

## Anatolian Rural Adobe Architectural Heritage: Case of Seyitüŝađı Rural Settlement

Tuba Nur Olđun<sup>1\*</sup>, Müjgan Bahtiyar Karatosun<sup>2</sup>

### Abstract

Anatolia has a rich cultural and architectural heritage with the influence of the civilizations it hosts and its location as a transition point between east and west. In this sense, it is seen that Anatolia has a long history in the context of rural architectural heritage.

In Turkey, in almost every region of Anatolia traces of the original rural architectural heritage it is outstanding. In this heritage, which consists of regional materials and structures designed by blending with local culture, adobe structures have a very important place. The use of adobe together with natural materials such as stone and wood in building production is encountered in many rural areas in Anatolia. However, in some regions, adobe stands out as the main building material and the usage density of other natural materials in the buildings produced with this material is much less than the adobe. One of these regions is Malatya, which is the rooted settlement of Anatolia.

In Malatya, where most of the adobe buildings have been lost in the urban area today, these building examples still exist in rural areas. However, many social, cultural and technological developments in recent years have caused the original adobe buildings in these rural areas to enter a process of change and disappearance. In this context, it is of great importance to document and conserve the adobe structures in question and the textures created by these structures, so that the original rural adobe architectural identity of the region is not completely destroyed.

When the application studies and written sources on the conservation of the original adobe architecture in the rural areas of the Malatya settlement are examined, it is striking that the number of works in this sense is low. For this reason, the study is based on the documentation of the Seyitüŝađı neighborhood, which is a unique rural texture in Malatya settlement where rural adobe architectural identity stands out in Anatolia; it aims to contribute to the conservation of this identity and its transmission to future generations. In this sense, firstly, general characteristics of Anatolian rural adobe architecture were mentioned; then the rural settlement of Seyitüŝađı in Malatya, which has a dense stock of adobe buildings, but not documented, was examined and handled in the context of conservation. As a working method, the relevant literature was examined and on-site observations were made. As a result, it is thought that the documents created with the data obtained and the evaluations made will emphasize the conservation of the original adobe architectural identity found in the Anatolian

**Keywords:** Anatolia, adobe architecture, Malatya, Seyitüŝađı.

### 1. Introduction

In the process from the beginning of building production to the present, the need for a shelter was met to be safe by being protected from harmful external effects; it is seen that the spaces are also diversifying with the increasing needs as time passes. In this context, together with functions such as production, worship and trade, structuring has gained a different dimension and diversified. With this development, although the function of the building has diversified, the fact that building production is carried out with the closest materials and the easiest methods has remained valid for many years. However, advancing technology over time has also caused changes in building production and many materials have become usable by moving to the farthest point desired.

This is due to the traditional building production carried out with the techniques learned through the closest material and master-apprentice relationship; it has accelerated the extinction process of many buildings

<sup>1</sup> Ph.D. Student, Ph.D. in Restoration Program, The Graduate School of Naturel and Applied Science, Dokuz Eylöl University, İzmir, Turkey. Box: 35390, Buca, İzmir, Turkey. Telephone No.: +90 05063619977 E-mail: [tubanurbaz@gmail.com](mailto:tubanurbaz@gmail.com)

<sup>2</sup> Prof. Dr., Department of Architecture, Faculty of Architecture, Dokuz Eylöl University, İzmir, Turkey.

with different functions and the settlement tissues that contain these structures. With these changes, the historical and cultural features that make up the identity of the residential areas have begun to be lost (Akyıldız & Olğun, 2020). All these developments have brought the concept of conservation to the agenda in architecture.

Many settlements in Anatolia contain traditional structures unique to the region they are located in and rural textures made up of these structures. A limited part of these tissues, which have many qualities worth conserving, have been documented and passed on to future generations with various conservation practices. However, most of them have not been documented yet; some have begun to lose their original qualities. In this sense, this situation is also observed in Malatya region, which is one of the leading areas in Anatolia, especially with its adobe architectural identity. In the Malatya region, where rural areas worth conserving with their original adobe buildings are located, it has been observed that there is almost no information and documents regarding these settlements. In this context, at the point where conservation understanding in architecture has reached today, it has been decided to examine the rural area conservation approach, whose importance has been understood recently, but there is not enough work in our country yet, and to address the Malatya region, which is an important example in this regard.

The study reveals the Anatolian rural adobe architectural heritage, which has rapidly transformed due to different reasons and is in danger of extinction, through the Malatya region in general; it aims to contribute to the conservation of this heritage. In this sense, it is aimed to determine the problems by determining the effects of changing conditions on rural architecture with the data obtained as a result of the investigations and to develop suggestions for the conservation, sustainability and transfer of the said architecture to future generations.

Within the scope of the study, Seyituşağı settlement, where the adobe material, which stands out in the rural architectural identity of Malatya, was used extensively in terms of reflecting the original rural architectural values of the region was examined as an exemplary area. The other units, especially the adobe houses, which are important representatives of the original architecture in the mentioned settlement area, have been documented through examinations and evaluated in terms of both their past situations and their current usage characteristics. As a study method, the relevant literature was examined and the data obtained from it were evaluated with the observations made in the settlement area.

## 2. Characteristics of the Anatolian Rural Adobe Architectural Heritage

Since ancient times, soil has come to the fore as the basic material of buildings built especially for shelter in many parts of the world. Soil, which is the main component of adobe building materials, which is used extensively in many continents and settlements, is a value that has been understood in today's architecture, along with issues such as environmental pollution that triggers climate change, rapid consumption of natural resources, and is used in the production of modern examples (Akyıldız, 2020). Despite all the changes in the fields of architecture and engineering today, in many settlements in the world, people still live in adobe structures and use adobe structures that have different functions. On the other hand, concepts and approaches such as conservation, sustainability, and energy efficient design are increasingly on the agenda; it brought along that high income groups prefer adobe buildings. (Kafescioğlu, 2017)

In many parts of the world, as well as in urban and rural areas of adobe material is used in Turkey, where there are residential buildings of adobe has several functions. However, economic activities in rural areas are intertwined with nature; therefore, the functional properties of structures are greatly affected by natural data and traditional factors are at the forefront; however, it is possible to say that the density of adobe buildings is higher than urban areas due to reasons such as less use of technological data. Thus adobe building production, especially in rural areas located in Turkey is widespread in Anatolia (Figure 1, 2).



