

FROM CENTRAL ASIA TO ANATOLIA: SPATIAL ANALYSIS OF DWELLINGS WITH WOODEN SWALLOW-DOME ROOF

GÜLSÜN NAVRUZ BERK, MEHMET UYSAL

ABSTRACT

People need shelter to sustain their lives within natural and artificial environments. The spatial formation and arrangement of rural dwellings, which serve as the answer to the housing need, are indicative of the way of life. The aim of this study is to introduce rural dwellings with wooden swallow-dome roofs, which have not received the deserved attention in terms of local housing typology and possess cultural heritage qualities, and exhibit variations in spatial organization and formation in Anatolia. The swallow-dome roof is a unique roof covering that is constructed using the overlay technique and is characterized by its distinctive and picturesque image, with an opening called ‘tüteklik’ at the end. It is assumed that the archetype of this roof covering emerged in dwellings. A literature review was conducted on dwellings with swallow-dome roofs, and the basis and distribution area of the roof system were explained based on existing literature research. In addition to the literature review, on-site research was conducted in sample areas in rural Sivas province, and the spatial characteristics of these dwellings were analyzed. Fieldwork, observation, and interview methods were employed during the research process. In this study, nine dwellings were selected as samples in rural Sivas province, focusing on dwellings characterized by the original roof covering of Central Asian origin. Dwellings with swallow-dome roofs have emerged under the influence of geographical, social, and cultural factors, as a result of the biological needs and available construction materials and techniques of people living at the minimum standard of living. These living spaces, produced by the local community to meet their basic needs, are covered with swallow-dome roofs. Dwellings with swallow-dome roofs are indicators of the geography, socio-cultural structure, and economic level. In conclusion, the cultural and spatial components of dwellings with swallow-dome roofs were examined to contribute to cultural and local continuity and to provide a place for this subject in architectural literature.

Keywords: dwelling with swallow-dome roof, rural architecture, spatial analysis, Sivas.

INTRODUCTION

The social and economic revolution known as the Industrial Revolution brought about social and spatial changes. With the phenomenon of industrialization,

lifestyles underwent transformation, and the process of building production began to society's patterns of production and consumption, and constructed through diversify. The migration from rural to urban areas altered the relationship between architecture and way of life, and this transformative movement also had an impact on housing as a living space. Studies on housing from the pre-industrial era, shaped by society's patterns of production and consumption, and constructed through experiential knowledge, have gained significance in this context. Researchers have shown interest in the concept of housing throughout history and have approached its analysis and interpretation from various perspectives. The spatial perspective of housing is shaped by the organizational scheme, geometry, functional characteristics, typology, sustainability, fragmentation, and integration of space. Within this framework, the subject of this study is the "spatial analysis" of dwelling.

The origin of the dwelling with a swallow-dome roof dating back to around 3700 BC, is attributed to the geography of Central Asia, and archaeological evidence suggests that the Botai dwellings in Kazakhstan are the archetype of dwellings with a swallow-dome roof (Kutlu 2020: 2459). It is indicated that dwellings with swallow-dome roofs have been identified in Azerbaijan, Armenia, Georgia, and Anatolia (Akin 1985: 112), and they have spread to the regions of Caucasus, Siberia, Turkestan, Uzbekistan, and Tajikistan (Kutlu 2020: 2455). The dwelling with a swallow-dome roof takes its name from the roof system that ends with an opening called 'tüteklik'. The 'tüteklik' at the end of the dome-like roof system is a single opening that serves as a chimney, vent, skylight, lantern, or rooftop window, providing a connection between the interior space and the external environment. The necessity of removing the smoke emanating from the hearth, which serves as an essential spatial element for heat and light in sustaining human life, highlights the important of the roof system that ends with an opening called 'tüteklik'. Oğuz (2001) emphasizes the importance of removing the smoke from the space and states that the smoke is expelled through the opening in the ceiling, which serves as a chimney. Furthermore, Oğuz (2001) mentions that apart from the smokestack located at the center and highest point of the dome-shaped ceiling, there is no other chimney, and that's why the roof system is named after this opening. The roof system with a swallow-dome (roof system with 'tüteklik') opening is formed by placing wooden beams on top of each other and rotating them at a forty-five-degree angle to enclose square or nearly square-shaped spaces (Akin 1985: 24, Akin 1991:323). The roof system with a swallow-dome is created by overlapping and rotating elements, and it includes the opening called 'tüteklik', which serves as both a smoke vent and the sole source of light in the space. This roof system is constructed using the overlapping technique (Choi 2017: 200).

The swallow-dome roof, in addition to its formal qualities, has become traditional through its spread in various geographies and its enduring form over centuries. The swallow-dome roof, created using the overlapping technique, is an

impressive, visual, symbolic, and unique architectural product in terms of its form. Dwellings with swallow-dome roofs, are the harmonized form of needs and possibilities in a traditionalized manner. It is an indicator of society's way of life and a tangible example of both the society's struggle against nature and its harmony with nature. Dwellings with swallow-dome roofs, shaped by the influence of natural environmental factors as well as cultural and socio-economic factors, are unique cultural and architectural products that require spatial analysis in terms of their original floor plans, housing components, functional characteristics of housing components, and spatial context.

ANALYSIS OF DWELLING WITH SWALLOW-DOME ROOF

Studies on the original roof covering, the swallow-dome roof, have a limited place in the field of architectural literature. Akın (1991) examines the swallow-dome roof in mosque and religious buildings and states in his article that the swallow-dome roof stands out in monumental structures and has spread across a wide geography. In his thesis titled *Doğu ve Güneydoğu Anadolu'daki Ev Tiplerindeki Anlam* (The Meaning in House Types in Eastern and Southeastern Anatolia), Akın (1985) also mentioned dwellings with swallow-dome roofs and provided data on the spatial formation of dwellings with swallow-dome roofs in the villages of Muş-Hasköy, Şarkışla-Ortaköy, Şarkışla-Hüyük, and Şarkışla-Sivrialan. Kutlu (2020), who investigated the origin and development stages of the swallow-dome roof in Central Asia, brought a new perspective to dwellings with swallow-dome roofs in an archaeological context. Kutlu (2020) conducted research on the origin and developmental stages of the swallow-dome roof in Central Asia, providing an archaeological perspective on dwellings with swallow-dome roofs. He has provided data on the development, change, and transformation of dwellings with swallow-dome roofs throughout the centuries. In their study examining the 'tandır' house architecture in traditional Erzurum houses, Köşklü and Tali (2010) have mentioned that 'tandır' houses have wooden roofs with swallow-dome design and discussed their architectural formation. The studies conducted by Akın (1985), Kademoğlu (1977), and Kutlu (2020) have revealed the existence of dwellings with swallow-dome roofs. It has been emphasized that the archetype of the swallow-dome roof, which stands out in monumental structures, coexists with dwellings (Akın, 1991), and the foundation of spatial formation should be sought in dwellings.

