Politecnico di Torino

Master's Thesis :

Past Meets Present

Studies of Restoration and Functional Enhancement

At Shahrestanak palace in Alborz Province(Iran)



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Politecnico di Torino

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Master Degree in
Architecture for Sustainable Design

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Abstract

This study marks the culmination of my two-year master's journey in the Architecture for Sustainability program at Politecnico di Torino, with a focus on maintaining a strong connection to my homeland, Iran. Upon arriving in Italy, I observed a pronounced dedication to historical monument preservation, contrasting sharply with Iran's challenges in this area. Inspired by Italy's preservation methods, I aimed to integrate heritage conservation and sustainability at the Shahrestanak Palace, a 19th-century historical site in Alborz Province near Tehran.

The initial chapter provides a historical context, outlining the evolution of Tehran and its architectural heritage, emphasizing the significance of preserving Shahrestanak Palace. The second chapter examines the palace's geographical and territorial context, focusing on its accessibility and relationship with its surroundings. The third chapter offers a detailed architectural analysis of the palace, highlighting the fusion of Iranian and European elements influenced by the monarch's travels during the 19th century.

The study concludes with a revitalization project concept for Shahrestanak Palace, proposing its transformation into a publicly accessible venue. This revitalization aims to stimulate economic growth through sustainable and eco-friendly restoration, preserving the cultural heritage while promoting tourism and community engagement.

Introduction

My objective was to culminate my-two year journey in the masters degree program in architecture for sustainability at politecnico di Torino. Simultaneously, I sought to maintain a strong connection to my homeland, Iran. After coming to Italy, I observed how much attention is paid to historical monuments and heritage preservation. This was a stark contrast to Iran, where historical sites often face challenges due to limited resources and different preservation approaches. My aim is to integrate heritage conservation and sustainability with contemporary needs, breathing new life into the palace and its surrounding area. Inspired by Italy's methods, I decided to address the abandoned Shahrestanak Palace in Karaj province, near the capital city of Tehran.Dating back to the 19th century, Shahrestanak Palace holds significant historical importance, being associated with the reign of one of Iran's paramount monarchs. Initially conceived as a summer retreat for the monarch, it provided a refuge from the capital's demands, offering opportunities for hunting and relaxation amidst favorable weather conditions. However, beyond its historical significance, my aim was to underscore the intrinsic connection between this architectural gem and Iran's broader history and architectural heritage.

In the first part, recognizing the reader's unfamiliarity with Iranian history, I provide necessary tools and instruments for my case study. I delve into a brief history of different typologies across various dynasties, tracing the evolution of the capital city, Tehran. Additionally, I establish connections between these historical palaces and gardens, elucidating their functions and architectural characteristics to underscore the importance of preserving Shahrestanak Palace.

In the second chapter, the analysis delves deeper into the territorial aspect, examining the Shahrestanak Palace's relationship with its surroundings and neighboring areas. It commences by providing an overview of Iran and Italy's geographical locations, subsequently focusing on the specific location of the Shahrestanak Palace. Given its distance from the city, accessibility becomes a key consideration. The chapter explores historical modes of transportation to the palace and highlights its current accessibility for a diverse range of individuals, including climbers, riders, pedestrians, and others.

In the third chapter, it is essential to analyze the architecture of the palace to gain a comprehensive understanding of the case study. This entails examining how the architecture of the palace, influenced by Iranian architectural styles of the era, manifests in its interior and exterior design. Notably, during the 19th century, the king's exposure to European architecture during his travels resulted in a fusion of European and Iranian architectural elements. To analyze this aspect, surveys are indispensable. Despite the palace's ruined state, I utilized available information and documents obtained indirectly to conduct this analysis.

After concluding the aforementioned analyses, we can proceed to formulate the project concept. This involves revitalizing the Shahrestanak Palace, thereby breathing new life into the edifice while safeguarding its historical legacy. This revitalization entails reimagining the palace's function and usage, transforming it from a space exclusively accessible to the king and courtiers into a venue accessible to the broader populace. By repurposing the palace to cater to public needs, such as tourism and community engagement, we aim to stimulate economic growth both locally and nationally. Central to this endeavor is the restoration of abandoned palaces in a sustainable and eco-friendly manner, prioritizing the preservation of cultural heritage while facilitating naturalistic activities.

Shahrestanak palace, Karaj, Iran

1. Introducing the history of Iranian Architecture



1.1 Chronicles of Iranian Architectural Evolution(651 AD to the present day)

Pre-Islamic Period

(Before 651 AD)

- Iran had a long history of architectural development with influences from different civilizations such as the Elamites, Achaemenids, and Parthians.
- Structures included Persepolis, Pasargadae, and other Achaemenid sites.



Fig1. Persepolis, https://www.earthismysterious.com/magnificent-ruins-of-the-ancient-city-of-persepolis/

Sassanid Era (651–224 AD)

- The Sassanid Empire marked a continuation of Persian architecture, with innovations such as the use of large-scale barrel vaults, domes, and arches.
- The Taq Kasra (Arch of Ctesiphon) is a notable example of Sassanid architecture.

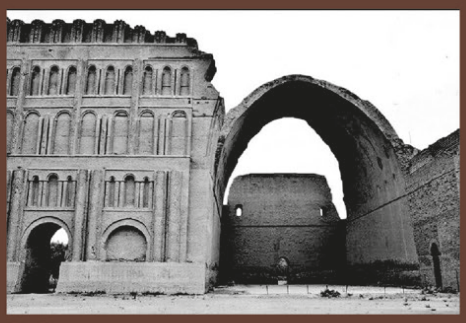


Fig2. Taq Kasra, https://www.atlasobscura.com/places/taq-kasra3/NWI5YjZkMzAwY2Uy/MzM2Y2EzZDQwYjA2/NDhfQ3Rlc2lwaG9u/XzAxLmpwZw.jpg

Islamic Period (7th Century AD) onwards)

- The mosques and minarets were built to invite people to Islam and prayer instead of the Sassanian fire temples.
- Notable examples:Jameh Mosque of Isfahan and the mausoleum of Sheikh Safi al-Din in Ardabil

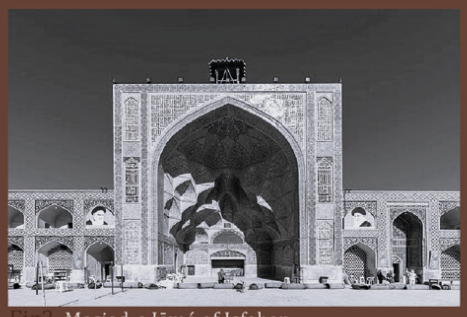


Fig3. Masjed-e Jāmé of Isfahan, https://it.wikipedia.org/wiki/Moschea_del_Venerd%C%3AC_(Isfahan)

Ilkhani (13th Century)

- Develop Islamic and Persian architectural traditions.
- Notable structures include the Mausoleum of Oljaytu in Soltaniyeh and the Jameh Mosque of Isfahan.



Fig4. Soltanieh Dome , https://iranparadise.com/soltaniyeh-dome/

Safavid Era (16th18-th Century)

- Golden age of Persian architecture
- The buildings constructed during this era are often characterized by a general four-iwan plan
- Prominent features included the use of intricate tilework and the construction of grand mosques, palaces, and the bazaars of Isfahan,



Fig5. Ali Qapu Palace , https://en.m.wikipedia.org/wiki/Ali_Qapu



Fig6. "Palace of the Sun , https://fa.wikipedia.org/wiki/%DA%A9%D8%A%7D%8AE_%DA%A%9D%84%9D%8A%7D8%AA

Afshari Era (18th Century)

- This building's external facade has elements of Indian architecture.
- Inside are Quranic inscriptions that serve as a symbol of Iranian Islamic architecture.

Qajar Era (18th20-th Century)

- Blend of Persian and European architectural influences.
- Residential buildings of the Qajar period typically consisted of a central room (iwan) and smaller rooms that were arranged around the central room.



Fig7. Golestan Palace , https://www.tehrantimes.com/news/82/417570-000-historical-objects-on-show-at-Golestan-Palace



Fig8. Azadi Tower , https://www.archdaily.com/774683/ad-classics-azadi-tower-hossein-amanat

Pahlavi Era (20th Century)

- Modernization of architecture, with the incorporation of modern styles and materials.
- The Azadi Tower in Tehran is a symbol of this period.

Post-Revolution (-1979Present)

- Emphasis on Islamic architecture and a return to traditional Persian elements in many constructions.
- Notable contemporary structures include the Imam Khomeini Shrine and the Milad Tower.



Fig9. Milad Tower , https://www.pexels.com/search/milad20%tower/

1.2 Golden age of tehran(1553-1925)

1.2.1 Tehran in safavid period(16-18th AD)

The Tehran gates were well-known for their robust, tall constructions as well as the urban areas that surrounded them. These areas were formerly constructed in different places along the Tehran wall, along with towers and ramparts. These structures were first built in the Safavid era, with the installation of five gates under Shah Tahmasb I's rule being the first example of such development.

"During his reign, Shah Tahmasb Safavi ordered the construction of a wall surrounding the city of Tehran and the installation of four to six gates on it because he loved Tehran and its pure climate. It appears that this wall had 114 towers, which is equal to the number of Quranic chapters. As a result, the first four gates surrounding the city were constructed during the Safavid era, which began precisely in 961 AH, in addition to the wall and towers of Tehran. These entrances were:
1.**Dolab Gate**, which is situated at the start of the Nayer al-Sultan Market.
2. **Shah Abdul Azim Gate,** which is situated at the start of Hazrati Market.
3.**Qazvin Gate,** . At the start of Qavam al-Dawla Market.
4.**Shemiran Gate**, At the intersection of Pamnar Street and Amir Kabir Street, at the start of Pamnar.[1]

Tehran Map in Safavid era (1501–1736)

"The city needs a wall built around it to protect it from robbers and attacks," Shah Safavi commanded. Tehran's city expansion plan was implemented in the shape of an asymmetrical octagonal, drawing inspiration from the Paris city map. The rectangular barrier was bordered on the outside by a deep, wide ditch, and it had four major gates.[2]

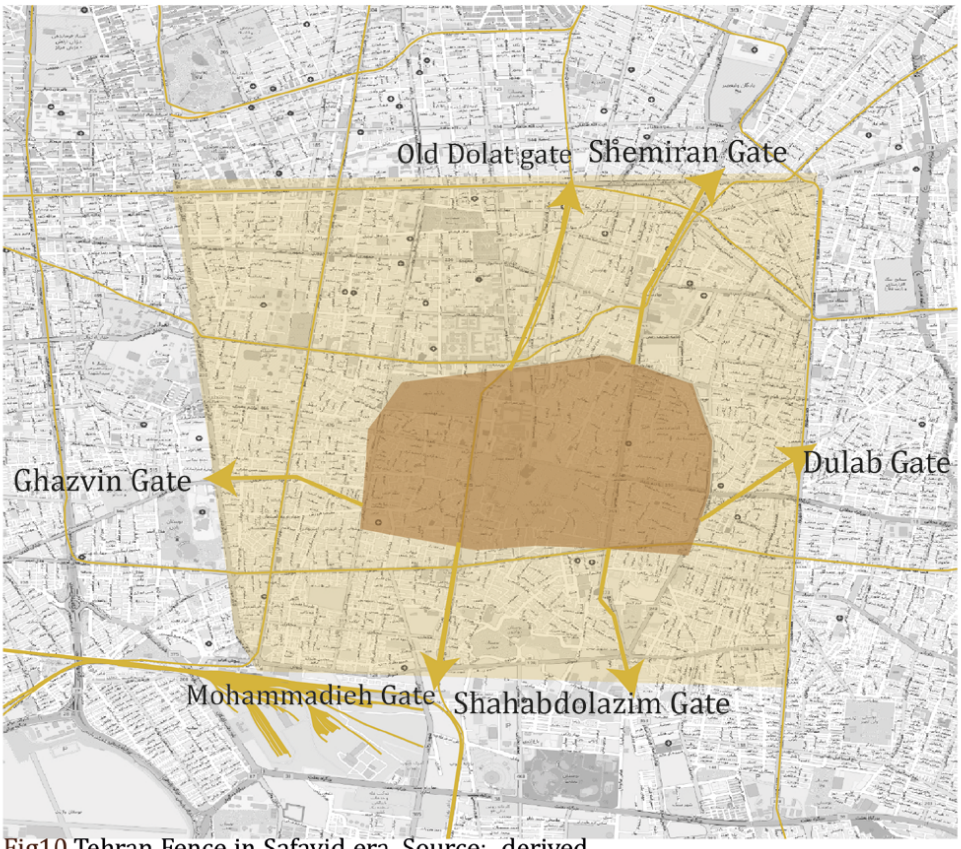


Fig10.Tehran Fence in Safavid era, Source: derived from the Kresisch map (Tahmasbi Wall), by author

1. Ettelaat Newspaper. "How Tehran's Historical Buildings Were Destroyed." 19 Feb. 1976, archived 30 Dec. 2017, retrieved 29 Dec. 2017
2.https://tehranica.info/information/history/%D9%85%D8%AD%D8%AF%D9%88%D8%AF%D9%87-%D8%AA%D9%87%D8%B1%D8%A7%D9%86-%D9%82%D8%AF%DB%8C%D9%85/

Safavid Gates



Fig11. Shemiran Gate, by Flandin, Eugène.
Lithograph, 1842.



Fig12. Dulab Gate, by Mittelholzer, Walter,
https://tehranica.info/information/history



Fig13. Ghazvin Gate,
https://tehranica.info/information/history



Fig14. Shahabdolazim Gate, by Sourine, Antoin
https://tehranica.info/information/history

The map of the Caliphate Tehran(Darul-Khalafeh)



Fig15. The map of the Caliphate Tehran. 1858 AD. August Kreshish
Source: Official document center of Golestan palace in Tehran

5 neighborhoods before the Naseri period:

At that time, the area of the city was about 4 square kilometers.

1.Oudlajan neighborhood **2.**Sanglaj neighborhood **3.**Bazaar neighborhood **4.**Chalehmeydan neighborhood **5.**Arg neighborhood [1]



Safavid old neighborhoods of Tehran
https://tehranica.info/wp-content/uploads/2022
1024.768/08/.webp, Edited by author

1.https://tehranica.info/information/history/Safavid old neighborhoods of Tehran

During the rule of Afghans

Old Dolat Gate

The Afghans built the northern gate of the Arg, which is located in the northern section of old Tehran, during their time of rule over Tehran in the late Safavid era. With the construction of this gate, also called "Darvazeh Asad al-Dawla," at the start of Bab-e Homayoun Street, Tehran now has six gates. According to legend, the Afghans constructed this gate in honour of their leader, Asad al-Dawla, as a means of escape in case the people of Tehran staged an uprising or launched an attack.[1]



Fig16. Old Government Gate of Tehran (Asad-Douleh Gate - Topkhaneh Square). by Luigi Pesce

During the reign of Mohammad Shah Qajar

Mohammadieh Gate

The only gate standing among the eighteen gates of ancient Tehran is the Mohammedieh Gate. It was constructed in the final years of Mohammad Shah Qajar's reign in , 1811 AD. Also referred to as the "Gate of Mohammadieh," this gate is situated at the start of Khayyam Street in Mohammadieh Square. Because it was considered a place of blessings when passing through, the Mohammadieh Gate survived the Qajar era when many other gates were demolished. It has vibrantly coloured glazed tilework depicting the fight between Rostam and the White Demon along with patterns of golden lions. The talented Shirazi tile maker Mohammad Qoli created this design, and is currently on display at Iran's National Museum.Even though the gate's four towers are still intact, their restoration will cost money because they have been converted into stores. Because of its religious significance, the Mohammadieh Gate holds a special place in the hearts of the people of Tehran. This devotion to the gate's spiritual significance contributed to its survival even when other Tehran gates were destroyed. The gate survived Naser al-Din Shah's and Reza Khan's subsequent expansions of Tehran. The people of the city may have derived the name "Mohammadieh" from their religious beliefs and reverence.[2]



Fig17. Remains of the Safavid fence near the Mohammadiyeh gate



Fig18. The second "Tehran" historical photography exhibition with a focus on "Life in Tehran's Historical Bazaar",www.tahraan.com

1. Complete Atlas of Tehran City, Gitashenasi, December 1992 AD. P., 6.
2. Parinush, Zahra. “Neighborhoods and Old Structures of Tehran Province.” Tabian, 12 September 2005. Retrieved 13 November 2009.

1.2.2 Tehran in Naseri era(18-19th AD)

Tehran was still largely the same city under this Qajar king, contained by the **-12kilometer** wall built during the Safavid era, but it was very different. Tehran now had fifteen thousand residents, a significant increase from the city's previous population of about one thousand. During this period, Naser Al-Din Shah gave the orders to build walls and towers, fill in the city's ditches, and expand Tehran. One of the most important moments in Tehran's history, he personally oversaw this urban expansion by striking a big ceremonial key, which is currently on display in the Golestan Palace Museum. The key symbolises Tehran's transformation.[1]

Tehran was chosen as the capital by Qajar for a number of reasons, the primary ones being that it was close to the Savojbolagh tribes' home and the lush Varamin region. Furthermore, the western tribes that lived in Varamin—that is, his supporters—had homes in and around Tehran. The biggest military bases of Iran, Astarabad and Mazandaran, were also not far from Tehran. It took almost ten years to build the fence and dig new trenches in Tehran during the rule of Naser al-Din Shah. Tehran expanded over several decades to occupy an area of three and a half square miles. There were twelve gates that connected it to its surroundings.[2]

Tehran in the style of Paris

After Naser al-Din Shah Qajar returned from his first trip to Europe, the capital started to grow. He was living in Tehran, where the population density was so high that there was barely enough space to move a pin. He made the decision to use European techniques to modernise and expand Tehran. Belair, a Frenchman, was hired to design a new city plan for Tehran with the intention of growing it in all directions. Inspired by the layout of Paris, a geometric design in the shape of an irregular octagon was the idea for Tehran. According to historians, Naser al-Din Shah wanted to make Tehran larger but also more like a capital city in Europe, especially in terms of design.[3]

Development of Tehran

When the strategy for Tehran's growth was complete, 158 years ago, in the year 1825-1826 AD, Naser al-Din Shah Qajar, took possession of a golden key. He went to the area around Shemiran Gate, which is located in modern-day Tehran at the intersection of Sadi Street and Enqelab Street. There, he struck the golden key to formally begin the capital's development. The next key was used by Mirza Na'ib al-Saltaneh, who came after him, and this was the official start of Tehran's growth.[4]



Fig19. Nasereddin Shah's pickaxe, https://iusnews.ir/images/upfiles/57792932/20181208.jpg

1. Law Newspaper. "The Gates of Tehran; The Heritage of Tahmasb Fence." 2018, https://irna.ir/xjpNsZ.
2. Javaherkalam, Abdul Aziz. History of Tehran. Tehran: Manochehri Library Publications, 1978.
3. Najmi, Asr. Tehran in the Course of Time. Tehran: Gutenberg Publications, 1994.
4. Ibid.,

The expansion of the capital from 12 to 32 kilometers

200 homes were constructed for the underprivileged in the first phase, which covered the area between Molavi Square and Execution Square. But Tehran was so full of people that there was nowhere left in the city for more homes. In the end, it was decided to close the moats surrounding the city, close Tehran's four gates, and let the city grow in all directions. The idea was for Tehran to grow by 1,800 ziraa in the northern section and by 1,000 ziraa in each of the remaining three sections. With this choice, Tehran's boundaries increased from 12 to 32 kilometres, giving its residents more room to live comfortably in the nation's capital after many years. In 1831 AD , which is exactly 5 years after the inauguration of Tehran's expansion, the construction of new gates to replace the old Safavid-era gates became a priority. The construction of these gates took several years, and when considering the completion of the city gates, it can be said that the plan for expanding the capital took a total of 9 years to be realized.[1]

12 Gates instead of 4 gates

In the early 1830s AD, Tehran initiated the construction of 12 new gates to replace the old 4 gates.Over time, gates like "Shemiran," "Dowlat," and "Yousef Abad" were added to the northern moat; "Shah Abdol Azim," "Khaniabad," and "Ghar" were built in the southern moat; "Doushan Tepe (Farahabad)," "Khorasan," and "Doulab" were established in the eastern moat; and "Bagh Shah," "Qazvin," and "Gomrok" were added to the western moat.The city was completely changed and given a new name when these gates were built, officially becoming the "Dar al-Khilafah Naseri."[2]

Digging a ditch is a way to protect the city

Following the growth of Tehran, Naser al-Din Shah Qajar followed Shah Tahmasbi Safavid's lead and built 12 gates and a moat around the city, as was customary at the time for city defence. Given that Tehran was officially the capital, these gates were crucial to securing the city. No one was allowed to enter or leave the city after dark because the gates were locked at night. The city gates would only be opened by the "Navaqel," or gatekeepers, in the morning after prayers were read and salutations were recited. Only then would people be able to enter or exit the city.[3]

When going through or entering the gates, city dwellers were required to utter the nightly password. By doing this, the person could indicate to the gatekeepers that they were a local and get permission to pass. In addition, a regulation was put in place requiring any stranger visiting Tehran for any purpose—including visiting friends or family—to get permission from the gatekeeper in order to enter and remain for a predetermined amount of time. The gatekeepers would pursue the person if they failed to depart the city within the allotted time.[4]



Fig 20.The Ditch of the Tehran Government Gate, on which the Revolution Street was built, 1910, Frederick J. Kelp

1. Najmi, Naser. Tehran in the Course of Time. Tehran: Gutenberg Publications, 1994.
2. Motaqedi, Kianoush. The Gates of Old Tehran. Tehran: Peykareh Publications, 2016.
3. Eyn al-Saltaneh. 1995. p. 561
4.Amirqasemkhani, Parisa. “The Shadow of Black Kanbar on the Walls of Nasserid Moat.” Hamshahri Online, 11 June 2024,



Fig 21. The ditch of Dushan tape Gate, by Frederick G. Clapp, 1928,
http://www.negarestandoc.ir/documentdetail.aspx?id=102193

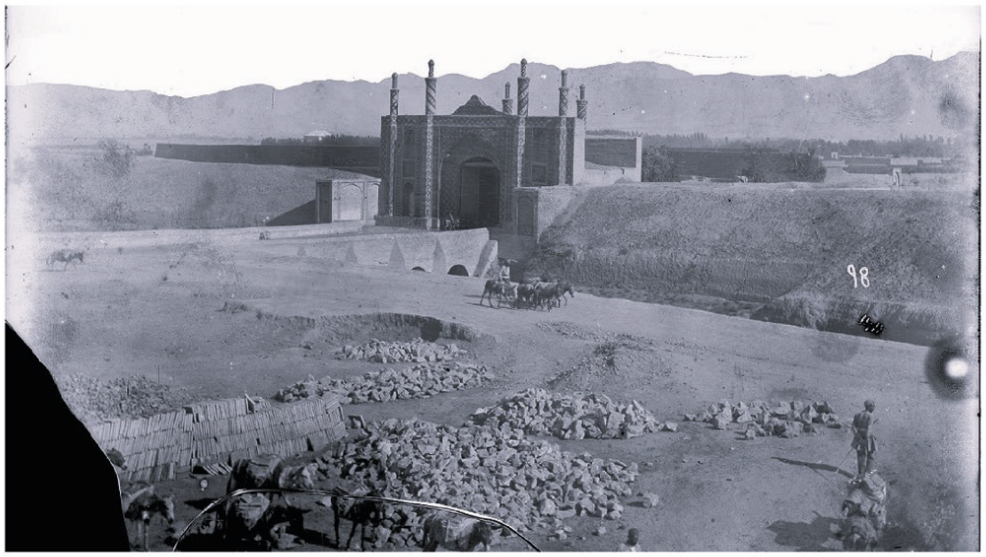


Fig 22. The ditch of Khanibabad Gate, Tehran , by Anton Soryugin,1928
http://www.negarestandoc.ir/documentdetail.aspx?id=102193