Figure 1. An adobe building in Havran



Figure 2. An adobe building in Suruç

settlement located in the west of Anatolia settlement located in the east of Anatolia

In rural areas where there is a high density of adobe buildings in Anatolia, two different construction systems stand out in the production of these structures. These systems are:

- Massive adobe construction system (with adobe blocks, forged adobe or masonry adobe)
  - Light adobe construction system (with adobe block filling or cast adobe filling). (Çelebi, 2012). (Figure 3, 4).



Figure 3. Adobe blocks

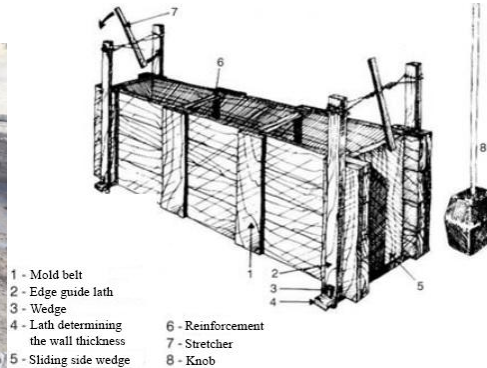


Figure 4. In cast and masonry adobe systems used wall formwork and mold forming elements (Acun and Gürdal, 2003)

It can be stated that among the adobe construction systems seen in Anatolia, the massive adobe construction system is used more intensely than the light adobe construction system. In this system, applications made with adobe blocks are at the forefront. Other massive adobe construction systems are generally found in the production of elements such as garden walls or temporary building constructions (Çelebi, 2012). In this sense, when we look at the massive adobe system prepared with adobe blocks, it is formed with molds and varies in different regions of Anatolia; however, it is seen that the basic materials of the system were formed with main blocks of 30x30x15 dimensions and lamb blocks of 30x15x15 dimensions. These blocks are arranged one on top of the other and side by side to form structural elements.

Although adobe building material stands out less than many modern materials today, it still contributes significantly to the building stock of almost every society. In this sense, while adobe reflects the tangible and intangible values of societies due to the intensity of its cultural qualities; at the same time, it serves the common goals of sustainable development all over the world and locally and makes positive contributions to social, economic and environmental issues both naturally and culturally. (Guillaud, 2014). For this reason, the use of adobe materials in rural areas, especially in Anatolia, contains important values in terms of examining the tangible and intangible original characteristics of traditional rural architecture.

### 3. Malatya Seyitüşağı Settlement

Malatya, historical, geographical, socio-cultural characteristics and the architectural heritage in Turkey with the owner, in as much as it takes place in Eastern Anatolia in Turkey is one of the settlements, with original data. While some of these unique data are seen in the urban areas of the settlement, most of them are located in rural areas. In this sense, when the architectural features of the settlement are examined, it can be stated that there are many original values in both urban and rural areas.

Although Malatya has unique architectural qualities, studies on the traditional architectural heritage of the region are very limited in terms of academic and practical aspects. Especially, studies on Malatya rural architectural heritage are quite few considering the rapidly lost values.

Considering the architectural features of rural settlements in Malatya, it can be stated that adobe material is used extensively in building construction and in this context, adobe material has an important place in the architectural identity of Malatya countryside. However, in rural settlements, functions such as houses of worship, education structures, warehouses and barns are frequently encountered, and most of these structures are built with adobe material. But in settlements that are undergoing transformation and rapidly losing their original texture, it is also common to build these structures as reinforced concrete.

Within the scope of the study, the rural settlement of Seyitüşağı in Yeşilyurt, one of the districts of Malatya, was examined. Especially the fact that it has a unique adobe layout and that this texture was not handled by any documentation was effective in the selection of this settlement. Considering the characteristics of Yeşilyurt district, which includes Seyitüşağı settlement with many rural settlements, it is seen that it is located in the south of Malatya. The district includes many areas that can be described as the center points of the city today.

Today, there are 83 neighborhoods in Yeşilyurt district (Yeşilyurt Data, 2019). As a result of the observations made in the field, it was determined that 17 of these neighborhoods are rural settlements. As a result of the oral interviews and on-site inspections, it was determined that 3 rural settlements have lost their rural characteristics and entered the urban area since 2014. Seyituşağı, a rural settlement studied in Yeşilyurt district, is located in the middle of the settlement (Figure 5).



Figure 5. Locations of Malatya province, Yeşilyurt district and Seyituşağı settlement (edited from Malatya Provincial Directorate of Culture and Tourism, 2020)

Seyituşağı settlement is located on a hilly terrain. The settlement covers an area of approximately 13.40 km<sup>2</sup> with agricultural lands (Parselsorgu, 2020) (Figure 6). It is located approximately 32 km from the city center.



Figure 6. Günpınar rural settlement borders and its immediate surroundings (Parselsorgu, 2020)

Cadastral maps covering Seyituşağı, for which no information is available about its history, and learned to have been prepared in the 1980s, were found. When the maps are combined and examined, it is seen that the parcel layout determined on the dates in question is still conserved today. (Canbay, 2019; Malatya Cadastre Directorate, 2019). (Figure 7).

