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Traditional Architecture in the Central-Northern Mediterranean Region: Tectonics and Typological Analysis of Traditional Mut Houses

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Abstract

Architectural tectonics is a crucial starting point for comprehending traditional houses in terms of their form and usage. The components of land use, material use and construction technique, and plan layout, which reveal "tectonic integrity," are the criteria that are considered. This study employs the typology method to question the tectonics of traditional housing architecture located in the central northern part of the Mediterranean Region, specifically through the example of Mut Houses in Mersin province. The typology study has facilitated the identification and quantification of the diverse array of architectural solutions and details that are characteristic of the region. Mut is a medium-sized district situated in the mountainous parts of the Central Taurus Mountains, with a settlement history dating back to the Roman Period. The fact that microclimatic conditions impact the supply of materials and construction techniques, and the cultural context influences the use of land, garden, and space, ensures that traditional Mut houses possess a distinct appearance in this region. Regrettably, these houses, which contain important details of the region, are at risk of extinction. This article documents the tectonic values of traditional Mut houses and conducts a typological analysis of them.

Keywords: Architectural tectonic, Mut, Traditional houses, Typology, Turkish house.

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INTRODUCTION

Vernacular architecture is the essential unit that enables us to understand the culture of a community and its connection with the place, and it has significant heritage value as a representative of the world's cultural diversity. This study focuses on understanding the tectonics and typological features of the unique traditional houses of Mut District, located in the central northern parts of the Mediterranean Region, contributing to the diversity of the heritage in question. Mut District, located on the highway route connecting the Mediterranean and Central Anatolia regions, has an important location in the historical context, and the traditional city centre bears traces from different civilization periods. However, as in many historical settlements, traditional houses in the Mut District of Mersin Province are also rapidly disappearing because of the implementation of planning decisions that do not consider heritage values. The lack of a general preservation plan covering the site areas of the district is also effective in this regard. Traditional Mut houses are influenced by Mediterranean and continental climate conditions. They are also affected by the continental climate due to their geographical location. Rich forest lands and rocky structure of Mut District affect the use of materials in traditional houses, and topography and climate characteristics also involve the plot use, plan layout, and construction (Manav, 2021). The inner sofa type and its variants are mostly used in plan layouts in Mut houses. In the construction of these houses, predominantly wooden beams and roughly hewn masonry stones, rarely wooden-framed bađdadi or wooden-framed stone-infilled walls, were used. Mostly all buildings consist of masonry stone walls, and wooden frames are rarely used on the west and south faade walls and projections, depending on the building direction. The dwellings are generally two-storey and they have an earthen roof. Mut, located in the region grouped as Toros Plateau by Gnay (1999), resembles the traditional houses in Akseki, Stler, Beysehir, Seydişehir, Ermenek, and amlıyayla in the same region in terms of the general appearance of the traditional houses (Sađırođlu 2017; Kavas 2015; Demirarslan, 2018; Bier, 2008; ztrk, 2011). As in other traditional houses in this region (Toros Plateau), wood and stone are the two main construction materials of Mut traditional houses, but they have a simpler and more unique appearance than their counterparts with the usage of stone and roof details. As a result, the general appearance of Mut traditional houses is a combination of a rectangular prism made of stone and a cantilever that looks like a second mass attached to this prism on the facade due to the difference in material and roof type. In this study, the tectonics of traditional Mut houses were examined through a typological analysis method in the context of land use (plot and garden use), material use, construction technique, plan layout, and faade elements. Prior to this study, two analyses of traditional Mut houses were conducted. The first one was a master's thesis investigating ten buildings across different

neighborhoods of Mut (İnce, 2013), while the second was centered on Mut Castle (Yergün and Ünal, 2005). Both studies provide information on traditional Mut houses; however, the first examines a few buildings, while the second is limited in its study area. Thus, the necessity of this study was to provide a valuable addition to the literature on traditional architectural heritage, safeguard the traditional houses in the region and the town of Mut, and facilitate the formulation of preservation policies. Understanding the tectonics and typology of traditional Mut houses highlighted the lesser-known features of houses in the north-central Mediterranean region.

Methodology of study

In this study, different methods were used to reveal the unique character and structure of the traditional houses of Mut, located in the north-central Mediterranean Region. The study has two parts. The first part is a literature review examining the tectonics, typology of traditional architecture, traditional Turkish houses, and the Mut District. The second part involves a 10-year field study from 2010 to 2020. Data from these surveys was analyzed through drawings, calculations, and maps. Initially, a comprehensive survey of the Mut district center was conducted, resulting in an inventory that assigned IDs to each traditional house. During this inventory study, 580 traditional houses and ruins were identified and marked on the urban map. Since it is the oldest source showing buildings, the boundaries of the research regions were determined by superimposing the 1955 aerial photograph and the urban map on which the traditional buildings and ruins were marked before. Thus, five different research regions emerged. To record the typology of traditional dwellings, a detailed form was prepared, including location, land use, street-building-garden relationship, building and garden entrance, garden elements, plan type, plan elements, and decoration details. Detailed identification of 232 buildings, allowed by the building owners and structural situation, was completed using these forms. During all identification studies, each building was documented with a photo, and each was given an ID number. In addition, plan sketches of 232 houses were drawn with on-site observations and measurements, and drawings of 11 buildings were made by taking detailed measurements using classical surveying techniques and laser scanning techniques. Finally, typological values were brought together, maps, tables, and graphs were created, and results were obtained by evaluation and comparison.

THEORETICAL FRAMEWORK: TECTONICS OF LOCAL ARCHITECTURE AND TYPOLOGY

Tectonics serves as a crucial starting point for comprehending traditional dwellings in terms of their form and usage. The term tectonics derives from the Greek words "tecton," which signifies a carpenter or builder, and "techne," meaning the art of making and

manual labor, thereby giving rise to the concept of technology (Sönmez ve Ağca, 2021; Karvouni, 1999). Initially originating from the fields of construction science and architecture, the term has since evolved to encompass geological applications, specifically pertaining to ground movements (Hematang and Ikaputra, 2022). Generally, the term tectonic has been used throughout history to refer to the application of building materials, technologies, and construction techniques for artistic purposes (Hürol and Numan, 2007). According to Akbaş's study (2023), theorists like Bötticher (1852), Semper (1860), Maulden (1986), and Frampton (1998, 2002) did not evaluate tectonics solely in terms of building materials and their composition (Akbaş, 2023). They described the "structural form" formed by the structural components and the "artistic form" that makes this structural form visible, which they considered a kind of characterization, to define tectonics (Akbaş, 2023). Frampton (2002) characterized tectonics as an architectural form that integrates local materials into culturally specific combinations. Maulden (1986) defined tectonics as activities that express a location's character with historical continuity, transforming its structure into an artistic creation beyond mere construction with local materials and culture. The emphasis on the character of the location, local materials, and culture is particularly noteworthy. Furthermore, Frampton (1998) posits that the three fundamental characteristics of architecture are "topos" (place), "typos" (meaning-usage), and "tectonic" (architectural form emerging in the context of material and culture), and argues that these three cannot be considered independently of each other when understanding an architectural work. The type is related to the form and, in this way, understands the place; the tectonics represents the form, and thus the structure implements an external concept to reveal a meaning that belongs to the type and becomes evident through it (Giusti, 1996; Russo, 2017). In other words, the topography of the land on which a building will be constructed and its influence on construction, the potential of local materials, and the cultural customs of space utilization that impact the plan layout all contribute to the architectural form. In this sense, tectonic expression can be defined as the creation of a structure with unique combinations of usage patterns based on the cultural accumulation of the location using locally available materials and techniques (Kavas, 2011). This study analysed the tectonics of a traditional dwelling, considering its relationship with the land and garden boundaries, the materials and construction methods used, and the plan layout components, based on Frampton's definitions and the literature on Turkish/Ottoman houses. Typology is a key concept that underpins the theoretical aspect of this research and allows for a site-specific understanding of architectural tectonics.

Tectonic features specific to each building must be supported by numerical data to be considered characteristic of a particular region. For this reason, typological analysis method was employed in the study. Typology involves a systematic process of perception, analysis,

documentation, abstraction, reduction, and diagramming, which has been widely applied in architectural research. In the field of Turkish/Ottoman residential architecture, typology studies have been used to understand and preserve traditional architectural practices. With typology studies, land use, plan types, material use, construction system and façade features in Turkish/Ottoman traditional housing architecture could be determined. Thus, analyses and evaluations can be performed on traditional textures or single structures, which have not yet been studied. The method of typology is an important tool for comparing regions and structures, protecting heritage development policies for a sustainable future, and understanding the tectonics of architecture in any place. Moreover, typological data of urban areas, neighborhoods, or rural settlements, which are representatives of traditional knowledge at different scales along with their natural and man-made environments, can be utilized to develop policies that include conservation in planning studies. In this study, a typological analysis method was employed to comprehend the tectonics of Mut's traditional houses and identify common features.