Fig26. Yousef Abad Gate, Tehran Frederick J. Kelp Year 1928



Fig23. Frederick Godmer Albert Kahn collection,1925

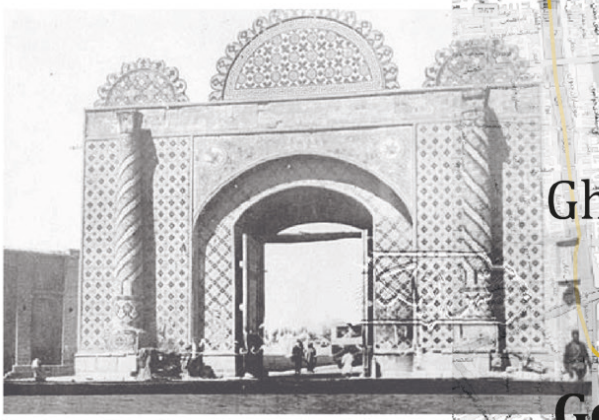


Fig24. Gomrok Gate by Walter Mittelholzer around,1925

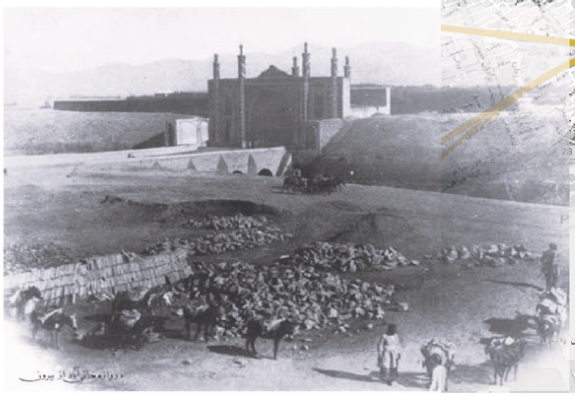


Fig25. Khanibabad Gate, Tehran Anton Soryugin

Figure 31. Tehran fence in Naseri era, Source:Google map, edited by author

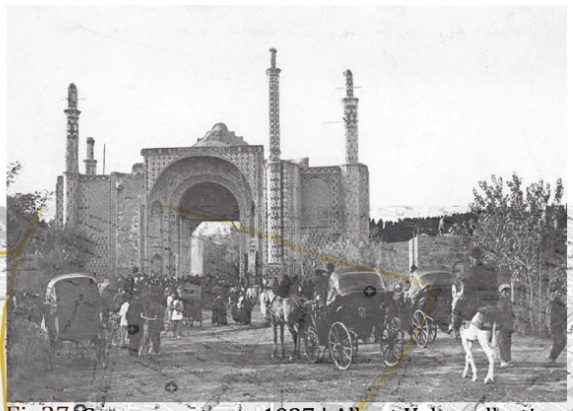


Fig27. Government gate 1927 | Albert Kahn collection Frederick Godmer



Fig28. Dushan Tepe Gate , by Walter Mittelholtzer around 1925

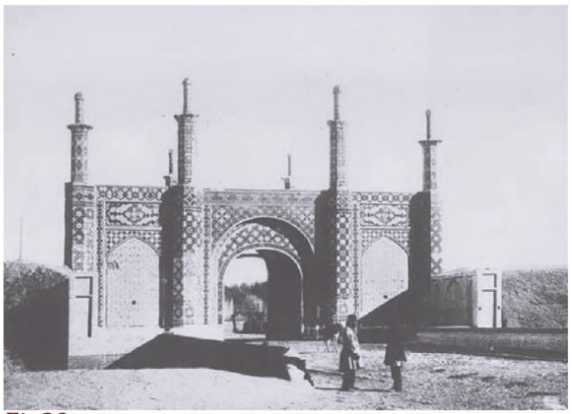


Fig29. Khorasan Gate , by Walter Mittelholtzer around 1925

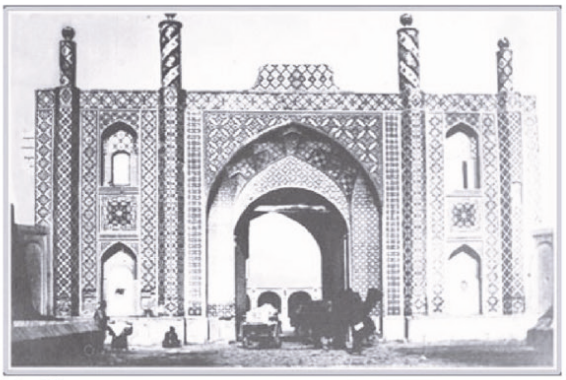


Fig30. Ghar Gate, by Walter Mittelholtzer around 1925

Old Naseri area of Tehran Map

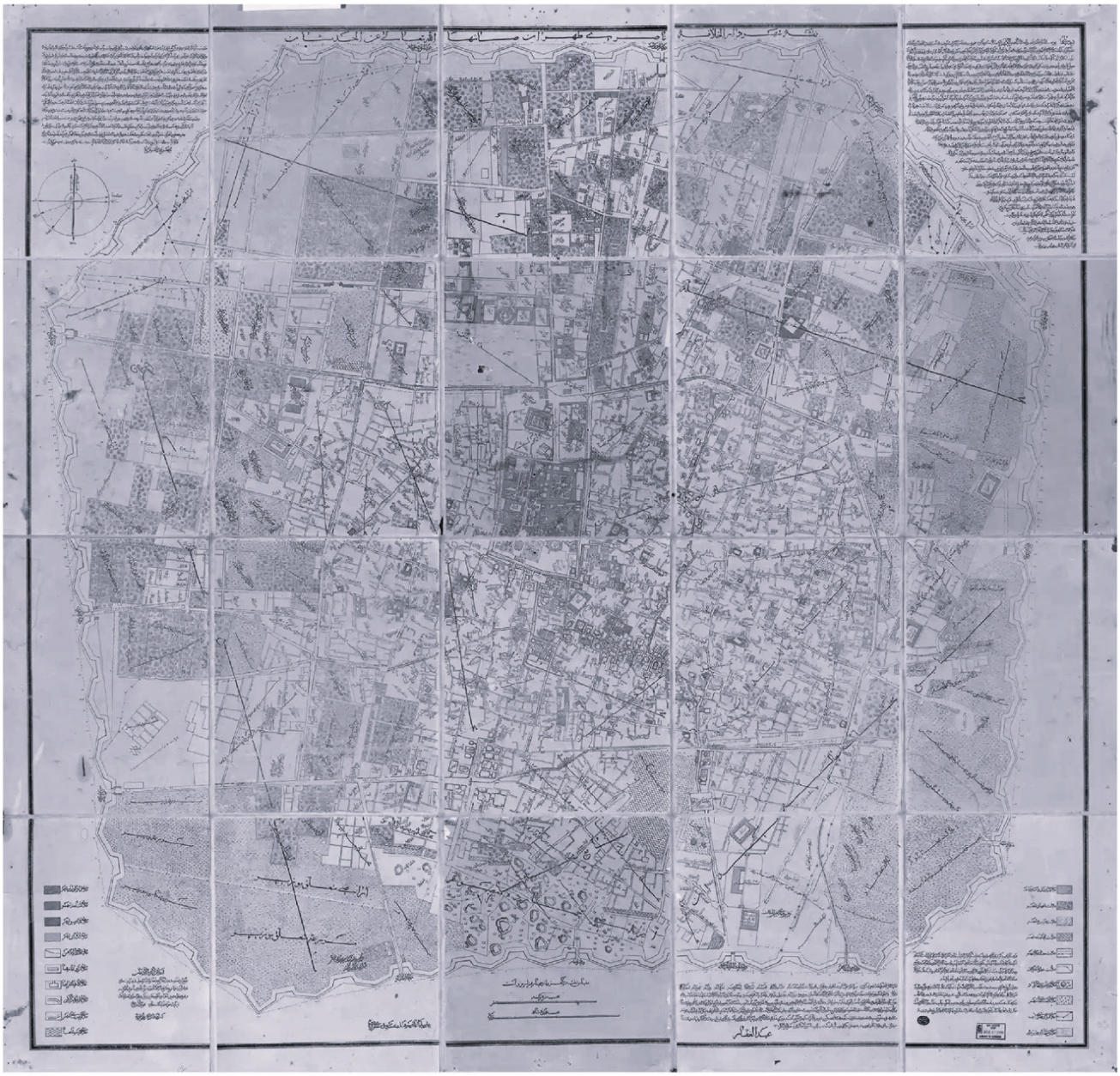


Fig32. Old Naserii area of Tehran map, by Najm al-Molk , 1891
Source: Official document center of Golestan palace in Tehran

The old borders and boundaries of the neighborhoods of old Tehran

Oudlajan Neighborhood:

Before the Naseri expansion:
The old Shemiran Gate was located in this neighborhood.
Oudlajan Neighborhood after the Naseri expansion:
The Dulab Gate was built in the wall of this neighborhood.

Bazaar Neighborhood:

Before the Naseri expansion:
The Mohammadieh Gate was located in this neighborhood.
Bazaar Neighborhood after the Naseri expansion:
The Cave Gate (Darvazeh Ghar) was constructed in this neighborhood.The Khanibad Gate was built on the border between this neighborhood and the Sanglajan neighborhood.

Sanglajan Neighborhood:

Before the Naseri expansion:
The old Qazvin Gate was located in this neighborhood.
Bazaar Neighborhood after the Naseri expansion:
The Customs Gate , Qazvin Gate , and Shah's Garden Gate were constructed in this neighborhood.
The Khanibad Gate was also built on the border between this neighborhood and the Bazaar Neighborhood.
Chaleh Meydan Neighborhood:

Before the Naseri expansion:
The old Dolab Gate (Darvazeh Dolab) and the old Shah Abdolazim Gate (Darvazeh Shah-Abdolazim) were located in this neighborhood.
After the Naseri expansion:
The Khorasan Gate (Darvazeh Khorasan), the new Shah Abdolazim Gate (Darvazeh Shah-Abdolazim), and the Machine Smoke Gate (Darvazeh Mashin-Doodi) were constructed in this neighborhood.

Arg Neighborhood:

Before the Naseri expansion:
The old Dolat Gate (Darvazeh Dolat) was located in the north, and the Arg Gate (Darvazeh Arg) was situated in the south of this neighborhood.
After the Naseri expansion:
This neighborhood remained largely unchanged after the Naseri expansion, but it was no longer bordered by the outer wall of the city.

Dolat Neighborhood:

After the Naseri expansion, the Dolat neighborhood was added to Tehran.
New gates were constructed in this neighborhood, including Dushan Tapeh Gate (Darvazeh Dushan Tapeh), New Shemiran Gate (Darvazeh Shemiran Jadid), New Dolat Gate (Darvazeh Dolat Jadid), and Yousefabad Gate (Darvazeh Yousefabad).[1]

1. Reiman, Hossein. Tehran in the Past and Present. 1st ed., Tehran: National University of Iran, 1976.

Location of neighborhoods and gates:

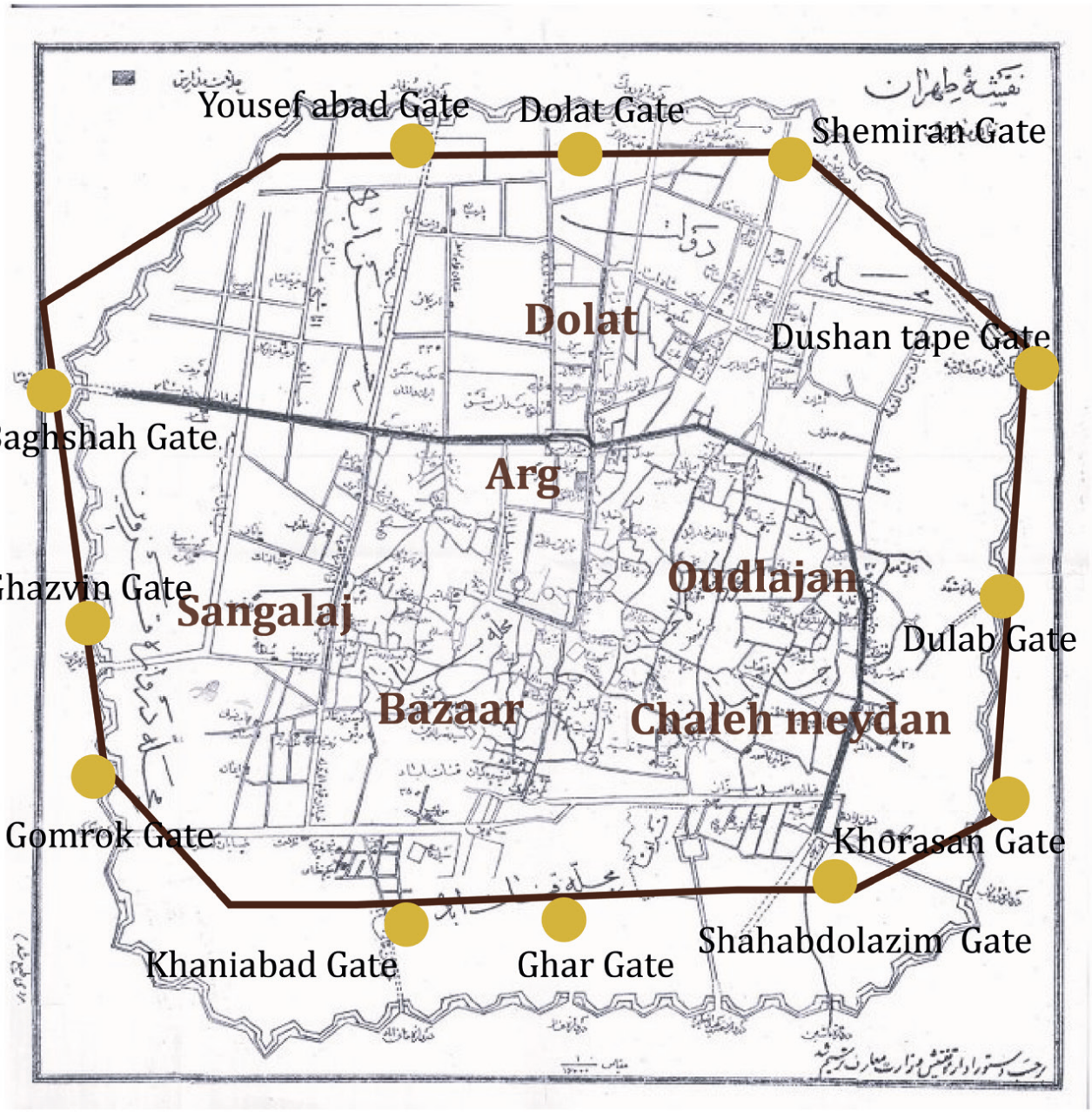


Fig33.Neighborhoods and fence of Tehran at the end of the Qajar period Map of the Department of Education 1925
Source:https://tehranica.info/information/history/%D%85%9D%8AD%D%8AF%D%88%9D%8AF%D%-87%9D%8AA%D%87%9D%8B%1D%8A%7D%-86%9D%82%9D%8AF%DB8%C%D85%9

The oldest map of Tehran

The information that was gathered indicates that during the first Iran-Russian War, a Russian soldier by the name of Naskov created the oldest map of Tehran, also referred to as the Naskov map. This map was created with routing and strategic position identification in mind.

In this map the fence of Safavid in The face of a mortise collection Around the city, the government citadel was located in the form of a rectangular square in the northwest **A** and between the gate of Shah Abd al-Azim and the Arg **B.**[1]



Fig34.Rovan Naskov's map of the city of Tehran in 1826 of the time of Fath Ali ShahQajar
Source:Mehryar, Mohammad, et al. Visual Documents of Iranian Cities during the Qajar Era. Shahid Beheshti University, Cultural Heritage Organization, 1999.

1. Shirazian, Reza, Tehranography, The Bank of Maps and Place Names of Old Tehran.

Tehran city from the south with the view of Shahabdolazim gate



Fig35. Tehran city from the south with the view of Shahabdolazim gate.
Source: Golestan palace album,1866

Tehran at the beginning of transformation

Tehran was an entirely enclosed city up until Naser al-Din Shah's rule, and the word itself referred to a traditional Eastern city. The way that people dress, how they get around, how their homes are lit, how people interact with each other and the various social classes in society, and other aspects of daily life have not changed significantly from earlier eras. The extended family, which consisted of a man, one or more women, and several children, was the fundamental unit of the community. The extended family lived with or close to older relatives like grandparents and other relatives like aunts, uncles, and others. As a whole, the extended family has provided support to every member of the family. The people's leisure time was spent with their relatives. Taking part in religious ceremonies or paying respects to graves constituted a significant pastime during the off-peak hours. Tehran's literacy is symbolised by arches, domes, and garlands.It was specified that the buildings' structures were made of timber, load-bearing walls, or vaults. For hundreds of years, mud and wood were the primary building materials, and everything else was entirely conventional. Among the city's significant structures were mosques, schools, caravanserais, palaces,marketplaces and homes. These structures' early Islamic designs and patterns were adopted in Iran and carried through the ensuing centuries, albeit with minormodifications, up until the Qajar era. All of the buildings are quiet, feature a central courtyard, tiny city streets, and so forth. They were straight; the city was surrounded by a high, thick fence, and the royal citadel was surrounded by a second fence.[1]

1. Takmil Homayoun, Naser. Social and Cultural History of Tehran from the Beginning to the Nasseri Dar al-Khalafeh. Cultural Studies Office, 1998.

There were only two sizable squares in Tehran; Arg Square, also known as Topkhaneh Mubarake, and Sabze Square were situated to the south of the government citadel. Other significant urban areas included the hubs of takayas and mahallats, in addition to the city's tallest structures, such as domes and Mosque minarets had a religious component, and the Ashura decade ceremony and group formations were the two most significant religiously-based social events in cities. The most common social gathering and group activity in the city was mourning in various neighbourhoods.It was carried out annually.
As a result, Tehran's traditional physical and cultural layout was maintained until the start of Naser al-Din Shah's reign in 1847 A.D. It lasts no more than four generations, or a hundred and twenty years at most.[1]



Fig36. General view of Tehran in the Nasrid period.
Source: https://www.jadidonline.com/slideshow/4/2839

1. Takmil Homayoun, Naser. Social and Cultural History of Tehran from the Beginning to the Nasseri Dar al-Khalafeh. Cultural Studies Office, 1998.

1.3 Historical evolution of persian gardens and Royal palaces

1.3.1 Persian Garden's Symmetrical

The garden is a collection of water beds, gardens and all kinds of plants, passages and beds, which together with many buildings it creates a complex combination. In the garden the eve of closed and semi- open spaces (buildings) is very limited compared to open spaces, and there is a close relationship between them and open spaces, these characteristics together make the garden more complete than the courtyard and the closed space in terms of the overall composition of open and closed spaces. At the same time, it makes it different from it.The garden enclosures typically have a regular shape, often square or rectangular, with a sloping or stepped surface. These gardens are elevated by a wall, creating the illusion of a hidden treasure for those behind it. The layout of these gardens can be based on a central or axial arrangement, or a combination of both. In a single-axis design, the garden area typically forms an elongated square along the main axis, with the entrance building and a kiosk marking the starting and ending points. The central axis is characterized by a stream, water features, and rows of trees arranged linearly.Symmetry is a common feature in the design of these gardens. Examples of such gardens include Dulat Abad Garden, Prince Mahan Garden, and Baber Garden in Kabul. In the garden layout, the center is marked by a prominent element such as a pavilion or a water feature, and it is surrounded by streams, pools, and by streams, pools, and rows of trees that are aligned with the main axes. This design, known as "**Charbagh**," is a more elaborate version of the "Charbaghche" layout in courtyards, with the central pavilion, streams, and trees adding strength and depth to the garden spaces.[1]

Various gardens around the world, such as **Fin Kashan Garden**, **Qajar Palace**, **Chehelston Garden**, Bulbul Garden with the Hasht Behesht Mansion in Isfahan, Humayun's Tomb Garden in Delhi, and Akbar's Tomb in Sikandra, follow these design principles. These gardens are characterized by the presence of four main passages, a central pond or garden, and four surrounding green spaces, creating a sense of completeness and harmony in the garden's overall design. While central gardens share common features, differences can be observed due to variations in the emphasis on main directions. Some gardens prioritize one axis, making it more prominent, often achieved by relocating the pavilion away from the geometric center. Expanding the main axis, emphasizing water features, enlarging pavilions, or strategically placing important entrances are techniques used to enhance the significance of one axis over the other.kind of It creates disorientation in the collection and makes the whole garden look universally complete and perfect.Differences can be seen among different gardens, in a general definition, due to the emphasis on the main directions. In some of these gardens, the emphasis on one axis has caused it to be more distinct than the other axis) and the emergence of the main direction for the garden. this Quality is possible by pushing back the booth from the geometric center the garden can be done, which makes the main axis look longer. Widening this axis or giving more importance to its water beds is one of the other arrangements that the gardener has used to achieve this goal, extending the volume of the pavilion or opening a main porch in the desired direction or placing an important entrance in The beginning of it also has an axis relative to The other axis has given superiority.[2]

In some gardens, a blend of central and axial designs is evident, such as in Neishabur's layout. In other cases, the landscape follows a central arrangement, while the placement of buildings, pavilions, and entrances resembles a central design. A prime example is the Taj Mahal in Agra. In more extensive gardens that harmoniously combine axis and center elements, the complex features multiple interconnected gardens or centers along a central axis, as seen in Hazar Jarib and Farah Abad Gardens in Isfahan and Shalimar Gardens in Kashmir and Lahore.[3]

1.Rasouli, Jalil, Kambeiz Nowaee, and Kambeiz Hajighasemi. Brick and Imagination: Description of Islamic Architecture in Iran. Shahid Beheshti University, Soroush, 1391, p., 326-324.
2. Ibid.,p.,328-326
3.Ibid.,p.,328

The geometrical structure of Persian garden Plan

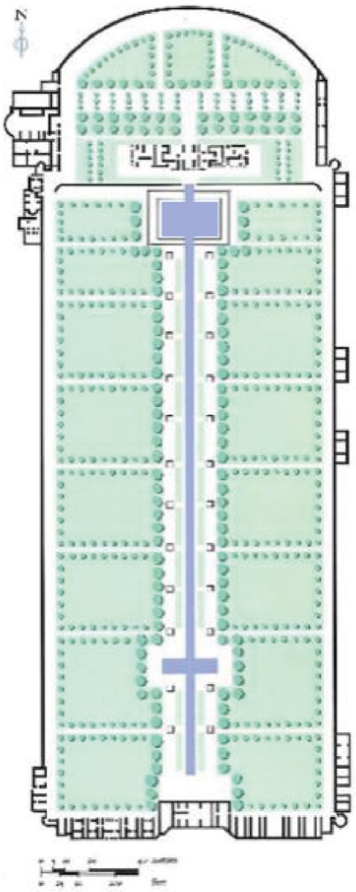


Fig37.single-axis design
Shahzadeh-Mahan Garden, Kerman
https://d-nb.info/34/1211613941

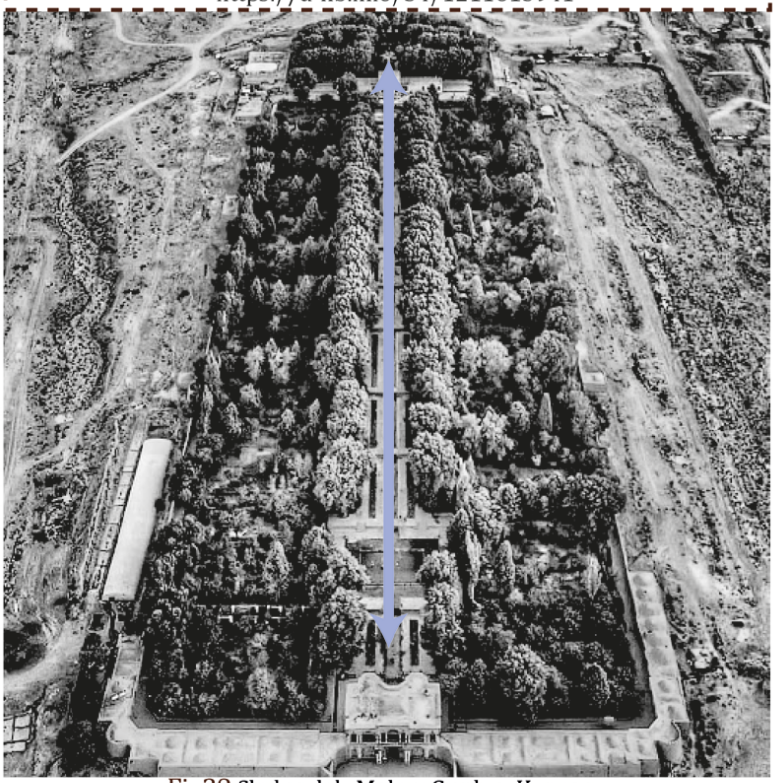


Fig38.Shahzadeh-Mahan Garden, Kerman
https://historicaliran.blogspot.com/07/2011/shazdeh-garden.html