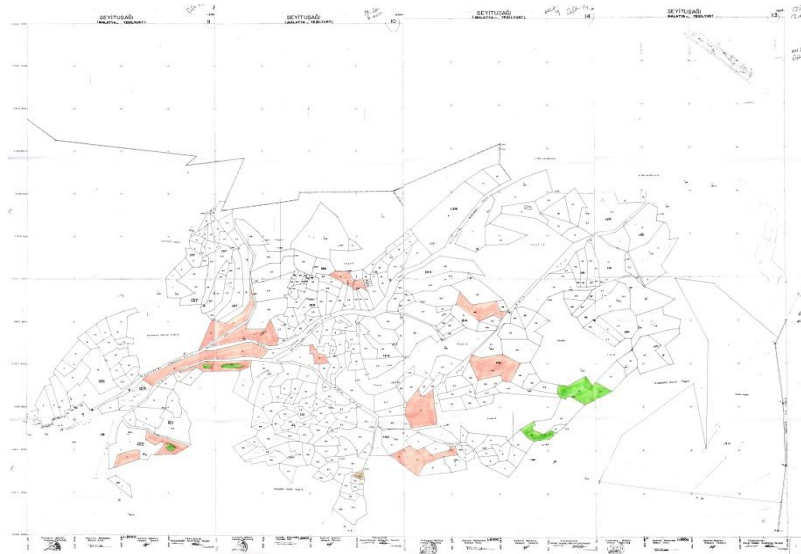


Figure 7. Cadastral map belonging to Seyituşağı and known to have been prepared in the 1980s (edited from Canbay, 2019)

Population change of the settlement; it was 171 in 2013, 181 in 2014, 207 in 2015, 196 in 2016, 185 in 2017, 257 in 2018 and 227 in 2019. In the light of these data, Seyituşağı received immigration between 2013-2015; It gave immigration between 2015-2017; it is possible to state that he received immigration again in 2018 and



emigrated in 2019. Of the population in 2019, 117 were men (%51) and 110 were women (%48.5). (Malatya Population Data, 2020).

The area where the settlement is concentrated in Seyituşağı is located in the north considering the whole area of the settlement. There are scattered agricultural areas in areas close to and far from the built environment. Regions outside these areas are not used in any way. (Figures 8, 9).



Figure 8. Areas of dense construction and agricultural areas in Seyituşağı (edited from Parselsorgu, 2020)



Figure 9. A view of Seyituşağı from an area where housing is concentrated

As a result of the oral interviews and on-site inspections held in Seyituşağı, it was learned that most of the middle-aged and elderly population who spend the whole year in the settlement today are retired by working in public institutions in different provinces, especially Malatya. Young population rarely come to the settlement; it was stated that he resided in various provinces, especially Malatya and Istanbul.

Seyituşağı's main source of income is animal husbandry. However, agriculture is also carried out. It has been determined that the main agricultural product is apricot. In the context of animal husbandry, it has been observed that sheep and goat breeding is common. From this point of view, it can be stated that animal husbandry activities are more intense than agricultural activities.

### 3.1 Analysis of Malatya Seyituşağı Settlement in Tissue Scale

When the general characteristics of the Seyituşağı rural settlement are examined, a rugged area stands out. However, there is a collective settlement area, not scattered. In this sense, when the general characteristics of the settlement texture are examined, one of which is interconnected and divides the texture into two in the east-west direction; others are mostly main roads in the western part. Many main roads connected with these main roads are located in various parts of the fabric. In terms of social infrastructure, two of them are on the main road; it has been determined that there are gathering areas / squares at four different points, two of which are on side roads. Oral interviews and on-site observations show that these areas are used more intensively, especially in the spring and summer months. In addition, there is a Cem House building as a public building that constitutes the social infrastructure of the settlement. In addition, the main road that reaches the settlement from the district is connected to the fabric from the southwest.

Apart from this, there are also roads indirectly connected from the district. (Figure 10, 11, 12, 13).