TRADITIONAL TURKISH HOUSES

Many studies have attempted to define and analyze traditional residential architecture in Türkiye. Accordingly, the Turkish house is sometimes defined as an Ottoman house and sometimes as an Anatolian house. In this part, Turkish house literature is examined and discussions regarding the origin of this house type, its distribution in Anatolian geography, and its grouping are presented.

By including the land use, plan layout, material use and construction details of the Turkish House, it is aimed to examine and discuss similar architectural features of traditional Mut houses in the following parts.

Research on the traditional Turkish house

Different views exist on the origins of traditional Turkish houses. The first opinion is that the building samples from the 15th and 16th centuries can only be approximated, and the earliest examples observed date back to the 17th century, and there is no certainty regarding their origin due to the lack of information and records (Kazmaoğlu and Tanyeli 1979, Kuban 1995, Günay 1999, Asatekin 2005). Another viewpoint is that the Central Asian nomadic tent is analogous to the room unit in terms of both space and function, and the arrangement of the rooms on the plane also mirrors the nomadic tent (Küçükerman, 2007; Tomsu, 1950; Çakıroğlu, 1951). Traditional Turkish residential architecture has evolved over time, incorporating slight modifications within the context of local influences, and can be seen throughout Anatolia and its surrounding regions. Although significant differences occur in size, construction and regional characteristics, some basic and immutable features reveal the Turkish house as a distinct type, fixed by tradition and tested over centuries (Bozdoğan, 1996).

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Firstly, Sedat Hakkı Eldem (1968) described the civil architectural buildings produced in Anatolia and Rumelia during the Ottoman Empire, which reached their most developed form in the 17th and 18th centuries, as Turkish houses. As a result of Eldem's ongoing investigations, Turkish House Plan types are grouped as without sofa, with outer sofa, with inner sofa and with central sofa. Kuban (1995) named these traditional buildings "Turkish Hayat Houses" and examined their development in three periods. According to Kuban (1995), the houses mostly sampled from western and northwestern Anatolia, were cubic and single-sided, later on, more open forms, classical examples with protruding wooden walls were adopted, and recently, the living space in front of the rooms has become centralized and moved away from its classical type. Kazmaoğlu and Tanyeli (1979), made a grouping and evaluation according to the general formation. They stated that the main factor affecting the houses, which are shaped by the effects of different geographies and climate, is the socio-culture and socio-economy. They evaluated these buildings, which they named Anatolian -Ottoman-Turkish residential architecture, in two regions: the regions where the original Anatolian synthesis is seen and the transition regions. It has been stated that the original Anatolian Synthesis, Iranian and Central Asian plan schemes, nomadic life habits, and domestic construction technologies have merged over the centuries to form the Anatolian Turkish housing scheme, and synthesized and pure examples of local elements are more common in the Transition Regions. Günay (1999), named the house where Turks lived throughout history, which was under Ottoman rule, constantly developing with geographical and cultural influences the Turkish House. Günay emphasized Eldem's works and evaluated them in 15 regions according to building materials and construction techniques. Of these regions: Taurus highlands, Aegean coasts and islands, Southeastern Anatolia, Eastern Anatolia, partially Central Anatolia and Kayseri, while the buildings reflect the Turkish House character in terms of construction technique and plan features, Günay stated that local influences are dominant. Bektaş (1996), describes the Turkish House, which has been influenced since prehistoric times. Without making any zoning grouping, Bektaş stated that each of these buildings were shaped by the materials of the place and within the framework of the basic principles.

When all these zoning and definitions are evaluated; It is understood that houses are generally shaped within the framework of basic principles that can be named as plan layout, form, use of materials, roof cover and construction technique adapted to geological and climatic conditions (Öztürk, Çahantimur and Özgünler, 2017). It is impossible to discuss a single type, material, and technique in a wide geographical and temporal context. Nevertheless, Turkish houses have been able to preserve and transmit their original characters for many years within this wide construction universe. Today, it is still possible to come across

examples of traditional houses that correspond to all these definitions almost everywhere in Anatolia.

Plan layout, plot use, site intervention, and traditional urban pattern

As referred to in the previous part, there are four different types of traditional housing plan typology that Eldem (1968) determined after many years of field survey. In determining the plan typology, the relationship between the room and the sofa, which forms the connection between the rooms, is examined. In this context, plan types are named as: without sofa, with outer sofa, with inner sofa and with central sofa (Eldem, 1968; Figure 1).

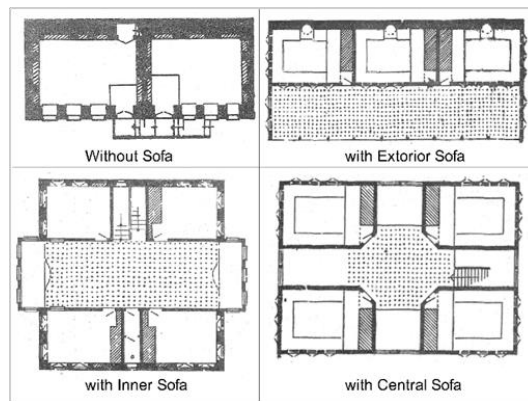


Figure 1. Traditional Turkish house plan types (Eldem, 1968)

In traditional Turkish house architecture, buildings are shaped in harmony with the topography of the land and the floor where the plan typology is evaluated is always located on the upper floor. So, whatever the topography, site intervention has always been minimal (Küçükerman, 2007; Kuban, 1995; Figure 2).

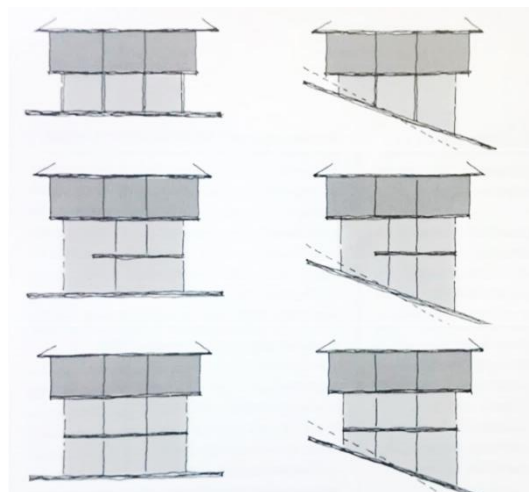


Figure 2. Site intervention, floors and main floor relationship (Küçükerman, 2007)

A daily routine with limited interaction with the outside world necessitated that daily task be carried out on the ground floor or in the garden. Therefore, large gardens enclosed by high walls and with

annexes play a key role in using the traditional dwellings and shaping urban pattern. The variable functions of the ground floor and the enclosed nature of the garden or building walls define the boundaries of the street, while the upper floors are extended towards the street through a perpendicular axis. The limited relationship of daily life in the garden and the house with the street, in other words, the introverted state of the general structure of the buildings, means a weak relationship with the city, and this creates a sparse pattern texture in traditional cities (Cerasi, 1998).

The characteristics of the room in the Turkish house

Although the construction technique, material use and building forms are depending on the climate and region, the main element of the Turkish House is the room. Even if all the rooms are the same or each one is in variable size, the spatial characteristics of the room remain the same because the traditional lifestyle does not change. There is no distinction between rooms according to their functions (Küçükerman, 2007). A room is a place to cook, eat, and live during the day and a place to sleep at night, developed in equipment and dimensions to perform all kinds of daily life activities. (Eldem 1968, Güven Ulusoy and Üstün 2019). The room-sofa relationship partially affects the entrance to the rooms and using/design of the interior furnishings. Room entrances are usually at the corners of room and in a door-cabinet system. This mechanism includes a door, cabinets, and sometimes a bathroom (gusulhane). The door cabinet system also formed the wall of the room. This wall, which separates the sofa or other rooms, can also be used in two sides. On the other walls of the room, there are small cupboards for storage, fireplaces, and windows (Küçükerman, 2007). The fireplace is also a specialized room element that has even been placed in our oral culture with the representation of the home. The fireplace, located on the outer wall of the building, is a building element that provides heating and ventilation to the interior space, and cooking (Bektaş 1996). Contrary to the plain appearance of the building envelope, the interior is very rich with specialized ceiling decorations in rooms and sofas, cabinets, niches, carved wood or plaster fittings, and wall paintings (Yürekli and Yürekli 2007). They are wooden horizontal building elements that have gained a special meaning in the establishment of the room; create the upper border of the doors, windows, and cabinets; resize the room and keep it at the human scale; and have a function in the construction system. Of these horizontal lines that divide the room at different levels, the upper line also has a spatial function by transforming into a shelf that completely wraps around the room (Küçükerman and Edirne 2022). Another factor that defines the rooms is the division of space and functions into horizontal sections at specific intervals. These wooden axes serve as beams in the construction system and play a crucial role in shaping the perception of the space. They determine the lower and upper boundaries of windows, doors,

fireplaces and cabinet systems, affecting the dimensions of these elements. In some cases, the upper line can also function as a wooden shelf, adding extra utility (Küçükerman, 2007; Kuban, 1995).