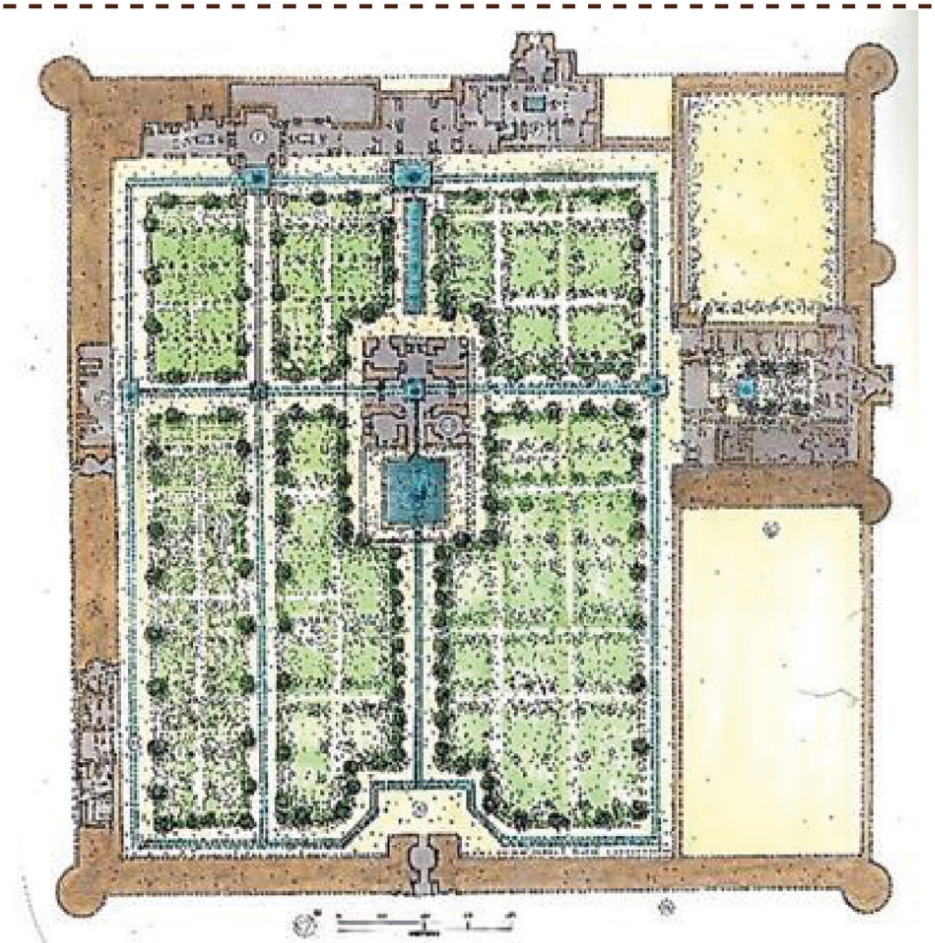


Fig39.Central-axis design
The Plan of Fin Garden, Kashan (Khansari et al. 1998)
https://d-nb.info/34/1211613941

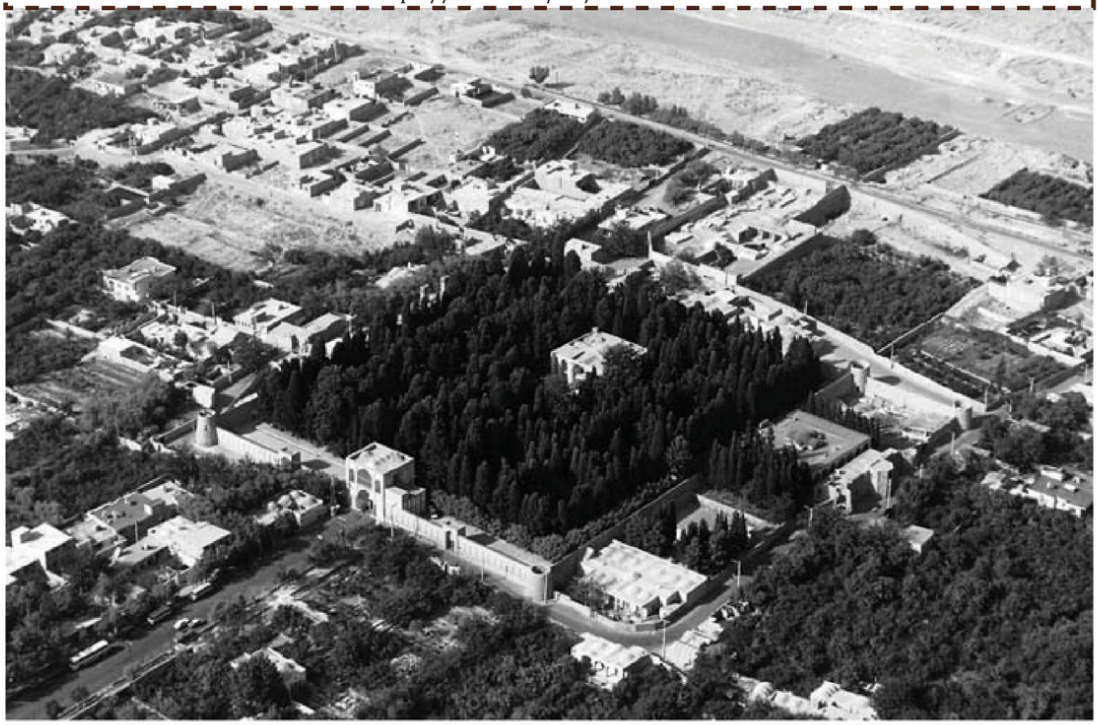


Fig40.Bird's eye view of Fin Garden by Jasem Ghazbanpour, 1996.
https://www.researchgate.net/publication/348923393_The_authentic_layout_of_the_main_avenue_of_fin_garden_in_Kashan/figures?lo=1



Fig41.Combination of central and axial design
Shalimar garden Lahore, Pakistan plan 2013
https://pin.it/32QrGat

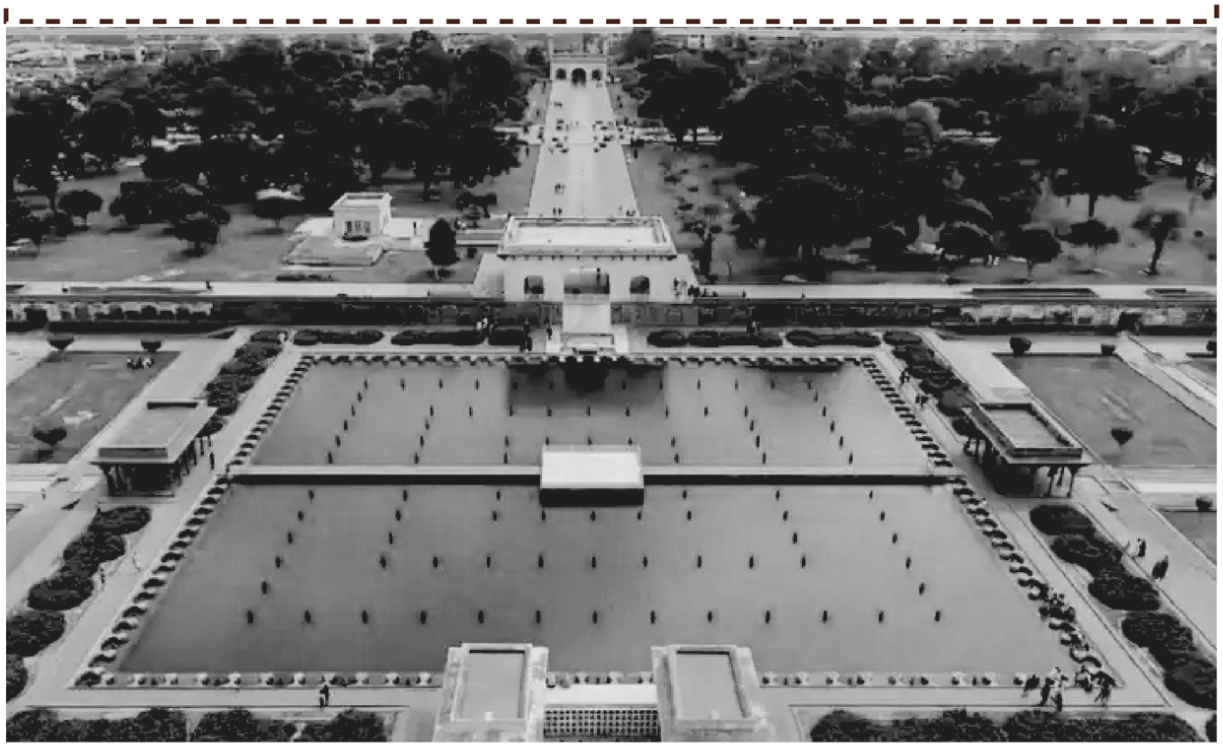


Fig42.Combination of central and axial design
Shalimar garden Lahore, Pakistan plan
https://www.pakistantraveler.com/the-shalimar-gardens-shalimar-bagh-lahore/

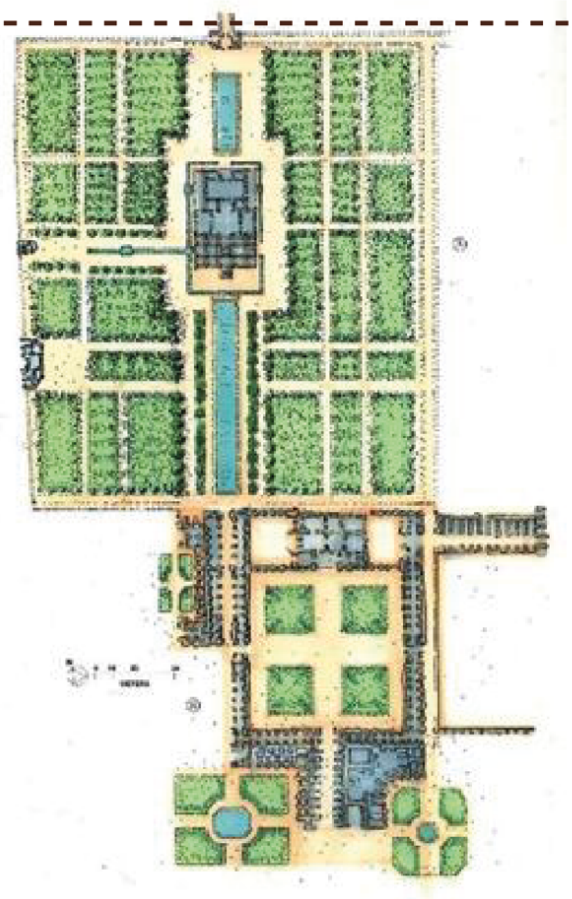


Fig43.Emphasis on one side and direction in the central order plan
The Plan of Chehel Sotun Garden, Esfahan
https://d-nb.info/34/1211613941

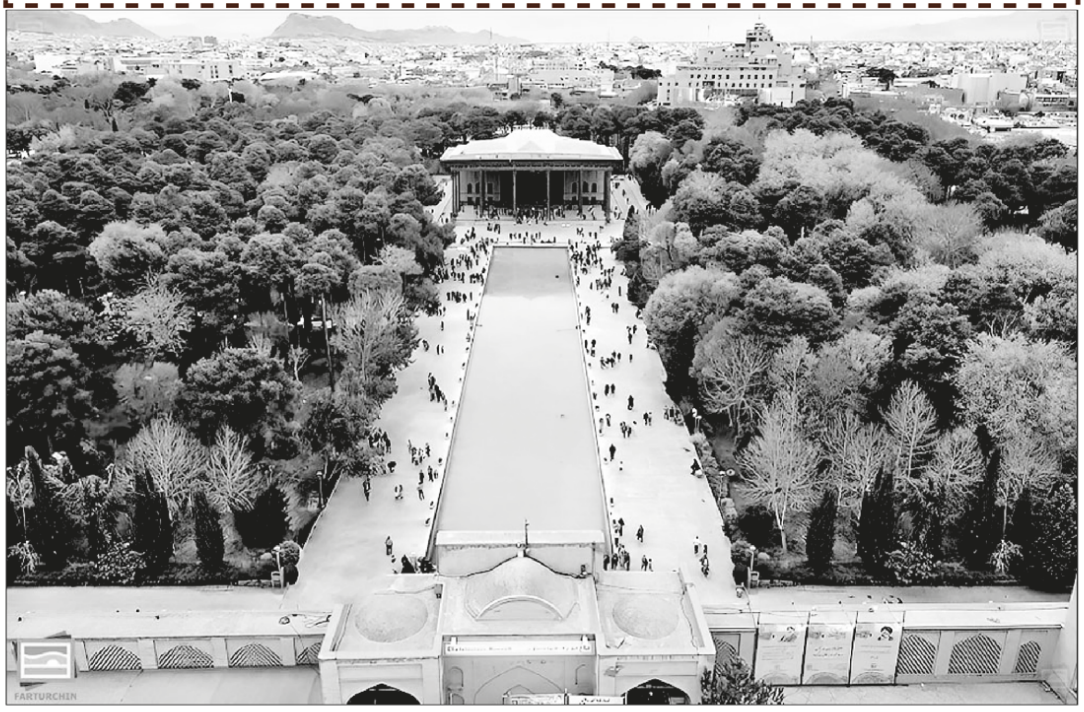


Fig44.Bird's eye view of Chehel-sotoon by Mahdi Bahadoran, 2021.
https://farturchin.com/blog/.html

1.3.2 Buildings in gardens

In the design of traditional gardens, the most significant structures, apart from the main buildings, are the "Kushk" (huts) and entrance buildings. These semi-open spaces are closely integrated with the garden, and their design complements the overall garden complex. The huts derive their meaning and existence from the garden, blurring the boundaries between interior and exterior spaces. They are often octagonal in shape, offering multiple perspectives and points of view. Openings and windows in these huts are strategically designed to bring the outside garden inside, creating a feeling of harmony with nature.nThese semi-open spaces also serve as verandas along the sides of the huts, enhancing the connection to the garden. In some cases, semi-open spaces are integrated into the main building, making it difficult to distinguish the boundary between the garden and the structure. Isfahan's Chehelston Pavilion features a hierarchy of semi-open spaces with different sizes and levels, all centered around pools, creating a smooth transition from open garden space to the main hall.The quality of the internal spaces in these huts, particularly their central areas with spacious, high, and colorful interiors, draws attention and emphasizes the connection to the surrounding nature. Water features are often associated with these huts, with various arrangements such as placing water basins inside the huts or surrounding huts with streams or artificial pools. These designs create a sense of seclusion and tranquility within the garden. In summary, the design of traditional gardens places great importance on semi-open spaces like huts, which serve as an integral part of the overall garden complex and offer a seamless connection with nature, often accentuated by water features.[1]



Fig45.Kushk of Chehel Sotun Garden, Esfahan
https://www.afsaneharchitecture.com/architectural-photography

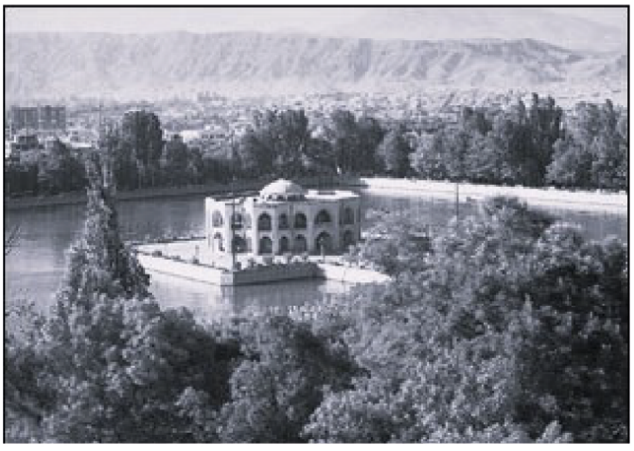


Fig46.Coexistence of booth and water, Building in the middle of water,Kushk of Shah Gholi, Tabriz,
https://www.iranchamber.com/cities/tabriz/tabriz.php

1.Rasouli, Jalil, Kambeiz Nowaee, and Kambeiz Hajighasemi. Brick and Imagination: Description of Islamic Architecture in Iran. Shahid Beheshti University, Soroush, 1391, p., 331-330.

1.4 Gardens: Essential to Naser al-Din Shah's Life(18-19th AD)

1.Different aspects of Naseridin Shah's life

Naser al-Din Shah, the fourth king of the nomadic Qajar tribe, had a deep connection with nature and a strong affinity for outdoor life, which was characteristic of his tribal upbringing. He was quite content when camping in the mountains, valleys, or forests of Mazandaran, displaying a love for nature that had been nurtured since his childhood. According to Prince Naser al-Din Mirza and Lasan al-Mulk Sepehar, he preferred the green expanses of grass and the abundance of streams over the confinement of city life. This love for the natural world led him to embark on numerous journeys during his almost fifty-year reign, taking him to various regions of Iran, including Khorasan, the central regions, Iraq, Ajam, Isfahan, Qom, Gilan, and Mazandaran. However, Naser al-Din Shah's curiosity for new experiences extended beyond Iran's borders. Encouraged by his advisors, he made several trips to Europe and one to Atbat. These journeys, occurring every few years, served both pilgrimage and tourism purposes. Naser al-Din Shah possessed a keen sense of aesthetics and documented his travel experiences extensively, providing captivating descriptions of the natural landscapes and the places he visited. Naser al-Din Shah's life was significantly marked by his travels to summer cottages and hunting grounds, where he spent half the year in the former and the other half in the latter. The tradition of nomadic life had deep roots in the Qajar dynasty, and previous kings had also established places for summer retreats, such as Fath Ali Shah's Zanjan Yilag and Qishlag and Mohammad Shah's palace in Shemiranat.[1]

1.2.Life in the Highlands and Pastures

Naser al-Din Shah's preference for spending time in summer retreats was not only a nod to the nomadic lifestyle but also a practical choice due to the extreme heat and water pollution in Tehran during the summer months. This led to a mass exodus of the king's courtiers and the people from the city to the more pleasant climate of Shemiran near Tehran. The high volume of people in these areas prompted Naser al-Din Shah to arrange and provide facilities for living in these retreats.The movement between different residences was also influenced by the changing seasons. When the weather warmed up, the king left Shemiran's villa and ventured to the villa behind the Alborz mountains, where he would set up camps in various locations. These journeys involved special customs and advanced planning to accommodate the large number of people accompanying the king.During the Qashlag season, the Shah spent time in the city of Tehran, but he occasionally went hunting in the areas east of Tehran, including hills, Sorkheh Hesar, and the Qashlaghi hunting ground of Jajrud. He constructed gardens and mansions in these hunting grounds.constructed gardens and mansions in these hunting grounds.
Naser al-Din Shah's lifestyle revolved around traveling between summer cottages, hunting grounds, and the city, with each place serving a different purpose and requiring specific accommodations and facilities. These retreats allowed him to enjoy nature, escape the city's heat and congestion, and indulge in hunting and relaxation.Naser al-Din Shah was a deeply religious person and showed a strong commitment to holding.[2]

1.3.Beliefs of Naserddin-Shah

religious ceremonies. During his travels to Yalag areas, especially when these trips coincided with the mourning ceremonies for the imams, he ensured that a group of Rozeh Khans conducted the mourning rituals. He had a particular interest in the Muharram mourning ceremony and prayer recitations during these days. With the support of the government in the citadel, these religious ceremonies were held on a grand scale.[3]

1.Firouzeh, Marzieh. “Life in the Royal Gardens of Naser al-Din Shah in Tehran.” Master’s thesis in Architecture, Shahid Beheshti University, February 2010,p.,20-18.
2.Ibid.,p.,25-20.
3.Ibid.,p.,28-25.

Naser al-Din Shah's beliefs extended beyond religious matters. He had a strong belief in astrology and prophecy, placing great emphasis on the guidance of astrologers in determining the most auspicious days for his movements. Astrologers not only advised on the departure dates but also determined the return dates from his trips, as well as the day of arrival in the city. In terms of his preferences for accommodations, Naser al-Din Shah frequented gardens like Negarestan and Nezamieh. However, as the city of Tehran expanded and its fortifications were modified, some of these gardens came within the city's boundaries and lost their original purpose. New gardens, such as Shah garden and Bagh of Ishrat Abad, were established near the new city,Ishrat Abad often served as the starting point for his journeys.The Shah's beliefs played a significant role in the creation and management of these gardens. While some gardens like Negaristan remained within the new city boundaries, their dimensions changed over time. Others, like Lalehzar, lost their significance in the Shah's life and were eventually sold.[1]

1.4. Modernist Spirit

The introduction of Iranians to Western civilization and the manifestations of European progress can be traced back to the Safavid era and the Iran-Ottoman wars. The early encounter occurred when Abbas Mirza, the son of Fath Ali Shah, sent Iranian students to Europe. From this point onward, Iranians began to travel to Europe, and the aristocrats and courtiers started to interact with European culture and its various manifestations. The increased exposure to European culture piqued the interest of the wealthy and courtly classes, prompting many government officials to send their children to study in Europe. Under the influence of people around him and with the encouragement and support of Mirza Hossein Khan Sepahsalar, Naser al-Din Shah decided to visit Europe for the first time in 1290. This trip took place 26 years into his reign, and he became the first Iranian king to travel to Europe. He made subsequent trips in 1916 and 1928AD. The spirit of modernism and the desire to adopt foreign influences were also evident in the gardens of this era. Gardens were created with the name "Park," signaling changes in garden design and construction. Naser al-Din Shah employed a top-tier English gardener named Burton, who taught Iranian gardeners the art of flower gardening. Other nobles of the time also began using European gardeners in their own gardens. This influx of European expertise resulted in the introduction of various types of flowers and plants from European forests and mountains into Iran, and it gained popularity. The desire to embrace foreign influences extended beyond ornaments and decor. It influenced architecture, leading to the construction of new buildings such as museums and zoos, and the design of gardens in a new style resembling parks. The old city fence fell, and Naser al-Din Shah built gardens near the new fence in its place. During Naser al-Din Shah's reign, much of his time was spent in the inner gardens with his wives, where they would engage in recreational activities. The spirit of modernism during this era was also reflected in the royal gardens, as foreign gardeners were employed, various flowers were cultivated, and mansions with a foreign aesthetic were constructed.[2]

1.Firouzeh, Marzieh. “Life in the Royal Gardens of Naser al-Din Shah in Tehran.” Master’s thesis in Architecture, Shahid Beheshti University, February 2010,p.,28.
2.Ibid.,p.,34-28.



Fig47.Nasseridin Shah zoo
Source: Golestan palace album



Fig48. Nasseridin Shah in her hunting ground around the north, Source: Golestan palace album

1.4.1 Palaces in under Naser al-Din Shah's rule

Naser al-Din Shah's life was deeply intertwined with travel and nomadic experiences. He strategically built gardens in the regions he frequented during his travels, providing a fixed and familiar place for him during his journeys. Over time, these gardens evolved into regular recreational destinations for the king, and he would visit them regularly, sometimes even several gardens in a single day. Naser al-Din Shah's interest in leisure and the garden lifestyle led him to establish numerous gardens outside Dar al-Khilafah. While he didn't personally construct a multitude of gardens, he allocated funds for the maintenance and restoration of these green spaces. His commitment to the care of the royal gardens was so significant that even when he embarked on extensive journeys, including trips to Europe, he would receive telegraph updates about the garden conditions. There were individuals responsible for sending reports on garden upkeep via telegraph. In terms of garden construction, the pattern remained consistent, with gardens often being established or renovated while the king was traveling, usually lasting no more than a few months. As Naser al-Din Shah established new gardens outside Tehran, many of the older gardens he owned were gradually forgotten, and some fell into disrepair, were destroyed, or were sold.[1]

Gardens built by Naser al-Din shah	Gardens of the wives of the king	Gardens of Ownership	Gardens of kings before
Dushan Tepe	Aghdasieh	Davudieh	Lalehzar
Niavaran	Naaz abad	Ilkhani	Negarestan
Saltanat abad		Nezamieh	Mohammadieh
Qasr Yaghut		Sepahsalar	Qasr Qajar
Firoozeh palace			Dolat abad
Bagh Shah			
Ishrat abad			
Eish abad			

Table1. The names of the royal gardens of Naser al-din shah's rule

Of course, apart from the names mentioned in the table, Naser al-Din Shah also had gardens in areas far away from Tehran. Jajrud garden and mansion, part of which was built during the reign of Fath Ali Shah, and part of which was added by Naseriddin Shah, kan garden and mansion, Shahrestanak garden, Damavand bagh shah also was for fath ali shah and Qasr Soleimanieh Fath ali shah in Karaj was also considered as royal gardens.The use of the royal gardens that Naseriddin Shah was not the founder of is very different. Of course, none of these gardens were used for a long time and most of them were used in special occasions such as holding ceremonies and sometimes only for the king's entertainment. With the expansion of Tehran's fence, those gardens that were close to the fence were located inside the new fence, and their role in the life of the Shah became less than before. Those gardens that the king had appropriated or belonged to his wives were rarely used by the king, while the gardens that were left by the previous kings were mostly used by the king, especially the Lalehzar gardens. Negarestan and Qajar Palace, in continuation to the use of these gardens in time The government of Naser al-Din is mentioned.2

1.Firouzeh, Marzieh. "Life in the Royal Gardens of Naser al-Din Shah in Tehran." Master's thesis in Architecture, Shahid Beheshti University, February 2010,p.,39-34.
2.Ibid.,p.,41-40.

