aged people between the ages of 30-50, and if the fountain is near the mosque, women do not spend much time by the fountain because they are uncomfortable with the presence of many men around the fountain.

Memories by the fountain have been passed down from generation to generation as a part of cultural memory, and it has been emphasized that especially the agreements between young girls and boys, glances are integrated with memories extending to marriage, and fountain heads are the origin of many folk songs. Fountainhead memories have been an important part of social life, especially by women and children, and the fountain, which is an architectural object, has taken its place in cultural heritage values not only with its physical features and function, but also as a memory object that integrates with memories.

4. The Effect of Physical Changes On the Transfer of Fountain Culture

Besides being the most common types of water architecture, fountains are among the most important elements of Turkish cities in every period, have greatly increased their active use values in the process of change in both social structure and physical structure as a result of changing living conditions and user characteristics in Kayseri, as in many other cities. they have lost. In particular, the cutting of water sources for various reasons affected the fountains as well as every unused structure, and many fountains were destroyed and disappeared with the effect of time. Road widening and routing studies in different periods facilitated the decision to move some of the fountains lost their functionality to a large extent and were smaller in size compared to other historical buildings, and most of them were relocated as a kind of conservation method. These relocations, which were implemented due to planning decisions, were generally

carried out only for the purpose of maintaining the existence of the building, and the fountains lost their functions due to the fact that the water installation was not connected after the relocation. During the moving of the fountain, attention was paid to the fact that only the historical building would continue to exist and not be destroyed. However, as a result of the fact that the plumbing systems are not installed, the issue of changing the place and position of the fountains in the cultural memory and the original building materials and construction techniques are damaged, as well as the removal of the fountains from their place and context, has not been adequately examined.

When the periods when the fountains were destroyed are examined, it is seen that nearly 30 fountains have disappeared, especially between the years 1960-85. In the previous periods, there were only fountains in the houses and streets of the notables of the city, but in 1955, after Kayseri was connected to the central water system, water was started to be connected to the houses. The fountains that have served the public for centuries have fallen into the background, and most of them have been cut off in a short time. Another reason why the water of the fountains is cut off is the destruction of old waterways, while old houses without deep foundations are demolished and replaced by high-rise buildings with deep foundations (Yörükoğlu, 1987, p. 8). In this process, it is seen that 11 fountains were dismantled, disassembled and reassembled and moved to different areas.

When the reasons for moving the fountains are examined, it is understood that the majority of them were removed and transferred to another point due to zoning problems. The reasons for the relocation of these fountains, which were moved with the decision of the Conservation Board, are explained in the decisions of the Kayseri Cultural Heritage Preservation Regional Board. According to these documents in the archive, some of these fountains were completely removed from their location and moved to an area within the Seyyid Burhaneddin Cemetery. For example, Hacı Mehmet (Kaptan Paşa) Fountain (Figures 7, 8), built in Bozatlı Paşa Neighbourhood Adak Street in 1807, was moved due to the fact that it was about to be demolished, it was dangerous, and the surrounding construction was formed without considering the fountain, making it difficult to preserve the fountain in place. The Hüsrem Fountain (Figures 9, 10), built in the 19th century at the intersection of Kaya and Durak Streets in Lala Paşa Neighbourhood, was moved to Seyyid Burhaneddin Cemetery in 2003, as it remained in the median of the 40-meter road in the zoning plan (Figures 11,12).

Figures 7, 8. Hacı Mehmet (Kaptan Paşa) Fountain in its old place (K.K.V.K.B.K. Archives) and at the point where it was moved

Figures 9, 10. Hüsrem Fountain in its old place (K.K.V.K.B.K. Archives) and at the point where it was moved

Figure 11. The original location of the Hacı Mehmet (Kaptan Paşa) Fountain and the cemetery where it was moved

Figure 12. The original location of the Hüsrem Fountain and the cemetery where it was moved

It is seen that other fountains have been moved to the vicinity of the street or avenue where they were originally located. For example, Sivas Street Fountain (Figures 13, 14), built on Sivas Street in the 19th century, was moved to the same street next to the Fevzioğlu Library (Figure 15), since it is located on the road route in the zoning plan. The Binbaşı Hacı Hayri Bey Fountain (Figures 16, 17) built in 1900/1923, next to the Hacip Kümbeti at Zekai Bey Neighbourhood Fevzioğlu Street, was moved to the park in the same neighbourhood (Figure 18) due to road widening works.

