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IDENTIFICATION AND ANALYSIS OF THE ARCHITECTURAL SPACES AND FEATURES OF THE HISTORIC SEB CASTLE IN SARAVAN COUNTY, IRAN

Jamshid DAVTALAB[1]✉, Abolfazl HEIDARI[1] and Vajihe NAROOEI[2]

[1] Assistant Professor, Department of Architecture, University of Zabol, Zabol, Iran, (Corresponding author: jdavtalab@uoz.ac.ir).
[2] M.A. Student, Department of Architecture, University of Zabol, Zabol, Iran.

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Abstract: Qajarid residential-governmental settlements found in Baluchistan have a unique architecture due to the security concerns that resulted from adjacency with the borders of the neighboring countries, in addition to the special climatic and environmental conditions of the region. The concepts behind the architecture of the Qajar era had certain shared grounds that were rooted in the sociopolitical issues of that historical period and can still be observed in many Qajarid castles. This study analyzes these concepts in the architectural features of Seb Castle in Saravan County, with the aim of reviewing the architecture of the castle and identifying its spaces. The architecture of Seb Castle, which was a residential-governmental site, reflects the cultural, climatic, and geographical conditions of the region, as well as the builders' knowledge of the local materials. In this research, which is partly historical-interpretive and partly descriptive-analytical, the prominent architectural features and ornaments of Qajarid castles in Saravan County, especially Seb, are discussed with the aim of examining the major factors that have affected the structure of these fortified buildings. The results show that the sociopolitical conditions of that era had a great impact on the structure of Qajarid castles. In addition, the study of the prominent features of Seb Castle shows that it has a special mastaba structure and that it has been constructed with the clay-alyssum mixture, a local material once commonly used in the region. Unlike other Iranian historic buildings in which common ornaments included decorative plasterwork, tile-work, mosaic, and mirrors, the interior and exterior of Seb Castle have been decorated using clay and mud.

Keywords: Qajarid architecture, Qajarid castles, Saravan, Seb Castle.

چکیده: شناسایی و الویت سنجی سکونتگاه‌های مسکونی- حکومتی دوره قاجار در منطقه بلوچستان علاوه بر شرایط اقلیمی و محیطی، بدلیل هم مرز بودن با کشورهای همسایه و شرایط خاص امنیتی منطقه معماری مخصوص به خود را دارند. در این خصوص مفاهیم به کار رفته درآرایه‌های معماری دوره قاجار دارای معانی مشترکی است که معلول مسائل اجتماعی و سیاسی دوره خود بوده‌اند و در بسیاری از قلعه‌های به‌جای مانده از آن دوران دیده می‌شود. مقاله حاضر با محور قراردادن این مفاهیم مشترک و تحلیل آن‌ها در آرایه‌های قلعه سبِ سراوان، در صدد معرفی معماری به‌کار رفته در این قلعه و شناخت ویژگی‌های فضاهای موجود در آن است. معماری به‌کار رفته در قلعه سب که یک قلعه مسکونی- حکومتی بوده است نشان از فرهنگ، اقلیم، شرایط جغرافیایی و فرهنگ استفاده از مصالح بومی منطقه دارد. در این پژوهش که بخشی به روش تاریخی- تفسیری و بخشی از آن توصیفی- تحلیلی می‌باشد به ویژگی‌های بارز معماری، تزئینات و گچ بری‌های قلعه‌های دوره قاجار در شهرستان سراوان، به‌ویژه قلعه سب پرداخته شده و عوامل تأثیرگذار بر ساختار کلیدی قلعه سب مورد بررسی قرار گرفت. نتایج تحقیق نشان می‌دهد که فضای سیاسی و اجتماعی آن دوران، تأثیر فراوانی بر ساختار این ابنیه داشته است. همچنین بررسی ویژگی‌های بارز قلعه سب نشان داد که ساختار آن دارای شکل خاص هرم مصطبه بوده، مصالح به‌کار رفته در این قلعه از ملات بومی، مقاوم و خاص "گل رس- توتری" است و تزئینات داخلی و خارجی به‌کاررفته در آن، برخلاف دیگر بناهای تاریخی ایران که در آن‌ها از تزئینات گچبری، کاشی‌کاری، معرق، آینه‌کاری و سایر الحاقات تزئینی استفاده می‌شده است، با استفاده از ملات خشت و گل به زیبایی انجام گرفته است.

کلمات کلیدی: معماری دوران قاجار، قلعه‌های دوران قاجار، سراوان، قلعه سب.