Location of Qajar palaces
Tehran ,1848-1996

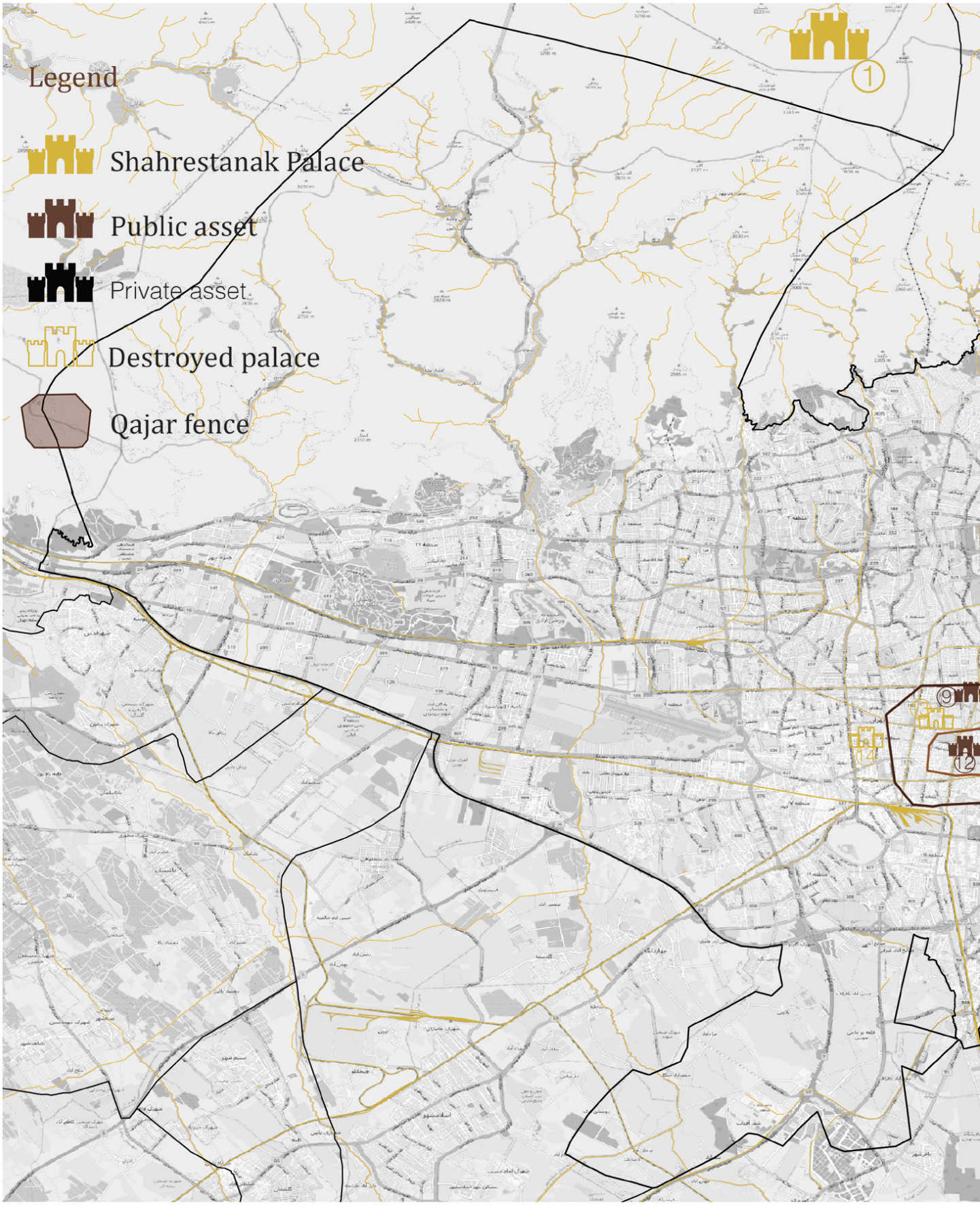
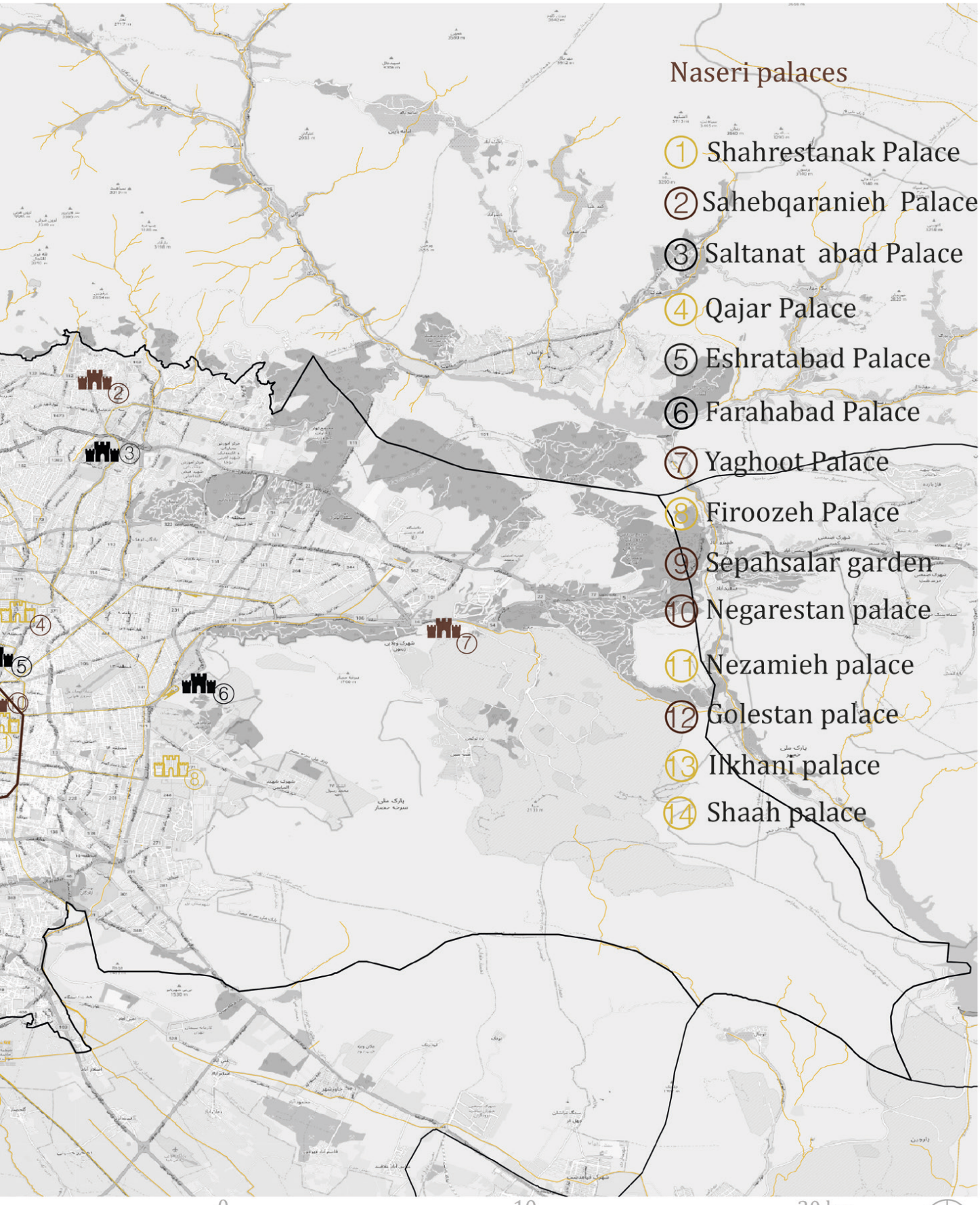


Fig49. Tehran map with Naseri palaces, Source: Google map, edited by author


Naseri palaces
1 Shahrestanak Palace
2 Sahebqaranieh Palace
3 Saltanat abad Palace
4 Qajar Palace
5 Eshratabad Palace
6 Farahabad Palace
7 Yaghoot Palace
8 Firoozeh Palace
9 Sepahsalar garden
10 Negarestan palace
11 Nezamieh palace
12 Golestan palace
13 Ilkhani palace
14 Shaah palace
0
10
20 km
Scale:1.18000

1.4.2 Exploring different palaces under Naser al-Din Shah's rule

Qasr Qajar

The Qajar Palace is the name of one of the palaces during the Qajar era in Tehran, and its structure is considered one of the oldest palaces of the Qajar kings. This palace, which was located near the present-day Chahar Rah Palace or the Chahar Rah Station, situated at the junction of the old Shemiran Road (Dr. Shariati Street) and Abbas Abad Street (current Beheshti Street), was destroyed during the reign of Reza Shah Pahlavi, and in its place, the Qasr Prison was established. This vast structure, situated on top of a hill, had four watchtowers at its four corners. Additionally, the building lacked external windows and, in this sense, more closely resembled a military fortress rather than a royal palace. There were extensive gardens surrounding this structure, separated from each other by pools and clear streams, and constructed on contiguous pieces of land. The palace entrance featured a grand building that provided stunning views of the desert, Shemiran, Tehran, the ruins of Rey, Najafabad, Ashraf Abad Palaces, and Doshan Tepe. The surroundings and buildings were well visible from this elevated point.In later periods, the old palace had various uses until it was completely demolished during the time of Reza Shah. In its place, the current Qasr Prison was constructed, and the palace's name was given to this prison. Only a French hat and an old building remain from this ancient palace. Part of the northern lands of this palace also came under the control of the judicial and law enforcement forces.[1]

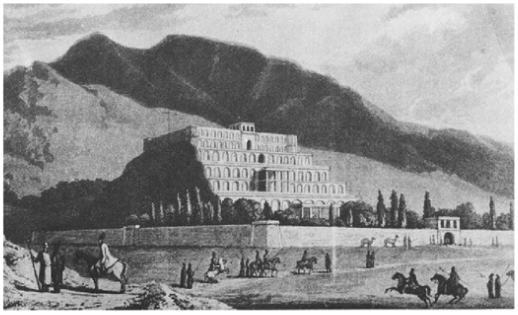


Fig50. Qajar palace, 1808-9
Source: Morier, James. *A journey through persia, Armenis, and asia Minor*, to constantinople. 1812.

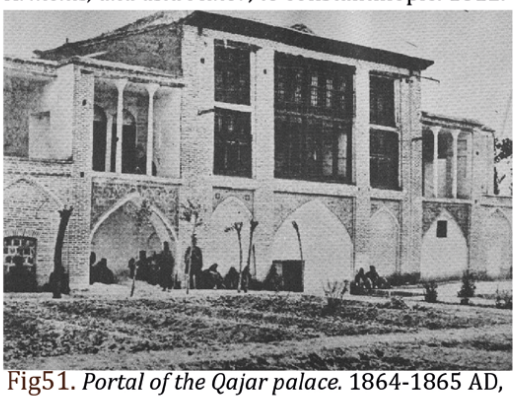


Fig51. *Portal of the Qajar palace.* 1864-1865 AD,
Source: Golestan palace album



Fig52. The Qajar palace Howz-Khaneh 1840-41,
Source: Coste, Pascal. *New buildings of Iran. 1867*

1. Najmi, Naser. Dar al-Khalafe Tehran, Attar, 1989-1988.

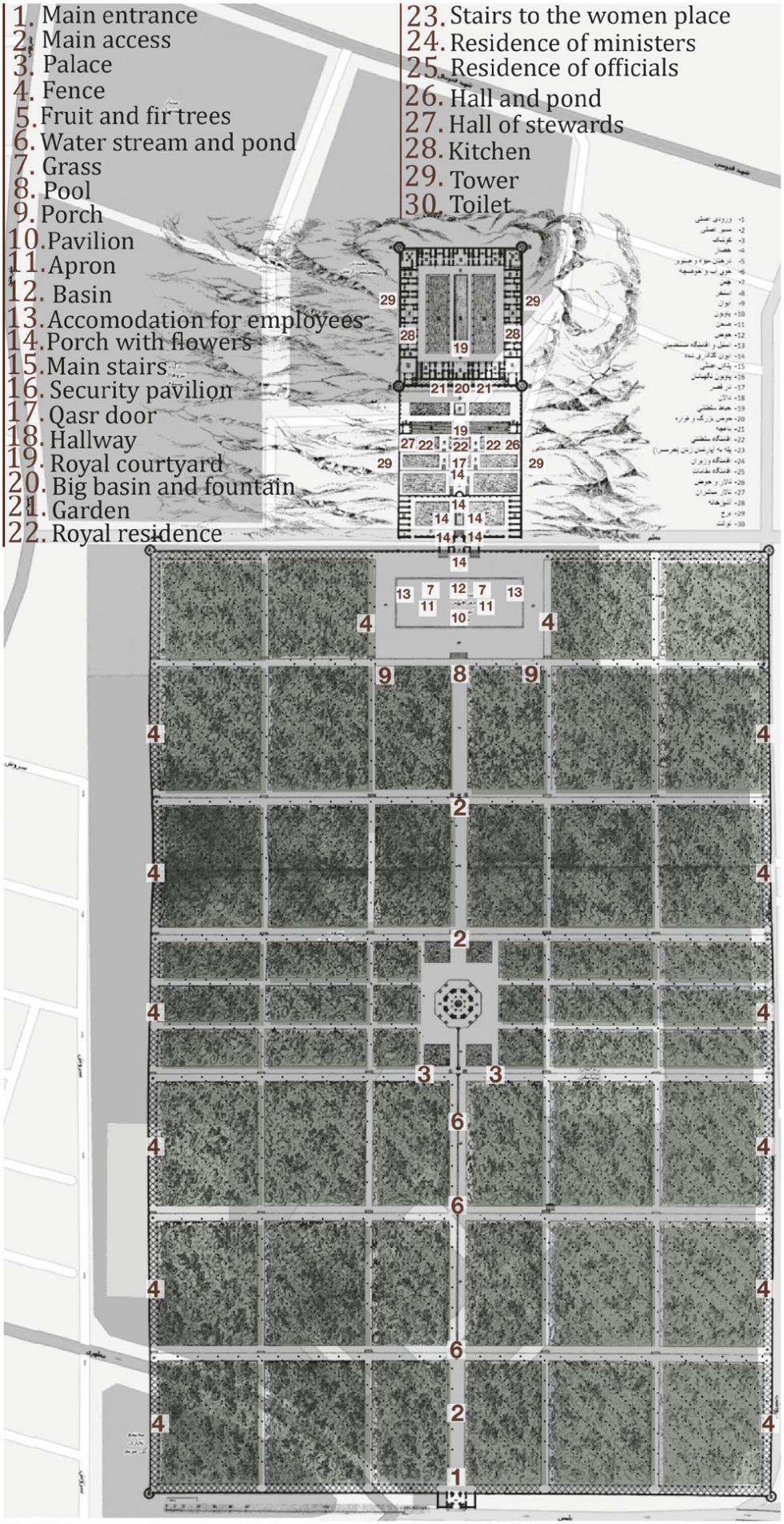


Fig53.Comparative map of Qajar palace, Drawn in 1841 AD

Ishratabad Palace

The Kolah Farangi Mansion, or the former Ishrat Abad Palace, is a Qajar-era building located in eastern Tehran, in Ishrat Abad Square (Sepah Square) within the Ishrat Abad Barracks (Vali-e Asr Barracks). This historical structure was registered as a national monument of Iran on April 1967 ,12, with registration number 648.[1]

Ishrat Abad's Kolah Farangi Mansion was located in eastern Tehran, more precisely in the northeastern section of old Tehran, between Qajar Palace (Qasr-e Qajar, now known as the Prison of the Palace) and Negarestan (Baharestan Square), outside the Shemiran Gate. In the years 1875–1874 AD, Naser al-Din Shah Qajar ordered it. Ishrat Abad's expansive and magnificent gardens contained this mansion. There were roomy pavilions and kiosks in the gardens. There were about thirty-two small, semicircular-shaped pavilions encircling a large central pool, as well as a number of smaller pools and fountains, in the centre of the garden. One of the Shah's wives could stay in each of these pavilions, which had wooden windows that opened towards the central pool. Mostly, the garden provided as a location for the Shah's leisure activities and marriage ceremonies. The building known as Kolah Farangi was a four-story tower with a cupola on top that overlooked the garden. This building featured a Shah's sitting area with a marquetry ceiling and elaborate mirrors on the third floor.[2]

The Akbar-Abad Palace was built after Naser al-Din Shah's first trip to Europe. Building is attributed to Ali-Mohammad Sana'i, one of the prominent architects who brought about a personal innovation and revival in the architecture of Tehran. This mansion follows the Iranian architectural pattern and is a four-story structure. During a certain period, it was assigned as a residence for Anis al-Dawlah, one of Naser al-Din Shah's wives. In the southeast of this mansion, there is a large circular pool that was filled with water from a qanat.[3]

The surrounding structures and the Ishratabad Garden and Palace were turned over to the military after the Qajar dynasty fell, and they were dubbed the "Shahrbani" or "Ishratabad" Barracks. For this reason, the military has come to be associated with the history of the Ishratabad Palace. They called the prison inside the barracks the "Ishratabad Prison."
Following the events of June 1963 ,15, Ayatollah Khomeini was held captive in this prison for a duration of one month and seven days . A few years later, the Pahlavi Guard troops took control of this barracks. It was one of the strategically important takeover sites in the 1979 Revolution. During the takeover, the Ishratabad Palace sustained significant damage, and bullet and shell marks can still be seen.[4]



Fig54. "The Kolaferengi Building of Ishratabad in the Past", 1875
Source:https://vilayar.com/images/uploads/newfiles/16568694731612.jpeg

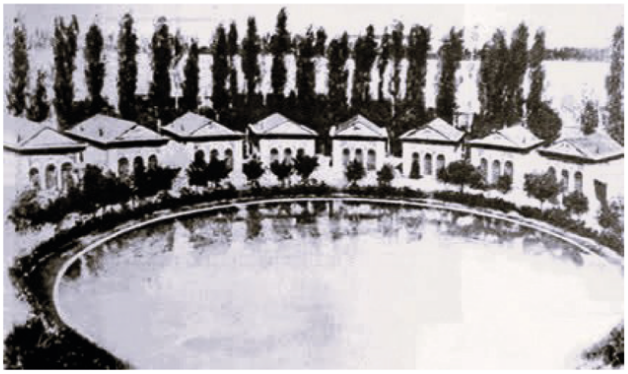


Fig55. Small houses around the pond in the southeast of the palace, 1875
Source: Golestan palace album

1."Encyclopedia of the History of Architecture and Urban Planning of Iranshahr." Ministry of Roads and Urban Development, archived from the original on 6 October 2019.
2. Naser al-Din Shah's Harem, in the Fence of the Barracks." 24 Dec. 2008.
3. "Kolaferengi Building Will Be Renovated." Jam Jam Online, 14 Jan. 2013
4. "The Fate of 'Ishratabad' Was Decided." 15 Jan. 2013.

Saheb Qaraniyeh Palace

The Sahebqaranieh Palace is a palace in Tehran that was founded in 1850 AD by the order of Naser al-Din Shah of the Qajar dynasty. Naser al-Din Shah, in 1850, instructed the construction of Sahebqaranieh Palace, a two-story palace that included a royal living area, a throne hall, a bathhouse, a mirrored hall, and 40 to 50 smaller houses, each containing four rooms and a courtyard for women of the harem. Naser al-Din Shah called himself "Sahebqaran" in his 31st year of reign, and he named this palace "Sahebqaranieh Palace." [1]

Because of the pleasant climate in Niavaran, Naser al-Din Shah ordered the construction of this magnificent palace with the intention of using it as his home. Mozaffar al-Din Shah took over as Iran's ruler following the assassination of Naser al-Din Shah, and he made several modifications to the Sahebqaranieh Palace. He demolished the harem as one of the changes he made. This palace underwent numerous renovations after the Pahlavis, including Reza Shah and Mohammad Reza Shah, came to power. For example, Reza Shah removed and replaced the palace's furniture, curtains, and wallpaper in preparation for Mohammad Reza Shah and Fawzia's nuptial celebrations. Among the modifications made by Mohammad Reza Shah Pahlavi were those to the rooms, flooring, and décor. The palace underwent restoration and reconstruction following the revolution. The palace doors were renovated and the mirror and stucco work were strengthened.Sahebqaranieh has been transformed into a place for tourists.[2]

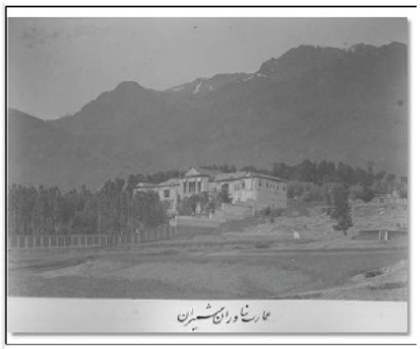


Fig56.The eastern view of Niavaran
Source:Golestan Palace, Visual Documents Center

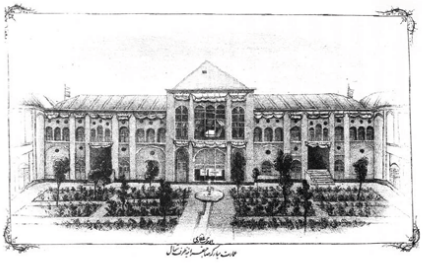


Fig57.Abu Tarab's painting from the north front of Saheb Qaraniyeh mansion
Source:Zoka & Semsar, 1997, p. 259



Fig58.The north facade of Saheb Qarani PalaceSource:Golestan Palace, Visual Documents Center



Fig59.Aerial photo of the garden,Iran National Cartographic Center, 1956

1. https://www.tehrantimes.com/news/447651/Quake-causes-cracks-in-Tehran-s-Sahebqaraniyeh-Palace
2.https://www.kojaro.com/attraction/8992-%DA%A9%D8%A7%D8%AE-%D8%B5%D8%A7%D8%AD%D8%A8%D9%82%D8%B1%D8%A7%D9%86%DB%8C%D9%87/

Dushan Tepe

The Doshan Tappeh Palace is made up of several structures that were constructed by Hajeb-ol-Dowlch in 1852 A.D. under Nasser-ed-Din Shah's instruction, and they continued to evolve after that.It included an outer court, an inner court (for women only), a Kolah-Farang, and an additional wing. Stables, carriage housing, and a garrison camp were located at the base of the hill. A lake that was excavated in 1862 A.D. was fed by the waters of a unique water Qanat that was formed in 1861 A.D. A wide street shaded by trees was accessible through a special gate that led to a horse racing course. For Tehtanis, this was a street where they went to see sights. Doshan Tappeh got its name because it was a hunting area due to its hare population. Initially, the Tehran Zoo was in the Lalezar neighbourhood before moving to Doshan Tappeh.[1]



Figure60.Dushan Tepe mansion photo from Golestan palace album, photographer Abdullah Qajar



Figure61.Dushan Tepe mansion photo from Golestan palace album, photographer Abdullah Qajar

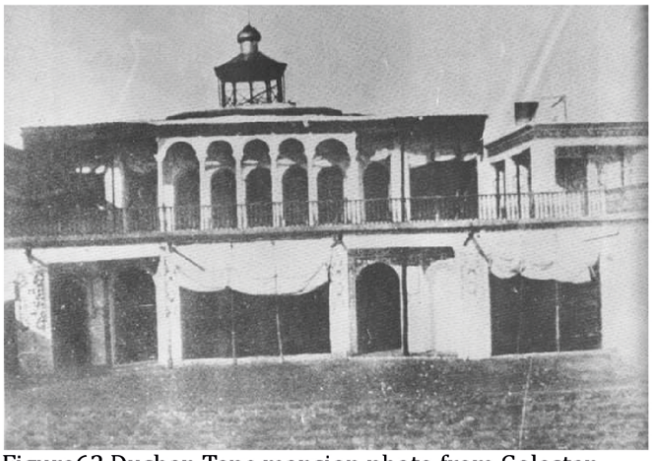


Figure62.Dushan Tepe mansion photo from Golestan palace album, photographer Abdullah Qajar



Figure63.Dushan Tepe mansion photo from Golestan palace album, photographer Abdullah

1. Qaziha, Fatemeh, editor. Memoirs of Naser al-Din Shah from Travel and Hunting in Dushan Tappeh. Nashr-e Goya, First Edition, Summer 2023, 500 copies, 523 pages.