Figures 13, 14. Sivas Street Fountain in its old place (K.K.V.K.B.K. Archives) and at the point where it was moved

Figure 15. The original location of the Sivas Street Fountain and the point where it was moved

Figures 16, 17. Binbaşı Hacı Hayri Fountain in its old place (K.K.V.K.B.K. Archives) and at the point where it was moved

Figure 18. The original location of the Binbaşı Hacı Hayri Fountain and the point where it was moved

Lise (Şefika Hanım) Fountain (Figure 19), built in 1921 on İnönü Street in Tosun district, was moved to the opposite side of the street due to road widening works (Figure 20). Şeyh İbrahim Tennuri Fountain (Figure 21), which was built in 1482 on Tennuri Street in Cumhuriyet district, was also moved to another point of the same street due to road widening works (Figure 22). The Talas Square Fountain (Figure 23), built in 1887 at the entrance of Ali Saib Pasa Street in the Kiçiköy district, was taken across the same square in 1968 due to road widening works (Figure 24).

Figure 19. Lise (Şefika Hanım) Fountain,

Figure 20. The original location of the Lise (Şefika Hanım) Fountain and the point where it was moved

Figure 21. Şeyh Tennuri Fountain

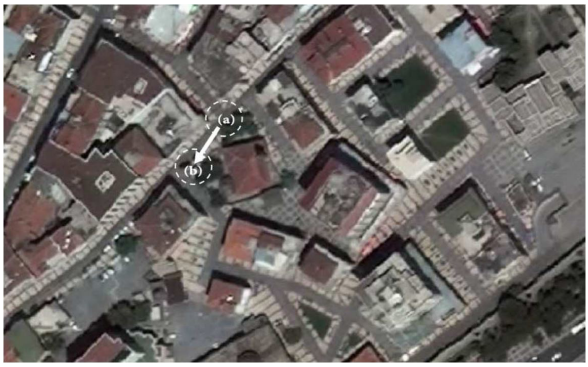


Figure 22. The original location of the Şeyh Tennuri Fountain and the point where it was moved

Figure 23. Talas Square Fountain,

Figure 24. The original location of the Talas Square Fountain and the point where it was moved

It is seen that among the moved fountains, the ones located next to a monumental building were moved to another point of the same building. The Gülük Fountain (Figure 5), which was built in the 18th century next to the Gülük Mosque, was taken into the courtyard of the Gülük Mosque for an unknown reason in 1905 (Figure 25), The Sahabiye Fountain (Figure 2), built in 1266 next to the masjid opposite the Sahabiye Madrasa, was moved to the east of the Sahabiye Madrasa at the beginning of the 20th century due to the square planning works (Figure 26), The Gevher Nesibe Fountain (Figure 27), built 5 m. south of the Gevher Nesibe Madrasa in 1868 (Denktaş, 2000), was moved to the southwest of the Gevher Nesibe Madrasa during the park planning works in 1988 (Figure 28). Seyitgazi Fountain and Minaret, built in 1904 (Denktaş, 2000) in the north of Seyitgazi Mosque (Figures 3, 4), on the other hand, since they are located on the newly opened Tacettin Boulevard route, they were taken into the garden of the mosque in 2001 (Figure 29).

Figure 25. The original location of the Gülük Fountain and the point where it was moved

Figure 26. The original location of the Sahabiye Fountain and the point where it was moved

Figure 27. Gevher Nesibe Fountain,

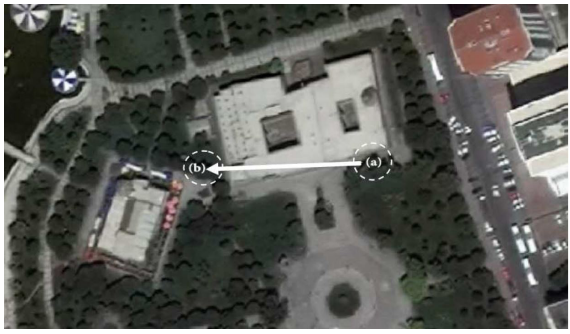


Figure 28. The original location of the Gevher Nesibe Fountain and the point where it was moved