The dwelling with a swallow-dome roof carries the picturesque image feature with its swallow-dome roof system, and it draws attention with its fluid solution, functionality, impressiveness, visual appeal, and economical approach (Uysal, Berk 2021: 253). It is necessary to analyze its historical significance, its roots, its original formation, its structural characteristics, and its interpretations in a holistic context (Berk N. 2022: 81). In this context, factors related to origin, spatiality, influencing factors in formation, structural and semantic contexts form the proposed approach for analysis (Berk N. 2022: 82).

It is known that the formation of a dwellings with wooden ‘swallow’ roof starts with a functional single space that has a circular plan and ends with an opening opening vent on the roof (Kutlu 2020: 2459). The hearth (‘ocak’) located in the center of the circular space is a source of heat, light, a cooking tool, and a symbol of the continuity of life. The vertical projection of the hearth, the hole, is the final point of the roof, chimney, serving as the sole source of light in the space and enabling the expulsion of smoke to the outside. In housing described by Akın and Kademoğlu, it is observed that circular formations transform into square and rectangular formations according to the structural and physical requirements. The single and functional space covered with the original roof is called ‘evlik’ in the dwelling with wooden swallow roof referring to the functionality, protectiveness and reliability of the word ‘house’ (Kademoğlu 1977: 173).

Within the scope of this study, the findings regarding the spatial analysis of dwelling with wooden swallow roof in rural areas have been presented through the example of rural areas in Sivas.

SPATIAL ANALYSIS OF RURAL DWELLING WITH WOODEN ‘SWALLOW’ ROOFS THROUGH THE EXAMPLE OF SIVAS COUNTRYSIDE

Data obtained from cultural and literature studies indicate that dwellings with swallow-dome roof can be found in the rural areas of Sivas province, located in the Upper Kızılırmak Section of Central Anatolia in Turkey which has been mentioned as a settlement area since ancient times (Ökse 1994: 244). This assumption has been supported by interviews with village headmen in rural areas of Sivas province and further validated through on-site inspections. The study area was determined to include Hafik, Şarkışla, Ulaş, Kangal districts, and the Elbeyli region in Sivas (Figure 1).



Figure 1: The study area, Sivas, Turkey

Spatial analyzes were made on nine (9) sampled dwellings with wooden swallow roof (Figure 2), which were identified within the borders of Sivas province and selected within the scope of the study.

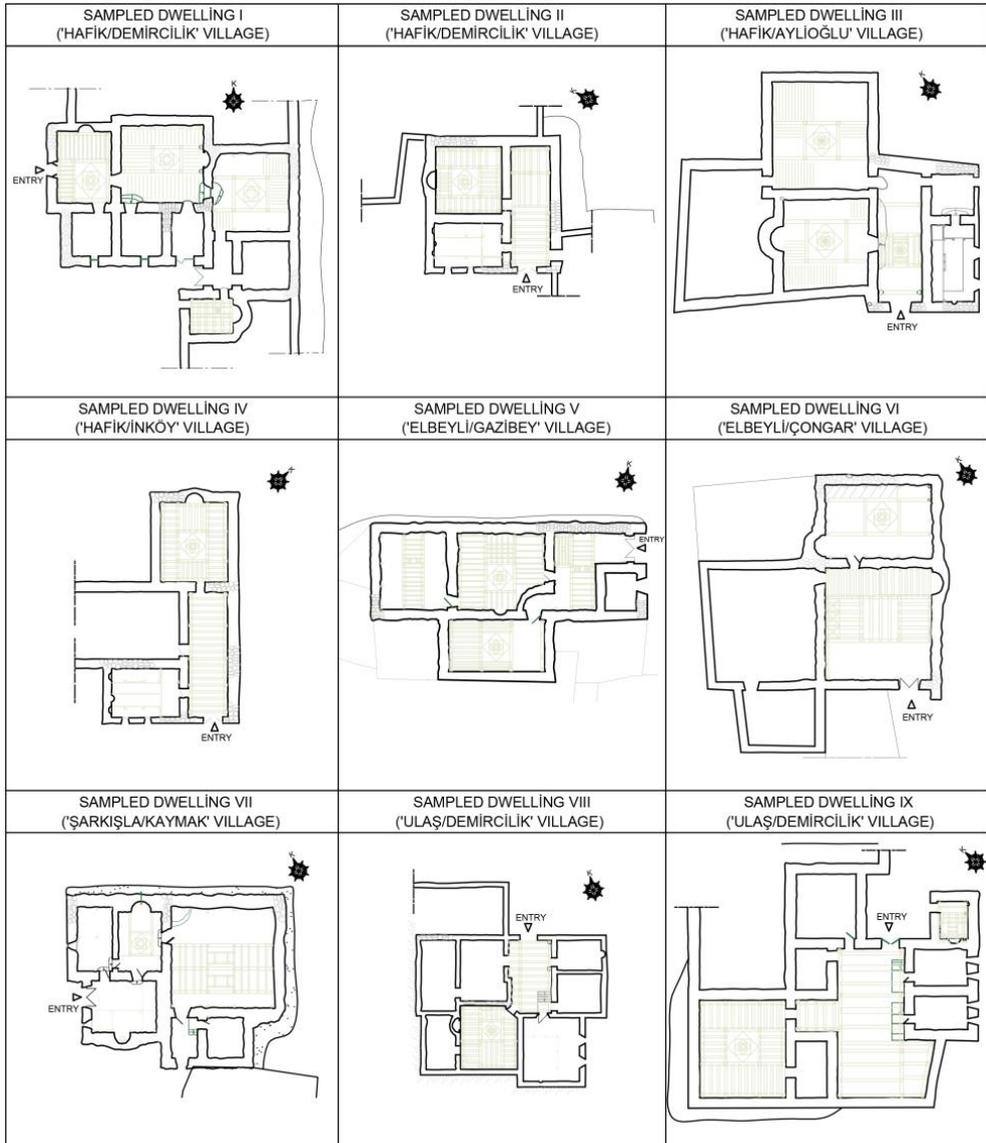


Figure 2: Sampled plans of dwellings with swallow roof

The sampled dwellings with swallow-dome are either attached or detached. Among the dwellings sampled, I, II, V, VI, VII, IX are part of the adjacent building group, while III, IV and VIII are located as detached buildings (Figure 3). Environmental factors (climate, topography), social, cultural and economic factors have been effective in the process of contiguous construction. Contiguous construction brings ease in the building production process through common walls, cheap cost, suitable settlement for topography, protection of heat in the space, and the sense of trust that comes from being together. In the transition to a discrete building scale, economic factors come into play. The improvement in economic

conditions has allowed for the transition from contiguous construction to detached construction.