I. Introduction

One of the important ways to know the history of our ancestors is to study the historical monuments and relics left by them (Davtalab et al. 2021). In any historical period, governments devised certain strategies to defend their lands and properties. Constructing castles was a basic strategy to achieve that goal. A castle is an enclosed area with strong walls and towers, which can house soldiers or residents. During wars, people took refuge inside castles to stay safe from enemy attacks. The food stored inside castles could often feed the dwellers for several months (Tashakkori, 2013). Many castles were built in Iran during the Qajar era, and many of these castles were used for residence, especially by local rulers (Rezalou, Eslami Nasab, and Dadkhah, 2014). A large number of historical castles can be found throughout Sistan and Baluchistan (an eastern province of Iran), especially in Saravan County. Belonging to the Qajar era and located in Seb Village, Seb Castle is the most prominent historic building in Saravan. Seb Village is located 10 kilometers southeast of Sib va Souran County and 45 kilometers southwest of Saravan County. According to the Dehkhoda Dictionary, Seb means "the place of many springs". Seb Castle, which is also known as Sib Castle and Kalaseb, is the tallest clay and mud building in Iran and has been dubbed the most beautiful earthen castle in the country. It is a remnant of the constructions carried out in the Islamic era of Iran and falls into category 27 of the historic monuments of Sistan and Baluchistan Province. Seb Castle was the center of governance for all regions in Saravan County, such as Kont, Hidouch, Souran, Zaboli, Paskouh, Gosht, and so on. It was politically important during many different historical periods. According to the available documents, when Nasser al-Din Shah decided to take control of the Baluchistan

region in 1878, he sent his forces directly to Seb Castle. This historic castle is one of the most intact buildings that were constructed during the Islamic period of Baluchistan, and it was registered as a national monument of Iran under number 1751 in 1996. The building itself is 23 meters high and stands on a small hill with height of four meters (27 meters in total). Despite its significance, this national historical monument has seen little scholarly attention. In addition to being the tallest earthen castle in Iran, Seb Castle has many outstanding features, which highlight the necessity and significance of this study.

This article introduces the architectural spaces and features of Seb Castle and answers the following questions:

- What are the prominent features of Qajarid castles in Saravan County?
- What are the prominent features of Seb Castle compared to other castles in Saravan County?
- What factors have affected the physical structure of Seb Castle in Saravan County?

II. Research background

The rather small number of studies carried out about the architecture of Qajarid castles shows that this subject has not yet received the scholarly attention it deserves. Farhad and Kashani (2010) examined the determinant factors of the architecture of the Qajar era and concluded that a new style of architecture was developed in the Qajar era. While Qajarid architects mostly emulated the works of Safavid architects, there were some differences in the architecture of the Qajar era, which resulted from the different political and religious tendencies of that period during Iran's history. Kamali (2009) has studied the status and standing of the Qajarid architecture throughout the course of the history of Iranian architecture prior to the new era. In their case study of Vali Castle in Ilam province, Rasouli and Ahmadi (2021) reviewed the construction of Iranian castles in the pre-Islamic and post-Islamic eras of the country based on the political, economic, and geographical requirements of each era. They categorized the castles into two groups: (1) castles built on mountains (for military and defensive purposes), and (2) castles built on plains (to protect caravans and house soldiers). Varmaghani (2015) examined the characteristics and morphological changes of fortifications from the beginning of the Median era to the end of the Qajar era and the factors that affected the military and defensive considerations in the construction of Iranian cities. Sharifi Kazemi, Anani, and Mohammadian (2015) suggested that security was the most influential factor in the formation of the structure of the castles built in Boshrouyeh City. Zarei and Heidari Babakamal (2014) examined the significance of the castles of the Shahdad region in providing security across the western section of the Lut Desert. They compared the function of these castles with that of other castles built inside and outside Kerman and the central areas of Iran. Keikhaei (2021) suggested that the castles that were built in Sistan and Baluchistan during the pre-Islamic and Islamic periods of Iran reflect the developmental trend of defensive constructions during the two eras. Keikhaei (2021) also proposed that what distinguishes Seb Castle from Kont Castle are the unique technical features in its architecture and the prominent indigenous decorations of the castle. Jangizehi and Ghorbaniparam (2017) explained that clay and mud were used to construct Seb Castle due to their accessibility and inexpensiveness and associate the durability of Seb Castle with its pyramid-like structure, and the use of the sticky mortar consisting of straw, mud, alyssum, and eggs.

III. Research methodology

This study was conducted using a combination of the interpretive-historical method and the descriptive-analytical method. The required data were collected via documentary, field, and library research. The data obtained from Iran's Cultural Heritage, Handicrafts, and Tourism Organization were also used during this study. Examination of the spatial structure of the architecture of Seb Castle can be seen as a part of systematic studies. Understanding the organized components and features of architecture requires a general comprehension of the structural-spatial characteristics of the mass and space, and how they are connected. This would allow the researcher to understand its physical-perceptual and physical-functional structures.