Figure 29. The original location of the Seyitgazi Fountain and Minaret and the point where they was moved

When examining the areas in which the physical changes that took place after the moving of these fountains affect the users, it is seen that the most obvious effect is the interruption in cultural memory. The fountains in their old place revive memories when seen, even if they are not used, and take their place in the cultural memory chain with the transfer of their former users. However, the memories of the fountains were removed from their former location or completely destroyed, are gradually being erased, and these buildings are a part of tradition and culture, lose their importance. While these spaces have taken a place in the memories as a socialization space, become meaningless for new generations with the change of today's socialization concepts and opportunities, generations including old users feel this deficiency.

5. Conclusion

Fountains, which are an important element of traditional neighbourhoods and cultural heritage, form an integrity within the concepts of social/functional space as a complementary part of the use of public space within the historical texture. Today, with the developing urban dynamics, the physical and social characteristics of the streets have also changed, and the fountain culture has begun to transform together with the historical fabric. In addition to the negative effects of time, the loss of functionality of the buildings, some of which have been moved and relocated due to zoning activities, and their removal from their context adversely affect the conservation process.

It is obvious that the relocation of historical buildings by applying the moving method, which is emphasized as the last method to be preferred among the conservation principles, will also have a negative effect on cultural memory. Buildings continue their memory development as long as they are used. The relationship between space and memory is established through structural and spatial indicators in historical buildings. With the use of historical buildings, the signs of spatial memory are preserved over time and create a link between the past and the future. The space perceived by the user is experienced and coded into memory. The coding process turns into spatial memory over signs as short or long-term memory according to the experience of the individual. The space, which is coded into the memory by the individual, is transformed into an image in the mind and gains a sense of belonging. The space, which gains a factual meaning in the later process, takes its place in the memory as a result of urban and social events (Cevizci, 1996, p. 6. Considering the relationship

between transportation practices and spatial memory indicators, there is a serious disconnection especially in terms of spatial context, and the building creates a new place/ function/ space setup in the place where it has just moved.

This change, which is the result of an inevitable process as users move away from the streets, which was a part of social life in the past, and transition to a different life in new spaces, gains a different dimension when considered in terms of conservation principles and cultural heritage values. The only reason why the fountains are considered as cultural assets and are a part of the intangible and tangible values that need to be protected, cannot be preserved is not that they have lost their function, usability and social meaning. The fact that new fountains are still used today and that approximately 180 new fountains were built between 1940 and 2010 in Kayseri city centre (Adıbelli, 2012, p. 34) show that the functions of the fountains are still not finished. This situation shows that there were negligence in the installation of water installations while repairing the historical fountains, and some fountains that could actually be used became dysfunctional due to faulty repairs and moving practices. Every historical building that loses its function and is not used is both rapidly deteriorating physically and losing its place and importance in cultural memory.

Conservation is a concept that encompasses tangible and intangible values that include the survival of historical buildings, the transfer of historical documents to future generations, the preservation of scientific resources/works, taking precautions according to the changing environmental conditions of the historical environment, and the continuity of cultural values, traditions, customs and traditions. These tangible and intangible values of cultural assets constitute the main reason for protection. The purpose of conservation is to transfer the lifestyle and cultural accumulation of a certain period to future generations. Considering that the conservation is related to the past, future and present of the building, preserving the original values it represents and transferring it to the future is accepted as the basic principle of conservation practices. One of the most important criteria that will ensure the success of the conservation works in the historical settlements is not to lose the authenticity value, to ensure the active participation by adopting the decisions taken regarding tangible and intangible values by the users at the building/neighbourhood/city scale, and to provide physical, social, cultural and economic continuation. It is clear that the authenticity value is seriously damaged and the place/space/cultural memory relation in the city is damaged by the moving process. For this reason, arranging data to remind the place in the city memory by means of digital animations or

signboards in the original place of the moved building after the process is carried out, placing plaques, signboards or promotional kiosks containing the original location, photographs and the date of the transportation process in the moved place, both in terms of conservation principles and the continuity of cultural memory. is one of the measures that can be taken.