ATTACHED/DETACHED FORMATION OF THE SAMPLED DWELLINGS

	Attached Formation	Detached Formation
The Sampled Dwelling I ('Hafik/Demircilik')		—
The Sampled Dwelling II ('Hafik/Demircilik')		—
The Sampled Dwelling V ('Elbeyli/Gazibey')		—
The Sampled Dwelling VI ('Elbeyli/Çongar')		—
The Sampled Dwelling VII ('Şarkışla/Kaymak')		—
The Sampled Dwelling IX ('Kangal/Yarhisar')		—
The Sampled Dwelling III ('Hafik/Aylioğlu')	—	
The Sampled Dwelling IV ('Hafik/İnköy')	—	
The Sampled Dwelling VIII ('Ulaş/Demircilik')	—	

Figure 3: The attached-detached formation of sampled rural dwellings with wooden swallow roofs

The sampled dwellings with wooden swallow roofs exhibit a settlement context in relation to topography, showing both embedded in the slope and above-ground formations. Sampled dwelling I, II, V, VIII, VII, IX are embedded in the slope, while III, IV, VI are located above ground (Figure 4). In the form embedded in the slope, it is seen that the called 'evlik' (dwelling, house) and barn spaces are completely buried and the relationship of these spaces with the outside space is provided by a vertical hole which is called 'tüteklik' in at the end of swallow-dome. In the above-ground formation, the relationship between the 'evlik' and the barn with the outside space is established through the 'tüteklik' (hole, cavity) at the end of the swallow roof.

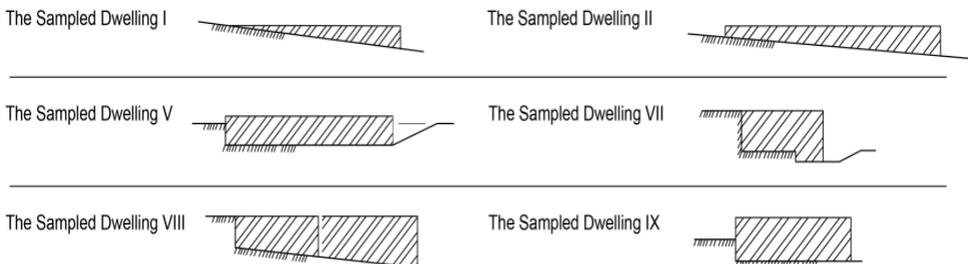


Figure 4: The embedded formation of sampled rural dwellings with wooden swallow roofs

All of the sampled dwellings have a connection with the public space (street) through a semi-public space, and the connection between the semi-public space and the interior space is established through a courtyard (Figure 5). In the form embedded in the slope, the connection with the semi-public space is provided through the open facade of the dwellings to the exterior. The relationship between the dwelling with swallow-dome and the semi-public space is established on the horizontal plane through the courtyard door and the windows of the rooms overlooking the courtyard and the namely ‘seki’ room (raised platform room).

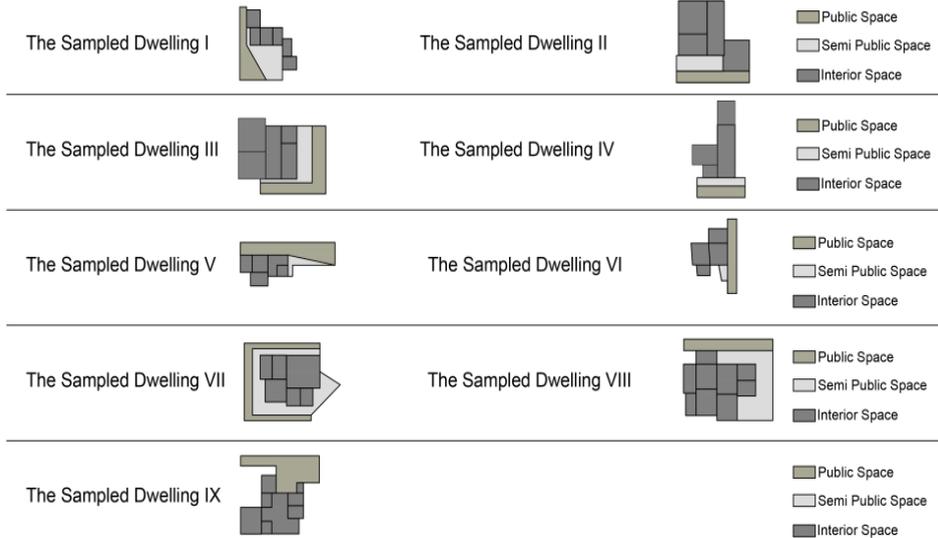


Figure 5: Public/Semi-public space-interior space relationship in sampled dwellings

From the ‘hayat’ (courtyard) which is the entrance and passage space, access is provided to the ‘evlik’ (main living area) (sampled dwellings I, II, III, IV, V, VI, VII, VIII), rooms and ‘seki’ rooms (I, II, IV, V, VIII, IX), barn (II, III, IV, V, VI, VIII), hayloft (II), ‘aralık’ (corridor) (III), cellar (VII) and ‘aşkana’ (kitchen and storage room) (IX) (Figure 6). In this context, the ‘hayat’ (courtyard) acts as a communal space that connects with the semi-public area in the sampled dwellings with a ‘hayat’ (courtyard), and the distribution to other spaces is realized through the ‘hayat’ (courtyard).

In the sampled dwelling with a wooden swallow roof, the entrance-distribution space provides access from the ‘hayat’ (courtyard) to the ‘evlik’ (house) area, and from the ‘evlik’ area, there is access to the pantry, barn, and room. The ‘evlik’ (house) is also referred to as the ‘ev damı’ (house roof) as a reference to its usability by the household. The living space for animals, the barn, is located within the dwelling, and access to the barn is provided through the ‘evlik’ (house). Access to the barn is also provided through the other door of the dwelling, which opens to the outside and is called ‘aralık’ (corridor). Despite this door, the homeowners have indicated that the animals use the courtyard and the ‘evlik’ (house) space to access the barn. In addition to the barn, the relationship between the hayloft and the barn, as

well as the semi-public area, is established through the corridor called ‘aralık’. The guest/guest house/room is partially detached from the living space of the household, its relationship with the outside space is provided independently, and the planning is made to meet the needs of the guest (Figure 7).