IV. Discussion and results

IV.1. Study area

Saravan County is in the southeast of Sistan and Baluchistan Province. It borders Khash County from the northwest, Sib va Souran County from the west and Pakistan from the east and southeast. It is located at the easternmost point of Iran. Saravan County has the highest number of castles (54) in the Baluchistan region (Fig. 1). The most important historical castles of Saravan are Seb Castle, Dezak Castle, Khairabad Castle, Kont Castle, and Paskouh Castle.

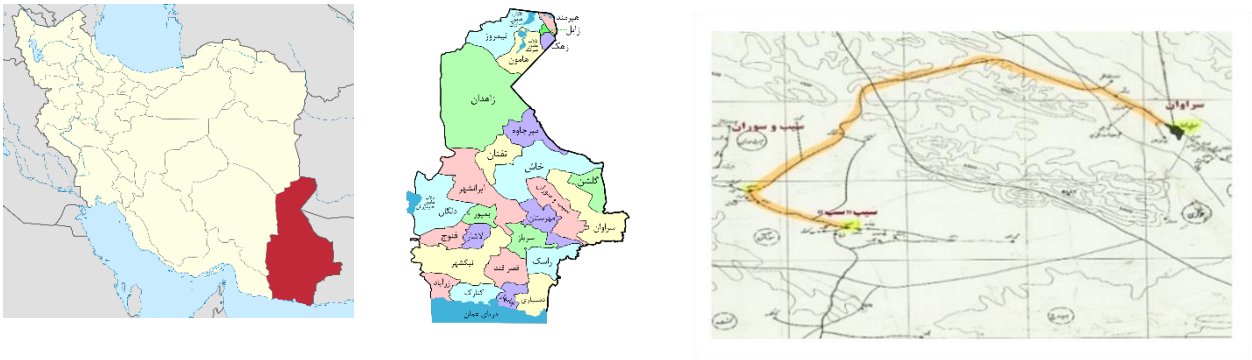


Figure 1. The location of Sistan and Baluchistan Province in Iran (left), the location of Saravan County in Sistan and Baluchistan Province (center) and the location of Seb Castle in Saravan County (right) (by Authors).

IV.2. Architectural features of Saravan's castles during the Islamic-Qajarid period

Finding the answer to the first research question, which is about the prominent features of Qajarid castles in Saravan County, required the identification of the features of the architecture of the Qajar era and then the examination of these architectural features in Saravan's castles. The NW-SE direction of houses, the central and introvert yards of buildings, observance of the hierarchy and significance of spaces, Karbandi decorations of the ceiling of vestibules (Hashti), the hall as the most important space on the northern side of the house, water pools and gardens were among the common architectural features of the Qajar era. Direct observations and available maps showed that some of these architectural features are present in the Qajarid castles of Saravan County as well, especially Seb Castle and Kont Castle. In addition to the above-said features, decorations, and ornaments are among the prominent architectural features of these castles. The decorations of these castles are mainly on the building face overlooking the courtyard and in the interior spaces, while the facade and the outer walls are rather simple and unadorned. However, battlements and towers break the uniformity of the exterior and can be considered a type of decoration. Most decorations in Qajarid castles were done using plaster. This material has been used in almost all of these castles to cover most of the interior spaces and to do plasterwork (plain shapes or floral motifs). Brick decorations with geometric or simple designs have also been used. Decorative shapes created by bricks were particularly common ornaments in their curved sections. Decorative niches and arches were often used to add visual variety to the different surfaces of these castles and were a common means of decorating them. While these castles were not all adorned to the same degree, there are some common decorations that have recurred in most of them (Table 1).

Table 1. The geographical and historical location of castles in Saravan.

Name of castle	District/village	Era
Seb	Sib va Souran / Sib va Souran	Islamic-Qajarid
Kohneh Qaleh	Central	
Kouhak	Bamposht / Kouhak and Esfandak	
Gosht	Central / Gosht	
Khairabad	Central / Suburban	Mongolian
Sarjouvshastan	Central / Suburban	Islamic
Hoshak	Central / Suburban	
Bamposht	Bamposht / Bamposht	
Hitak	Central / Suburban / Hitak	
Dezak	Central / Suburban / Davarpanah	
Esfandak	Bamposht / Kouhak and Esfandak	
Dehak	Central / Dehak	
Kallegan	Jalgh / Kallegan	
Nahouk	Jalgh / Nahouk	
Zaboli	Jalgh / Kallegan	
Paskouh	Sib va Souran / Paskouh	
Kont	Sib va Souran / Hidouch	
Bolgheis	Central / Suburban	
Cheshmeh Nemak (Joushan)	Central / Gosht	
Hidouch	Sib va Souran / Hidouch	
Bakhshan	Central / Suburban - Bakhshan	

IV.3. Seb Castle

As mentioned before, Seb Castle is a Qajarid building located in Saravan County, with its name derived from Sib Village. The term Seb also refers to ancient tribes in Saravan.