References

Adıbelli, R. (2012). Kentsel dönüşümün ve toplumsal hafızanın yansıması olarak Kayseri'deki çeşmeler. B. Asiliskender, B. Ceylan ve A. E. Tozoğlu (Eds), *Kayserinin yirminci yüzyılı* içinde. Kayseri: Abdullah Gül Üniversitesi Yayınları.

Allan, K. (1951). *The meaning of culture, moving the postmodern critique forward*. London: Praeger Publishing,

Assman, J. (2001). *Kültürel bellek eski yüksek kültürlerde yazı, hatırlama ve politik kimlik*. İstanbul: Ayrıntı Yayınları.

Başaran İnce, G. (2010). Medya ve toplumsal hafıza, *Kültür ve İletişim,* 13, 9-29.

Batukan, F. B. (2017). Korumada taşıma yönteminin kültürel hafızaya etkisinin kayseri örneği üzerinden irdelenmesi (Master Thesis), Erciyes Üniversitesi Fen Bilimleri Enstitüsü, Kayseri.

Berger, P. L. and Luckmann, T. (1967). *The social construction of reality*, London: Penguin Books.

Cevizci, A. (1996).*Metafiziğe giriş*. İstanbul: Paradigma Yayını.

Çakır, H. and Yıldırım Gönül, B. (2015). Tarihi yapılarda mekânsal belleğin korunması: İzmit Seka selüloz ve kâğıt fabrikasının dönüşümü, *Beykent Üniversitesi Fen ve Mühendislik Bilimleri Dergisi*, 8/2, 85-110.

Denktaş, M. (2000). *Kayseri'de tarihi su yapıları (çeşmeler, hamamlar),* Kayseri: Kıvılcım Yayınları.

Depeli, G. (2011). Kültürel bellek: hatırlayış ve unutuş, *Hafıza Çalıştayı*, İzmir.

Geertz, C. (1973). *The interpretation ıf cultures: selected essays*. New York: Basic Books.

KKBKY, (2007). *Kapılar ve çeşmeler*. Kayseri: Kayseri Kocasinan Belediyesi Kültür Yayınları, Orka Matbaa.

KKVKBK - Kayseri Kültür Varlıklarını Koruma Bölge Kurulu (K.K.V.K.B.K.) Arşivi.

Öztürk, S. (2012). Kadın Kimliği Bağlamında Kültürel Bellek ve Van Merkezdeki Kadın Dengbêjliği Yansımaları (Master Thesis), İstanbul Teknik Üniversitesi, Sosyal Bilimler Enstitüsü., İstanbul

Storr, V. H. (2010). Schütz on meaning and culture, *The Review of Austrian Economics*, 23, 147-163.

Vural, M. (2008). *Sudan sanata*, İstanbul: İstanbul Büyükşehir Belediyesi İSKİ Genel Müdürlüğü Kültür Yayını,.

Yörükoğlu, Ö. (1987). *Kayseri çeşmeleri*, Kayseri: Beğendik Kültür Hizmetleri Serisi.

CHAPTER VIII

POCKET PARKS IN URBAN DESIGN

Seyhan SEYHAN[1*]& Elif BAYRAMOĞLU[2]

[1](Res.Assist), Karadeniz Technical University,*
Faculty of Forestry, Department of Landscape Architecture,
Trabzon / Turkey, seyhanseyhan2@gmail.com,
ORCID: 0000-0002-6046-5024

[2](Assoc. Prof. Dr.), Karadeniz Technical University,
Faculty of Forestry, Department of Landscape Architecture,
Trabzon / Turkey, elifsol_@hotmail.com,
ORCID: 0000-0002-6757-7766