1.5 Chronicle of Shahrestanak Palace

Establishment of the Shahrestanak Summer Palace (1916)

Doctors advised Naseriddin Shah to travel to a place with a temperate climate in order to treat his gout, which he developed towards the end of his life as a result of eating too much meat. After looking for the courtiers, he discovered Shahrestanak, which has pleasant weather and a type of plant called "birch" that is excellent for treating boils. Subsequently, Naseriddin Shah gave the order to build a palace there, which was completed in three years.[1]



Fig64.*Picture of Nasereddin shah,From Golestan palace album*



Fig65.*Picture of Nasereddin shah,From Golestan palace album*

Culinary Celebrations in Shahrestanak

Annually, Naser al-Din Shah held a cooking ceremony at Shahrestanak. This is covered in Etimad al-Sultaneh's memoirs. Naser al-Din Shah held a unique ceremony in Shahrestanak every year on a specific day, accompanied by his ministers, men, princes, and roughly a hundred of his women. Each noble and prince was required, by this ceremony, to take a corner of the work and wash the vegetables by hand before cooking them. Then favourite women of Shah would take his bowl and offer it to Naser al-Din Shah, who was the harem's owner. The first culinary celebration was held on an unexpected basis in 1906 AD, and according to handwritten notes by Naser al-Din Shah, it became an annual event with a symbolic meaning of his well-being. Usually takes plachis, Naser al-Din Shah relocated his cooking ceremony to Sorkheh Hesar and constructed a palace there.[2]



Fig66.*Cooking place next to Naseri Palace,From Golestan palace album*,1868

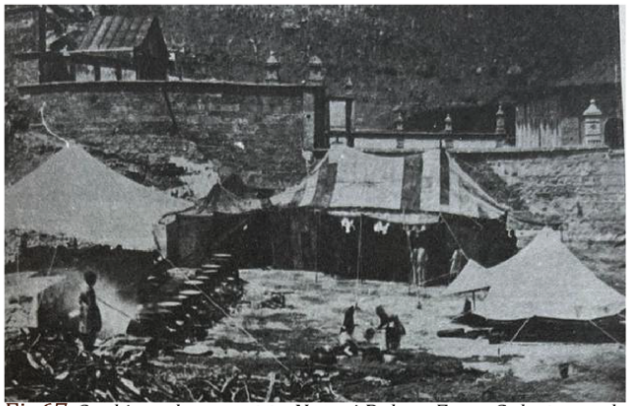


Fig67.*Cooking place next to Naseri Palace,From Golestan palace album,1868*

1.Department of cultural heritage., (n.d.), Shahrestanak palace, p, 6.
2. 2.Ibid., P, 8.

Interest in hunting and camping

Among the kings who had a strong interest in hunting and exploring regions that would be good for these activities was Naseredin Shah. Among the places he personally picked and returned to often was Shahrestanak. Naser al-Din Shah devoted many months of the year to travelling and hunting, despite the difficulties and dangers of the period. It was required of many government officials to go with him, even though their enthusiasm for such things was restricted. As a result of his repeated visits, Naser al-Din Shah gave the order to build a summer palace close to the village of Shahrestanak in 1878 AD. This charming palace was his permanent hunting lodge, and it was located close to 'Gale Kileh's' perennial spring. [1]



Fig68.*The time Shah used to go hunting and camping in Shahrestanak,Shah tent highlighted in the picture, Golestan palace album*



Fig69.*Shahrestanak palace and camping tents around it, Golestan palace album*

1. Bozorgmehr. "Naser al-Din Shah Palace in Shahristanak Village." 2018, www.karajshahr.ir/.

From Manzarieh to Shahrestanak

According to Dr. Fourier (1928), [Once more, we departed from Manzarieh, this time heading for Shahrestanak, which is six hours away. We made our way up the mountains for the first three hours, struggling all the way to 3,400 metres. The route is made up of winding roads that skirt the mountains, and a group of women from the caravan are trailing behind us, hanging on to the mules' necks and the heights Their path is occasionally obscured from our view and occasionally laid out in front of us. The dark stone backdrop featured grey tents with colourful umbrellas placed in front of each one. The reason the tents and tents could be seen clearly from a distance was because of the amount of work the accompanying woman had done.

Upon crossing the pass, we were met with a breathtaking vista, in which several peaks materialised before us akin to tumultuous ocean waves,[1] with Damavand commanding the east side with its massive bulk. We noticed deep valleys to our right, where it appeared that there were some isolated communities, after a steep descent we reached Shahrestanak.We were met with the view and the Shah's summer home as soon as we arrived at our destination. A rectangular building with a large yard full of trees and a circular pond in the centre faces the street. The lower portion of the building is built on a hill, and towards the front is a one-story building with open surroundings on all sides.The inner one, which opens onto the square, enclosed courtyard, is on the left; however, when viewed from the front, it is on the outer right side. The entire valley is visible from the river's source, which is a few hundred metres above the royal palace. The banks of this flooded river are lined with tents.]

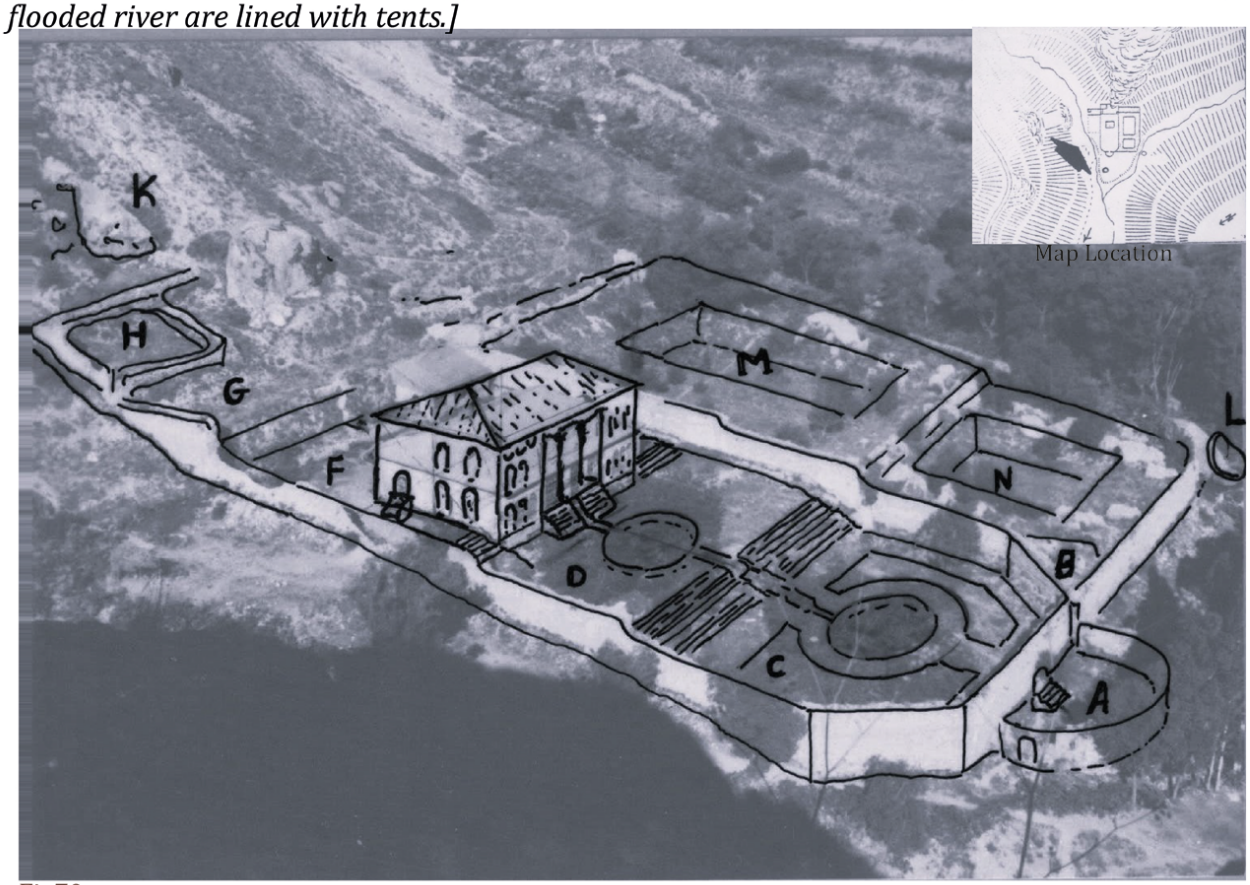


Fig70.*View from north to south and showing the location of the complex, Report of Nasseredin Shah palace in Shahrestanak, 1997*

Legend

A Royal entrance
B Shah Bathroom
C Lower yard
D Middle yard
E Original palace
F Upper yard
G Outside terrace
H Water reservoir
K Fountain
L Stone inscription by the water stream
N Lower yard adjacent to palace

1. Sotoodeh, M. (2003). Historical Geography of Rudbar, Karaj.Tehran.The center of the great Islamic encyclopedia, 2018, P, 189.
2. Ibid., P, 190.

Study of Tehran's Design Evolution During the Naseredin Shah Era

Eclectic architecture, a fusion of **western neo-classical** and **traditional Iranian styles**, dominated palace and government building design during the first thirty-four years of Naseredin Shah's rule. However, In the final fifteen years of his reign, the fashion evolved and became more Occidental. Neo-classical architecture took over as the most popular design for the moment. Galvanised iron to cover and cast iron for columns and railings were the only contemporary materials that originated in Europe were gable roofs. The cause of these recent advancements during the reign of Naseredin Shah,returns to the early days of our introduction to modern weapons.16th century, during the conflicts between the Iranian army of tradition and the army of the modern Portuguese in the south and Ottoman Empire in the west. In both conflicts, Iran was defeated. More significantly, Iranian nobility and intellectuals realised that their country lags far behind Europe in terms of science and technology during the first half of the 1800s, when the Russian army captured large portions of Iran's northern region. Because of this, the nation's educational system was the first to undergo modernization reforms, followed by the military.[1]

However, the changes didn't end there. The political, economic, social, and artistic traditions were progressively altered in Faced with Modernity, and new European systems were implemented. As a result, architecture, like other facts of Iranian life, was modified to meet the new demands of today's world. It should be highlighted that, for the fifty years of the Naseredin Shah kingdom, the design and construction techniques used for both religious and common-use buildings (apart from Tekieh Dolat, a structure used for funeral rites) primarily stuck to the parameters of traditional Iranian architecture.It is advised that future research examine how modernity has affected Iranian architecture over various time periods starting in the middle of the 19th century.[2]

Nasseri era

During a period that spanned from the Qajar dynasty to the days of the Pahlavi dynasty, Tehran, the capital city of Iran, at that time experienced significant changes. The architectural style of this era is often referred to as " Tehranian style." At the beginning of the century although Tehran was already Irans city it was still considered a relatively ordinary capital with a population of around 250,000 people. Amongst the Qajar rulers Nasereddin Shah had a impact, on architecture and urban planning which is why this era is commonly known as the Nasseri era.[3]

During Nasseri era we are exploring how European architecture influenced architecture, in the Nasseri era. The impact of this influence is particularly evident, in buildings, one of which we are examining; Shahrestanak Palace. This architectural style from that time is often referred to as "postcard architecture" because it was introduced to Iran through souvenirs and had an influence, on the art and architecture of that era. We can see the impact of the Shahs journeys, to the countries reflected in features like semicircular arches, slanted ceilings, pediments and more. From 1924 to 1964, in the Shahs rule there is a blending and fusion of local and European architectural techniques. Several distinctive features of Qajar architecture, reflective of its modernity, are evident in the influential design of Shahrestanak Palace:

1 Extroversion: This represents a modern approach in contrast to the introversion of earlier Iranian and traditional architecture.

1. Ghobadian, V. Architecture in Naseri Palace.Tehran.Pashtun, 2013, p, 7.
2. Ibidem.
3. Kalantari, N., and S. Roshanfekr Jourshari. “Studying the Effects of Modernity on Development of Iranian Architecture in the Qajar Era.” Indian Journal of Fundamental and Applied Life Sciences, 2015.
4. Ghiasi, Z. European Architectural Effects in Qajar Architecture (19th Century). Master’s thesis, The Autonomous University of Barcelona, 2020, pp. 130-131.

2 Decorative and dramatic columns: Columns on the facade, like those found in the Shahrestanak mansion, are frequently arranged in hexagonal or rectangular sections.

3 Building of Steps along the Main Axis: In contrast to conventional Iranian architecture, which typically places steps at a higher elevation with fewer scenic views, steps were built along the main axis.

4 Sloping Roofs: During the Qajar era, light wooden roofs were used, designed as gables beneath a level surface. The weight was moved from the roof to the walls, and finally to the floor.

5 Roman Semicircular Arches: A prominent feature that Qajar architects frequently employed, these arches were taken from Western architecture.

6 Balconies:Three types of balconies have been identified: forward-going balconies, one- or two-linear porches, and multi-story balconies on upper floors. They started to appear frequently in mansion designs.

7 Use of Columns: As seen in the Shahrestanak mansion, combinations of four and six column designs were used during the Nasser al-Din Shah era, particularly in the exterior porches.

8 Building Cover: Throughout the Qajar era, the skeleton and wall partitioning were constructed using traditional materials and brick framing. Then, stone, gypsum coating, and mosaic tiles started to show up as important components in facade design.[1]

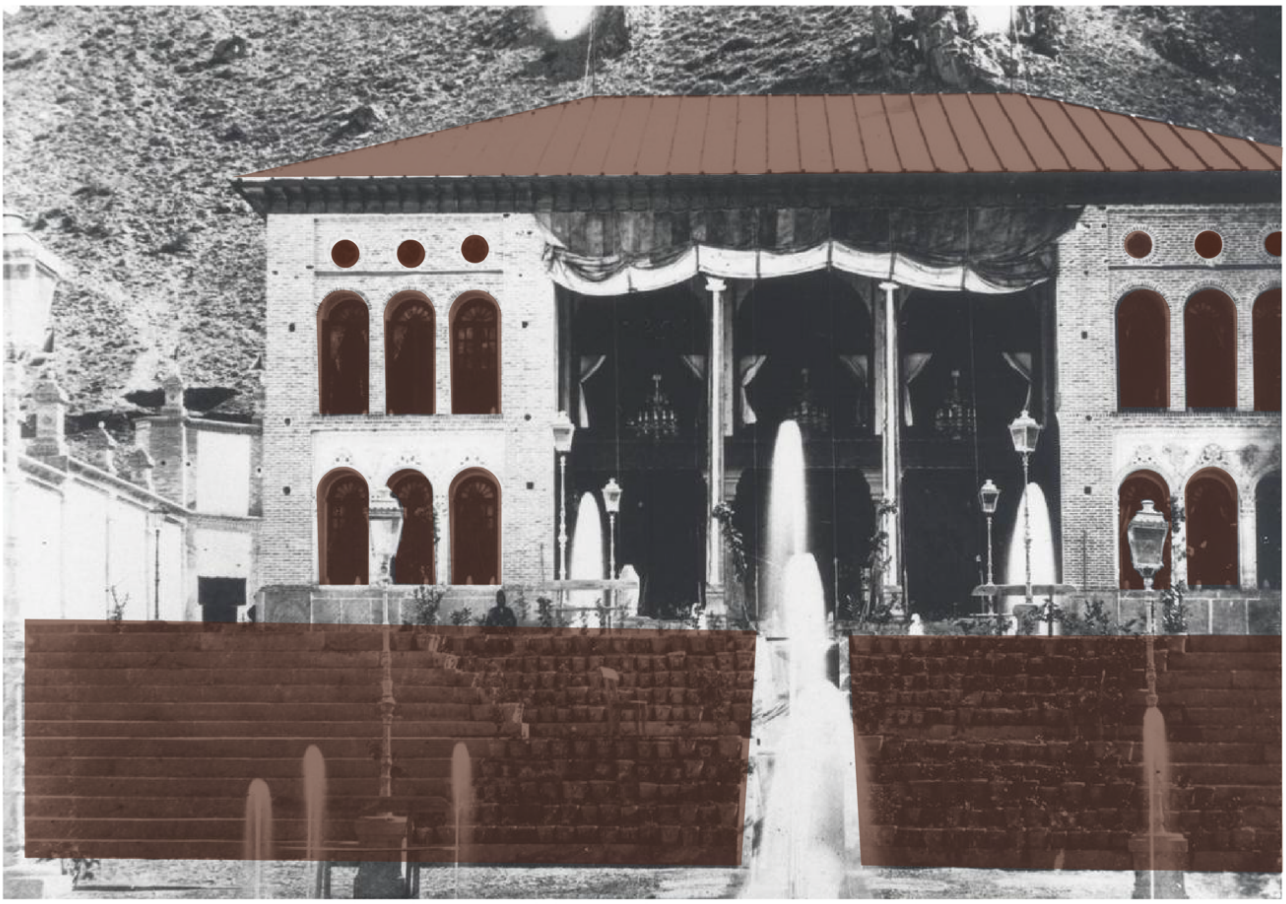


Fig71.*Shahrestanak mansion from the front with some highlighted elements of the Nasseri era, Golestan palace album,.1913*

1. Ghiasi, Z. European Architectural Effects in Qajar Architecture (19th Century). Master's thesis, The Autonomous University of Barcelona, 2020, pp. 170



Fig72. *Photo of Shahrestanak mansion , 1913, Golestan palace album*

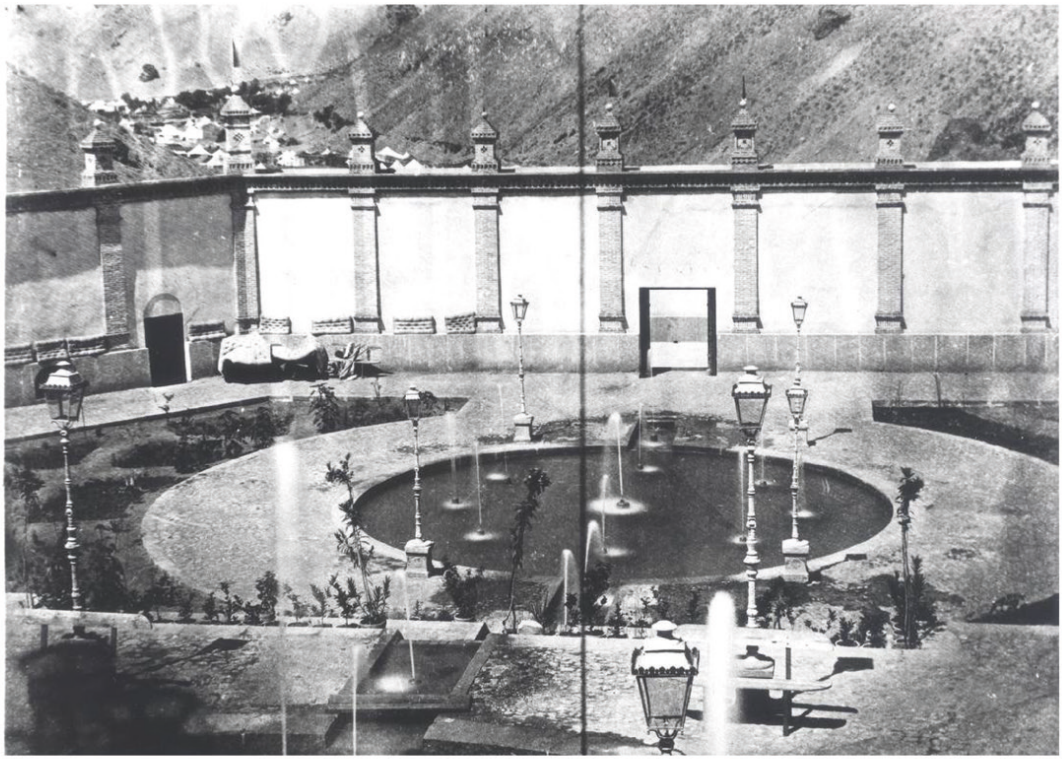


Fig73. *Photo of courtyard and the pond of Shahrestanak mansion towards bottom, 1913, Golestan palace album*



Fig78.*Photo of the pondhouse of Shahrestanak mansion, 1913, Golestan palace album*

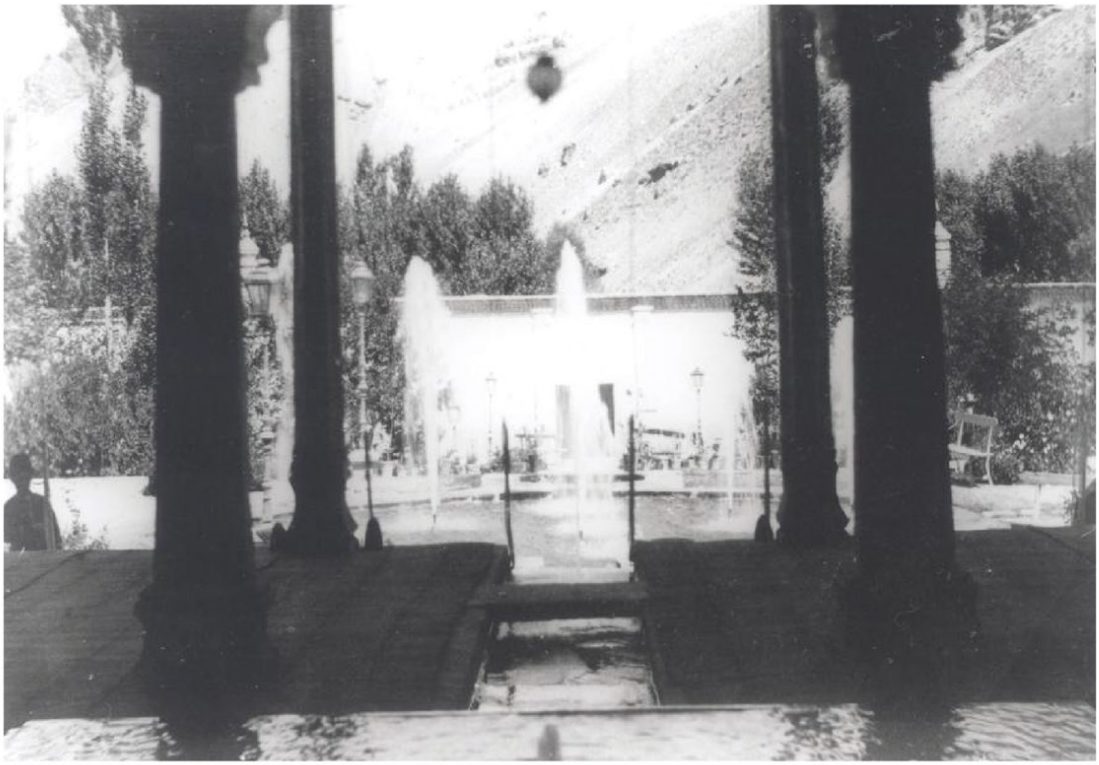


Fig79.*Photo of courtyard and the pond of Shahrestanak mansion towards bottom from inside, 1913, Golestan palace album*

Shahrestanak palace, Karaj, Iran

2. Navigating the territorial landscape



Where we are?



Fig80. World map, personal edit, out of scale



Fig81. Iran map, personal edit, out of scale



Fig82. Alborz map, personal edit, out of scale



Fig83. Karaj map, personal edit, out of scale

2.1 Alborz province

2.1.1 Geographic location of Alborz province

Through a land area of more than 5,122 square kilometres, Alborz Province is both the newest and the smallest province in Iran. Markazi province to the southwest, Qazvin province to the west, Tehran province to the east, and Mazandaran and Qazvin provinces to the north all abut this province.The general census conducted in 2012–2011 AD found that Alborz Province had a population of over 2,412,513 people, of which 2,184,371 were residents of the province's cities. With 471 persons per square kilometre, the province has a population density of %2.3 of the nation's total population. This province was established in 2011–2010 AD and consists of the following 5 counties: Nazarabad, Karaj, Eshtehard, Taleghan, and and Hashtroud.[1]



Fig84. Alborz Province, personal edit, out of scale

The region in question slopes from north to south and is situated in the southern foothills of the central Alborz mountain range. In this region, the highest point is 1479.2 metres above sea level, while the lowest point is 1353.2 metres. According to the topographic map, the terrain slope likewise runs from northeast to southwest.[2]

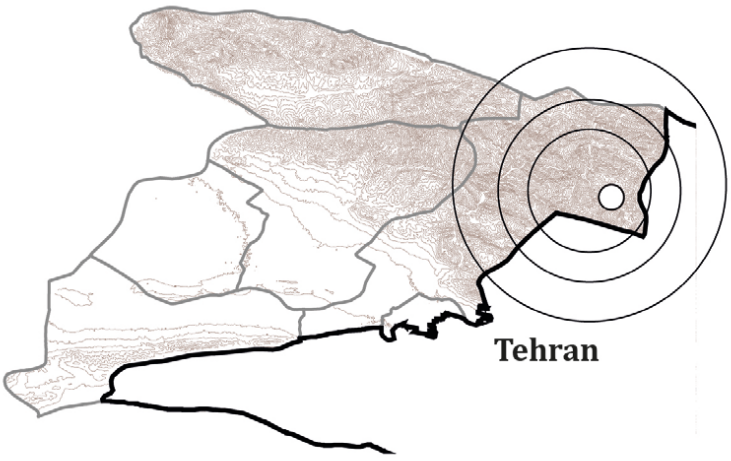


Fig85.Topographic map of the Alborz province, personal edit,out of scale

1.https://alborz.inso.gov.ir/portal/home/?29078/%D9%85%D8%B9%D8%B1%D9%81%DB%8C-%D8%A7%D8%B3%D8%AA%D8%A7%D9%86
2. Bakhtiari, S. Tourism Atlas of Karaj City and Country. Institute of Geographical and Cartographic Gitaology, 2006.