As a result, the rooms in the traditional Turkish house; has a design with defined space elements that respond to functions such as sitting, sleeping, bathing, storage, performing daily activities and hosting guests (Küçükerman, 2007). For this reason, although the plans of traditional houses in Anatolia vary, the rooms have the same appearance. Depending on whether the houses are in cities or rural areas or in the context of time, there are differences in the decorative workmanship details in the interior.

Construction systems and material use of traditional Turkish house

The construction system in the traditional Turkish house has developed using three main techniques: under the influence of different climatic conditions, construction systems have become specialized and diversified. In addition, the fact that buildings are in a rural or urban environment affects the technical and detailed solutions applied in the construction. Stones, wood, and adobe are the main materials used in construction systems. Along with stone and adobe, brick and wood were used as the filling materials. In this context, with the contribution of the construction system selection, the common language in the general form of the building shell: the lower floors are fuller and more inward, and the upper floors are more open and outward facing with an increase in the number of windows. This is the most preferred mixed-production system for achieving a general format. To create a mixed system, load-bearing masonry walls were preferred at the ground floor level and timber framed systems were preferred on the upper floors. (Asatekin, 2007). Upper floors: It is built with a frame system consisting of uprights placed 30 to 90 cm apart and timber elements supporting them horizontally and diagonally. This frame takes the name of “hımiş” when filled with stone, adobe, or brick, “dizeme” when filled with wood, and “bağdadi” when covered with laths and plastered with mud (Öztank, 2010).

TYPOLOGICAL ANALYSIS on TRADITIONAL MUT HOUSES

The traditional houses of Mut, which are the subject of the study, are also among the Turkish houses; in terms of location, plan and façade organization, architectural elements, construction technique, and material usage, it exhibits a transition region synthesis at the intersection of the Central Anatolia and Mediterranean regions and under the influence of both regions.

Location and history of Mut district

Mut is located in the central northern part of the Mediterranean Region in Türkiye. Mut was founded on the Göksu Valley, which

connects Central Anatolia to the Mediterranean, between the Taurus Mountains, and is non-coastal district of Mersin Province (Figure 3). The wind generated by the pressure caused by the rapid changes in topography blows from the valley grooves along the northwest-southeast axis of the Göksu River and its tributaries, leading to the development of a distinctive microclimate in the Mut district (Köse, 2004; Wolf, 2003). The diverse topography of the area and the unique microclimate of Mut influence the construction of traditional buildings and the choice of materials (Manav, 2021).

This medium scale settlement's foundation is based on Claudiopolis, a Roman colonial city. Until the establishment of the Republic, it was located within the lands dominated by the Byzantine Empire, Anatolian Seljuk State, Karamanoğlu Principality and the Ottoman Empire. There are buildings or ruins belonging to these civilizations in the district centre and the immediate surroundings (Manav, 2020).



Figure 3. Location of Mut District in Mersin Province and Türkiye, Anonymous (2022)

Mut historical town center and determining the study area

The literature on Mut settlement was obtained from travelers (Davis, 1879; Evliya Çelebi, 1611-1685), stories from local people, (Atlay, 2006; Gürpınar and Mustul, 2013; Gürgen, 2016; Demirdağ, 2016; Akbaş, 2015) state archives (Directorate of State Archives, Turkish Language Association Library, General Directorate of Mapping), or other academic studies cited in the article. It is known that Mut, a town consisting of a single neighborhood in the 16th century, by 1914 consisted of three neighborhoods: Kale (147 households), Şih (75 households), and Hamidiye (12 households). While it had the same three quarters until 1927, as of this year, the Şih and Hamidiye Neighborhoods were merged and been Meydan Neighborhood, and Kale Neighborhood were divided into three parts and called Kale, Doğanç, and Pınarbaşı (Çelik, 1994; Atlay, 2006). While the names and locations of some important places in

the city center are described in all these written sources, no maps or drawings of the settlement were found. The oldest source available in this context, the aerial photo dated 1955 (General Directorate of Mapping), was used to determine the research boundaries. At photo: Kale, Doğancı, Pınarbaşı, and Meydan, which are expressed as the first neighborhoods of Mut, are still more densely populated and leap towards various points on Asput, Yatırtaş Avenues, Bulgurcular, Üçbey, and Camili Streets (Figure 4).

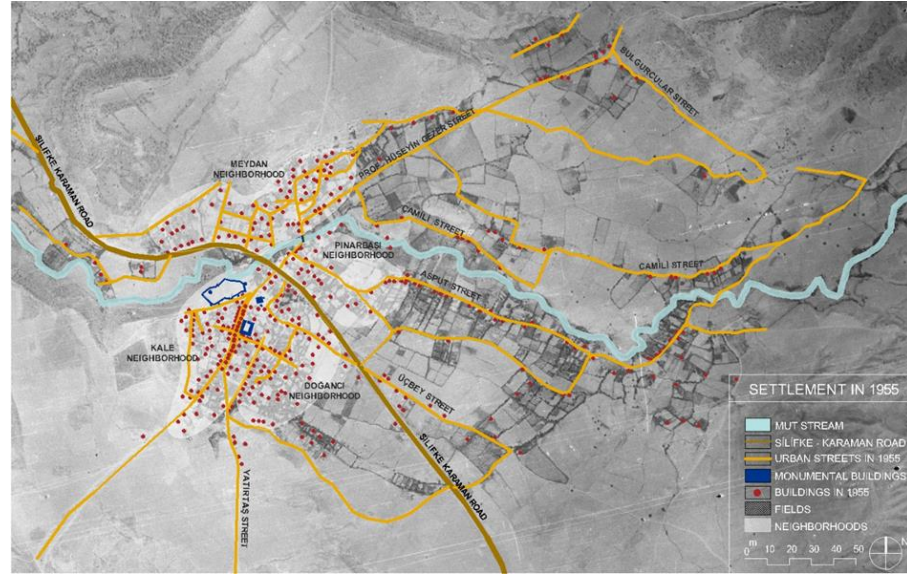


Figure 4. Settlement analysis in 1955 (edited by the authors using the 1955 aerial photo obtained from the General Directorate of Mapping and the literature of this period.)

According to this, the places where the traditional buildings are dense in Kale, Doğancı, Meydan, and Pınarbaşı Neighborhoods, Yatırtaş, Asput, and Bulgurcular Streets and surroundings have been determined as research areas. Since the traditional houses in Camili and Üçbey streets have gone, these streets are not included in the scope of this study. To make comparative evaluations in the following parts of the study, zoning was made by considering historical urban development. The area covering Kale and Doğancı Neighborhood is named region “a”, the area covering Meydan District is named region “b”, Pınarbaşı Neighborhood, Asput Street, and surroundings are named region “c”, Yatırtaş Street and surroundings are named region “d”, and the eastern part of Bulgurcular Street is named region “e” (Figure 5).

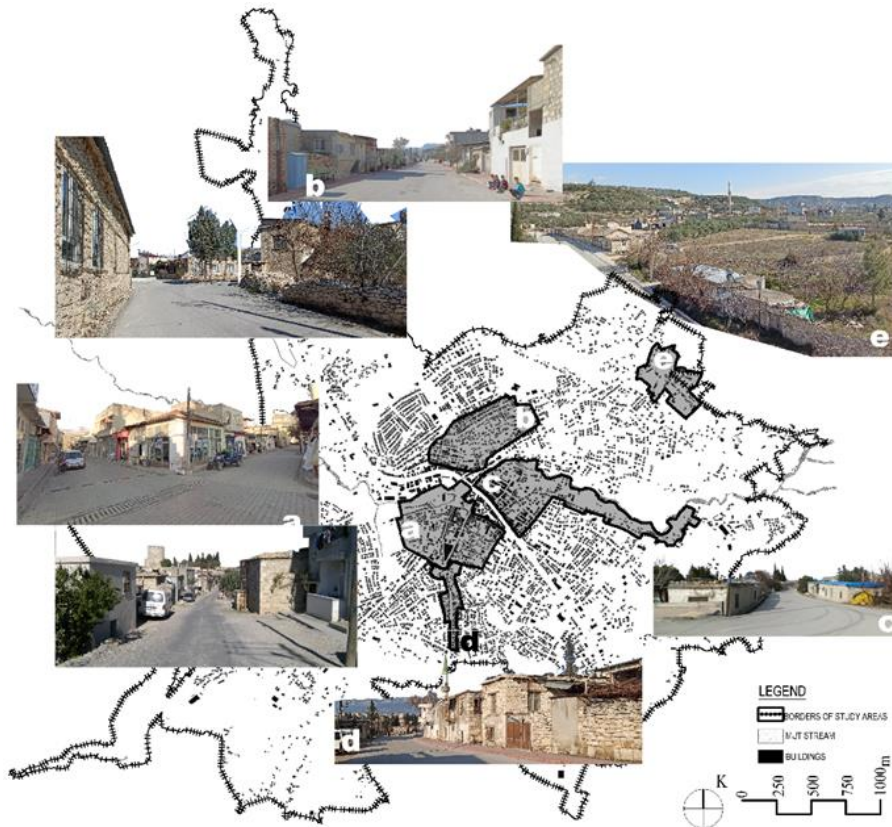


Figure 5. Location of all study regions in Mut and relative to each other, all photos taken in 2019 by the corresponding author.