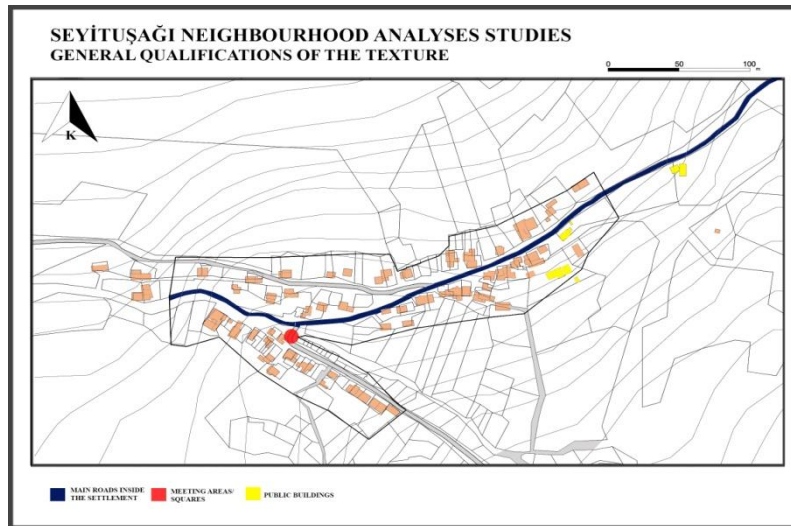


Figure 10. General qualifications of the texture in Seyituşağı



Figure 11. The main road inside Seyituşağı

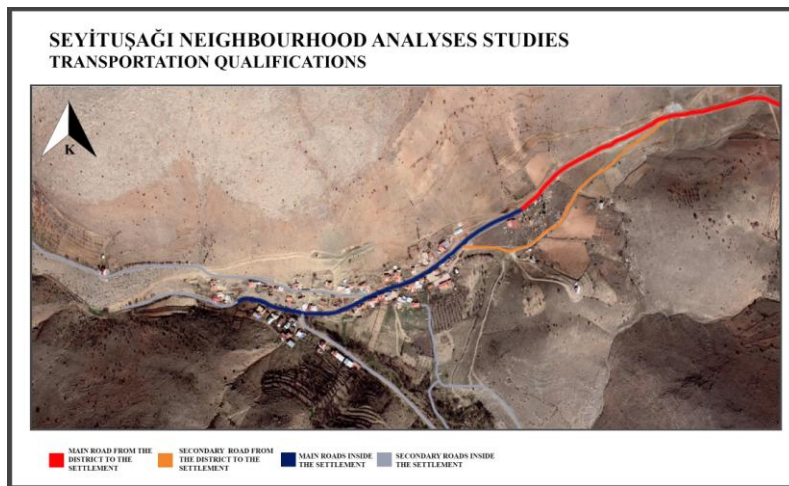


Figure 12. Transportation qualifications of the texture in Seyituşağı

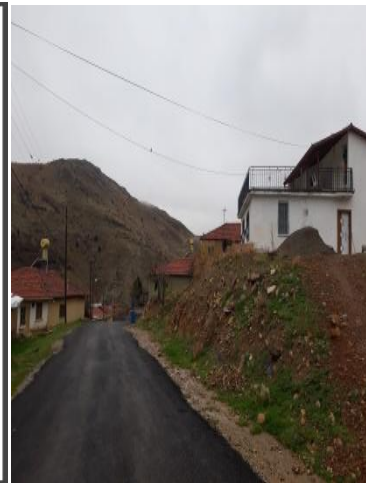


Figure 13. The main road from the district to Seyituşağı

There are 11 islands and 76 parcels within these islands in the settlement area. Some islands are divided into few parcels with a larger surface area; some of them are seen to consist of many parcels with a small area. (Figure 14).

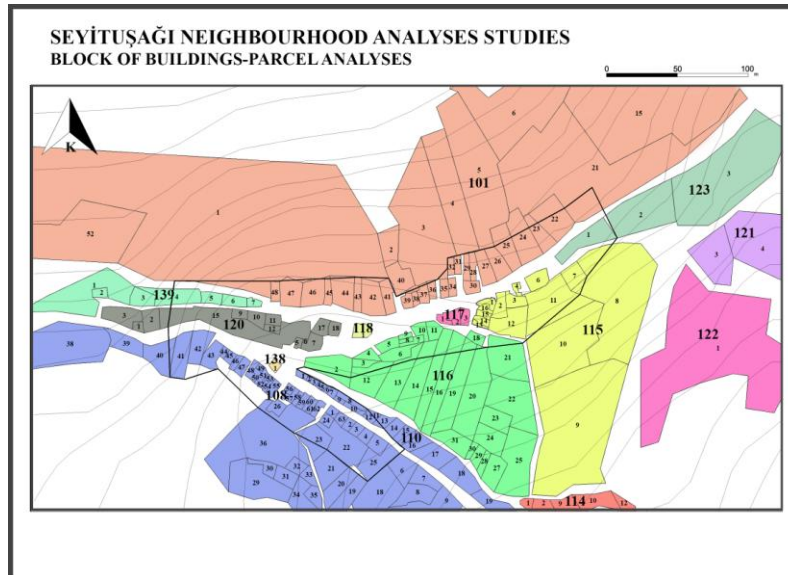


Figure 14. Block of buildings-parcel analyses in Seyituşağı

When the functions of the buildings in the settlement are examined, the density of the residential function is striking. It was observed that the semi-basement floors of the two storey buildings were used as storage. Semi-basement floors are provided separately from the outside, not inside the building. On the other hand, the upper floors of some two storey buildings were used as houses. In addition, there is 1 Cem House, 1 school, 1 health center, 1 lodging, 1 agricultural building, 4 warehouse structures, 1 woodhouse and 6 barns. School and health center buildings are not used actively. The agricultural building is a single room unit built into the nearby agricultural area and used only during the harvest season. (Figure 15, 16, 17, 18).