1. Introduction

Cities are areas that create with natural and physical environments, develop and change themselves in line with the returns of the age (Önder and Polat, 2012). Industrialization and technological developments from the past to the present and the increase in opportunities in cities lead people away from rural areas to urban areas. Thus, cities; It turns into areas where there are various uses in many areas such as transportation, housing, trade, education, work, social and economy, wrong land uses, deforestation, production and consumption pressures, and various environmental pollutions and problems (Korkut et al., 2017; Kurdoğlu and Parlak, 2022). In this situation, individuals trying to continue their lives are exposed to warnings that require constant attention and can cause mental and physical fatigue. In order to prevent this, it needs restorative areas in the city (Peschardt and Stigsdotter, 2013). At this point, urban green spaces come to the fore with the psychological, aesthetic, health, cultural, social and environmental opportunities they provide (Carbó-Ramírez and Zuria, 2011).

Urban green areas refer to all open vegetation areas in the urban environment. While these areas contain livable and attractive elements for urban residents, they also create habitats for various species within the urban landscape (Francis and Chadwick, 2013; Küçükbekir and Bayramoğlu, 2021). However, the increase in building and population densities in cities with urbanization leads to the shrinkage of green areas in cities. In this case, it causes demands for green areas in the city. In order to meet the demand for green areas in cities, many small green areas are created naturally and unplanned. One of them is pocket parks. Pocket parks are small green spaces located in patches within high-density urban areas, flexibly distributed and providing appropriate services (Hou, 2022).

Figure 1. Pocket Parking Applications (Url-1; Url-2)

Pocket parks are small-scale areas accessible to all users, which are shown as an alternative to provide the benefits of urban parks within their limited areas. Spaces for enjoying nature, entertaining activities, improving psychological and physical health, developing positive social relationships and creating sustainable communities are social assets (Hussein et al., 2022).

2. Pocket Park Concept

Just after the Second World War, the concept of pocket parking emerged and was introduced in Europe. Afterwards, the idea of creating experience, small and undeveloped green spaces in cities, inspired by Europe, was brought to its lands in the USA. American landscape architect Charles Dowing Lay classified parks according to their size in 1914 and defined pocket parks as areas smaller than other parks or playgrounds. In the 1950s and 1960s in the USA, the concept of pocket parking emerged clearly in public green spaces due to limited accessibility. It was difficult to find undeveloped land for a new public space, as intensive development in large cities led to insufficient green space or recreational areas in neighborhoods. The idea of small parks became popular in

New York, with Hoving calling for the creation of public green spaces as small as a building in early 1965 (Naghibi et al., 2021).

The word origin of the pocket park concept comes from the word "Vest" for Vest Pocket Park, another name for Paley Park (Figure 2) built in 1967 in New York City, USA. It was created by taking the small pockets, which are also clothes, as the meaning of the word. Accordingly, pocket parks are interpreted as small but secret, safe and warm areas (Temizel and Erdoğan, 2022).

Figure 2. Paley Park (Url-3)

The term is used to describe small and compact urban green spaces in cities. Small urban green spaces are defined differently depending on their components, location, purpose and function (Nordh et.al., 2011). They are urban open spaces on a very small scale. Small urban green spaces are considered a subset of urban parks. For this reason, their functions and components may be similar. Small urban green spaces differ in terms of use and appearance (Jasmani, 2013).

Pocket parks can meet the green needs of individuals in the close vicinity of their homes, integrating with their daily urban use (Bai, 2016). Generally, these areas are one of the most important parts of the urban scale neighborhood unit. However, as a result of the increase in ecological awareness and demographic and cultural changes in cities, it has become a part of many public spaces and ecological networks throughout the city (Forsyth and Musacchio, 2005).

Pocket parks are small and compact urban parks, which are located in the transition spaces of the buildings, bordered by the pavements and walls of the existing buildings, and located in densely populated areas. Typically found in dense urban areas. Pocket parks have three main locations: corner plots, middle of the block and plots along the block. It serves many functions and purposes depending on location and user groups. Dense residential neighborhoods may have backyards or community gardens where employees can have lunch, children can play (Figure 3). These parks can only consist of hard surfaces and green surfaces, or a combination of both (Luks, 2001).