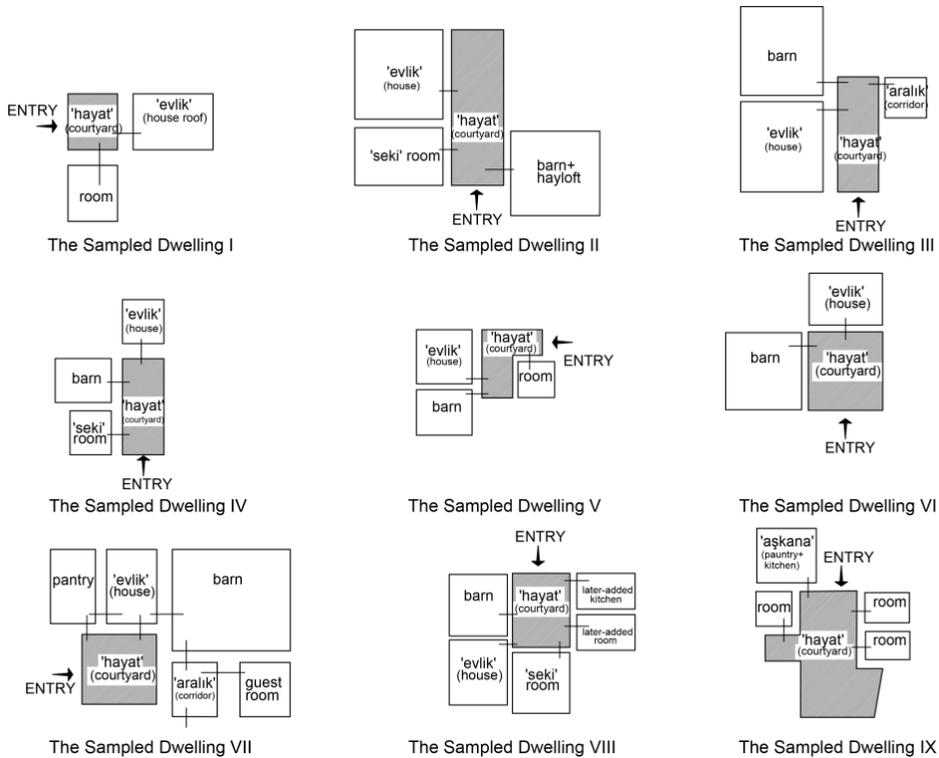


Figure 6: ‘Hayat’ (courtyard) and connected spaces in sampled rural dwellings with wooden swallow roofs

In the sampled dwelling II with a swallow-dome, access is provided from the rectangular courtyard to the ‘evlik’ (house), barn, hayloft, and rectangular ‘seki’ room. ‘Evlik’ (house), was planned as a functionally closed living space, while the seki room was planned as a space close to the entrance and specialized for sitting (Figure 7). In the sampled dwelling III, access to the living area ‘evlik’ (house), barn, and ‘aralık’ (corridor) space is provided through the rectangular courtyard. The barn and the hayloft are related in a way to complement each other’s function. ‘Aralık’ (corridor) is the transition space to the semi-public space and at the same time allows the seki room to be privatized. The seki room, which is separated through ‘aralık’ (corridor) and planned to meet the needs of the hosted guest, also provides opportunities for organizing collective activities (Figure 7).

In the sampled dwelling IV, which provides access to the living area, ‘evlik’ (house), barn, and ‘seki’ room through the ‘hayat’ (courtyard), it is observed that the ‘seki’ room is located near the entrance, while ‘evlik’ and the barn are positioned away from the entrance (Figure 7). Entry to the room designated for

guests in the sampled dwelling V with a swallow-dome roof is also provided through the courtyard. Following the courtyard (hayat), there is a corridor named 'aralik' that provides access to the barn and the 'evlik' (main living area), while the 'evlik' leads to the storage space, the hayloft (Figure 7). The proximity of the hayloft to the road, its connection with the exterior through the swallow-dome, and the homeowner's mention of using the hayloft from the roof explain the location of the hayloft and the relationship between the hayloft and 'evlik' (main living area).

In the sampled dwelling VI, access is provided from the courtyard to the 'evlik' and the barn, while access to the hayloft is achieved through the barn, establishing a relationship between the hayloft and the barn (Figure 7). In the sampled dwelling VII, direct access is provided from the courtyard to the 'evlik' and pantry. 'Evlik' is directly connected to the barn. Access to the guest room is provided through the 'aralik' (corridor) attached to the barn. The direct connection between the 'aralik' and the public space allows guests to communicate with the outdoor area without using the spaces designated for family life (Figure 7). In the sampled dwelling VIII, access is provided from the 'hayat' (courtyard) to the rectangular 'evlik' space, the barn space, and the hayloft. Access to the pantry is obtained from the 'evlik', while access to the hayloft is obtained from the barn. In the sampled dwelling IX, the 'hayat' (courtyard) is centrally located, allowing access from the 'hayat' (courtyard) to the barn, the rooms, and the 'aşkana' (the living quarters, kitchen). There is also a connection between the barn and the hayloft (Figure 7).