2.1.2 Karaj and the Village of Asara

In continuation of the discussion on familiarizing with the geography of Alborz province, we introduce the city of Karaj and the district of Asara where our project is located:

Karaj City

Situated 35 kilometres west of Tehran in the foothills of the central Alborz Mountains' southern range, this county is centred around the city of Karaj, which serves as the capital of the recently formed Alborz Province. It has 74 settlements with people, comprising 6 rural districts, 6 cities, and 2 districts, which include:

1.The districts of Mohammadabad, Kamalabad, and Garmdarreh, as well as Karaj, Garmdarreh, Kamalshahr, Mahdasht, and Mohammadshahr, comprise the central part of the city.

2. The districts of Asara, Adran, and Nesa as well as the city of Asara comprise the Asara region. Karaj County is located in a temperate zone and is expected to experience moderate weather, as its geographical latitude is approximately 36 degrees. But this pattern has been somewhat disturbed and altered by variables like altitude, distance from the sea, and the impact of warm, dry southeast winds.[1]

Asara village

Asara is a mountainous area with villages tucked away in craggy, rocky valleys. There is very little permanent settlement in this area, mostly limited to a few small villages, because of the scarcity of agricultural and residential lands as well as the harshness of life, particularly during the cold seasons when the valleys are covered in snow and difficult to access. There are about 30,000 people living in the 56 villages that make up the Asara region. The villages of Shahrestanak and Arangeh, located in the northern foothills of the Alborz Mountains, are surrounded by verdant pastures and awe-inspiring natural settings, including a profusion of fruit orchards, sparse forests, and grain fields.Among these villages, Shahrestanak is home to historical and cultural landmarks, including the Shahrestanak Palace, also known as the Naser al-Din Shah Palace, which had been forgotten for years.[2]



Fig86.Karaj map, personal edit, out of scale

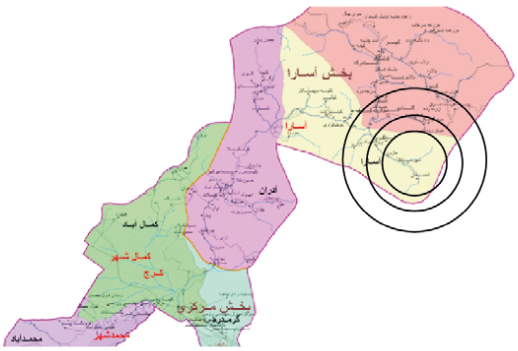


Figure87. Karaj map
Source: Alborz Province website

1.https://alborz.farhang.gov.ir/fa/moarefeyeostanalborz/shenasnamehostan
2. https://www.beytoote.com/iran/tafrihi/negin1-alborz-mountains.html

2.1.3 Geographic Location of Shahrestank

At last, we have arrived at the location where our case study is situated, and we want to review its geographical location, examine its exact placement on the map, and observe its neighboring areas and surroundings:

In the Asara region of the city of Karaj, in the Alborz Province of Iran, lies the lovely village of Shahrestanak. This village is located on the border between the provinces of Alborz and Tehran, 54 kilometres northwest of Karaj. Shahrestanak, at 2,190 metres above sea level, is a popular destination for travelers and nature lovers, particularly in the autumn when its mountain roads, verdant valleys, orchards and charming gardens come to life. The villages of Kasil to the north and Kan, Sulaghan, and Imamzadeh Davood to the south encircle Shahrestanak village. The peak of Tochal, which significantly influences the area in terms of climate and accessibility, is located to the south as well.Shekarabad and the village of Ahar border it to the east, and Sark, Laniz, and Shalineh border it to the west.[1]

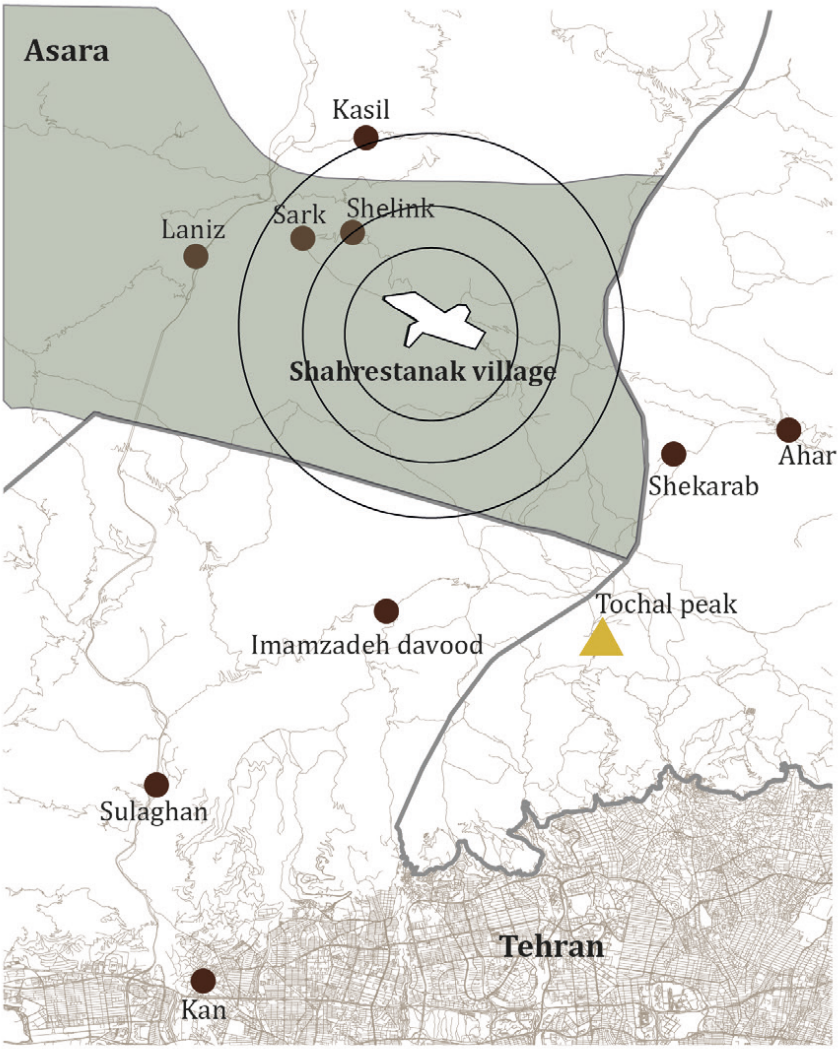


Fig88.Geographic location of Shahrestanak and the neighboring villages, personal edit, out of scale



Key map

1.https://www.kojaro.com/attraction/8114-shahrestanak-village/

2.2 Shahrestanak village

2.2.1 Climate factors

Shahrestank district is a part of the central region of Alborz province when it comes to national boundaries. It is reachable from the Chalus road, which is the communication route that leads from the Chalus road, roughly 13 kilometres after Asara and before arriving at Kasir and Meydanak. Divided, it slopes southwestward, extending approximately 8 kilometres into a valley and two verdant fields where the Shahristanak River flows before joining the Karaj River.[1]

Shahrestanak, one of the most well-known villages in Nasa Province, is situated in the southernmost part of the province and has longitude of 51 degrees and 21 minutes, geographic latitude of 35 degrees and 55 minutes, and an elevation of 2,180 metres above sea level. [2]

The weather patterns of Tochal and Central Alborz have a major impact on the overall climate of the Shahrestanak region, which is situated in the centre of Alborz close to Tochal. On Tochal Mountain, which is located in the middle of Alborz, the east and west winds are most common. On the other hand, it also blocks winds coming from the west to the east due to its alignment with Damavand Mountain. Because of this, the climate in this area is unstable and frequently experiences sudden changes in the weather within a few hours. Furthermore, data suggests that Tochal Mountain experiences different weather than other mountains at a similar altitude; roughly two thirds of winter days are sunny and wind-free. Eight months out of the year see snowfall in the area, which adds to Shahrestanak's generally chilly climate. The region experiences 14 degrees Celsius on a monthly average. Even though Shahrestanak is cold, it has nice weather in the summer, which makes it a popular place for summer homes and hunting grounds. Naser al-Din Shah Qajar was one of the rulers who supported this decision throughout history.Shahrestanak's average monthly temperature of 14 degrees Celsius contributes to the region's typically chilly climate. Shahrestanak has pleasant summer weather despite its cold temperatures, which makes it a popular place for summer homes and hunting grounds. Leaders such as Naser al-Din Shah Qajar have backed this choice historically.[3]

2.2.1.1 Precipitation

Similar to other Central Alborz highlands, Shahrestanak experiences most of its precipitation as snow. Beginning in mid-November, the rainy season lasts until May of the following year. Naturally, the natives' claims that there hasn't been as much rainfall in recent decades are true. in such a way that the snow could occasionally reach a height of 4 metres in 1931 and earlier. This is in spite of the fact that it now approaches 1.5 metres. Eight months of the year are spent with winter snow at these heights. In light of this, consider how to manage and preserve this unique location, which is not always easily accessible. Avalanches are also caused by the multiple layers of snow in the heights, and since the palace is situated on a slope facing north, avalanches typically happen on slopes facing south and west. This area is not threatened by heavy avalanches. The tilting of the trees and historical writings indicate that avalanches do occur along the valley, but they do not occur very frequently in this area.[4]
The difference between the amount of precipitation in the driest and wettest months of the year is 68 mm. During the year, the temperature changes by 24.1 degrees Celsius. The driest month is August, with 2 mm of precipitation. The highest amount of precipitation with an average of 70 mm occurs in April.[5]

1. The work's registration file. (1997), p. 3
2. The registration file of Dezdband castle in Shahristan, 2011, p. 26
3.Tumani, 2008, p.122
4.Ibid., p, 124.a
5.https://fa.climate-data.org/

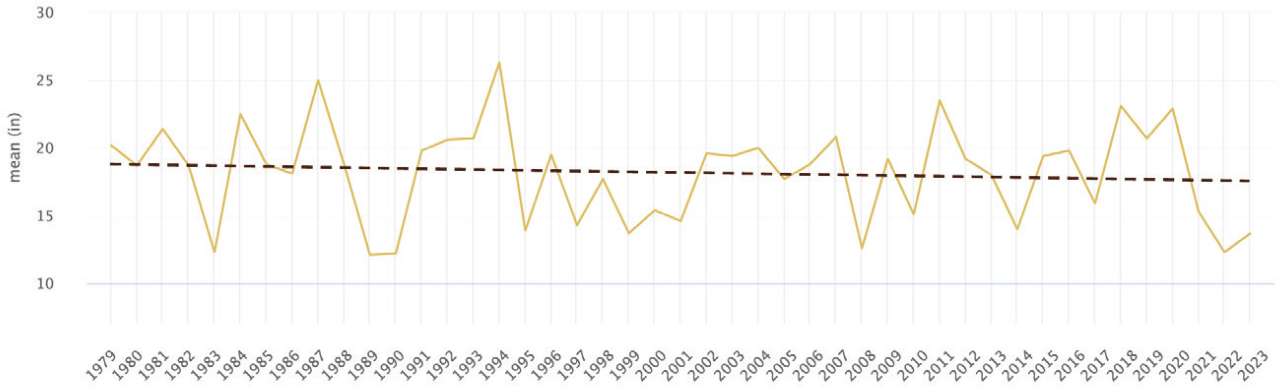


Table2. Mean yearly precipitation, trend and anomaly, 1979-2023.
https://www.meteoblue.com/en/climate-change/shahrest%c81%4nak_iran_115755

2.2.1.2 Wind

Considering that the Alborz mountain range is east-west, most of its valleys are north-south, And this has caused the sunrise and sunset to be seen very beautifully there, so it is called the sun's nest. From the moment of sunrise to sunset You can see the sun there, because of the duration of the sun's rays, it has the best summer weather in Iran, due to the wind, along the west-east, the prevailing winds pass through this valley like a tunnel and hit less obstacles. Therefore, because the wind speed in the heights and narrow valleys is controlled, this causes an increase in the wind speed and its favorable or harmful effects. The presence of orchards and fruit trees as a buffer These winds are considered to be a useful factor in the design. Of course, the location of the palace in the direction of the valley is almost north-south, which causes the mountains adjacent to this area to increase the area near the mansion in certain directions Protect against these winds.[1]

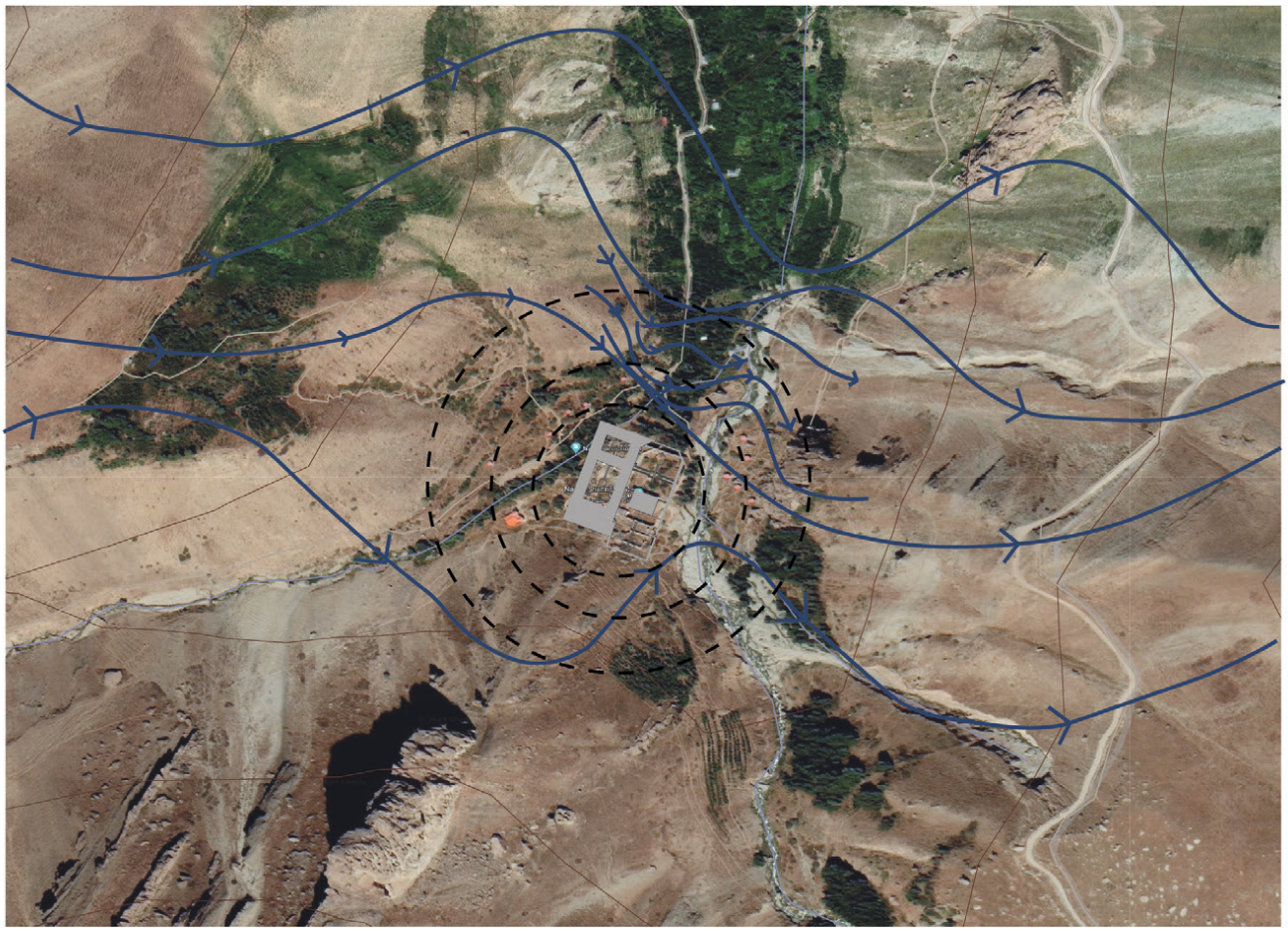


Fig89.Wind direction, personal edit, out of scale, Source:Google earth

1. Hamshahri Newspaper, 23 September 1993.



2.2.1.3 Temperature

Shahristanak, in general, has a low temperature. In the summer, the temperature rarely exceeds 15 degrees, and in the highlands, this amount reaches 5 degrees. In winter, the air temperature is so low that Due to the weather conditions, many people from the city migrate seasonally to Tehran and Karaj. The reason why the city is so cold even in the summer is because the place is concave, and the cold air goes down in the valley and there. Of course, the influence of this along with other factors such as: weather conditions, latitude and altitude, etc.[1]

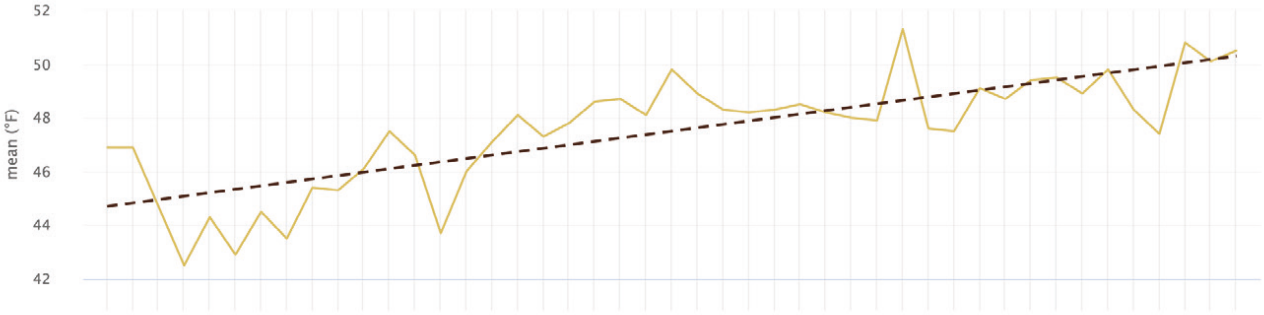


Table3. Mean yearly temperature, trend and anomaly, 1979-2023.
https://www.meteoblue.com/en/climate-change/shahrest%c81%4nak_iran_115755

2.2.2 vegetation and Fauna diversity

Vegetation diversity

This area mostly includes meadows with rich willow trees, barberry and hawthorn bushes along the river and streams at lower altitudes, and a rare community of birch trees and various species of nester and wild almond shrubs at higher altitudes. There are also remnants of the destroyed juniper forest on the northern slopes.Among the other plants of this region, we can mention the mountain plant Valk, Shurk and mountain mushroom, as well as jashir and rhubarb. The most important fruit trees of this region are cherry, pear, and apple
Apricots, walnuts, hazelnuts, tomatoes and peaches.[2]

In the spring season, the village of Shahrستanak is filled with medicinal and edible plants that the residents of this area dedicate to Chinese grass in this season of the year because they know the vegetation very well. So when they go to the Chinese grass, as they say, they come back with full hands. Plants such as mountain thyme, chamomile, chives, and... are among the plants that grow well in this place, and the people of Shahrestanak either for their own consumption or for sale in perfumeries.[3]

Fauna Diversity

In Qasran mountain, there are all kinds of beasts, such as leopard, bear, wolf, fox, jackal, mountain goat, Deer, sable, jackal and rarely boar and all kinds. Birds such as partridge, tiho, starling, owl, etc.There are rare storks and some other species .This village has all kinds of wild animals and birds such as jackals, wolves,etc.[4]

1. https://fa.climate-data.org/
2. http://khaneyeminajoon.blogfa.com/post/2576
3. https://www.kojaro.com/attraction/8114-shahrestanak-village/
4. https://amordadnews.com/106397/