Figure 3. Examples of usage areas (Url-4; Url-5)

One of the unique and exciting features of pocket parks is that they can be created from vacant lots or forgotten areas (Blake, 2013). It is scattered in patches in the city structure and serves the local people directly in a hidden way. It plays an important role in the daily life of urban residents and meets the functional needs of people. It provides people with a space for entertainment and relaxation in the busyness of urban life (Wei and Lu, 2018).

2.1. Benefits of Pocket Park

Pocket parks have environmental, social and health benefits (Abd El Aziz, 2017). According to the national recreation and park agency, the social and health benefits of a well-designed pocket park;

• Reduced crime rates and perception of security,

• Encouraging exercise,

• Lower rates of health complaints,

• Improving the mental health of its users

• Empowering communities to make decisions that affect local residents,

• Making communities more social by connecting people in the same neighborhood

• Strengthening relations with local governments and communities.

The environmental benefits of pocket parks are;

• It reduces pollution caused by traffic and resource consumption, meets the needs within walking distance and prevents people from going out of the cities for nature experience. Thus, it reduces pollution and traffic.

• Reusing the destroyed areas,

• Increases the amount of permeable surfaces in cities,

• It acts as a patch for some animals, especially birds.

2.2. Pocket Park Design Parameters/ Criteria

Pocket parks are created as a result of opportunities. While other parks are created on a designated area, pocket parks are created by evaluating the areas that are not used or are not used enough. At the same time, even if the citizens have areas where they can meet their needs, they can be placed at any point in the urban fabric (Hussein et al., 2022). Pocket parks should meet the needs and vision of domestic and foreign users, accessible, flexible, safe, inviting and have many other criteria. At this point, after the decision to create a pocket park in an area, some design parameters should be considered in the application part. These design parameters consist of three sub-categories as "space, environment and society" under the title of "Environmental and Qualitative Design Parameters". Each sub-category is divided into categories within itself. These parameters must have some properties. These features are also explained in Table 1., Table 2. and Table 3. given below (Sinou and Kenton, 2013).

Table 1. Space Design Parameters of Pocket Parks

1. CATEGORY: SPACE				
Design Parameters	**Size**	**Space Identity**	**Surfaces**	**Focal Point**
	It should be a small park of 50x100 meters	The function or functions of the space should be determined	Walls of adjacent buildings can be surrounded by vertical grass	In need of focal point - water features, gazebos or other structures
	The exact size should be determined according to the foreseen uses	Design concepts must be innovative	The floor should have textural interest and pattern	Defined edges that can contain a focal point
		There should be variety and choice	Ceiling - leaf canopy, solid canopy roof	
		Greatest play value	Empty walls should be avoided around the area.	
		Adaptable spaces		

Table 2. Environmental Design Parameters of Pocket Parks

2. CATEGORY: ENVIRONMENT		
Design Parameters	**Environmental Performance**	**Location and Linkage**
	The amount of natural shade should be maximized.	Empty spaces should be explored to provide opportunities for temporary public spaces
	It should be environmentally friendly; permeable surfaces, landscape beds with biological filters, high-efficiency lighting, solar powered facilities.	There should be a green road and parks located near the largest residential density
	Environmental education	Public open space layout should affect pedestrian flow
	Explore water and riparian habitat, rainwater and aesthetic improvements	Roads to a place must be provided
	There should be adequate lighting during the night	Pedestrian-use should promote network connection, high-use corner or mid-block connection
		Must be linked to other recreational, cultural and community facilities
		There should be a good flow of park users between the green road and the park.

Table 3. Society Design Parameters of Pocket Parks

3. CATEGORY: SOCIETY				
Design Parameters	**Users**	**Accessibility**	**Amenities-Activities**	**Safety& Maintenanc**
	Their goals should be physical fitness, social cohesion, mental and moral development, and neighborhood improvement.	Must be easily accessible	There should be individual seating instead of the bench	Inspection and maintenance should be
	Playgrounds should be designed in accordance with the current population of the region.	Must be invited with multiple entry points	Drinking fountains, bike racks, trash cans, etc.	Well protected from moving cars
	Must be suitable for social interaction	Pedestrian access should be comfortable and safe	There should be playgrounds, seating facilities and open, grassy areas	There should be fair access
	Must have nice and attractive design for various users	Unconventional places; roofs, facades or foyers	It should always be an activity that can mobilize the public sphere.	Unobstructed to the streets
	Main users should be determined		Seating should be maximized	Demanding maintenance requirements should be reduced
	The neighborhood should be included in the design process		Provide opportunities for public art	

Abd El Aziz conducted a study on the design criteria of pocket parks in 2017. In this study, he compiled the other studies on this subject and gathered the design criteria under seven headings. These; area and location, access and connectivity, surface design, uses and activities, environmental, landscape elements, participation and maintenance. The features of these criteria are explained in Table 4 below (Abd El Aziz, 2017).