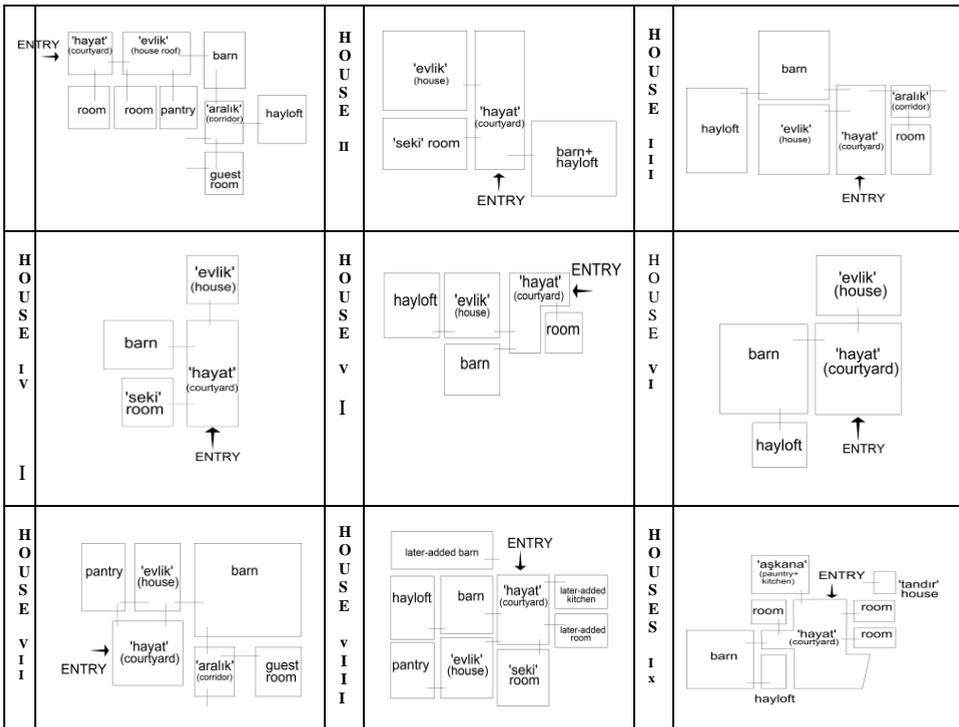


Figure 7: Plans of sampled dwellings with swallow-dome

The components of the sampled swallow-dome houses are listed as follows: ‘evlik’ (main living area), ‘hayat’ (courtyard), barn, hayloft, rooms, pantry, and ‘aralık’ (corridor) (Figure 8). The specified components of the houses are classified as follows: ‘evlik’ (main living area), barn, and ‘hayat’ (courtyard) as living spaces; pantry and hayloft as storage spaces; room, ‘seki’ room, guest room, and guest house as specialized spaces; ‘aralık’ (corridor), ‘hayat’ (courtyard), and ‘evlik’ as transitional spaces.

I	‘EVLİK’(HOUSE)-‘HAYAT’ (COURTYARD)-PANTRY-HAYLOFT-‘ARALIK’(CORRIDOR)-ROOMS-GUEST ROOM
II	‘EVLİK’(HOUSE)- ‘HAYAT’ (COURTYARD))-BARN-HAYLOFT-‘SEKİ’ ROOM
III	‘EVLİK’(HOUSE(- ‘HAYAT’ (COURTYARD)-BARN-HAYLOFT-‘SEKİ’ ROOM- ‘ARALIK’(CORRIDOR)
IV	‘EVLİK’(HOUSE) - AVLU(HAYAT)-AHIR-SEKİ ODASI
V	‘EVLİK’(HOUSE) – ‘HAYAT’(COURTYARD)-BARN-HAYLOFT-ROOM
VI	‘EVLİK’(HOUSE) – ‘HAYAT’ (COURTYARD)-BARN-HAYLOFT
VII	‘EVLİK’(HOUSE) – ‘HAYAT’ (COURTYARD)-BARN-PANTRY-GUEST ROOM
VIII	‘EVLİK’(HOUSE)- ‘HAYAT’(COUNTRY)-BARN-PANTRY-‘SEKİ’ ROOM-
IX	‘HAYAT’ (COURTYARD)- BARN-‘TANDIR’ HOUSE-HAYLOFT- ROOM-‘AŞKANA’(PANTRY AND KITCHEN)

Figure 8: Housing components in the sampled dwelling with swallow-dome roof

‘Evlik’ (main living area): The main living area where daily life takes place in the sampled swallow-dome dwellings is referred to as ‘evlik’. ‘Evlik’, derived from the word ‘ev’ (home), carries the meaning of household or house. In swallow-dome dwellings where the earth-covered roof is also a part of daily life, ‘evlik’ is also referred to as ‘house roof’. The final stage of the swallow-dome construction technique where the area outside the swallow is covered with soil. A soil-covered roof is a space in swallow-dome houses where daily activities are carried out, similar to the enclosed ‘evlik’ space. Therefore, ‘evlik’ and ‘ev damı’ are used interchangeably as equivalents to each other. The living space, ‘evlik’, in all sampled swallow-dome dwellings is covered with a swallow-shaped roof (Figure 9). In this context, the relationship between living and the swallow-dome construction is established through the ‘evlik’ (living space) and the swallow-shaped roof.

‘Evlik’ is the space where daily life needs are met, and it is equipped to fulfill these requirements. The equivalent of heating and cooking activity is the hearth, which is an active spatial element in the ‘evlik’. The hearth is generally placed across from the entrance and at the center of the wall, and its presence is emphasized by the direction of the load-bearing legs of the swallow-dome, highlighting the effectiveness of the hearth (‘ocak’) in the space. The hearth (‘ocak’) is an indicator of vital existence in swallow-dome dwellings. The smoking of the hearth is associated with the presence of life. The hearth area (‘ocaklık’), which includes the ‘tandır’, is planned to be elevated from the living floor level in some examples of swallow-dome roof dwellings (II, III, VIII). The raised platform not only allows for the planning of the ash pit, which enables ventilation for the ‘tandır’ but also creates a functional area for sitting, resting, and working around

the ‘tandır’ (tandoor). The elevated platform, in the sampled dwelling III, serves as both sleeping and sitting area, while in dwelling II, this area includes shelving units for placing kitchen utensils.