Seb Castle is considered to be the most politically historic section of Saravan County. According to historical documents, it was the first area in eastern Baluchistan, where Nasir al-Din Shah's forces were deployed in 1878 to monitor movements in the whole region. The origin of this castle, which is a royal fortress, dates back to the pre-Qajar era, namely the Safavid period, during which nobles began its construction. It was later expanded by the subsequent governments. This castle became a residence for rulers in the post-Safavid era and was one of the main headquarters of Nader Shah in the Afshari era. Seb Castle was home to the Barkzaei and Mirmoradzehi tribes until 1965, but it was later abandoned.

Regarding the factors that have influenced the formation of the main structure of Seb Castle, research shows that the sociopolitical atmosphere of that era had a great impact on the structure of all defensive buildings. In fact, examining the structure of these castles is not possible without knowing the concepts behind them. Security and defense have always been top priorities and major concerns for different societies throughout history. Similarly, the construction of spaces with a defensive approach has become an integral part of the historical culture of Iran (Sharifi Kazemi, Anani, and Mohammadian, 2015). As such, Seb Castle has been built on a natural feature to be taller (one of the main features of the castle). In fact, Seb Castle is the tallest mud-brick building in Iran (Fig. 2). Another main structural feature of Seb Castle is its mastaba (pyramid-like) structure for security reasons. The mastaba shape of the castle makes it more robust and prevents the drift of its thick and high walls. Another main structural feature of Seb Castle is its secret passages, especially hidden staircases, built to increase security during important meetings.

Figure 2. Seb Castle (by Authors).

Despite its age and the torrential rains of the Baluchistan region, Seb Castle has not deteriorated, which can be attributed to its construction materials. The local architects used a certain mixture to make a strong mortar with high adhesiveness. This has made the castle resistant to torrential rains and wind erosion.

IV.3.1. Layout of Seb Castle

Regarding the prominent features of Seb Castle compared to other castles in Saravan County, first, the general characteristics of Seb Castle will be described. Then its prominent features will be discussed in this section. The total area of Seb Castle is 4,000m2, and its built-up area is 900m2. The castle is 23 meters high and has been constructed on a hill. The base of the main building is a 36*25m rectangle. The building has two stories, and its size decreases as it rises, taking the shape of a mastaba. The castle's pyramid-like building has increased its stability and prevented its thick and high walls from drifting (Fig. 2). The castle has 14 towers, and the keep itself has four towers. The southeastern stairs are the only way to reach the castle. Beyond the gate, there is a passage that reaches the castle's threshold, which is located in the middle of the eastern wall. A steep corridor allows access to the central courtyard. This type of architecture makes entering the castle rather difficult and thus increases its security. A high curtain wall surrounds the castle, on which there are sections (locally known as Gholamgard) from which the guards could shoot arrows and create a defensive barrier against invaders.

The castle's building has two stories (locally known as Ashkoub). A chamber was reserved for the ruler at the highest point of the castle (locally known as Shahneshin) to provide a commanding view of the surroundings. This part of the castle has inlaid doors, among its unique features. A rather difficult-to-see, narrow, and steep staircase provides access to this

section. These characteristics helped keep the ruler's chamber away from stranger's eyes. The castle has ten rooms, which are built around the central courtyard (Fig. 3 (left)). There are also six rooms on the second floor, some of which were built by order of the last ruler (Fig. 3 (right)). There are niches in most rooms used to store objects and tools. The Baluch people call these niches Darig. The castle also has stables and a space probably used as a prison.