General situation of regions and traditional urban pattern

Region “a” (Figure 5a, 6a) includes the Kale and Doğancı Neighborhoods. Numerous archaeological sites are found at different levels in this area. It comprises many monumental buildings, traditional dwellings, commercial buildings, and traditional streets within the city centre. Since the establishment of the modern city centre in this region, many traditional buildings as cultural heritage have been destroyed and new buildings that do not adapt to the existing architectural texture have been built. The Region “b” (Figure 5b, 6b) is in the north of Mut Castle, across the Mut Stream, and is higher than the other parts of the district. Two types of street patterns were observed in this region, consisting of organic and Gridal streets. In 1878, 15 exchanged households brought from around Rumelia/Edirne were settled in Meydan District, then known as Hamidiye District (Atlay, 2006). It is estimated that these exchanges lived in the part where the organic street structure is located and that their residences created a texture reflecting the traditional Ottoman Street structure. Aerial photographs show that the gridal street section was built between 1955 and 1969. In this section, which was developed as a residential area, traditional buildings are still used as dwelling with their original features. Pınarbaşı District (Figures 5c, 6c) was separated from Kale District and became a part of today's developing modern district centre. Today, a few traditional Mut houses can be examined among the large building blocks. The rapid construction of new buildings limits the information about the land use of traditional houses in the east of the

Neighbourhood. On the contrary, Asput Street (Figures 5c, 6c) in the western part of the neighbourhood is a street used in the summer months in the past, with traditional residences among large orchards. Before the water network was established, access to the water source called Asput, which met the water needs of the district, was provided from this street. The water needs of the orchards around the street were also met from the same source (Akbaş, 2015). In both settlements, there has been a rapid decrease in traditional residences in recent years due to the construction of very high-rise sites that are incompatible with the existing texture. Yatırtaş Street (Figure 5d, 6d) is the beginning of the old Silifke – Mut road, and traditional dwellings still exist in this area. The buildings are directly connected to the street, and the garden is at the back of the building. All buildings were built within a common plot block. Bulgurcular Street (Figures 5e and 6e) is a street where bulgur production areas, large exhibition-drying areas, and employer and employee residences are located. After bulgur production, which affected the Mut economy, started in the 1930s, industrial and residential settlements developed on this street. (Manav and Urak 2019). On the street, whose original texture is largely preserved, there is a danger of construction, as in region “c”.

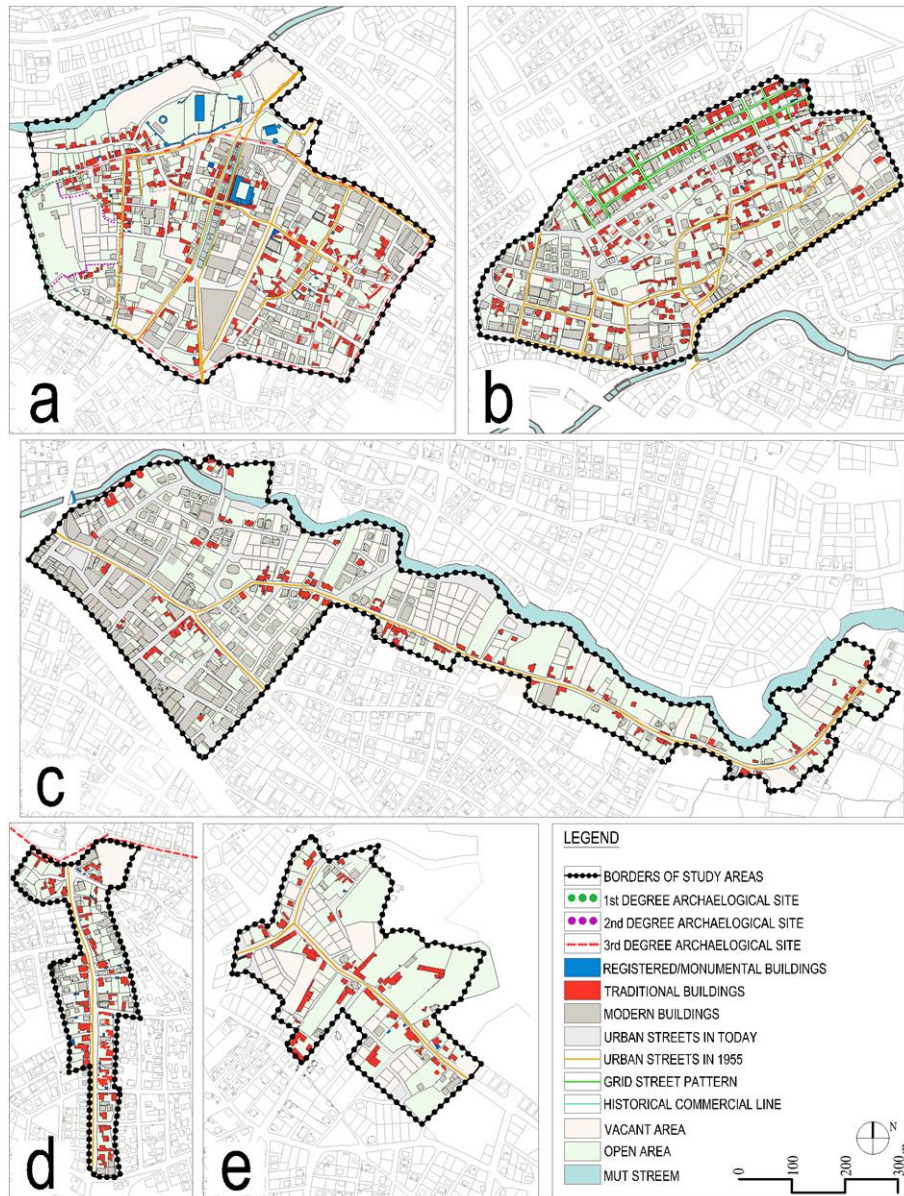


Figure 6. Traditional and new buildings in the first region (a) and second region (b), other regions: Asput Street and Pınarbası Neighborhood (c), Yatırtaş Street (d), Bulgurcular Street (e)

Land use (plot and garden use, site intervention)

Typological values of land use, garden utilization, and building entrances were determined by analyzing 232 buildings. The key finding from this analysis is that the gardens are actively utilized. Buildings are situated on one side of the plot, adjacent to the street, with the rest of the garden used for daily activities. The spatial arrangement of the street, building and garden did not affect the entrance to either the building or the garden. Despite being positioned along the street, the entrances to buildings are mostly through the gardens (Table 1). In addition, dwelling gardens play an active role shaping urban patterns as well as affecting daily life. It is deduced that the urban pattern formed by traditional dwellings is sparse than that formed by modern buildings. In addition, the organic street structure consisting of roads that suddenly change direction within the Ottoman residential settlement, short or long dead-end streets generally directed towards the inside of

the building block (Aliğaoğlu and Uğur, 2016), can be seen in region “a” and region “b” (Figure 6).

Table 1. Street, plot, building and entrances of building relations

BUILDING-STREET RELATIONSHIP	NEXT TO THE STREET	AT THE CORNER	DISTANCED FROM STREET	TOTAL
ENTRANCE TYPES				
ENTRANCE ONLY FROM STREET	 32 PSC	 3 PSC	0 PSC	35 PSC (%15,08)
ENTRANCE ONLY FROM GARDEN	 94 PSC	 5 PSC	 68 PSC	167 PSC (%71,98)
ENTRANCE FROM BOTH STREET AND GARDEN	 21 PSC	 9 PSC	0 PSC	30 PSC (%12,94)
TOTAL	147 PSC (%63,36)	17 PSC (%7,32)	68 PSC (%29,31)	232 PSC (%100)
LEGEND	▷ GARDEN ENTRENCE		▶ BUILDING ENTRENCE	

Gardens are perceived as an element that connects the houses with the street, spends time in it, and has various uses. The garden includes outdoor furnaces, warehouses, toilets, baths, outbuildings with poultry functions, and fruit trees. (Figure 7A). Gardens surrounded by high walls, the connection to the street are provided by gates called “bordo” gates in the region. Bordo gate has two wings and is wooden. The door opening is covered with wooden beams, tiled cladding, and small roofs in the form of a gable or porch (Figure 7B).