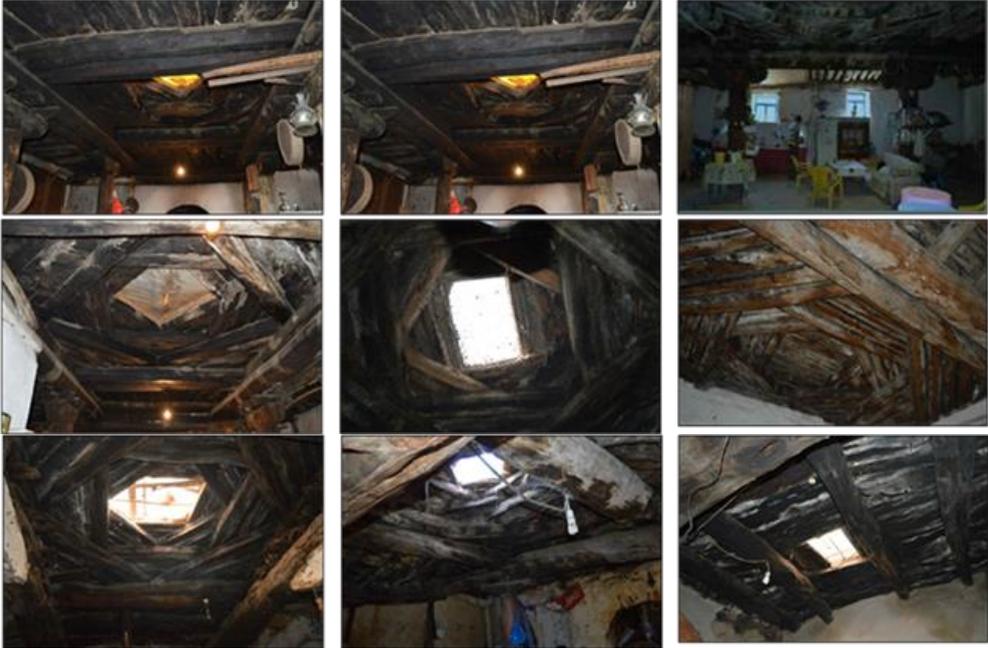


Figure 9: Formation of the ‘evlik’ (house) covering in sampled swallow-dome houses

‘Hayat’ (courtyard): The courtyard, which serves as the main entrance of the dwelling, is referred to as ‘hayat’ or ‘havlu’ in the sampled dwellings with swallow-dome roof. ‘Hayat’ (courtyard), which serves as a connection between the indoor and outdoor spaces and opens into a semi-public area, is an extension of the outdoor space in the house. The fact that the soil floor continues from the outside towards the ‘hayat’ (courtyard) and there is no elevation difference between the street and the ‘hayat’ (in dwellings numbered I, II, III, IV, VI, VIII) explains the relationship between the street and the ‘hayat’ (courtyard). ‘Hayat’ (courtyard) which serves as a transitional space distributing components such as ‘evlik’ (main living area), stable, rooms, etc., is also a living space where vital activities are sustained during the summer season. With the influence of the summer season, everyday life activities shift from the enclosed space, which is connected to the outdoor with the hole at the end of the swallow-dome roof, namely ‘evlik’, towards the open ‘hayat’ (courtyard). The ‘hayat’ (courtyard) corresponds to activities such as sitting, dining, cooking, and sleeping in all of the sampled dwellings, and it also includes the hearth like in ‘evlik’. In the dwellings numbered I, III, V, VI with the unique swallow-dome roof (Figure 10), it is covered with the original swallow-dome roof, indicating the seasonal transition of life from ‘evlik’ to the ‘hayat’ (courtyard).



Figure 10: In the sampled dwellings (I, III, V), a swallow-dome roof in the ‘hayat’ (courtyard)

Barn-Hayloft: Agriculture and animal husbandry are the main sources of livelihood in the settlements where the identified dwellings are located in rural areas of Sivas province. Due to factors such as the insufficient yield from agriculture caused by climate effects, the necessity of fallowing, etc., animal husbandry has gained importance. The cold climate has also brought about the necessity of benefiting from animal heat. In this context, the necessity of the continuity of life relying on the coexistence of humans and animals is reflected in the design of the sampled swallow-dome dwellings, where the stable is planned within the residential space. The stable is located in a separate area dedicated to the household’s life, concealed from the outside, and planned in direct relation to the ‘evlik’ or the ‘hayat’ (courtyard). The interaction between the ‘hayat’ (courtyard), ‘evlik’ (main living area), and stable is observed in the sampled dwellings I and VIII, while the interaction between the ‘hayat’ (courtyard) and stable is seen in the sampled dwellings II, III, IV, V, VI, VII, and XI. The double-winged doors of the ‘hayat’ (courtyard) represent the shared use of the ‘hayat’ (courtyard) by humans and animals.

The stable is covered with a swallow-dome roof, similar to the ‘evlik’, in the sampled dwellings numbered I, III, V, VII, and IX. It is noted that in the sampled dwellings numbered II, IV, VI, and VIII, the original swallow-dome roof existed but deteriorated over time. It is mentioned that the hole is called ‘tüteklik’ at the end of the swallow-dome in the stable provides lighting for the space and is also used for feeding when there is no hayloft. It is noteworthy that a similar relationship between ‘evlik’ (main living area), life, and the swallow-dome roof is observed in the sampled dwellings, as well as in the case of the stable, life, and the swallow-dome roof. In this context, it is assumed that the formation of the swallow-dome dwelling begins with the interaction between the ‘evlik’ (main living area) and the stable. In the sampled swallow-dome dwellings numbered III, VI, VIII, and IX, the storage space is directly connected to the stable through a door. In the house numbered I, the relationship between the hayloft and the stable is achieved through the ‘aralık’. In some dwellings, the hayloft also has a shed roof, and it is reported that the single opening of the earth-covered roof is used for lighting and feeding purposes through the shed roof.

Room-’Seki’ Room-Guest House/Room: It is assumed that the formation of the ‘evlik’ (main living area), stable, and ‘hayat’ (courtyard) is the initial stage of the formation in swallow-dome dwellings. As a result of the improvement of economic conditions and the relative overcoming of the challenging conditions imposed by the

climate, specialized spaces dedicated to the act of sitting have been added to the components of the house. Despite the necessity of fulfilling the requirements of the courtyard, 'evlik', and stable spaces, rooms are designed as spaces for sitting and hosting guests. The rooms are located at the entrance and open facade of the dwelling, and access is provided from the courtyard. The rooms designed for hosting guests are surrounded by seating platforms called 'sedir' on two or three sides. Separate from the room, the space called 'seki room' is where the village people gather for celebrations, farewell ceremonies for soldiers, socializing, and during holidays. It is mentioned that these rooms, which meet the needs of arriving travelers, are built by wealthy individuals. The 'seki' that give the rooms their name are planned elevated from the floor level of the rooms and they are separated from the rooms with different seating arrangements and distinct formations. The 'seki' rooms are located on the entrance facade of the dwelling, providing a connection from the 'hayat' (courtyard) (II, IV, VIII) or establishing a connection with the outdoor space through a designated corridor called 'aralık' (III) (Figure 11).