Fig90.Vegetation diversity, personal edit, out of scale, Source: Google earth

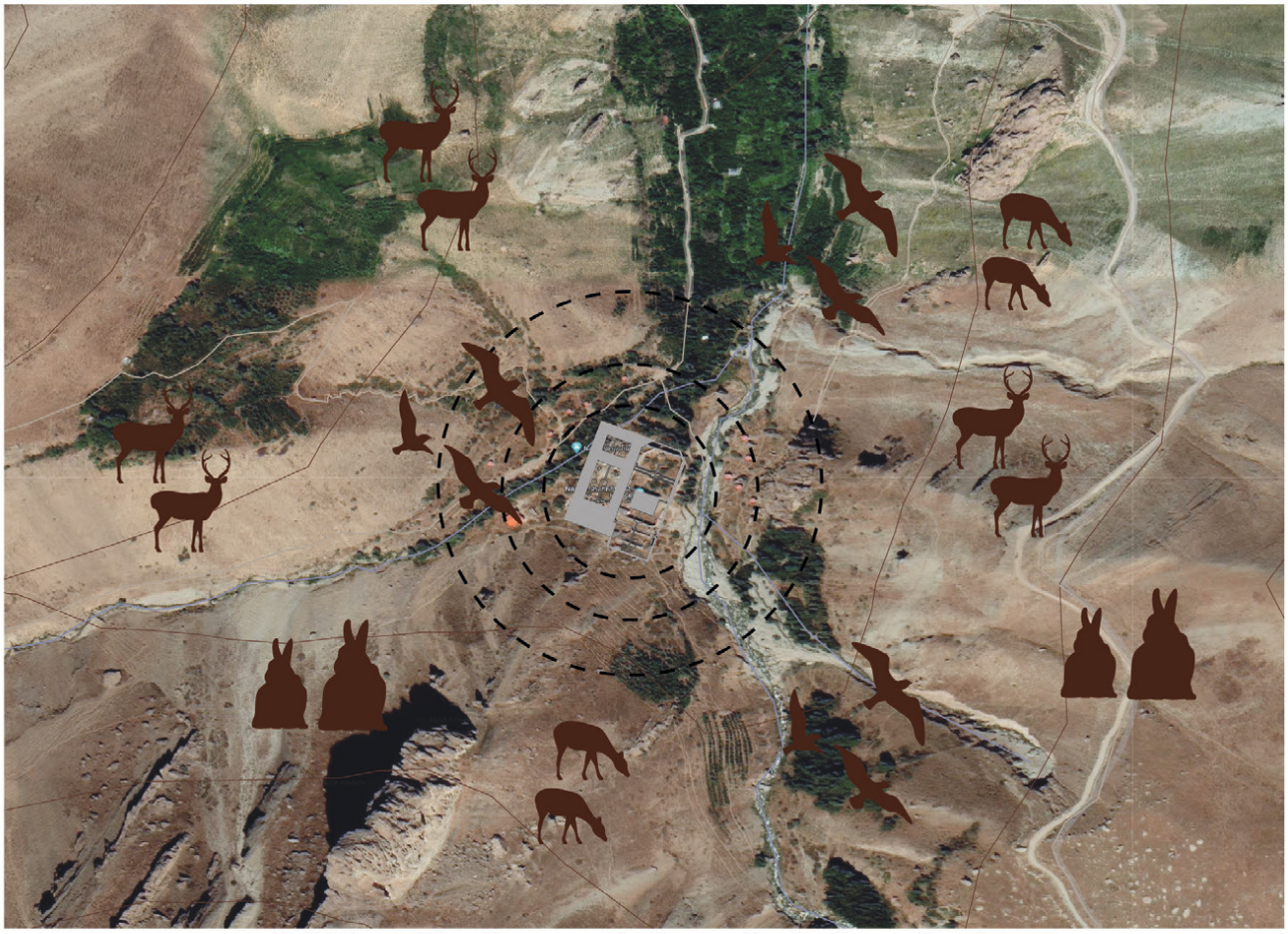


Fig91.Fauna Diversity, personal edit, out of scale, Source: Google earth

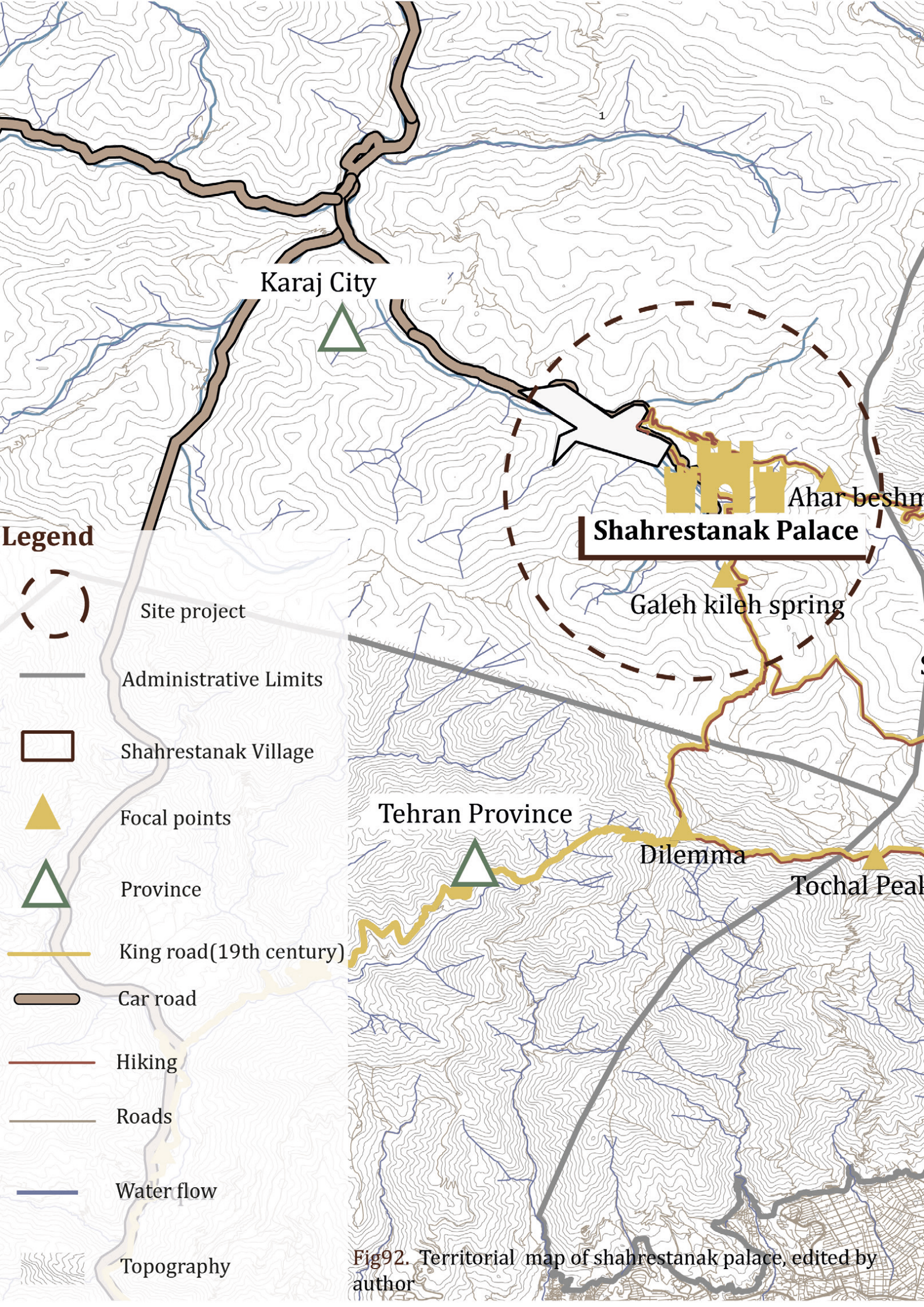
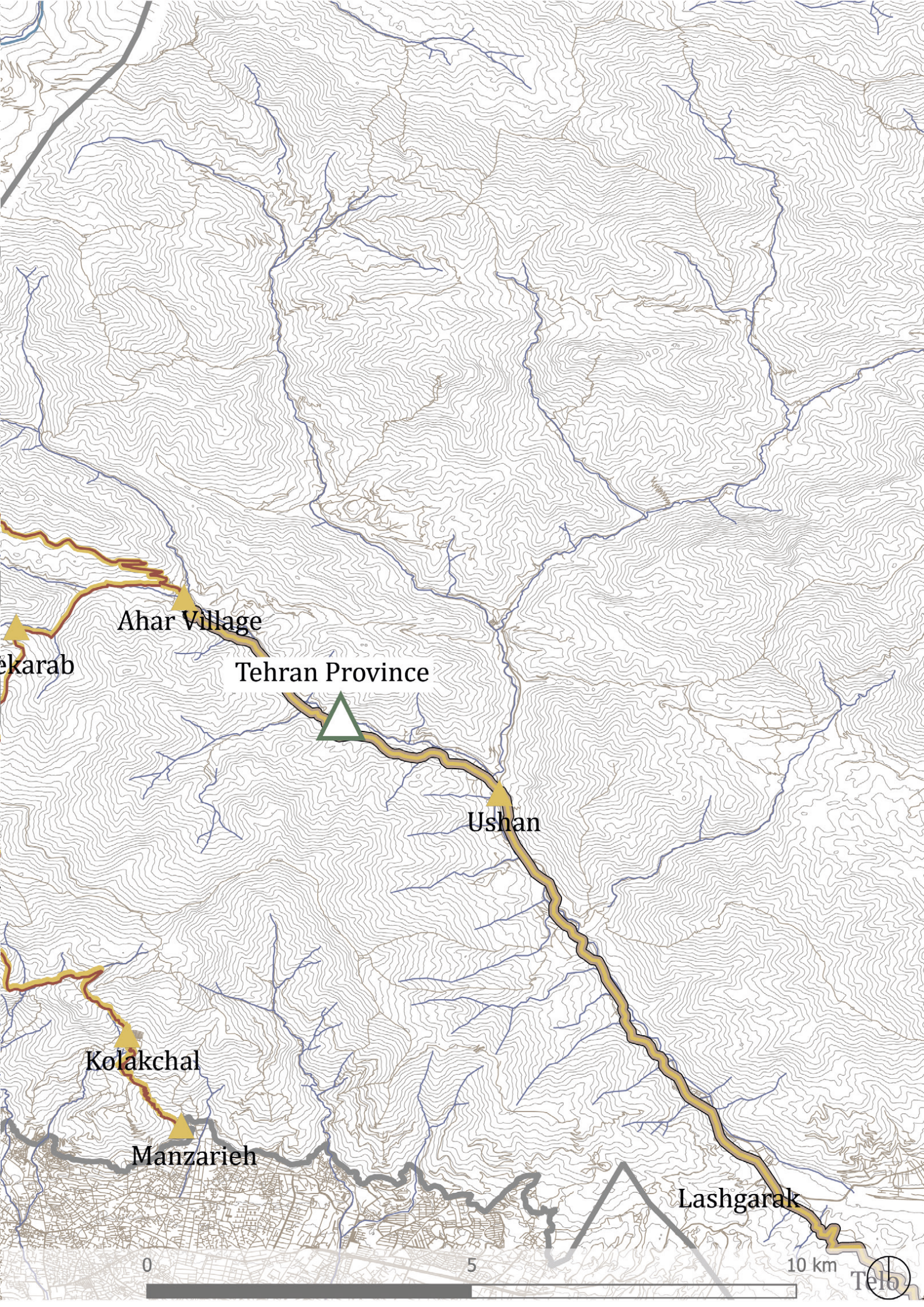


Fig92. Territorial map of shahrestanak palace, edited by author


Ahar Village
ekarab
Tehran Province
Ushan
Kolakchal
Manzarieh
Lashgarak
0
5
10 km
Tela

2.2.3 Road Conditions Prior to Infrastructure Development

2.2.3.1 The geographical setting of the village Shahrestanak

Situated in a verdant valley, Shahrestanak village is among the most picturesque villages along the Chalus road. There are lots of garden alleys and fruit orchards in a valley.Three valleys are accessible from the Shahrestanak valley's terminus, one of which is It leads to the **Tochal Peak**; climbers take it to Shahrestanak and back; another path leads to **Ahar**; still another path leads to **Gasil**.The Shahrestanak Mansion's communication route is Chalus Road, which is 55 kilometres away from Karaj Road. There is a side road that leads to Shahristanak on the right side of the road after the Asara section, which is roughly ten kilometres away. The actual route to Shahristanak is asphalt.[1]



Fig93. Karaj province map, edited by author

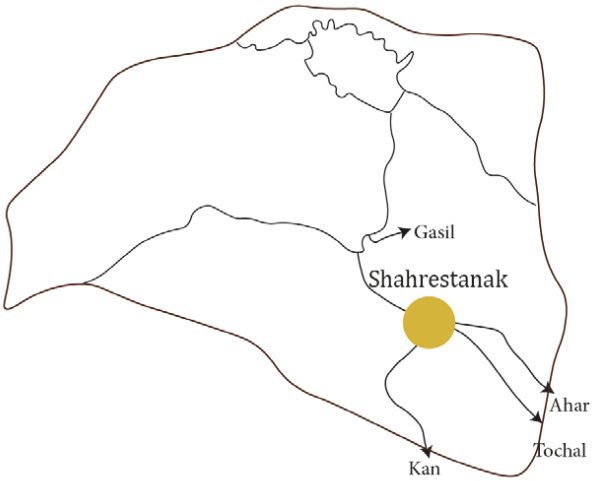


Fig94.Shahrestanak village leads to three valleys edited bu author

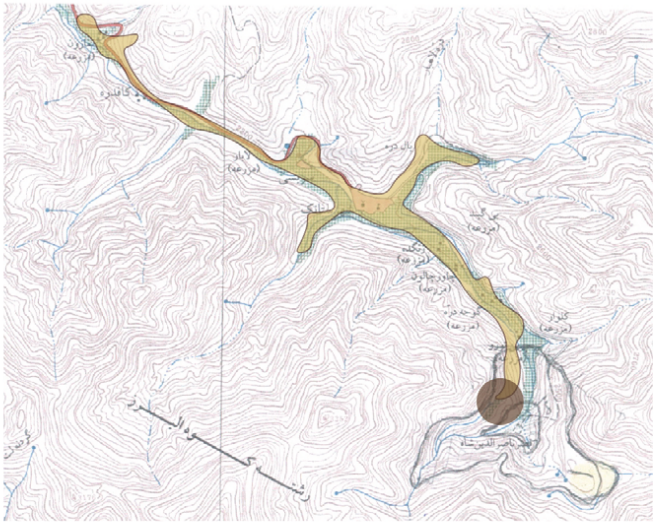


Fig95.Map of Shahrestanak village in the central part of Karaj
Source:Department of cultural heritage., (n.d.), *Shahrestanak palace*, p, 4.

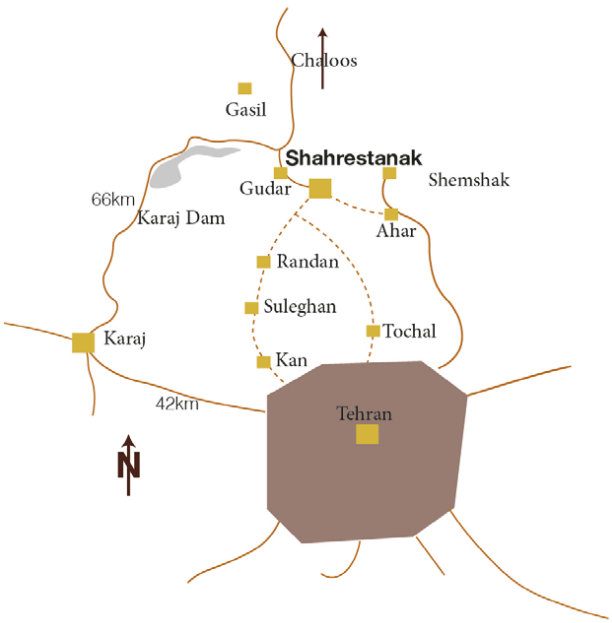


Fig96. Diagram of surrounding roads and villages

1.Department of cultural heritage., (n.d.), Shahrestanak palace, p, 3.

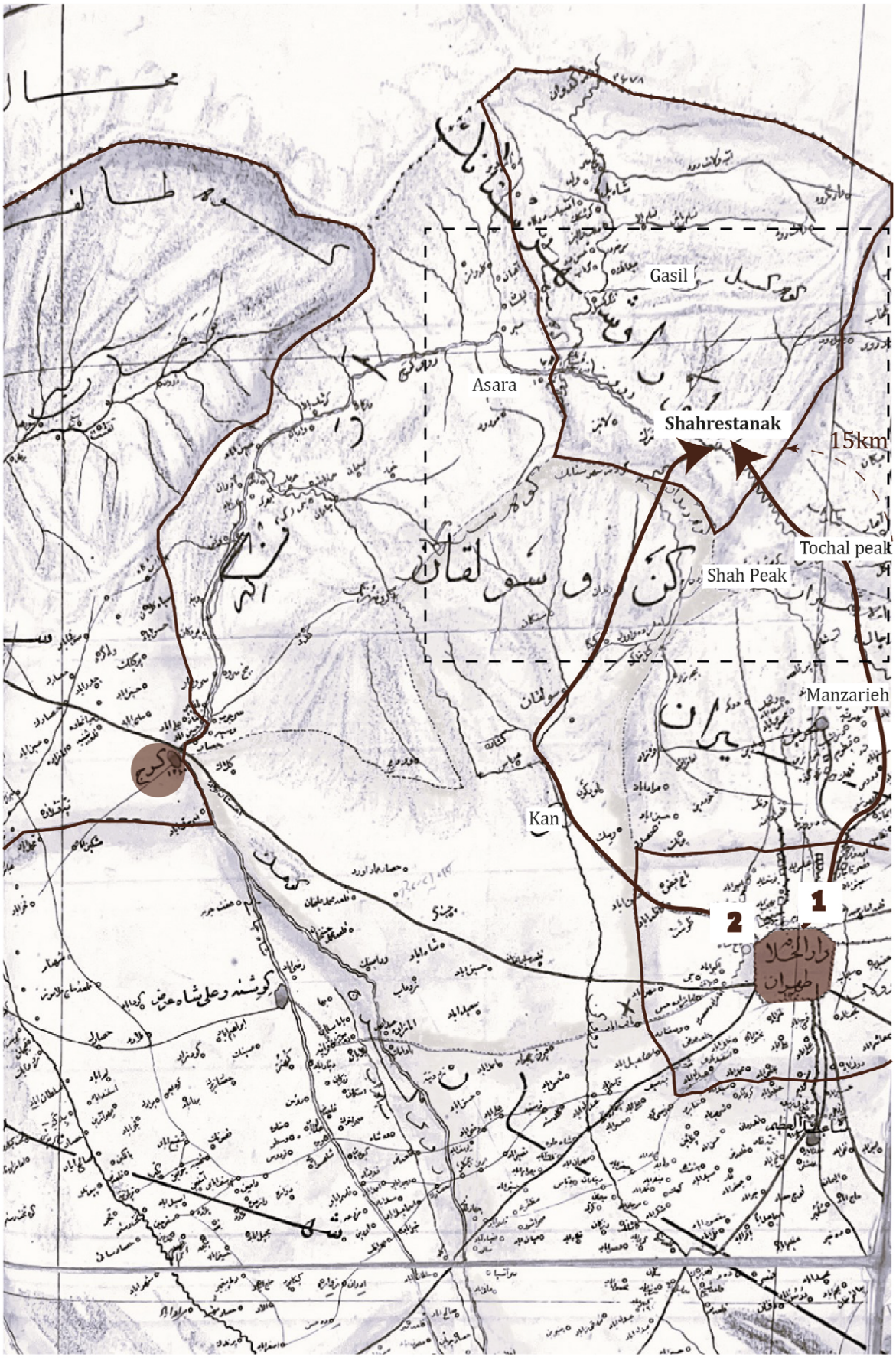


Fig97. Naser al-din Shah journey to shahrestanak,
Source:Shirazian, R. (2017). *Tehranography: Bank of Maps and Place Titles of Old Tehran*.Dastan, p, 81.

Naseri fence(Tehran)
Karaj Province

2.2.3.2 The Shah's Access Routes to Shahrestanak

1.There are stretches of what was once known as Shahi Road, also known as Naseriddin Shahi Road, running east-west and along the southern face of **Tochal Peak**. This road led towards Tochal Peak from the ancient village of **Manzariyeh**, which is now regarded as either a part of Tehran proper or one of its northern neighbourhoods. a short distance of several metres from Tochal Peak's southern slope. It is situated on its northern flank, with a delightful spring at the summit of the mountain that leads to Takht Shah Mountain (also known as Shah Peak) and beyond It has finally reached the city of **Shahrestanak** after being stretched northwest.[1]

The family camp of Naser al-Din Shah Qajar used this road as a means of passing the time. They departed Tehran for Shahrestanak Palace in the summer along with the crew and harem members. Along this route, which usually took a day, it occasionally took several days. The king also ordered the construction of tents and hares at various points along the way, including Takht Shah Mountain. This road is roughly 15 kilometres long, but it takes longer than usual to complete because it passes through many uphill and downhill valleys. [2]



Fig98. The road from mountains which Shah used to go, Southeast of Tochal peak
Source: Golestan palace album



Fig 99. The road from tochal peak to Shahrestanak, The landscape was captured from Google Earth in 2023

1.Pazouki, N. Shemiran Historical Monuments. Cultural Heritage Organization of the Country, 2003, p. 408.
2. Ibid., p, 409

2.This road's path started in Sorkheh Hesar and went through Telu, Lashkarak, Ushan, and Ahar. The road split into two in Ahar. One branch went northwest to the Tarbisheh region and the southern mountains of Tarbisheh and Ahar Beshm. From there, it descended to Shahrestanak. The other branch curved back towards the Shekrab area before descending from the heights to reach Shahrestanak on the north side of the Chamanmakhmal plains. When the weather was unpredictable in the spring and autumn, this route was typically taken. But the Shah's route—the carriage road—was only selected during the summer, when the terrain and weather were stable and there was no danger of storms, floods, or avalanches, to reach Shahrestanak.[1]

3.Sulqan and Imamzadeh Davood are the starting points of the royal route to Shahrestanak, which winds through rural and scenic areas. Usually, this route begins in the village of Sulqan, which is renowned for its verdant surroundings and peaceful atmosphere. From there, visitors set out on an adventure that passes through the breathtaking countryside, passing by the Imamzadeh Davood. The route offers travellers a view of rural life and beautiful scenery as it flows through farmlands, hills, and valleys. Travellers eventually reach the small town of Shahrestanak after taking this picturesque route, where they can explore its historical landmarks and cultural heritage.[2]



Fig 100. Shahi road to access Shahrestanak

1.Pazouki, N. Shemiran Historical Monuments. Cultural Heritage Organization of the Country, 2003, p. 408.
2. Ibid.,

2.2.4 Current access routes to the complex

Car roadway

1.The route to reach Shahrestanak starts in Tehran and goes through Karaj. When one arrives in Karaj, one is instructed to take the exit that leads to Chalus Road. After travelling about 44 kilometres on Chalus Road and through the picturesque villages of Asara, Mahan, and Dardah, travellers come to a significant intersection shortly before they reach Gachsar. After making this turn onto an asphalt road, the remaining portion of the trip is about 10 kilometres long and takes about 10 minutes to reach Shahrestanak.[1]

2.The alternative route, which begins in Tehran as well, involves leaving through the northern Azadegan Highway exit. It is about fifty kilometres from this starting point to the village of Shahrestanak. Once drivers have travelled 40 kilometres on the Tehran-North Highway, they should turn onto Chalus Road. Drivers will join the Shahrestanak pathway after a few minutes from the left exit of the road. Shahrestanak village can be reached by travelling approximately 9 kilometres on this route.[2]

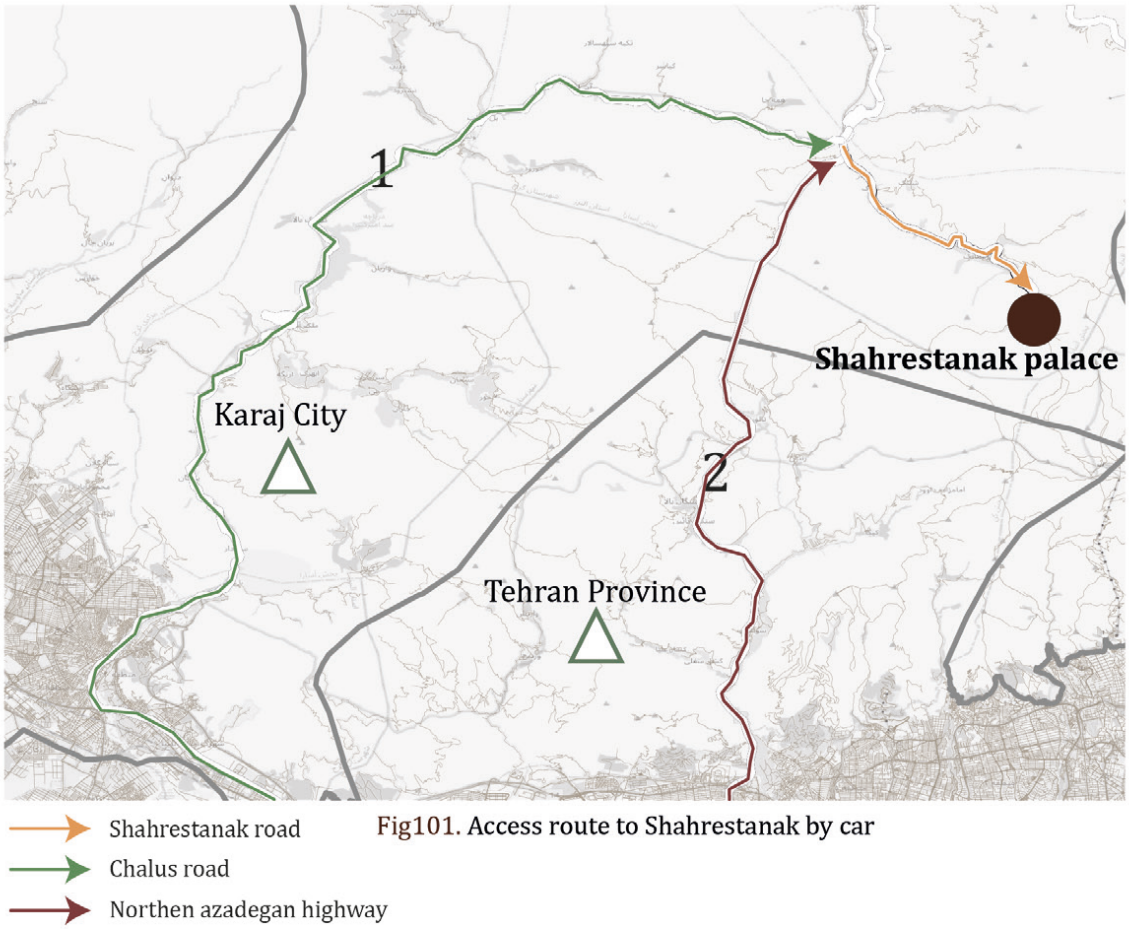


Fig101. Access route to Shahrestanak by car

Following our drive through Shahrestanak village, we come to a pair of roads where the car and footpath diverge from the path that climbs the mountain. All of the roads on the map lead to the palace.