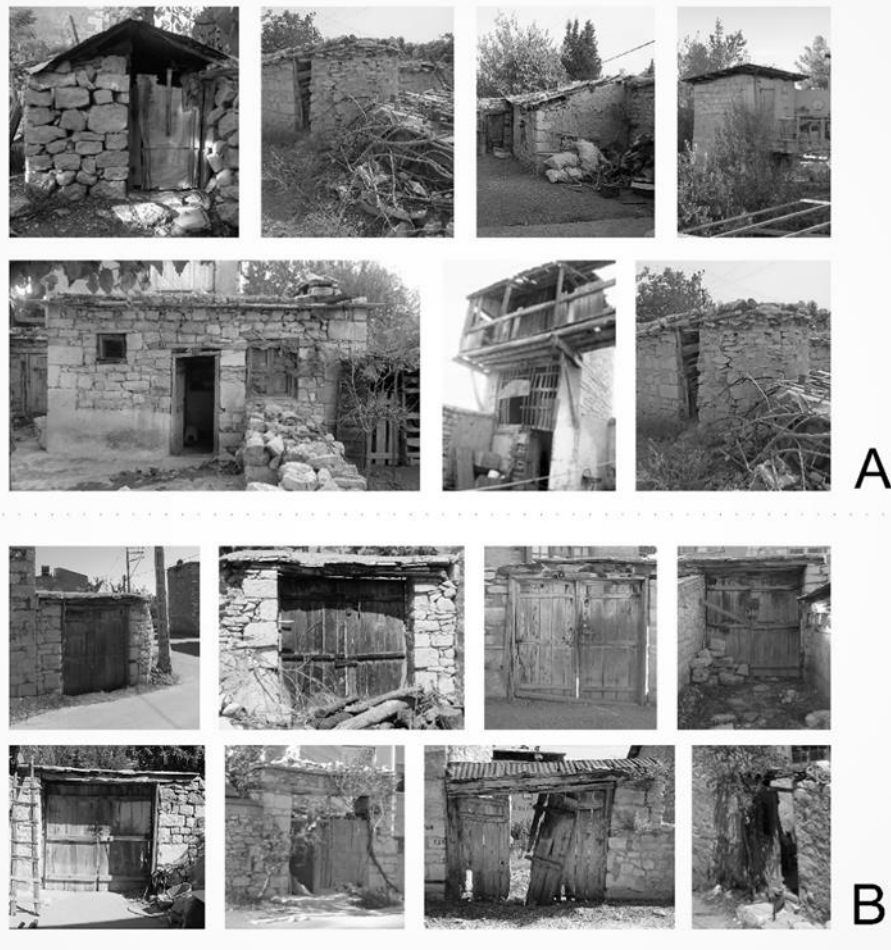


Figure 7. Annex buildings (Müştemilat) (A), The garden doors (Bordo) (B)

Plan layout, types, and plan elements

Traditional houses in Mut are derived from the main plan type, which is frequently encountered around Karaman and Konya and is called the plan type with a mabeyn (iki göz bir aralık) (Kahraman, 2012). Another type most used in the region is the inner sofa plan type and its variations. There are examples of wet areas such as toilets/bathrooms inside some buildings with inner sofas (Figure 8). Of the 232 houses examined, 147 (63.3%) have a mabeyn and 85 (36.7%) have an inner sofa, and there was no significant difference in the distribution between the regions (Figure 9).

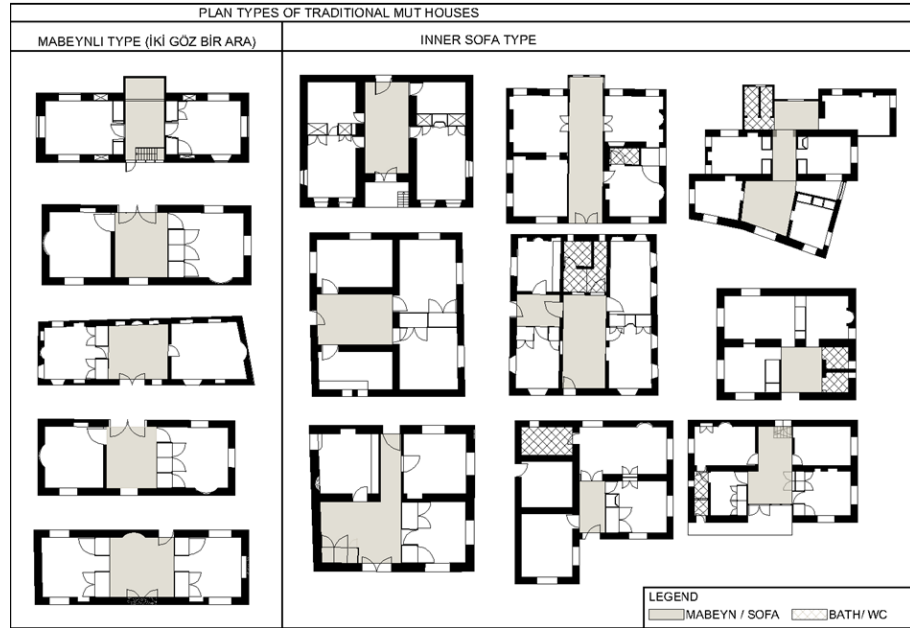


Figure 8. Plan types of traditional Mut houses

The entrances are generally located in the center of the buildings. In two-story buildings, a staircase is typically constructed on the façade for the first-floor entrances since each floor is used as a dwelling by different families, or the lower floor is used for non-dwelling purposes. The upper floor entrance is from a wide landing at the end of the stairs. These stairs are made of stone, wood, or using of both (Figure 10A). The first interior space at the entrance of the building is the sofa. On the sofa, there is a customized sitting area (*sedir*) separated by an arch or door, a stove for cooking or heating, or other service areas added later (Figure 10B).

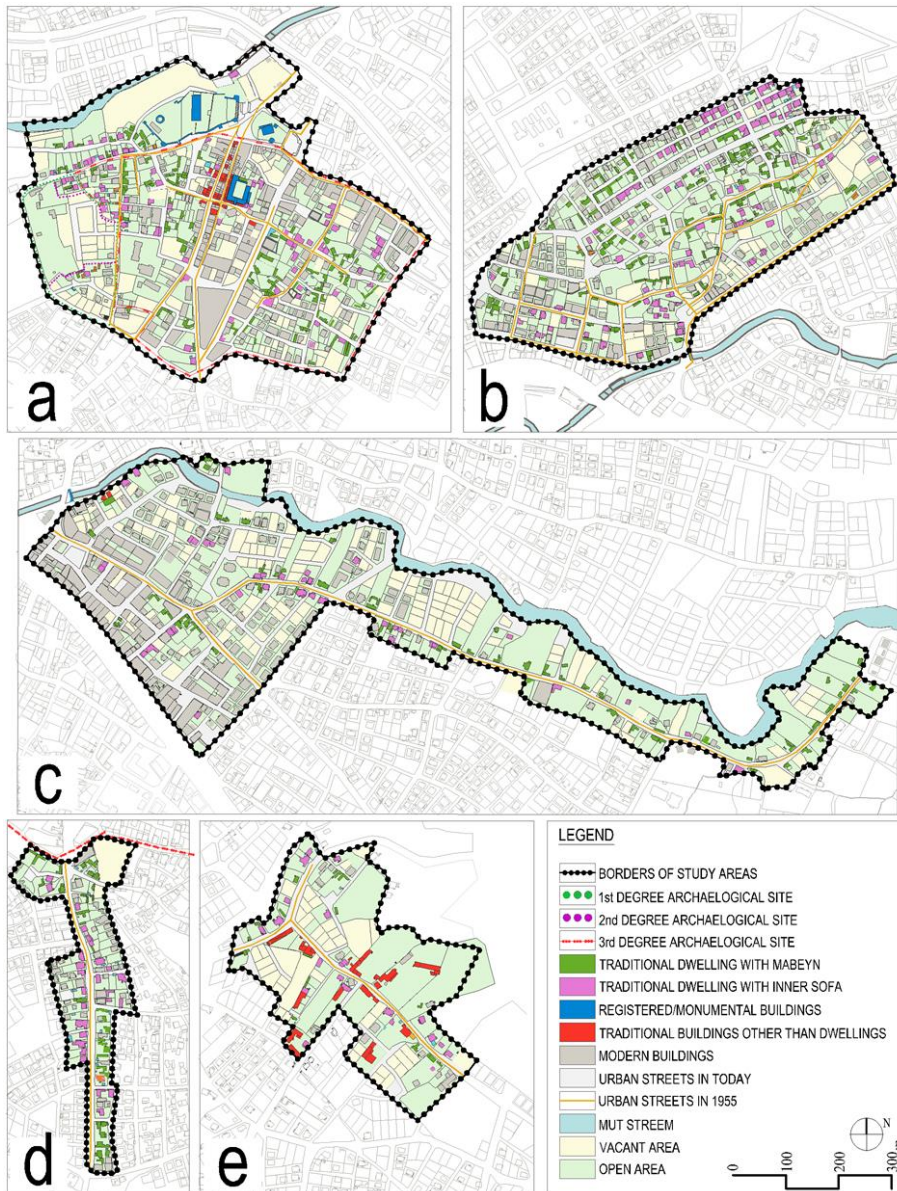


Figure 9. Plan types of traditional Mut houses in regions

The first interior space at the entrance of the building is the sofa. On the sofa, there is a customized sitting area (sedir) separated by an arch or door, a stove for cooking or heating, or other service areas added later (Figure 10B). The fireplace is a special element located in at least one room or sofa/mabeyn, especially on the north façade, and is composed of large stone blocks. It is a plan element that has lost its function today (Figure 10C). Wooden beams on the ceiling are often exposed. The wooden structural element (hasır, pardı), which is the first layer of the roof covering and connects the beams from above, is visible between the beams. In a few examples, the ceiling appears because the beams are closed from below. In only one example, an oval center with a floral motif was created in the middle of the ceiling covering (Figure 10D).