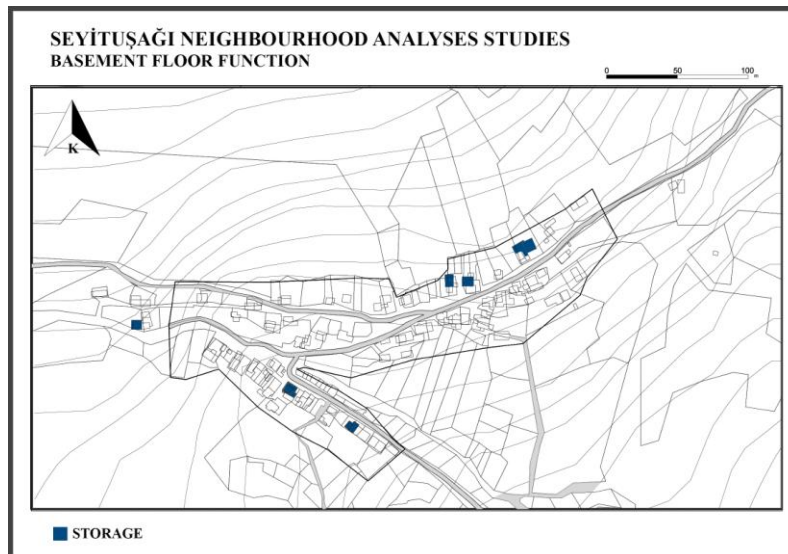


Figure 15. Basement floor function in Seyituşağı



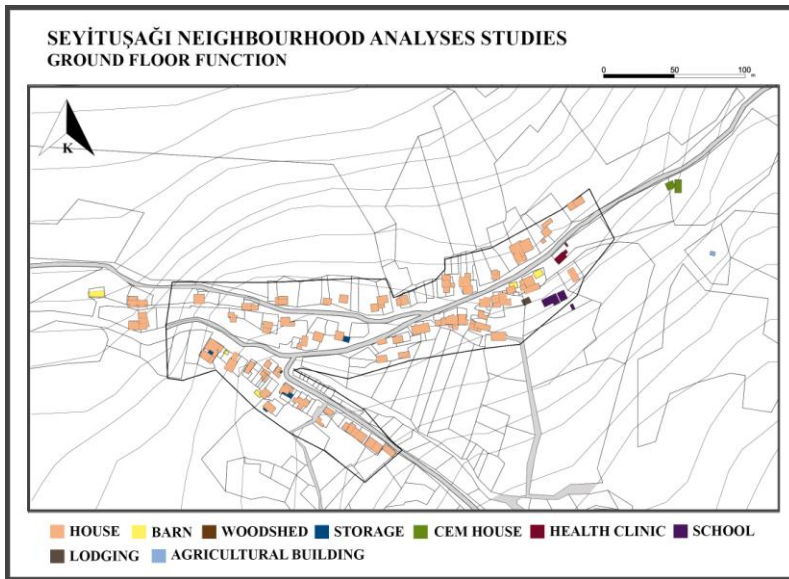


Figure 16. Ground floor function in Seyituşağı



Figure 17. Houses and a barn in Seyituşağı

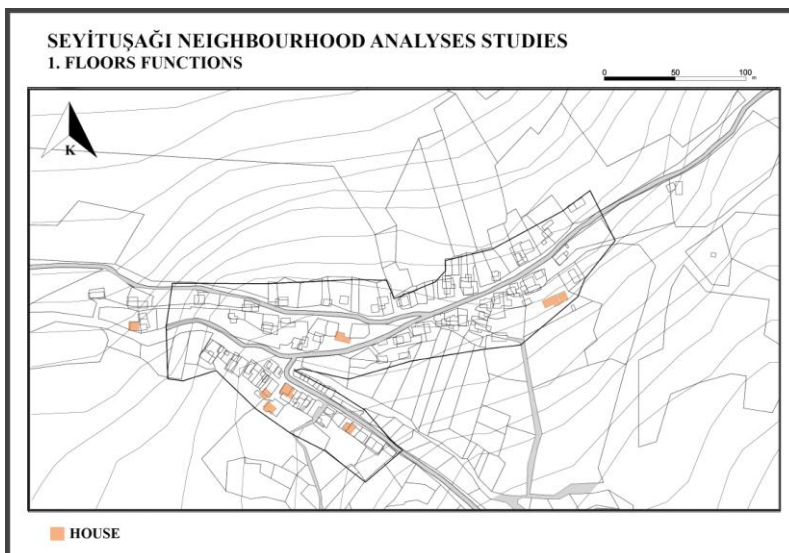


Figure 18. 1. floor function in Seyituşağı



Looking at the number of floors of the buildings in the rural settlement of Seyituşağı, it is seen that there are no more than 2 floors of buildings. However, it has been observed that single-storey buildings make up approximately %88 of the total building stock. In this context, it is possible to state that single storey buildings are more than two storey buildings throughout the settlement (Figure 19, 20).



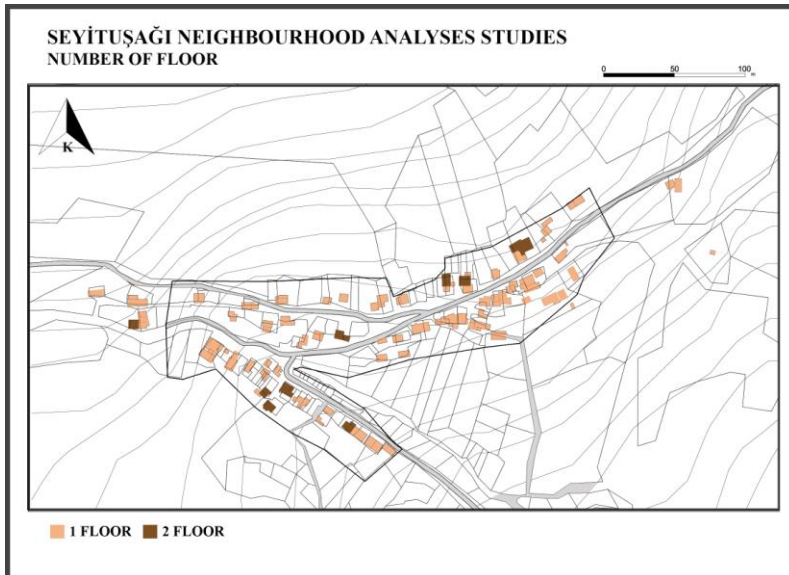


Figure 19. Number of floor in Seyitüşağı



Figure 20. A two storey house in Seyitüşağı

When the materials of the buildings in the settlement were examined, it was seen that all the buildings except the Cem House were built with adobe materials. Accordingly, Cem House reinforced concrete; other structures were built with a masonry system using adobe blocks called the main and lamb. (Figure 21, 22) .