Table 4. The features of these criteria

Area and Location • It should not exceed 5000m2, • Parks should serve a resident population of about 500-1000, • Pocket park should be within 5 to 10 minutes walking distance of target users, • Its park should be placed in front of active rooms in adjacent buildings, • Small, irregular pieces of land, vacant lands on forgotten and unused areas should be used, • Unconventional locations should be used: such as roofs, facades or foyers.
Access and Connectivity • Easy and equitable access with multiple entry points / No barriers between the street and the park, • Comfortable and safe pedestrian access, protected from moving vehicles, should be provided, • The park should be connected to the green road network and placed in high-density residential areas, • Accessible by both walking and cycling and should not require the use of a car, • Provide links to other recreational, cultural and community opportunities.
Surface Design • It should have defined edges and a focal point, • Clear sight lines should be provided throughout the entire site, • It should open to the street from 2-4 fronts, • It should offer attractive design/variety and options that appeal to a variety of users, • Defined identity and represent local communities, • There should be adaptive / comfortable spaces, • Surface walls should be able to transform into vertical grasses.

Uses and Activities • Appropriate areas for physical form such as basketball courts / playgrounds / climbing structures should be provided, • Space should be provided for mental development and relaxation, • Playgrounds should be recreated through seating and open lawns, • Activities should be added that will always activate the park, • Small event areas, meeting with friends, lunch breaks and areas for social interaction should be added, • Educational areas should be added so that children can better understand and appreciate nature.
Environmental • Permeable surfaces, bio-filtered landscape beds, high-efficiency lighting (LED) and solar-powered facilities should be used, • A tree-shaded ceiling should be provided, • Protection against weather conditions, rain garden and ditches should be provided, • Areas should be designed to receive sufficient sunlight and provide ventilation, • Recycled materials should be used.
Landscape Elements • Empty walls should be avoided around the area, • Water features, gazebos, individual seating, benches, drinking fountains, bicycle racks, bins, heat lamps, etc. should be added, • The amount of natural shade should be maximized, • Sufficient lighting should be provided during the night, • Opportunities for public art and attractive hardscape should be provided, • The possibility to include edible gardens should be created.
Participation and Maintenance • Include the users of the neighborhood in the design process for both building form and artistic development, • Support from local government should be provided to make the project possible, • A positive image should be maintained, • Maintenance requirements should be reduced.

3. Conclusion

The change and transformation that has taken place and continues to occur in cities brings with it negative effects as well as positive effects. As a result, it becomes a very important issue to evaluate the existing possibilities of the city in order to provide the life cycle of individuals and other living things in the city and to make cities more livable. At this point, institutions and organizations, designers, planners carry out various studies. Pocket parking applications are one of these studies. Pocket parks have emerged as an important part of urban green infrastructure systems in order to benefit many areas as a result of the increase in population density in cities and in proportion to urbanization and developments. These parks are one of the applications made to meet the emerging needs of the city for quality, environmental and recreational areas by transforming unused and abandoned areas in the city area. On the face of it, these parks are small compared to other areas and have the potential to meet many needs.

In order to carry out pocket park applications with the green space and content needed by individuals and the city on a small scale, it should be designed and implemented in accordance with the design parameters and criteria determined in pocket parks, as in every park design. At this point, in order to successfully create pocket parks in cities, it is necessary to pay attention to the parameters and criteria determined for the design to be made in the application part after choosing a suitable place.

References

Abd El Aziz, N. A. (2017). Pocket park design in informal settlements in Cairo city, Egypt. Landscape Architecture and Regional Planning, 2(2), 51-60.