Figure 10. Outdoor stairs and landings (A), Mabeyn/Sofa views (B), Fireplaces (C), Characteristic ceiling examples with Pardi, uncovered ceilings, timber lathed ceilings (D)

Although traditional Turkish houses have a simple appearance on the outside, their interiors are richly decorated. Mut traditional houses also reflect this expression. For example, room entrance doors are more decorated than building entrance doors. While there are various plant motifs and geometric shapes on the door wings, there are triangular pediments or windows above the doors. The wooden lock system, which keeps the door wings closed, is an important door detail in Mut. In this system, there is a wooden handle inside the room where the door is located, and when the door wing is closed, this handle fits into the notch on it. To open the door, the handle is pushed through the hole on the other side of the door wing and the door wing is released from the notch (Figure 11).

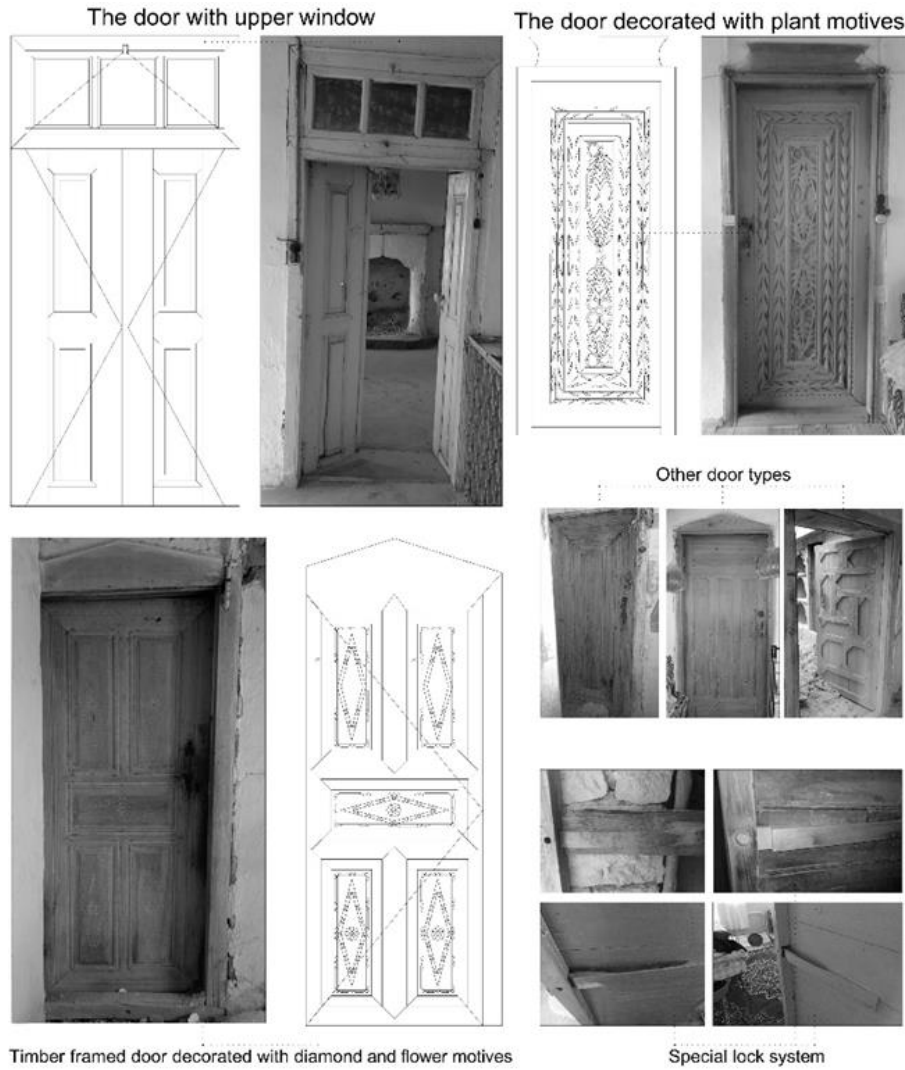


Figure 11. Room entrance doors and special door lock system

The dimensions of the elements in the room were determined according to the alignment of the beams used in the wall construction. The height of the windows closed/open niche cabinets with daily belongings, doors, and cabinets are equal to the distance between the two beams. Along with sizing the equipment in the room, the beams created space on a human scale. The shelf (sergen) at the level of the upper beam or upper level of the cabinet is at a height that the person can easily reach. Examples of the door-closet arrangement, which Küçükerman (2007) frequently mentions while describing the Turkish House room, are frequently encountered in the traditional houses of Mut. This arrangement, which consists of a door, closet (yüklük), bath (gusülhane), and sometimes a small shelf or cupboard with a specialized function, is an important element of the rooms. The closet (yüklük) where bedding, quilts, and similar items are placed, the upper or lower closet (musandıra) where tools used in gardening and similar items and grains are stored, and the bath (gusülhane) adjacent to the outer wall, which looks like a closet when the cover is closed, are parts of this arrangement. This area, where the need for storage and washing is met, is also a dividing wall that separates the two rooms (Figure 12).

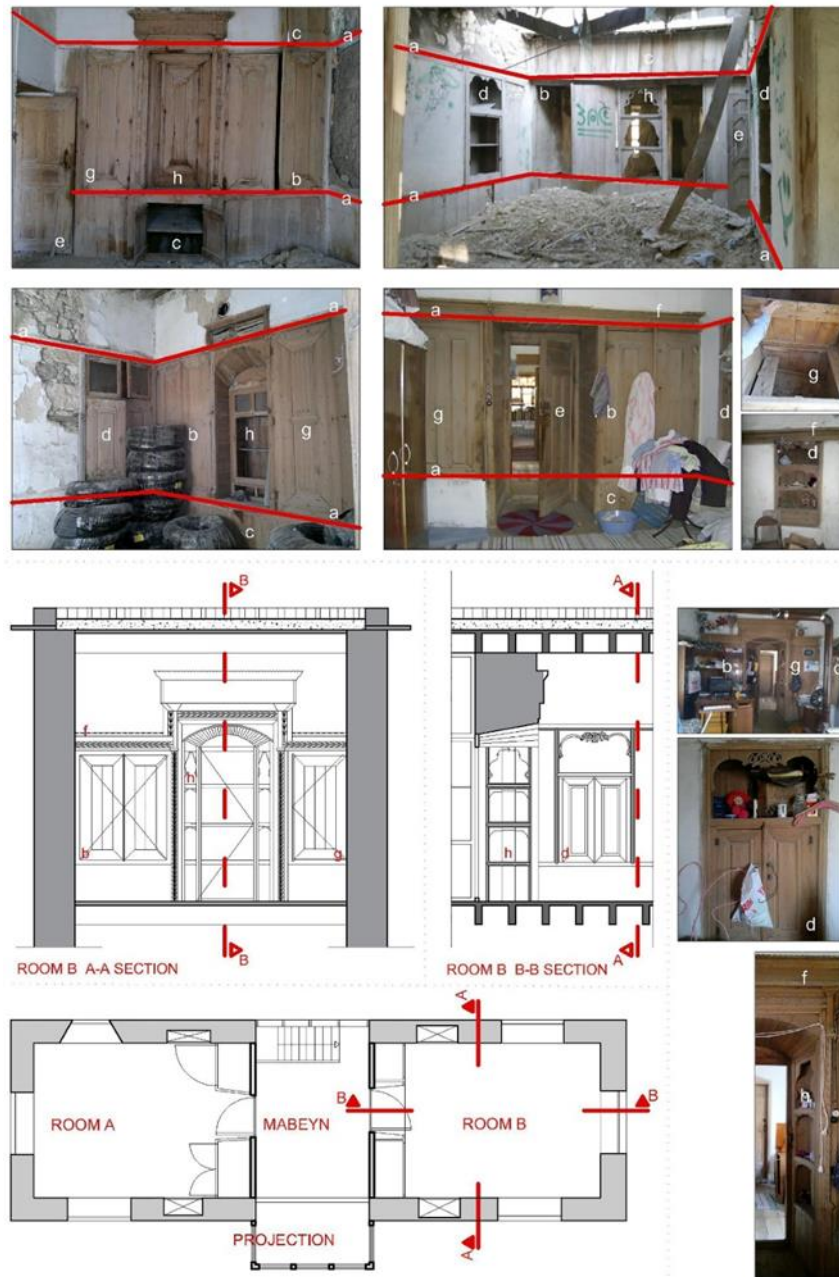


Figure 12. Cabinet-door assembly; A: Beam line (a), Cabinet (Yüklük) (b), Upper/Lower cabinet (Musandıra) (c), Cabinet (Niş) (d), Door (e), Sergen (f), Bath (Gusülhane) (g), Open shelf (Kandillik / Çiçeklik (h), B: The plan and sections of the door-cabinet assembly in Emine Çakır House

Material use and construction systems

The construction techniques of traditional houses of Mut are similar in all regions. The most common wall types are rubble stone walls in 50-60 cm thickness, and with timber frames at approximately 100 cm intervals, in which soil-straw mixture is used as the binder (Figure 13A, 13B). Walls built with unframed masonry stones and rarely adobe masonry systems were also encountered. Timber framed filled wall or bağdadi is used for interior walls or generally on west façade and cantilever walls. The filling material in the timber framed walls is stone. In the traditional houses of Mut, the walls were left completely exposed, and mud-straw mixed plaster was rarely used in some houses or again only on the projections (Figure 13C, 13D, 13E).