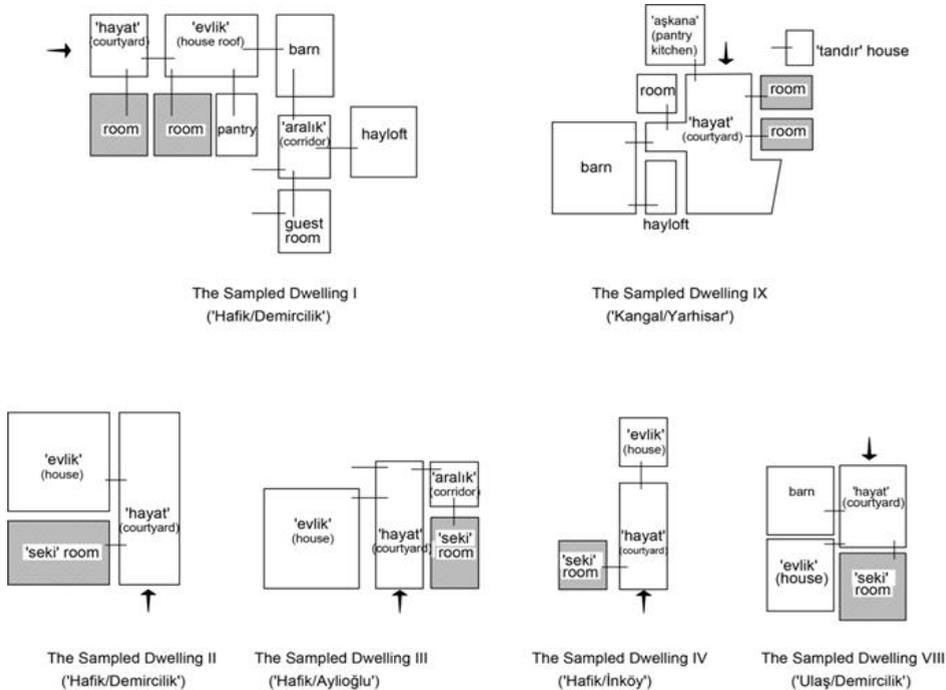


Figure 11: In the sampled swallow-dome dwellings, the room-'seki' room

The guest house is specifically designed to accommodate guests staying overnight and meet their needs, distinct from the regular rooms and 'seki' room. The guest house in the sampled dwelling I is located in a secluded area away from the entrance and 'hayat' (courtyard), and it establishes an independent connection with the outdoor space through its door opening to the semi-public area. The guest house is partially separated from the family members' living space and designed in a manner similar to the 'evlik' (main living area), allowing guests to fulfill all their

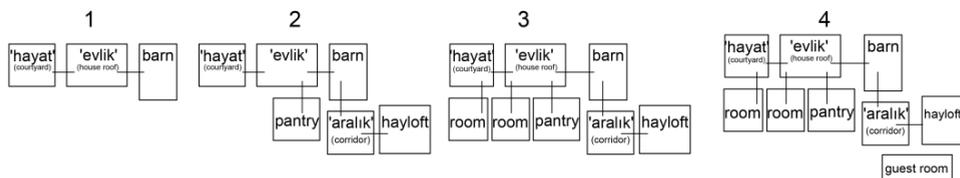
needs. Within the space, sitting and sleeping areas are created with ‘sedir’, a hearth is positioned on the opposite wall of the outward-facing door, and the space is covered with a swallow-dome roof. The guest house is referred to by the homeowner as a ‘single-eyed house roof’. This statement also supports the notion that the guest house carries the characteristics of a ‘home’. The guest house in the sampled dwelling VII, on the other hand, provides a connection between the indoor living areas and the outdoor space through an ‘aralık’ (corridor) and is elevated with a level difference from the ‘aralık’ (corridor).

Roof Terrace: In the sampled swallow-dome dwellings, the roof terrace is the area where the swallow-dome opens and is covered with earth. It is defined as an open working area where one can walk, sit, and dry cow dung, located on the top of the dwelling. The ‘evlik’ being referred to as the ‘home roof’ and the guest house being referred to as the ‘single-eye home roof’ (in the sampled dwelling I), and the similar functions of the ‘evlik’ and the roof terrace, make this naming understandable.

‘Aşkana’, ‘Tandır’ House: In the sampled swallow-dome houses, the space known as ‘aşkana’ serves as a kitchen and pantry, while also accommodating sitting activities. ‘Aşkana’ fulfills the functions of sitting and storage in the sampled house IX, while the ‘tandır’ house takes on the specialized role of cooking activities. In this context, it is assumed that in the sampled dwelling IX, where there is no ‘evlik’, the cooking and eating activities take place in the ‘tandır’ house, while the preparation and storage activities are carried out in the kitchen space known as ‘aşkana’. It is hypothesized that the ‘evlik’ space transfers its entire functions to other specialized spaces, assuming a collective role.

Pantry: The pantry, found in the sampled dwellings VII and VIII, is used as a storage space. The pantry, accessed from the ‘evlik’ (main living area) in sampled house VIII, is completely underground and used as a cold storage room. In sampled dwelling VII, the pantry is located a few steps below the level of the ‘hayat’ (courtyard) and the ‘evlik’ (main living area) and it is ventilated through windows opening to the outdoor area.

Based on the conducted analyses, it can be observed in the analyzed examples of swallow-dome dwellings (Figure 12) that the initial stage of formation in terms of housing growth and articulation is the entrance-distribution space ‘hayat’ (courtyard), the living space ‘evlik’, and the animal living space is barn (I, II, III, IV, V, VI, VII, VIII). It is assumed that storage spaces and specialized areas are added to the formation of ‘evlik’ (main living area), barn, and ‘hayat’ (courtyard).