Bai, N. (2016). Small urban green space for restorative value in a sub-tropical Asian city.

Blake, A. (2013). Pocket parks. Open Space Seattle, 2100.

Carbó-Ramírez, P., and Zuria, I. (2011). The value of small urban greenspaces for birds in a Mexican city. Landscape and Urban Planning, 100(3), 213-222.

Forsyth, A. and Musacchio, L. R. (2005). Designing Small Parks: A Manual for Addressing Social and Ecological Concerns. Canada: John Wiley & Sons, Inc.

Francis, R. A. and Chadwick, M. A., (2013). Urban Ecosystems: Understanding the Human Environment. New York: Routledge.

Hou, J., Wang, Y., Zhou, D., and Gao, Z. (2022). Environmental Effects from Pocket Park Design According to District Planning Patterns—Cases from Xi'an, China. Atmosphere, 13(2), 300.

Hussein, H., Jhung, L. K., and Zhang, H. (2022). Green Pause in a City: Design elements of a pocket park in Kuala Lumpur. Environment-Behaviour Proceedings Journal, 7(19), 191-200.

Jasmani, Z. (2013). Small urban parks and resilience theory: how to link human patterns and ecological functions for urban sustainability. Obtenido de https://www. academia. edu/9263609/Linking_Resilience_Theory_with_Urban_Green_Space.

Korkut, A., Kiper, T., and Topal, T. Ü. (2017). Kentsel Peyzaj Tasarımda Ekolojik Yaklaşımlar. Artium, 5(1), 14-26.

Kurdoğlu, B. Ç., and Parlak, P. Ö. (2022). Döngüsel Ekonomi-Döngüsel Şehirler. Mimarlık, Planlama ve Tasarımda Güncel Araştırmalar, Ed. Gülden SANDAL ERZURUMLU, Gece Kitaplığı, Ankara.

Küçükbekir, E., and Bayramoğlu, M., 2021. Comparison of Resource Valuation Methods in Protected Areas, Conservation of Natural Resources in the Context of Climate Change, Ed. Gökhan Şen ve Ersin Güngör, Duvar Yayınevi.

Luks, J. (2001). Focus Hope: A Pocket Park Study, Detroit, MI. Inquiry: The University of Arkansas Undergraduate Research Journal, 2(1), 19.

Naghibi, M., Faizi, M., and Ekhlassi, A. (2021). Design possibilities of leftover spaces as a pocket park in relation to planting enclosure. Urban Forestry & Urban Greening, 64, 127273.

Nordh, H., Alalouch, C., Hartig, T., 2011. Assessing restorative components of small urban parks using conjoint methodology. Urban Forestry & Urban Greening. 10

Önder, S., ve Polat, A.T. (2012). Kentsel açık-yeşil alanların kent yaşamındaki yeri ve önemi, Kentsel Peyzaj Alanlarının Oluşumu ve Bakım Esasları Semineri, 19 Mayıs 2012 / KONYA

Peschardt, K. K., and Stigsdotter, U. K. (2013). Associations between park characteristics and perceived restorativeness of small public urban green spaces. Landscape and urban planning, 112, 26-39.

Sinou, M., and Kenton, A. G. (2013). Parameters contributing to the design of a successful urban pocket park. In PLEA.

Temizel, S., Erdoğan, E. (2022). Cep Parklar,Ed., Kübra Yazıcı, Güncel Gelişmeler Işığında Peyzaj Mimarlığı Çalışmaları-2022, 219-249, İKSAD Publishing House, Ankara.

Url- 1 https://pin.it/3s7scP0, 09.11.2022

Url-2 https://pin.it/iYz1iSk, 09.11.2022

Url-3, https://www.pps.org/places/paley-park,07.12.2022

Url- 4, https://pin.it/2dgF2UY, 07.11.2022

Url-5, https://pin.it/2kWdSFR, 07.11.2022

Wei, J., and Lu, S. (2018). Research on Landscape Space Perception of Pocket Park. In 2018 International Conference on Engineering Simulation and Intelligent Control (ESAIC) (pp. 290-294). IEEE.