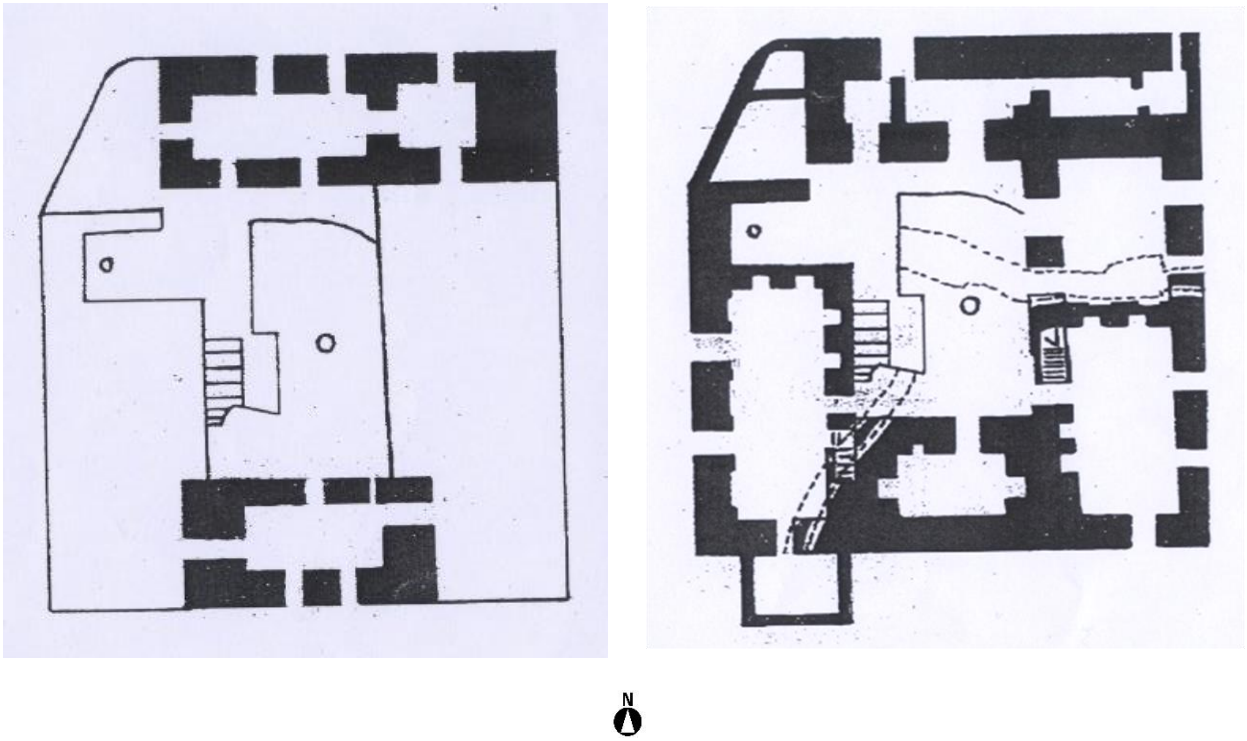


Figure 3. The layout of the first floor (left) and the second floor (right) of Seb Castle (Cultural Heritage, Handicrafts and Tourism Organization of Sistan and Baluchistan Province).

The castle's owner resided on the western side, a relatively large area. The eastern side, with a length of 11m and a width of 4m, has a flat roof and was probably used as a prison. The remains of a tandoor can be seen on the western side of the courtyard, which was used for baking bread for the castle's inhabitants. A mud-brick staircase in the southeastern room leads up to the watchtower. A well in the central courtyard provided easy access to drinking water. This well was dug into the rock on which the castle has been built. There is also another smaller well in the castle. Clay pipes carried the well's fresh water to the upper part of the castle. About 10 meters around the main have been paved with stones.

For better analysis of the characteristics of Seb Castle, the structure, the materials, and the decorations have been discussed separately.

IV.3.2. Structure

The architecture of Seb Castle is cubic and simple. It is symmetrical in shape, similar to the other castles in the region. The first section of the castle was reserved for elites and the ruler's close companions. Servants resided in the second section of the castle, and the ruler lived in the third section. The prison was located inside the stables. The castle has a total of 35 rooms. In general, the castle's various spaces consist of the curtain wall, a set of rooms built into the wall in two stories along three sides of the castle, the ruler's chamber as the most important part of the castle, unroofed sections, and security stations (Fig. 4).

Figure 4. The layout of Seb Castle (by Authors).

Curtain wall: The whole area of the castle, measuring 3,200 m^2, is surrounded by a six-meter-tall rectangular curtain wall. This protective wall has four quadrilateral towers at its four corners, which were not used for security or defensive measures; rather, they merely served to strengthen the joints of the wall's four sections. These towers are an integrated component of the structure of the curtain wall. The inner spaces of the curtain wall do not come to an end at the towers; rather, they continue and merge into the inner space of the towers. The structure of these towers is easily

perceivable in the outdoor landscape of the castle. Unlike the other castles in the region, there is only one entrance into Seb Castle, which is located on the southern wall. This increased the castle's security and made commuting from and into the castle much easier to control (Cultural Heritage, Handicrafts and Tourism Organization of Sib va Souran County, 2016).