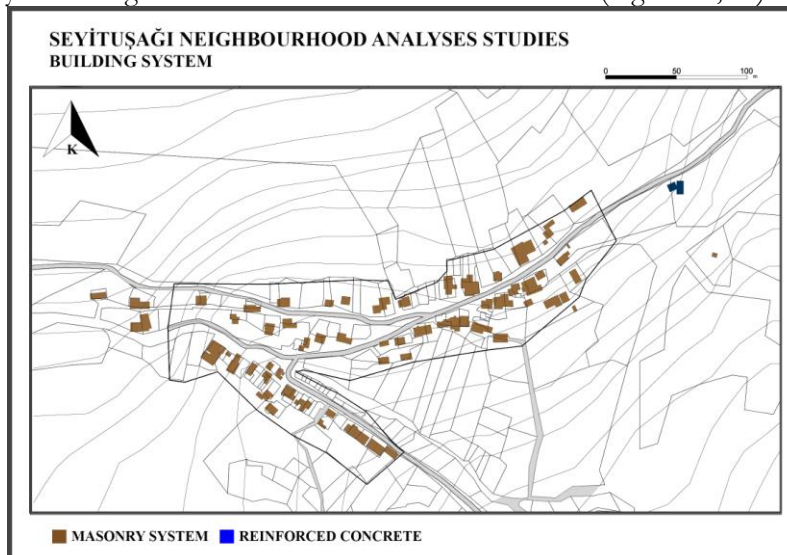


Figure 21. Building system in Seyitüşağı

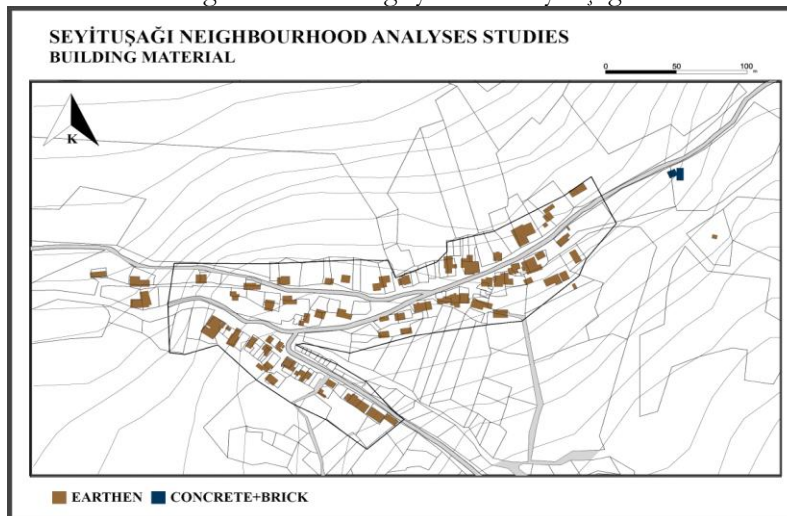


Figure 22. Building material in Seyitüşağı

When the transportation situation in Seyitüşağı was examined, it was seen that all roads located both within the built environment and near the built environment were both pedestrian and vehicles and were used

both ways. However, it can be stated that roads consisting of only soil material are also common with the use of soil on both sides of asphalt and asphalt in street pavements. (Figure 23, 24, 25, 26).

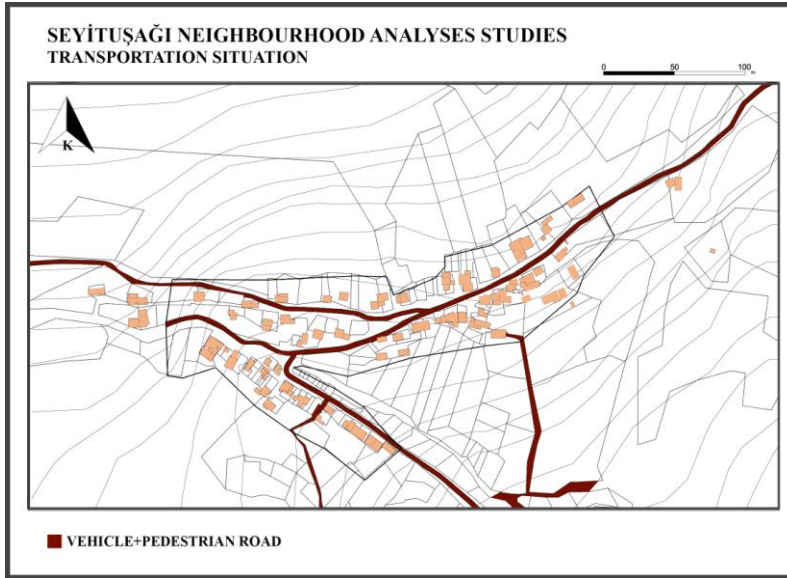


Figure 23. Transportation in Seyituşagi



Figure 24. A vehicle+ pedestrian road in Seyituşagi

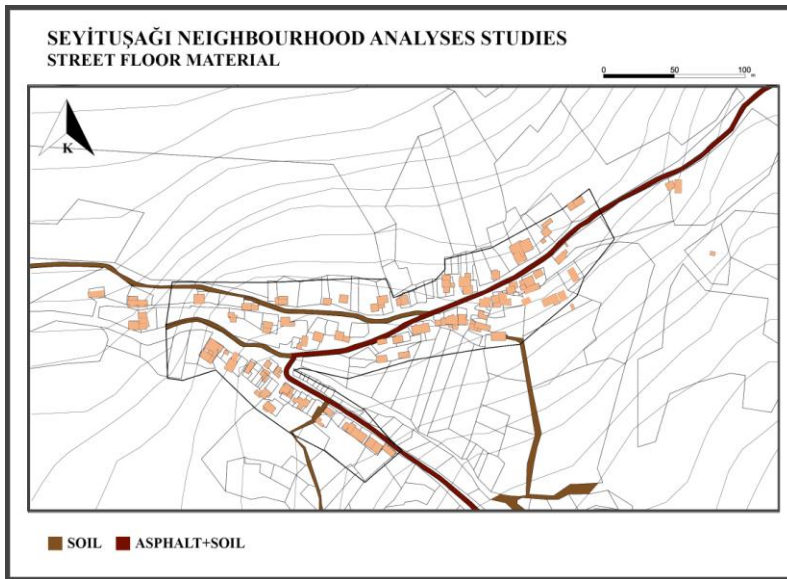


Figure 25. Street floor material in Seyituşagi



Figure 26. A street with soil material in Seyituşagi

When looking at the top cover material and type of the buildings in the settlement, adobe and Marseille type tiles draw the attention. However, a small number of Turkish style tiles, metal sheet and plastic material top covers are also seen. Top cover types are mostly flat and hipped roofs; in addition to these, it consists of gable roofs. As a result of oral interviews and investigations in the field, it was learned that Turkish style tiles were used in many buildings before Marseille type tile materials. (Figure 27, 28, 29, 30).