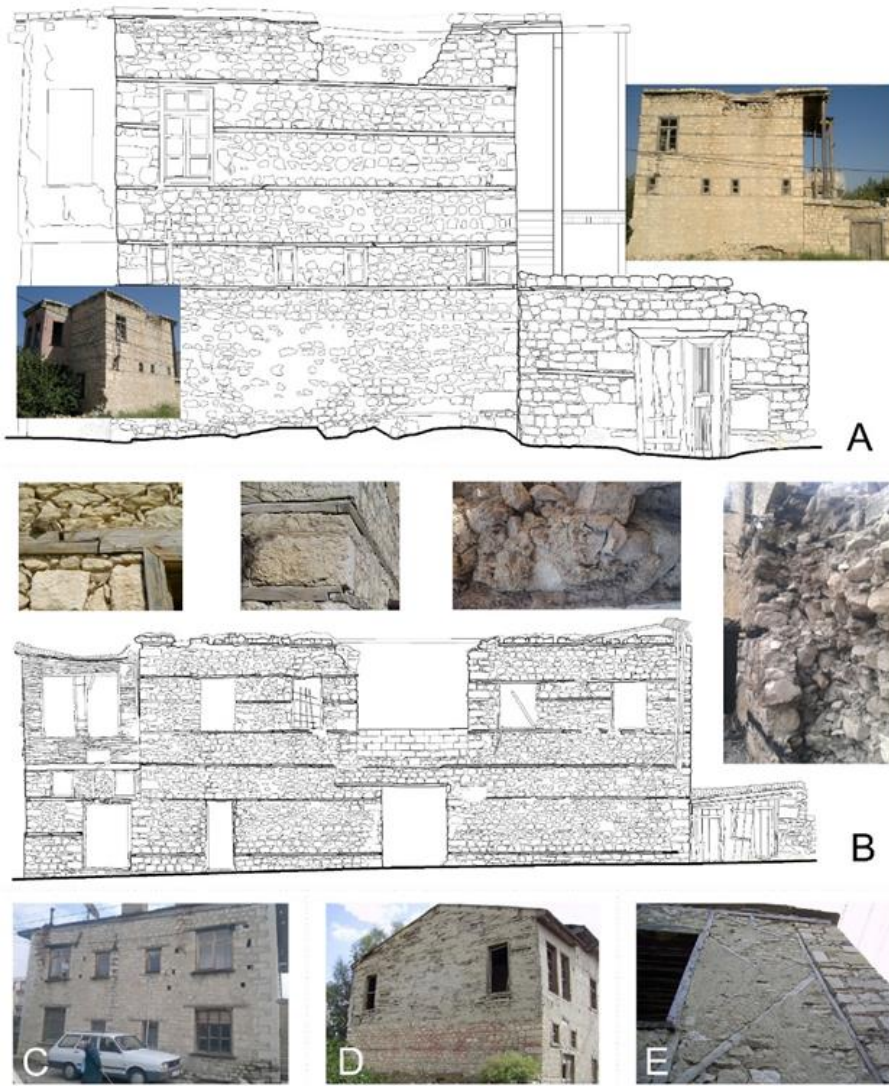


Figure 13. Examples of stone masonry wall with timber bond beams and details: Northwest façade of Hacer Şişik House (A), South façade of Ali Manav House and details (B), Examples of Stone masonry without timber bond beam (C), Timber framed-unfilled-timber lathed (bağdadi) (D), Timber framed-infilled (hımış) (E)

The floors and roofs are formed by covering the circular or rectangular beams with wooden laths placed on the masonry stone walls at varying intervals of 30-60 cm. The coating material on the roof is variable, and as a second layer, pine leaves or barks (keven) is laid to close small gaps. Adhesion is achieved by pouring a straw-added white mud mortar (cirk), on this layer. Red earth and rock salt are poured into this mortar. All layers are compressed with a cylinder stone (yuvak), and the soil is hardened, while water permeability is prevented. The compression process with yuvak is called pressing (yuvalama). Pressing is repeated every year to prevent deterioration of the roof. All these layers are surrounded by a single row of stones, giving this technical building a cubic appearance. The flat-shaped stone (wreath) below this row of stones and protruding 20-30 cm from the façade is a local and original detail at the roof/wall junction (Figure 14). The roof is not just for covering the building; it's also used for various purposes depending on the season. Foods such as wheat and tomato paste are laid on a flat

earthen roof and dried under the sun, and these foods are consumed in winter. Another function is to turn it into a sleeping area in the summer months. In the hot summer months, beds are laid out on the roof in the evenings, and with the first rays of the sun, the beds are taken up and the day begins.



Figure 14. Earth roof details

Façade features and façade elements

Unplastered walls, projections that look like a separate mass added to the main structure with the material and roof type, and the eaves and finishing details of the building's top cover are the elements that determine the façade character. Different microclimates under the influence of the research areas cause different occupancy and vacancy rates on the façades facing the same direction (Manav 2021). In addition, due to the same effect, as mentioned in the previous section, covered by woodlath (bağdadi) is more used than timber framed filling with stone (hımsı) Other original building elements on the façade are upper floor stairs, building entrance doors, windows, and chimneys.

As stated in the plan features and plan elements section, the stairs in the traditional houses of Mut are not inside, at outside, contributing to the façade character. There are examples where wood, stone, or both materials are used together in the construction of stairs. The main entrance doors are wooden, double-winged, and plain. The entrance doors of very few buildings are decorated. The most distinctive and common feature of these doors; are the windows above the door designed to meet the light need of the sofa. Entrance doors usually open towards the sofa (Figure 15A). The windows are small on the lower floors, and The windows are small on the lower floors and larger and in order on the upper floors. Window heights are limited by beamlines in beam structures. Window sizes are variable in the ones that do not use beams and the openings are covered with wooden lintels. Window

sashes are generally lateral rotation, and in a few structures, they are guillotine type. Metal and wooden balustrades are elements found in a few windows (Figure 15B). The projections are elements developed as an extension of the mabeyn/sofa, right in the middle of the façade. Only in some samples were projections observed in the rooms. The projections are separated from the main mass by their material and roof type, giving the façades a different character. Its walls are plastered or covered with wood and its roof is in the form of a gable roof. They are carried by buttresses or columns. (Figure 15C). Another of the most prominent elements of the façade character is the joint detail of the earthen roofs. This item has been described in detail in the previous section. Since the chimneys have lost their function or have been destroyed due to roof renovations, few have been identified. The history stones, in which the word "mashallah" is symbolized, as in the traditional house façades, especially in rural settlements of Anatolia (Budak 2020), are among the most original details of the façades of Mut houses. On the stones: the information of the year of construction, the person who made it, and the builder are engraved, and in some, the word "Maşallah" is symbolized in a circle (Figure 15D).