Rooms along the curtain wall: A number of rooms have been built in two stories along the curtain wall, except for the tower at the center. The stables and the prison are located in the lower story on the northeastern side. The dark winding corridor of the difficult-to-access space of the prison is behind the stables. The stables served as a place for keeping animals and torturing prisoners. Above the stables and the prison, some rooms with decorations (Fig. 5) overlooking the courtyard. This section was reserved for the ruler.

Figure 5. The stables (first floor) and prison (ground floor) of Seb Castle (by Authors).

The rooms on the eastern, western and southern sides of the castle are all on the ground level, with the upper floor housing the guard chambers. In addition to providing shelter for the servants, these undecorated rooms were used as storehouses and kitchens. The height of the outer wall of these rooms is about six meters on the outside of the castle, and they occupy a total space of about 100m2. A well dug into the rock at the center of the central courtyard provided fresh water to the castle's inhabitants. This feature is unique to Seb Castle in the region. A total of 10 small, and large rooms have been built around the central courtyard.

Ruler's chamber: The most important section of the castle is the ruler's chamber, which takes up about 900m2 of the castle's area. The chamber is a 25*26m rectangle with its walls leaning inward as they rise, forming a mastaba. The reason for the incline of the walls is probably the strength and stability of such walls compared to vertical walls. Another reason might be security and prevention of access to the upper sections (Litkouhi, 2011).

The ruler's chamber has two floors. The ruler's seat, located at the highest point, was added later. The wooden doors and windows once had elaborate decorative carvings. The niches and shelves are decorated as well, with zigzagged arched frames. Similar to the exterior of the building, the inner spaces have been coated with cob. The ruler's chamber is located at the highest point of the hill and the first floor of this chamber is on the same level as the upper floor of the other sections within the castle's walls. This section of the castle is a large mud-brick trapezoid, which has been decorated with unique arrow slits (Pirnia, 2008). The ruler's chamber has only one entrance for security reasons, which sits 2.5m above the courtyard's level. The entrance's staircase, located on the southeastern side of the courtyard, leads to an inlaid 0.5*1.5m double door with a thickness of 0.7m. Immediately beyond the door, there is a space in which the guards stand watch. This space is similar in form to a certain space in the traditional houses of the region where the elderly rest on two platforms on both sides of the door (Fig. 6).

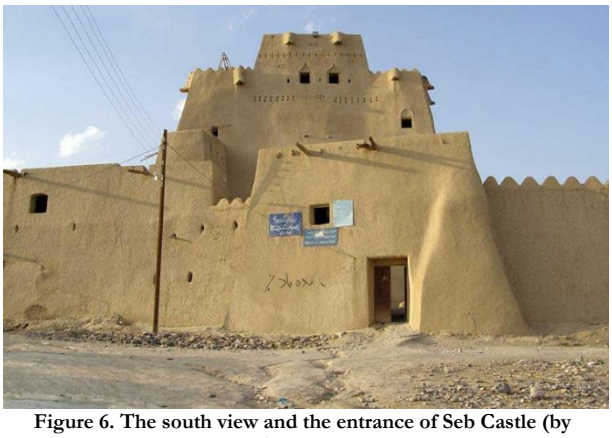
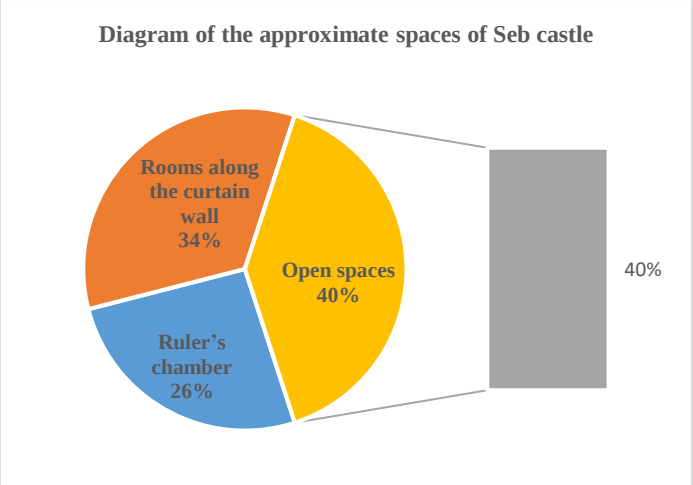


Figure 6. The south view and the entrance of Seb Castle (by Authors).

Open spaces: The remaining portion of the castle, which is approximately 1,300m2, consists of open spaces, such as unroofed corridors, inner yards, water wells, passages, and staircases (Fig. 7).

Security spaces: A three-meter-tall wall has been raised around the castle, which has four towers and certain areas for standing watch and shooting arrows. With dimensions of 48*74m, this wall encloses the castle in a rectangular shape. The southeastern stairs are the only entrance into the castle. Arrow slits can be seen in different parts of the building, including the walls of the courtyard of the first and second floors. These slits can also be seen on both sides of the upper section of the watchtower and next to its windows.