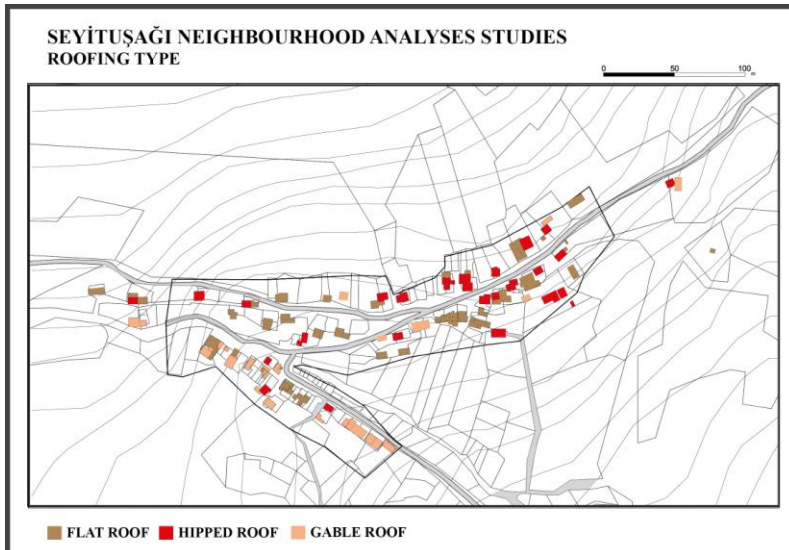


Figure 27. Roofing type in Seyituşağı



Figure 28. A flat roof in Seyituşağı

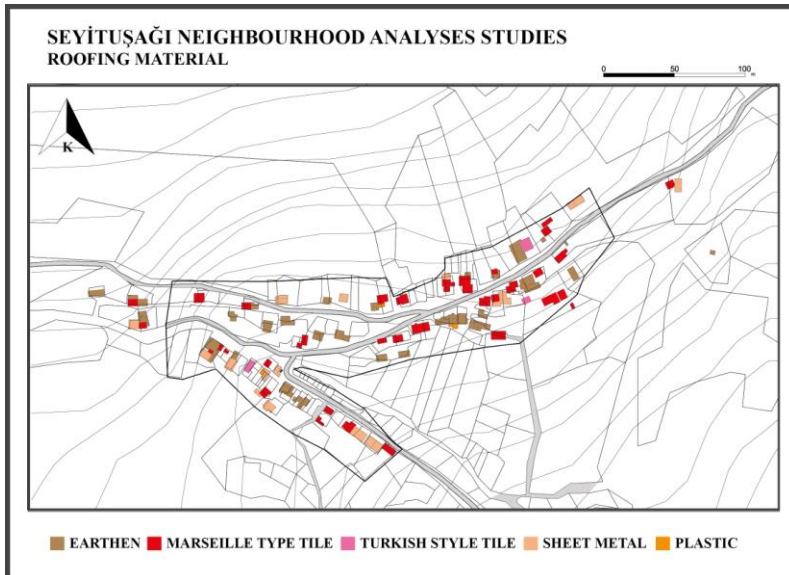


Figure 29. Roofing material in Seyituşağı



Figure 30. A roof with Marseille type tile in Seyituşağı

### 3.2 Common Housing Plan Drawing Schemes in Malatya Seyituşağı Settlement

There are 59 residential buildings in Seyituşağı, which have a unique spatial scheme. 7 of them consist of ground and semi-basement floors. The entrances of the semi-basement floors are not inside the building; it is arranged independently from the outside of the building and these floors are used as storage or cellar. 9 of the residences consist of ground and 1st floors. 7 of the 1st floors are used as storages; 2 of them are used for residential functions. According to the oral interviews, some of the 1st floors were not found in the original of the buildings and were added later.

The plan schemes in Seyituşağı, which can be determined by on-site examinations, are as in the Figure. These schemes differ according to the number of layers. When the figure is examined, it is seen that basically 2 different plan schemes are determined in the settlement. Both schemes are the plan sketches of buildings that are seen in both one storey and two storey buildings and both floors are residential or basement or roof floors. In one of these schemes, there is a hall on the ground floor and units with entrance from the hall. The dimensions and functions of these units can change in different structures. In the other scheme, not the hall to the bathroom / wc unit; it is accessed by a separate entrance from the outside of the building. In this scheme, the dimensions and functions of room units in different structures can change.

In all schemes, the hall space, where the main entrance of the building is provided, is also used for functions such as sitting, sleeping, entertaining guests, and eating. (Figure 31, 32).



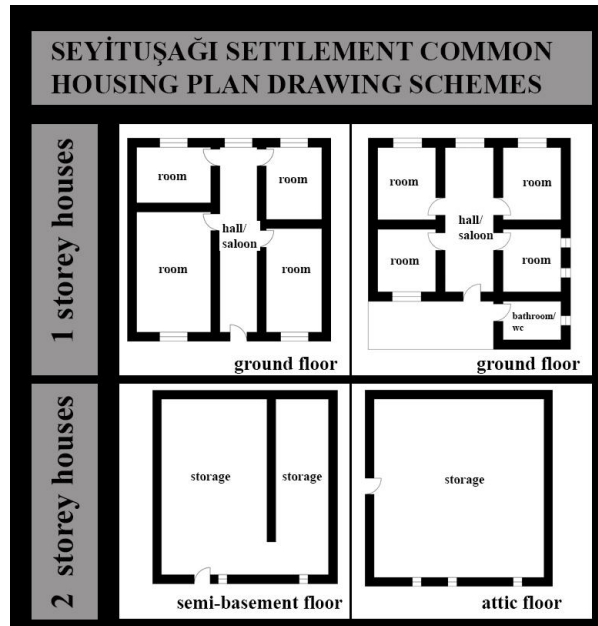


Figure 31. Common housing plan drawing schemes in Seyitüşağı



Figure 32. A one storey house's enter facade and hall/saloon place

### 3.3 Conservation Problems of Malatya Seyitüşağı Settlement

Rural architecture, unlike cities that are becoming more uniform and similar to each other; it exists with its unique values. However, these values are rapidly transformed or lost completely by inappropriate approaches today. In this context, the rural architectural heritage can be partially conserved or not conserved due to various problems. Malatya Seyitüşağı settlement is one of the original rural areas that have entered a transformation process due to various conservation problems. In this sense, the conservation problems of the settlement were evaluated in terms of texture and structure.