Sampled dwelling I

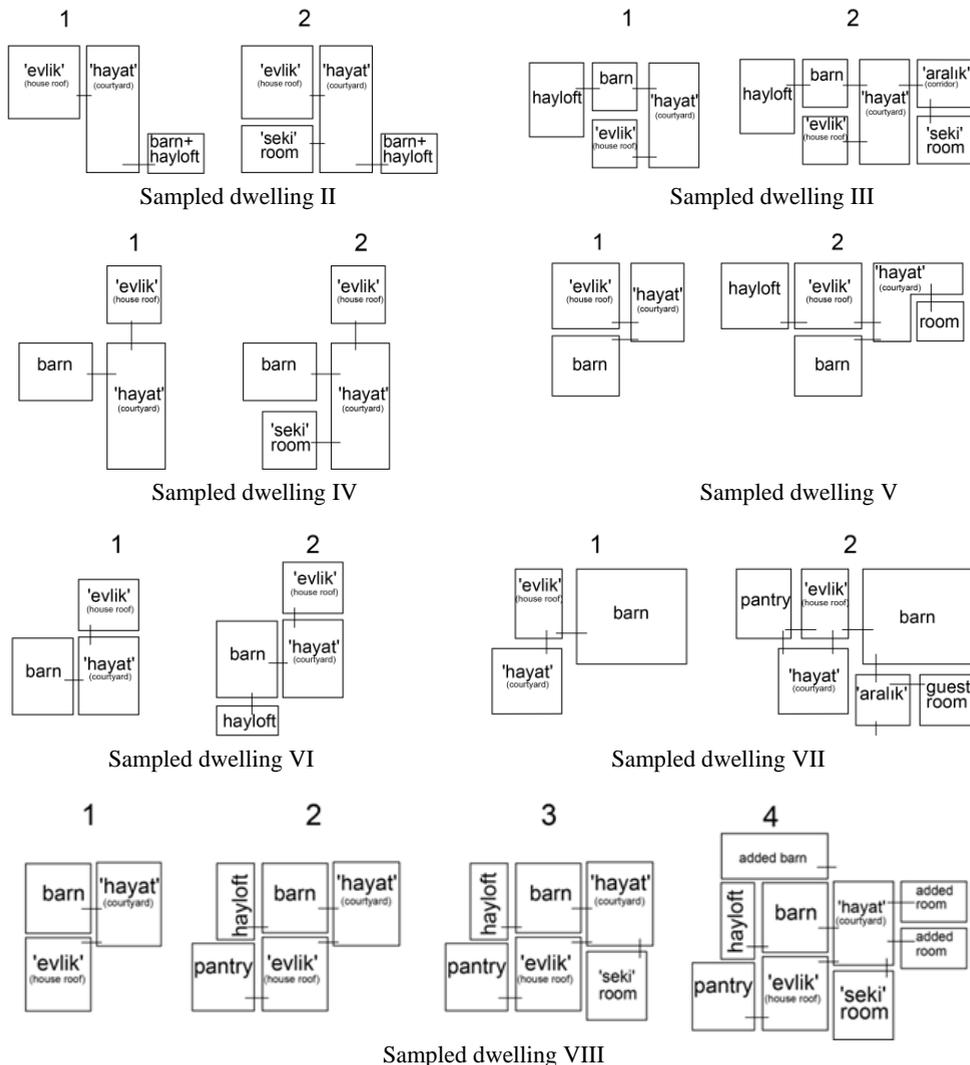


Figure 12: Housing growth-Annexation scheme in sampled swallow-dome dwellings

RESULTS AND FINDINGS

Within the scope of this study, examples of buildings built with wooden building materials dating back to Central Asia and covered with a roof in the form of an overlapping dome are discussed. The swallow-dome roof, beyond being a mere covering element that facilitates the removal of smoke from the space and defines the boundary between the interior and exterior, is a remarkable, visually striking, and unique spatial element that possesses picturesque imagery. The swallow-dome roof, with its unchanged formation throughout the process from Central Asia to the present day, has endured. Examples of swallow-dome roofed dwellings, which should be preserved due to their traditional formation, have become endangered and are on the verge of extinction today. The identification of surviving examples and the spatial

analysis of swallow-dome dwellings hold significance in the context of cultural and symbolic meanings associated with them.

The swallow-dome dwelling is shaped by natural environmental factors, socio-cultural influences, and economic factors. Cold climate factors have played a significant role in the spatial formation of swallow-dome dwellings, while topographic data and lifestyle have also complexly influenced their shaping. Climatic data has brought about the necessity of enclosed, buried, and swallow-dome roofed formations due to the dependence of human life on animal presence, which in turn ensures heat preservation. In the swallow-dome dwelling, the main living spaces, namely 'evlik' and barn, are positioned in a buried manner and covered with a unique swallow-dome roof. The formation of 'evlik' and barn with swallow-dome roofs is a vital necessity, essential for the continuity of life.

The construction of the dwellings in the form of adjoining housing groups allows for addition. The new dwellings annexed to the existing housing group through the shared use of walls. In this context, dwelling with the swallow-dome roof, with its ability to adapt to the expanding family structure, the desire for communal living, improving economic indicators, and changing functionality, responds to these factors by its inherent feature of being able to be annexed, in other words, by its sustainable structure.

The main living spaces, storage areas, and specialized spaces are classified as housing components in the sampled swallow-dome dwellings. 'Evlik', 'hayat' (courtyard), and barn comprise the main living spaces; pantry and hayloft serve as storage areas; 'seki' rooms, regular rooms, and guest houses form the specialized spaces. It is assumed that the formation in the sampled swallow-dome dwellings starts with 'evlik' (main living area), 'hayat' (courtyard), and barn, and over time, storage areas such as hayloft and pantry, as well as functionally specialized spaces like room, 'seki' room, and guest house, are articulated within this formation. Unlike the other examples, the 'tandır' house and the 'aşkana' (kitchen) replaced the main living area in the 9th sample dwelling, and a space called the shepherd's room for the person responsible for the care of the animals was added to the dwelling. The transfer of functionality from the 'evlik' (main living area) to specialized spaces is associated with socio-cultural and economic changes.

The 'evlik' (main living area), barn, and 'hayat' (courtyard) spaces in the sampled dwellings are covered with a swallow-dome roof. The relationship between the swallow-dome roof and the 'evlik' (main living area) and the swallow-dome roof and the barn, as well as the enclosed and buried formation of the spaces, are essential for the continuity of life. The enclosure of the main living spaces with a swallow-dome roof, without making a distinction between humans and animals, demonstrates the relationship between the life and the swallow-dome roof. The 'hayat' (courtyard), defined as a summer room, is also covered with a swallow-dome roof in some examples, indicating that the enclosed formation is reflected in the 'hayat' (courtyard) as well. In the sampled swallow-dome dwellings, rooms and spaces referred to as 'seki' room do not have a swallow-dome roof. In this context, the vital necessity of human beings who lead a borderline life in biological terms is associated with the triple formation of 'evlik' (main living area), barn, and 'hayat' (courtyard), which become

synonymous with the swallow-dome roof, and this necessity diminishes in the spaces that are articulated with the improvement of economic conditions.

This study examines the spatial analysis of swallow-dome dwellings constructed by blending with the living patterns, cultural factors, memory teachings, and natural environmental factors by the local people, which have been ongoing since Central Asia. An approach has been developed in the context of regional housing typology for the spatial analysis of swallow-dome dwellings, which are on the verge of extinction in contemporary times and can only be identified in limited numbers. Spatial evaluations specific to swallow-dome dwellings have been transferred, contributing to the preservation of cultural heritage.¹

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