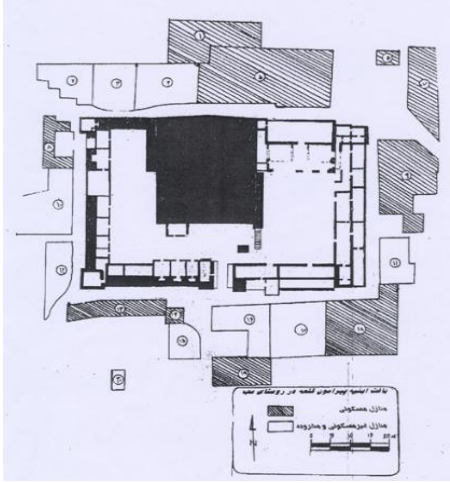


Figure 7. The spatial chart and the layout of the surrounding fabric of Seb Castle (Authors, produced based on the figures obtained from the Cultural Heritage Organization of Sistan and Baluchistan Province).

IV.3.3. Construction materials

For centuries, cob and mud-brick have been the main construction materials used in hot and dry climates. These inexpensive materials are very accessible and can be used with ease. The bright color of these materials reflects the radiant heat of the region. In addition, the heat transfer rate of mud-brick is desirable in hot and dry climates (Tavassoli, 2002). Mud-brick is made by mixing clay and water. Clay is made by adding water to the soil, kneading the mixture, and finally letting the moisture dry. Air-cured mortars and the clay have been used in Seb Castle to bond the mud-bricks and rubble. The constituting components of these mortars are clay, water, and lime to increase their strength. The coating used in Seb Castle is an air-cured cob made by mixing clay, straw, and alyssum. The mortar created by these three components is viscous and very resistant against heavy rains. The one-meter-thick walls and palm trunks have further added to the stability of the roof. The salt added to the straw has prevented the wheat grains from germinating. Half-calcined plaster commonly prepared in the Baluchistan region has also been used for coating the castle's surfaces. The builders of Seb Castle have utilized the local knowledge of architecture and climate to a considerable degree. The cut trunks and branches of palm trees, as well as mats made of Nannorrhops ritchiana (short wide palm tree), were often placed on the roofs and were then coated with cob. The local environment provided the architects with abundant amounts of mud and clay. As a result, the entirety of Seb Castle has been skillfully constructed with these materials. The roofs have also been built using local materials such as palm trucks, palm leaves, and leaf mats. All the different sections of Seb Castle have been constructed using mud-bricks and cob-alyssum mortar (Table 2).

Table 2. The materials used in Seb Castle and their application.

Material	Components	Application
Mud-bricks	Clay and water	Building the walls
Stones	Rubble	Strengthening the foundation
Clay mud mortar	Straw (wheat and barley) + clay mud + lime + water + salt	Bonding the mud-bricks and coating the roofs
Air cured mortar (clay mud - alyssum)	Clay + medium-sized straw + alyssum seeds	Coating the building's exterior surfaces and roofs
Coating mortar	Half-calcined plaster	Coating the building's interior surfaces
Tree trunks	Palm	Coating the roofs
Mats	Nannorrhops ritchiana plant	Covering the palm trucks placed on the roofs

IV.3.4. Decorations

Seb Castle was the residence of rulers. Constructed based on the principles of castle building in Iran, it has battlements that adorn its mud-brick visage. Geometric shapes decorate the niches and shelves. The doors and windows were once ornamented with carvings. The wooden gate has been covered with a metal sheet and wooden studs for added protection. Each iron sheet has two horizontal rows of studs with two studs vertically connecting the two rows. The studs have been wedged from the inside, and their iron nails have been bent to prevent them from loosening. The drawbar has been fastened to the door from the inside via these studs. The hinges rotate around wooden pieces overlaid with metal sheets to increase their durability. A piece of carved wood can be seen on the doorpost. The decorations consist of geometric shapes that form zigzagged parallel lines, triangles, and diamonds (Fig. 8).

Unlike the other Iranian historic buildings, which are ornamented by plasterwork, tile-work, mosaic, mirrors, and other types of common decorations both on the exterior and the interior spaces, all the decorations in Seb Castle have been made using mud mortar. Appendix A shows the various spaces, prominent features, and structural characteristics of Seb Castle.

Figure 8. The decorations of Seb Castle (by Authors) .