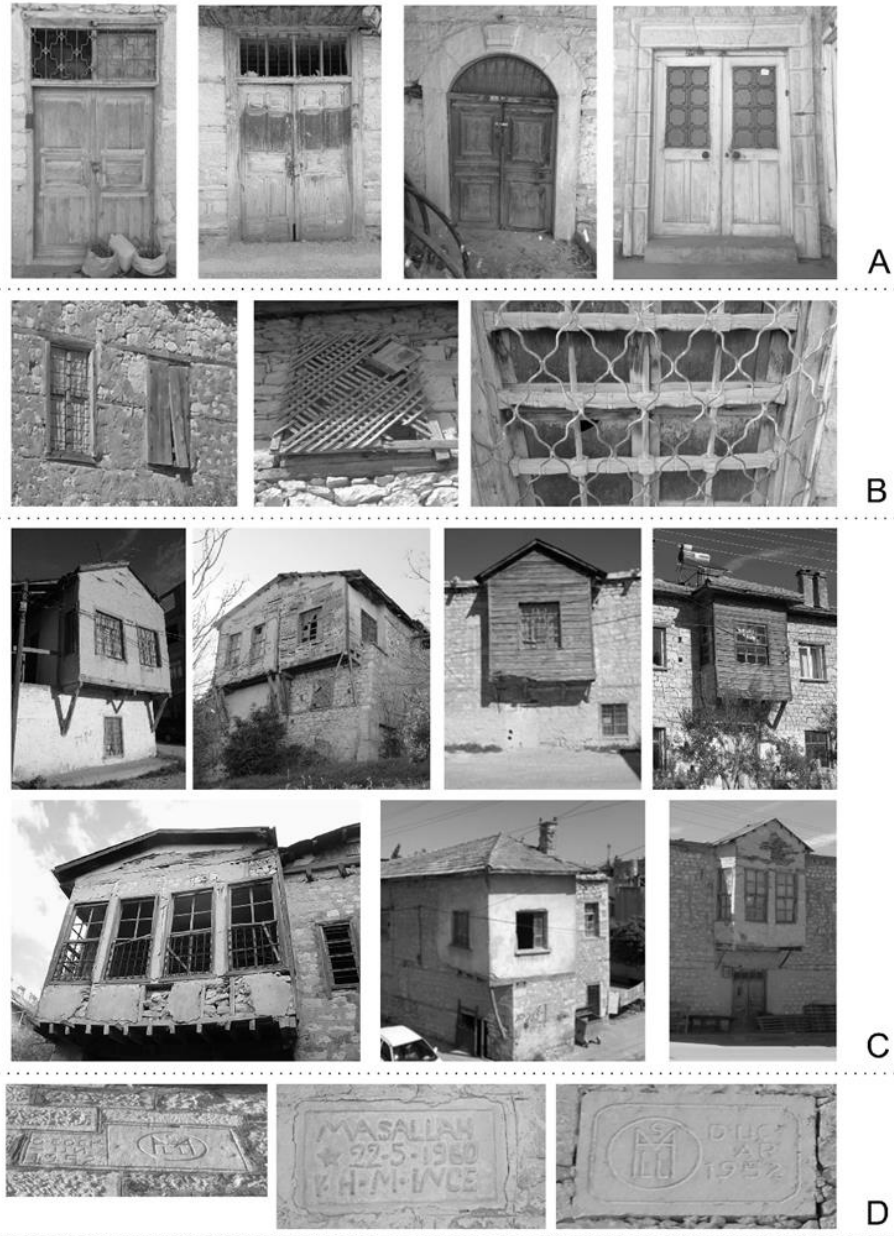


Figure 15. Main entrance doors (A), Windows and railings (B), Projections (C), Date/Maşallah Stones (D)

DISCUSSION AND CONCLUSION

This study, it is aimed to document the Traditional Mut Houses and the settlement pattern with their unique typological values, without completely disappearing. Especially in small settlements, since there is not enough analysis and documentation, the determination of the areas to be protected area is delayed, and the traditional pattern in these areas is deteriorated and transformed. During this transformation, traditional elements are also disappearing. Traditional Mut houses have not been noticed enough yet and are on the verge of losing their pattern integrity. Especially in the central area around the castle, many traditional houses were demolished in a short time because of the decision of the site area, which was taken too late. In addition, in different parts of Mut, the dwellings that are outside the site area and have original value are also rapidly disappearing. However, the

continued widespread use of traditional housing (Table 2) prevents the complete disappearance of this type of building. Thus, detailed typological data could be collected by examining 232 traditional houses.

Table 2. Usage analysis values of traditional Mut houses

ANALYSIS VALUES		Region "a"		Region "b"		Region "c,d,e"		TOTAL	
		Count	Percent	Count	Percent	Count	Percent	Count	Percent
Usage	Building in Use	139	64	155	66	92	73	386	66,5
	Empty Building	79	36	81	34	34	27	194	33,5
	Total	218	100	236	100	126	100	580	100

It was observed that the traditional houses that survive today in Mut District, which was founded on the ancient city of Claudiopolis, were built from the 19th century to the mid-20th century. Traditional Mut houses appear to be a combination of a prism built of rough-cut stone and another prism of wood added to the facade. The combination details of building elements, plan layout and dwelling gardens provide information about the traditional housing tectonics of the region. Using of rough-cut stone and timber bond beams is important in the construction of traditional Mut houses. Wooden frame is used in interior walls, sometimes on one façades and projections, in the "bağdadi" or "hımış" technique. The roof top is flat and covered with earth. Stone eaves and a single row of stones on the roof are a unique appearance to Mut. In two-storey traditional houses, projections are mostly located in the sofa and look like a wooden addition on the facade. In single-storey traditional houses, the cubic form and construction details are the same. Two types of plan layouts and configurations are used in residences. Mabeynli type; It consists of two rooms and a small sofa. In some examples of this type, there is a semi-open transition area such as the outer sofa at the entrance of the building before the mabeyn/sofa. The other and more commonly used plan type is with an inner sofa type. The plan elements reflect examples of traditional Turkish residential architecture. The relationship between street, building and garden creates a irregular and non-dense urban texture that is compatible with the topography, without requiring any intervention on the site. Lastly, another feature of Mut's unique facade is the date stones with the "Mashallah" symbol. Within the framework of all these features, the tectonic integrity of traditional Mut houses can be read as a combination of local materials, traditional construction knowledge and life, and can be compared with other geographies with their similarities and differences.

These houses, which are examples of the traditional Turkish house spread throughout Anatolia, reveal their identity among others with their unique typological values. On a route connecting Central Anatolia to the south, to the Mediterranean, the structural and fictional formation of the houses has been completed under the influence of the original microclimate.

Traditional Mut houses are similar to the traditional houses of Akseki, Sütçüler, Sarılar, Ermenek and Çamliyayla in terms of material use and construction techniques. A semi-open transition space, which cannot properly be called an exterior sofa, was used as a part of the plan, both in the dwellings of this region and in the traditional Mut houses. At the same time, it has common features with the general appearance of Konya's Hadim, Beyşehir and Seydişehir traditional houses. In terms of plan layout, the mabeynli plan type, which can be considered a primitive version of the plan type with inner sofa and is a unique type, which has examples in Konya and Karaman (Karpuz, 2011), was used in many buildings in traditional Mut houses. However, the use of mud brick as a building material in the same region does not create a typological value in traditional Mut houses (Figure 16).



Figure 16. Traditional houses examples of Akseki (Kavas, 2015; Girgin, 2020), Seydişehir (Öztürk, 2011), Beyşehir (Biçer, 2008), Çamliyayla, Sarılar, and Mut (Taken by corresponding author)

In this context, Mut houses can be considered as one of the unique local examples of Toros Mountains characterized by Günay (1999) in terms of materials, construction technique, and architectural design between Akseki-Pozantı area. On the other hand, based on the regional classification by Kazmaoğlu and Tanyeli (1979) defining the key

features of Anatolian-Turkish residential architecture, it is located in the Konya Region where Anatolia's original synthesis is displayed. According to Küçükerman's (2007) study classifying Anatolian residential architecture based on construction traditions, Mut houses are situated in the Southern and Southwestern regions where wood and stone usage is prominent. In addition to all similarities, Mut houses are particularly distinct from other examples, especially with their roof details. Therefore, it can be interpreted that Mut houses, reflect an original synthesis of the Central Northern Mediterranean Region (Figure 17).

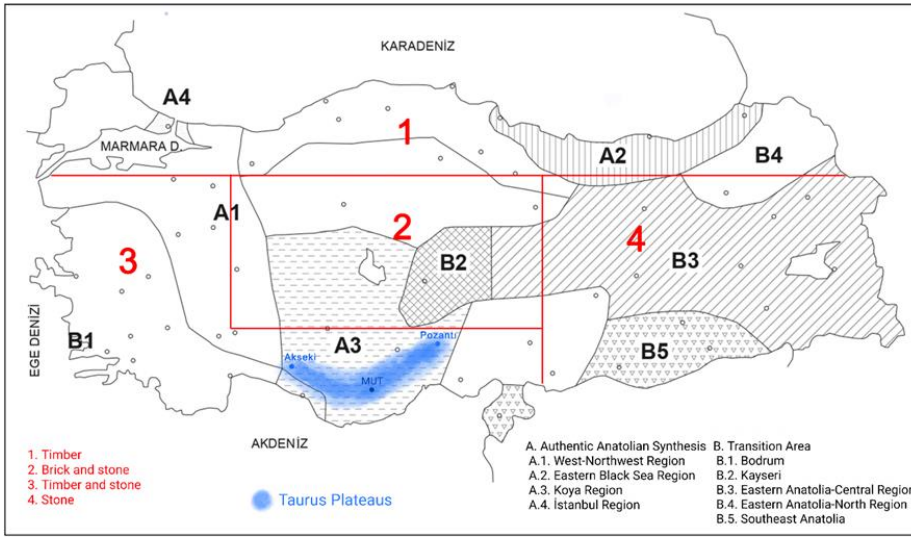


Figure 17. Showing the diversity in the Turkish House, the borders determined by Kazmaoğlu and Tanyeli (1979; (A) Authentic Anatolian Synthesis and (B) Transition Area variations), the borders determined by Küçükerman (2007; in red) and the Toros plateaus region determined by Günay (1999; in blue) overlapping map

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Resume

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