- Tissue-Scale Conservation Problems

Seyitüşağı settlement is affected by various problems in the scale of the settlement as well as in the scale of the building and cannot be conserved. These problems develop socio-culturally / economically and over the physical structure of the tissue. In this sense, the conservation problems, which are determined as a result of the observation of the area and the oral interviews with the users, that develop in the socio-cultural / economic context at tissue scale can be listed as follows:

-- Location related problems:

- Transformation in rural areas close to the city center occurs much faster than others; in this sense, Seyitüşağı is in danger of rapid transformation due to its proximity to the city center.

-- Problems related to lack of awareness of conservation:

- The traditional residences owned by the users and other traditional buildings in the settlement where they live; however, they do not find other concrete values in the tissue worth conserving,

- The users with high economic level in the settlement prefer reinforced concrete structures instead of traditional ones; perceiving living in reinforced concrete structures as a prestige,

- Pedestrians prefer to use axles made of asphalt and key cobblestone instead of soil materials axles; for this reason, the disappearance of unused dirt roads and paths over time,

- The concrete plasters used on the exterior of buildings negatively affect the character of traditional street textures,

- Rural areas, which cannot be utilized by tourism activities, are not deemed worthy of protection in institutions that have the authority to decide on settlement.

-- Economic problems:

- With agricultural production ceasing to be the main source of income, the active use of agricultural lands decreases and these areas become out of use over time,
- Due to the high rate of education of the young population and the fact that this educated population makes a living in cities with different professions, they leave the settlement rapidly,
- While flat roofs are preferred for drying apricots, one of the important products of agricultural production, on the top covers of buildings; with the decrease in this production, the spread of hipped and gable roofs,
- While flat earth roofs are common in traditional use on the top covers of buildings; today, with the use of metal sheet and hipped / gable roofs and Marseille type tiles, the original character of the streets has changed,
- With the change of family structure, the living culture, which affects the traditional texture, is also transformed; decreasing number of members of large families.

-- Problems arising due to socio-cultural changes:

- Year-round residents of the settlements are mostly elderly people,

The most important of these is that the streets, which stand out as social areas, become mostly serving vehicles at certain periods of the year with the decrease of pedestrian users in the settlement and the preference of materials such as asphalt and key cobblestone instead of the original street flooring material.

- **Building-Scale Conservation Problems**

Building material plays a determining role in the identity of Malatya rural architecture. This material, which distinguishes the rural architectural character of the region from other regions, is adobe. Adobe material, which is known to have been used in Malatya region for centuries, is also widely seen in rural areas.

The buildings that make up the rural adobe architecture in Seyitüşağı are faced with physical conservation problems; it loses its original spatial character with uncontrolled interventions in the plan typology. In this context, as a result of on-site examinations and verbal interviews with users, the physical conservation problems of adobe buildings in Seyitüşağı can be listed as follows:

-- Problems due to lack of periodic maintenance:

- The adobe structures that require periodic maintenance and this maintenance is carried out with the help of crowded families are neglected due to the abandonment of the users completely or only by the elderly people,
- Periodically, the interior and exterior wall surfaces of the buildings need to be plastered with adobe material; plastering of adobe plaster with concrete material with a longer life due to the need for renewal in about a year; this intervention with non-original material damages the buildings,
- Structures plastered with concrete not being able to conserve their natural air conditioning properties,
- Damage to the soil material top cover of the building during the installation of the roof covers; covering this cover with various chemical insulation materials,
- The need for periodically plastering the indoor floors of buildings with soil; continuous and intense dusting of interior spaces of buildings due to not performing this process,
- Repairing the worn parts of the buildings with non-original materials instead of using adobe or choosing reinforced concrete structures instead of completely demolishing them.

-- Economic problems:

- The users who continue to use adobe buildings and have a high economic level, make changes with wooden ceiling coverings, wooden parquet flooring and PVC doors-windows that are not suitable for the interior of these buildings,
- When there is a need for new buildings in settlements, reinforced concrete material should be preferred instead of adobe material to meet this need.

-- Problems arising in terms of plan formation and spatial qualities:

- Changes in the plan scheme by taking the wet areas indoors,
- Continuing the use of wet volume units outside the buildings in their original condition as a woodshed or storage,
- Partial or complete destruction of original barn structures in rural settlements where animal husbandry is declining,
- Social structures such as schools are neglected due to not being used actively.

The problems that emerged in the conservation of rural adobe architecture in Seyitüşağı bear similar qualities to those seen in many rural areas; some of them developed in connection with the original texture and structural character of the region. Based on this, it would be correct to develop suggestions in the solution of the problems determined by considering both the general and the local values.

#### **4. Evaluations and Conclusion**

Rural areas are values that should be conserved with their original architectural and residential texture characteristics. In this sense, Anatolian lands in our country contain many rural areas that are worth conserving.

Many of the original rural settlements in Anatolia, both socio-economically and physically; it faces conservation problems from various aspects both at the building scale. One of these settlements is Seyituşağı of Malatya. Seyituşağı, which is located in Malatya region, which stands out with the use of adobe building materials, is one of the rural areas that should be conserved with its unique adobe building stock and unique texture characteristics. However, the conservation problems that develop depending on the specific characteristics of the settlement make it difficult to conserve the original data contained here. In this sense;

- The users of the settlement and the institutions that have the authority to decide about this settlement, the original values of the area; increasing awareness of especially the adobe structures peculiar to the region and the conservation of the texture created by these structures,
- Making social and economic studies / improvements in the settlement in order to prevent the migration of especially the young population; In this way, the maintenance of adobe structures that need periodic maintenance can be done by their users,
- Encouraging the maintenance and repair of the adobe structures in the settlement and the values of these structures in a way that conserves the original qualities
- Ensuring that the spatial changes occurring in adobe structures are arranged in a way that does not harm the original qualities,
- Measures such as conserving the original qualities of adobe buildings that are not used actively, will contribute to the conservation of Seyituşağı in terms of texture qualities and architecture. In this sense, it is thought that the study will draw attention to the conservation of adobe rural areas, which have unique qualities in our country and in the world, and to transfer them to future generations, especially in Seyituşağı rural settlement.

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