V. Conclusion

As a historic building belonging to the Qajar era, which served as the center of authority for the whole region, Seb Castle has not seen much scholarly attention. The aim of this study was to provide a better understanding of the spaces and prominent features of the castle's architecture by combining the interpretive-historical and descriptive-analytical methods for the identification and analysis of the features. The results concerning the first research question, which was about the prominent features of Qajarid castles in Saravan County, showed that decorations and plasterwork were among the prominent characteristics of Iranian castles built in Saravan during that era. The decorations of these historic buildings can be seen mainly in their interior spaces and on the exterior surface that overlooks the courtyard. The facades of these buildings are rather simple and devoid of any ornament. Battlements and towers, however, break the uniformity of the exterior and can be considered a type of decoration. In addition, geometric patterns and decorative shapes created by bricks, as well as ornamental niches and arches, further adorn the various spaces of these castles. Regarding the factors that have influenced the physical structure of Seb Castle, the results showed that the sociopolitical conditions of that period had a great impact on the structure of these buildings. Territorial security and defense were major concerns and priorities for the residents of these lands. As a result, many buildings were constructed with a defensive approach as part of the historic Iranian culture. These buildings were often raised on natural features to increase their height, which is also a key structural feature of Seb Castle. Another key structural feature of Seb Castle is its mastaba shape implemented for safety and security reasons. The mastaba shape of the castle makes it more robust and prevents its thick and high walls from drifting. Another key structural feature of Seb Castle is its secret passages, especially hidden stairs, built to increase the security of its residents when holding important meetings. Regarding the prominent features of Seb Castle compared to those of other castles in Saravan County, analysis of the castle's features in terms of building, structure, construction materials, and decorations showed that its spaces can be grouped into five categories: (1) curtain wall, (2) open spaces, (3) roofed spaces reserved for the ruler, (4) roofed spaces inside the wall (5) security spaces. The trapezoid shape of the section reserved for the ruler, which crowns the castle and is decorated with unique arrow slits, distinguishes Seb Castle from the other castles found in the region.

In terms of construction materials, the interior surfaces of the castle have been covered by cob. The expansion joint in the main building and the castle's construction materials such as clay, straw, palm wood,

and inlaid doors are among the prominent features of this monument. Unlike other historic Iranian buildings in which plasterwork, tile-work, mosaic, mirrors, etc., have been used for decoration, all ornamental features of the interior space and exterior surfaces of Seb Castle have been made using mud mortar.

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Appendix A

The various spaces, prominent features, and structural characteristics of Seb Castle (by Authors)

No.	Space	Image	Features
1	Outer wall		In Seb Castle, vertical structural components often have multiple functions. In addition to separating spaces, enclosing areas, and providing cover, they form a strong barrier. The curtain wall of Seb Castle, onto which the walls of the inner rooms are perpendicular, provides additional stability to the castle's walls.
2	Battlements		The battlements are located on the second floor and above the tower. Three areas have been designated for standing watch. These areas overlook all around the castle. To the north, the houses next to the castle, the plain, and Mount Apatan are easily visible. To the east and west and beyond the main courtyard, the whole village and a few kilometers beyond that can be seen.
3	Arrow slits		Arrow slits have been dug all over the castle, from the walls of the courtyard to the main building on the first and second floors. In addition, dedicated spaces have been constructed for guard duty. These arrow slits provided the archers with sufficient visibility and protected them from enemy projectiles.
4	Gate		Seb Castle has three gates on its western and northern sides.
5	Mastaba shape		The foundation of Seb Castle is solid rock, and it has been built on the natural stones of a 20-meter-tall hill. Rock foundations can withstand high amounts of pressure and are highly resistant to subsidence and water seepage.

6	Corridor		The corridor is very narrow and long and has a short roof. Beyond the entrance, mud platforms have been built on both sides for the gatekeepers to sit.
7	Ruler's chamber		A relatively large area has been created on the western side of the courtyard, which was probably inhabited by the Khan or the owner of the castle. The second floor has a total of six rooms with varying sizes based on their application. The first room is a hall built by Mir Mahmoud Khan in the western section. This room was later used as a private meeting room. Most rooms have niches for safekeeping objects.
8	Stables and prison		On the eastern side of the castle, a space with a length of 11 meters, and a width of four meters was built, which was used as a prison. Since this prison is similar to a dungeon, the prisoners had little hope of escaping. It has very thick walls, and the entrance is in the stables.
9	Well		There is a water well, in the middle of the courtyard, around, which has been paved with stones. There is also a well in the ruler's chamber, located on the upper floor. Unlike many other castles that have moats, Seb Castle lacks one because the layers of stone on which the castle has been constructed have added to the height, thus making it secure enough.
10	Windows		Windows overlooking the courtyard provide light for the interior spaces. In addition, the openings dug into the walls of the ruler's building help lighten the interior spaces.