1.https://www.kojaro.com/attraction/8114-shahrestanak-village/access route to shahrestanak
2.https://www.kojaro.com/attraction/8114-shahrestanak-village/access route to shahrestanak

Distances to Reach the Castle After Arriving in the Village

-From the beginning of the road exit from Chalus road to the village of Shahristanak:7.9 km

-From the beginning of the road (exit from Chalus road) to the crossroad:11.9 km

-Walking and car path (from the beginning of the crossroad to the palace):1.76 km

-Hiking trail (from the beginning crossroads to the palace):2.30 km [1]

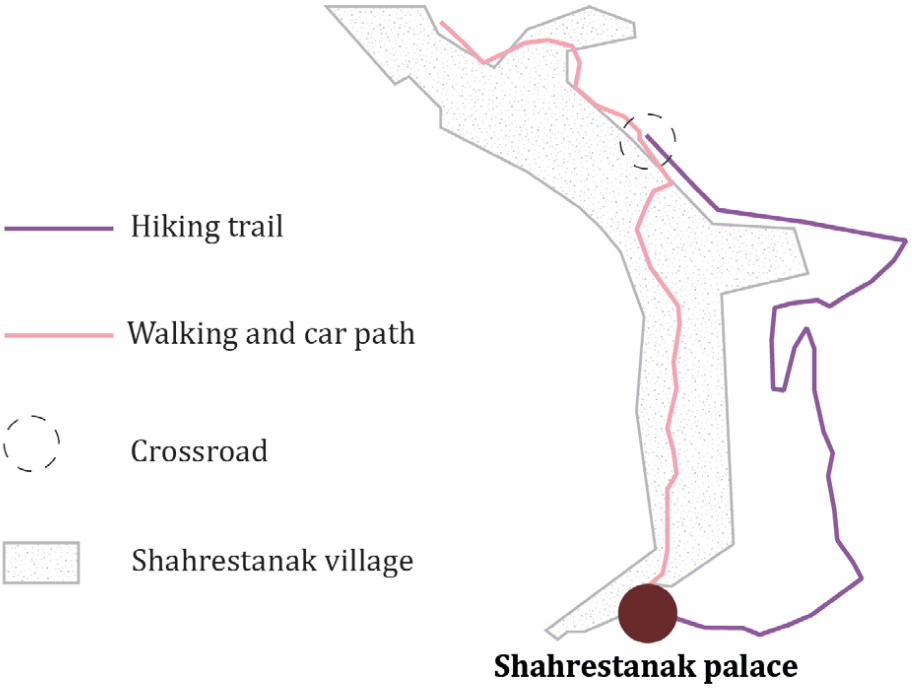


Fig102. Routes leading to shahrestanak palace, Personal edit

Mountain hiking and walking trails

1.From Tochal Peak, you can also go to Shahrestanak. You should descend the western side of Tochal in this mountain climbing route, hiking for approximately one hour until you reach Shahnesin Peak in Shahrestanak. The remaining portion of the route can be reached on foot in about 1.5 hours from there. But the route is very light and simple, and it won't give you any problems. You can walk out of the village and onto the country road outside the village after about 20 minutes of walking from Shahneshin Peak. From there, you can take the direct route to Naseri Palace.[2]

2.The Ahar villages are reached by the second access route. It will take you about an hour to travel the 44 kilometres by car to get there. After parking your car, you can start hiking in the direction of Shekarab village. After that, you'll reach the palace after a moderate amount of hiking through gorgeous garden valleys.[3]

1.Routes by google map
2.https://www.kojaro.com/attraction/8114-shahrestanak-village/
3.https://mountaindream.ir/mountain-climbing

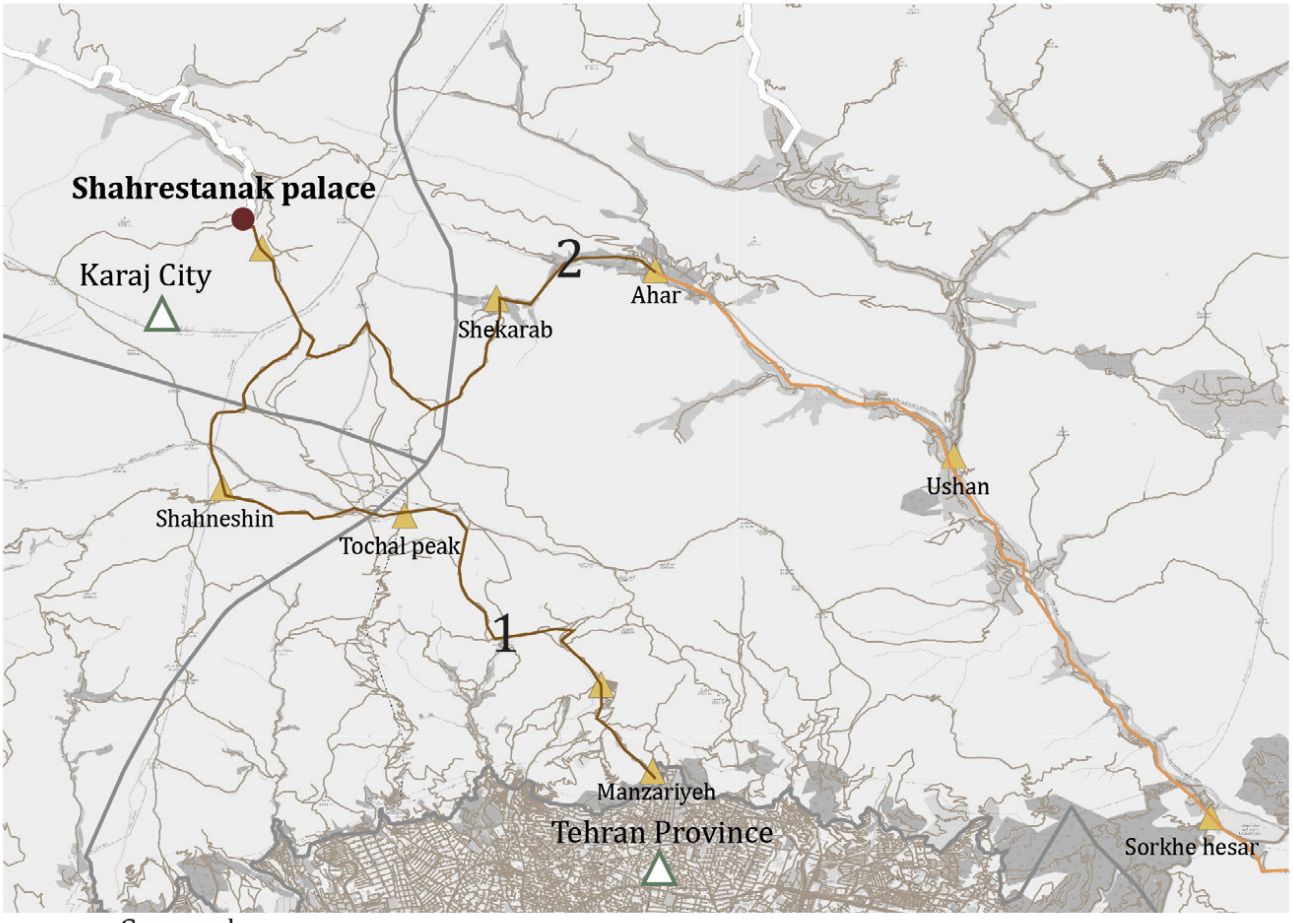


Fig103.Access route to Shahrestanak by hiking

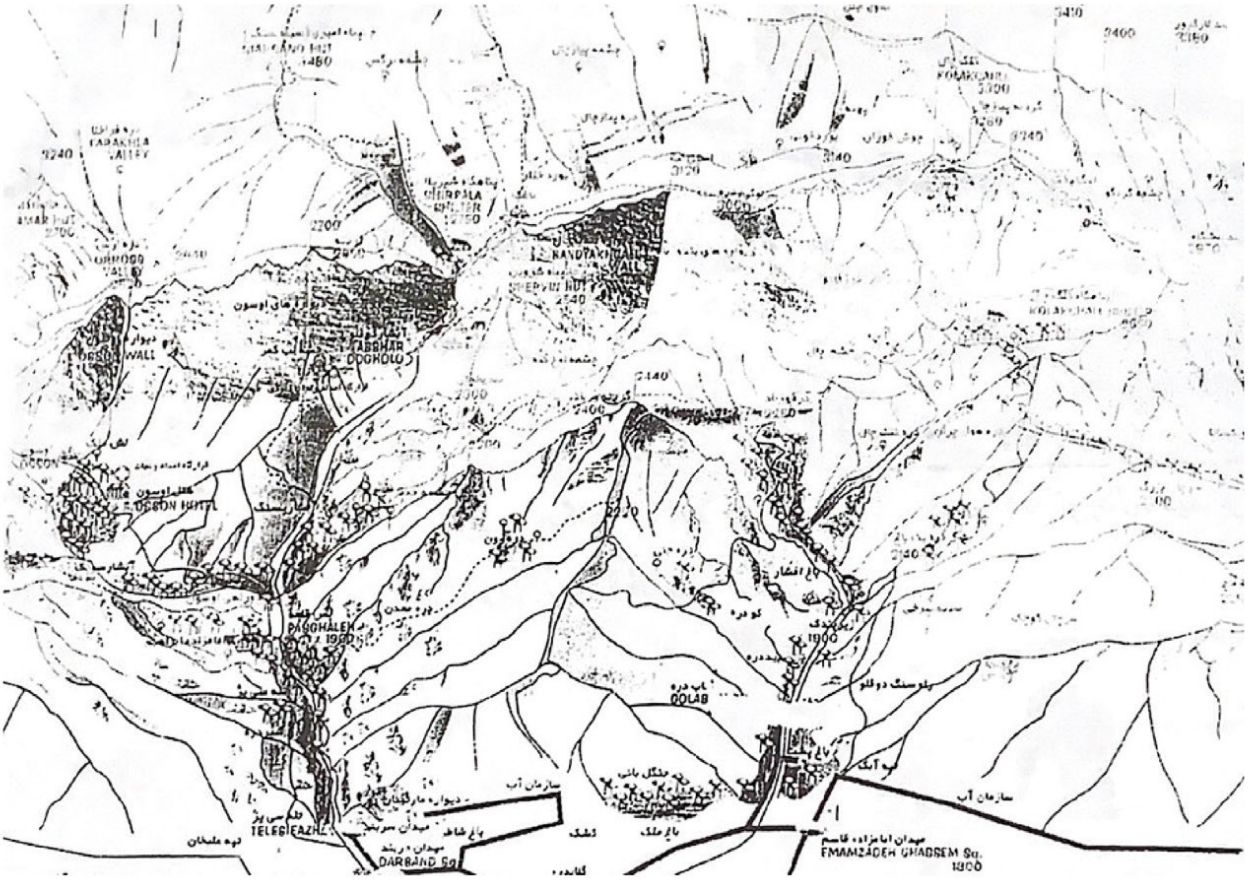


Fig104. Access route to Shahrestanak by hiking, Source: Pazouki, N. Shemiran Historical Monuments. Cultural Heritage Organization of the Country, 2003, p. 411.

2.2.5 Understanding the Surroundings of the Complex

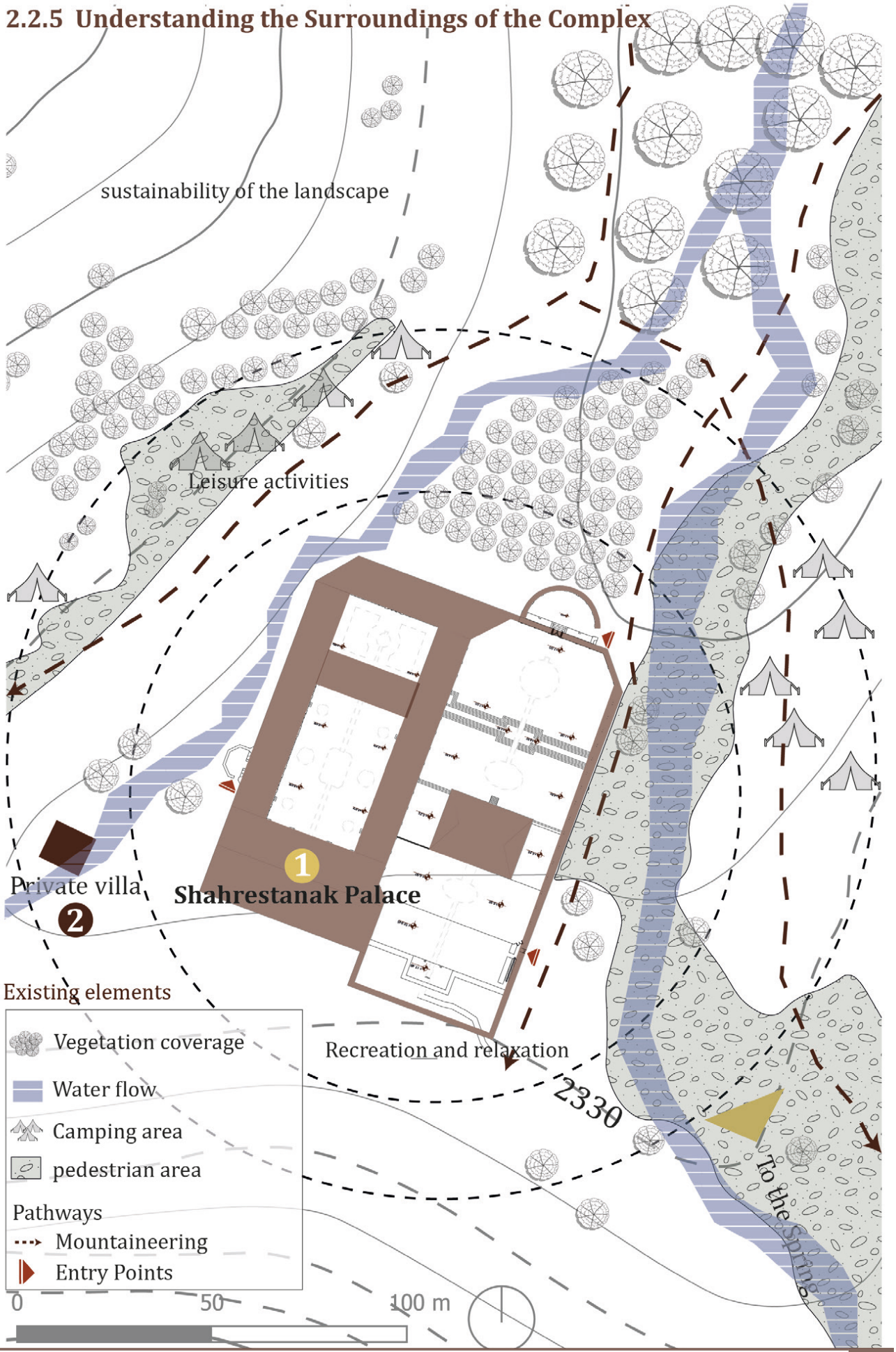


Fig105. Understanding the surrounding of the complex, edited by author, Source: Google earth

Shahrestanak palace, Karaj, Iran

3. Architectural insight of the complex

3.1 Iranian Architecture during the Qajar Period(1785-1925)

Iran was ruled by the Qajar dynasty for 146 years, from 1785 to 1925 AD. Numerous advancements were made in a variety of fields during this time. During this time, modernity had an impact on traditional Iranian society, changing a number of social, political, cultural, and artistic standards. Architecture was not exempt from this shift, and the corpus of traditional Iranian architecture, along with its guiding theories and methods, had to adapt to new circumstances.[1]

By examining the buildings of the Qajar era, there are three types of architecture. Isfahan style, Tehrani style (a combination of Isfahan s tyle and neoclassical s tyle) and s tyle that are completely influenced by European neoclassical architecture. The First Period: Agham Mohammad Khan Qajar started this period in 1164 AD when Tehran was chosen to be the nation's capital, and it lasted until 1228 AD when Dar al-Fonun School was built.Second Period: Started in 1228 AD with the building of Dar al-Fenun and lasted for up to 31 years until the entrance of Sepahsalar Garden was constructed in 1843 AD.[2]

- The use of vertical colored lattice windows named orsi
- The use of red or purple colors in seven-color brick tiles
- Using London flower pattern in tiling
- Using the crenate along the roof of palace
- Using the pictures of Persepolis
- Decorative elements and facade work under influence of Western elements
- Making large and high iwans in entrances
- The centrality of buildings with pillars and columns
- Tall buildings showing the grandeur and power
- Materials such as stone, cement and iron
- Introverted
- Interior decorations
- Postcard architecture
- Creating a staircase in the main axis
- Complying the pecking order
- Turning three-door rooms to two-doors
- Gable roof
- Creating the squares[3]

Decorations of Qajar era:

- The use of vertical colored lattice windows named orsi
- The use of red or purple colors in seven-color brick tiles
- Using London flower pattern in tiling
- Using the crenate along the roof of palace
- Using the pictures of Persepolis
- Decorative elements and facade work under influence of Western elements[4]

1.Ghobadian, Vahid. Tradition and Modernity in the Contemporary Architecture of Tehran. Elm memar, 2018, P., 21
2.Ibid., p.,24.
3.Kamali, Mohammad Reza. A Study of Qajar Era Architecture. University of Art Isfahan.
4.Ibid.,

- The use of vertical colored lattice windows named orsi
- The use of red or purple colors in seven-color brick tiles
- Using London flower pattern in tiling
- Using the crenate along the roof of palace
- Using the pictures of Persepolis[1]

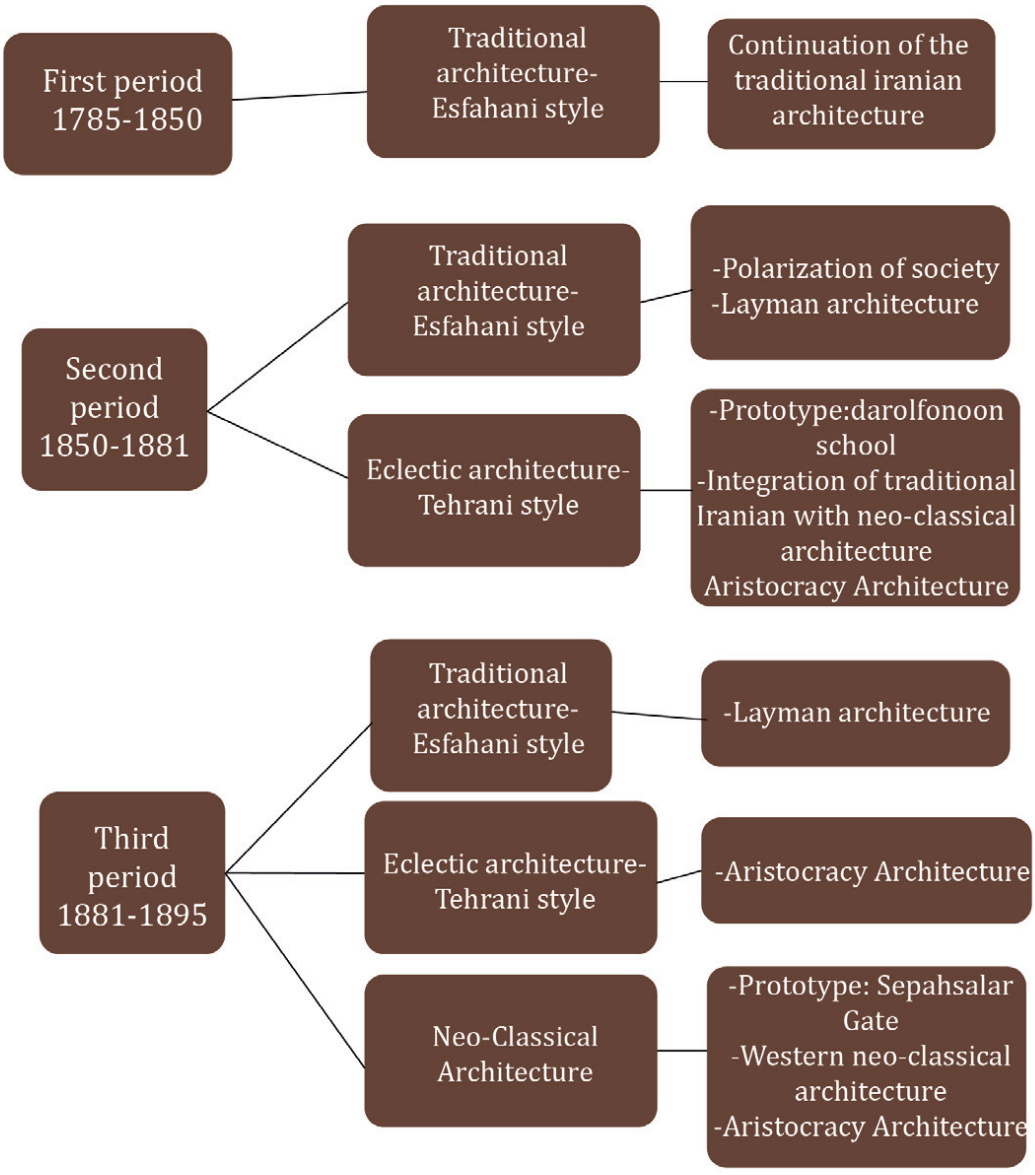


Fig106. Architecture styles from the beginning of the Qajar Era to the end of Naseredin Shah period.
Source: Ghobadian, Vahid. Traditional and Modernity in the Contemporary Architecture of Tehran. Elm Memar, 2018,

1. Kamali, Mohammad Reza. A Study of Qajar Era Architecture. University of Art Isfahan.

First Period of Qajar's Buildings



Fig107. Ground floor plan and facade of Qavam al-Dowleh house in Tehran (Zand, 2001).
Source: Tahmasbifard, M. A., (2020). International Journal of Architecture and Urban Development. *A Comparative Study on Residential architecture in Qajar era,* Architecture in the Qajar era, 10(2), 49-58.

Second Period of Qajar's Buildings (in the time of Naser al-din Shah)



Fig108. *Masoudieh Mansion, Source: IRNA, 2018*

Third Period of Qajar's Buildings



Fig109. *Azizieh or Malijek Mansion. (A) The plan of Malijek Palace. (Source: Saadati Khamseh, 2016) (B) The facade of Malijek Mansion.(Source: Zakarzadeh, 2008).*

Five elements dependent on architecture which are of architectural characteristics of Qajar era:

1. Wind catcher

One of the architectural elements of Iran is wind catcher that it was common in Qajar period. Wind catchers were usually built on top of cisterns, palaces (Golestan Palace) and residential houses for air conditioning and cooling the place. At first, this architectural element was very simple and included only one vent opening and guided the air from this opening into inside, it was decorated with beautiful tile work, then, it has taken steps to perfection and their evolved form had two floors and four directions with eight openings and the wind catchers of Qajar period can be seen in Tehran, Yazd, Abarqu, Kashan, Tabas, Semnan and Damghan.[1]



Fig110. Wind catcher, Source:https://memarifa.ir/badgir/

2. Orsi window

It was a kind of lattice window that was opened and closed vertically and had various functions the locations they were used were in internal spaces, upper rooms and gooshvar rooms located in one or both sides of large and high halls. Orsi windows were also used on the side of the house that was faced to the public pathway. The surface of Orsi windows was decorated with a variety of different gereh sazi (making knot) patterns and colored and simple glass.[2] Fenestrations above doors and Orsi windows of Qajar period were in shape of arc and crescent and many of fenestrations were circular and oval and in decorations of Orsi windows in Qajar era mostly the configuration work was used.[3]



Fig111. Orsi window,
Source: https://dorsawin.ir/double-glazed-orsi-window/

1. Nasiri Ansari, 1971, p. 273.
2. Soltan Zadeh, 1996, p. 30.
3. Sarikhani, Majid. A Study of Archaeology in Qajar Architecture, 2006, p. 60.

3. Santouri

The antiquity of constructing santouri in architecture goes back to 700 BC in Greek temples architecture. The use of santouri was not common in Iran's architecture before Qajar era and dyring Qajar period entered into Iranian architecture from the classic architecture of Europe because of relationships with the West and it is one of the characteristics of Qajar architecture. Santouris are not necessarily triangular; they can have vaulted arch above them. The importance of santouri in architecture is that usually an open and wide space is created on them so they could place a particular subject inside them.[1]

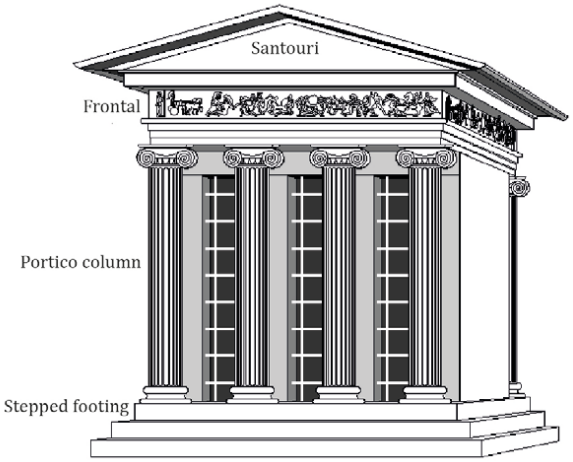


Fig112. Santouri,
https://fa.wikipedia.org/wiki/

4. Jamkhaneh

One obvious and noteworthy aspect of many ancient Iranian buildings is their architecture in the form of domes. In actuality, these buildings' domed shape is a fundamental component of traditional Iranian architecture. The importance of windows is so great that the dome-shaped buildings themselves have windows. Jāmkhāneh windows are holes in the middle of domes that let light and air flow through. These apertures were originally called jāmkhāna windows because they were covered with glass (jām) when needed, such as in the winter or when it rained or snowed.
It was very easy to cover these openings with glass, and it looked beautiful too.[2]



Fig113.Jamkhaneh,Source:https://dorsawin.ir/types-of-windows-in-iranian-architecture/

1.Marzban, Parviz, and Habib Marouf. A Pictorial Dictionary of Visual Arts (Architecture, Sculpture, Painting). 3rd ed., Soroush, 1998.
2.Pirnia, Mohammad Karim. An Introduction to Islamic Architecture of Iran. Soroush Danesh, 2005.

The study comes to the conclusion that brick, glass, and wood were the main building materials in all three Qajar periods. Large windows and doors were made of glass and wood, and because the residents were wealthy, high-quality brick was frequently used for facades. Although stone was rarely used in earlier Iranian architecture, during the second period it was used in structures such as Shams al-Amara, which was influenced by Western architecture. The first period's semi-introverted and introverted building plans gave way to the second and third periods' fully extroverted designs, which reflected a move towards opulent residential architecture. Porches and other semi-open areas declined during the second period but reappeared during the third. In the third period, entrance designs became more open, replacing the first and second periods' emphasis on privacy. With the exception of a small amount of traditional tiling, decorations were always centred around mirrors and plastering. Realistic human, animal, and plant motifs influenced by neoclassical and Zandiyeh period art were included. The steady shift from traditional to European and Neoclassical forms throughout the eras is indicative of Western influence. Originally hidden and functional, staircases evolved into independent, more noticeable features in outdoor areas by the third period. Furthermore, there was an increase in street-side openings during the second and third periods, suggesting a downward trend in privacy.[1]



Fig114. Shams al-Amare
https://www.eligasht.com/Blog/travelguide87%/

1.Tahmasbifard, M. A. "A Comparative Study on Residential Architecture in the Qajar Era." International Journal of Architecture and Urban Development, 2020,

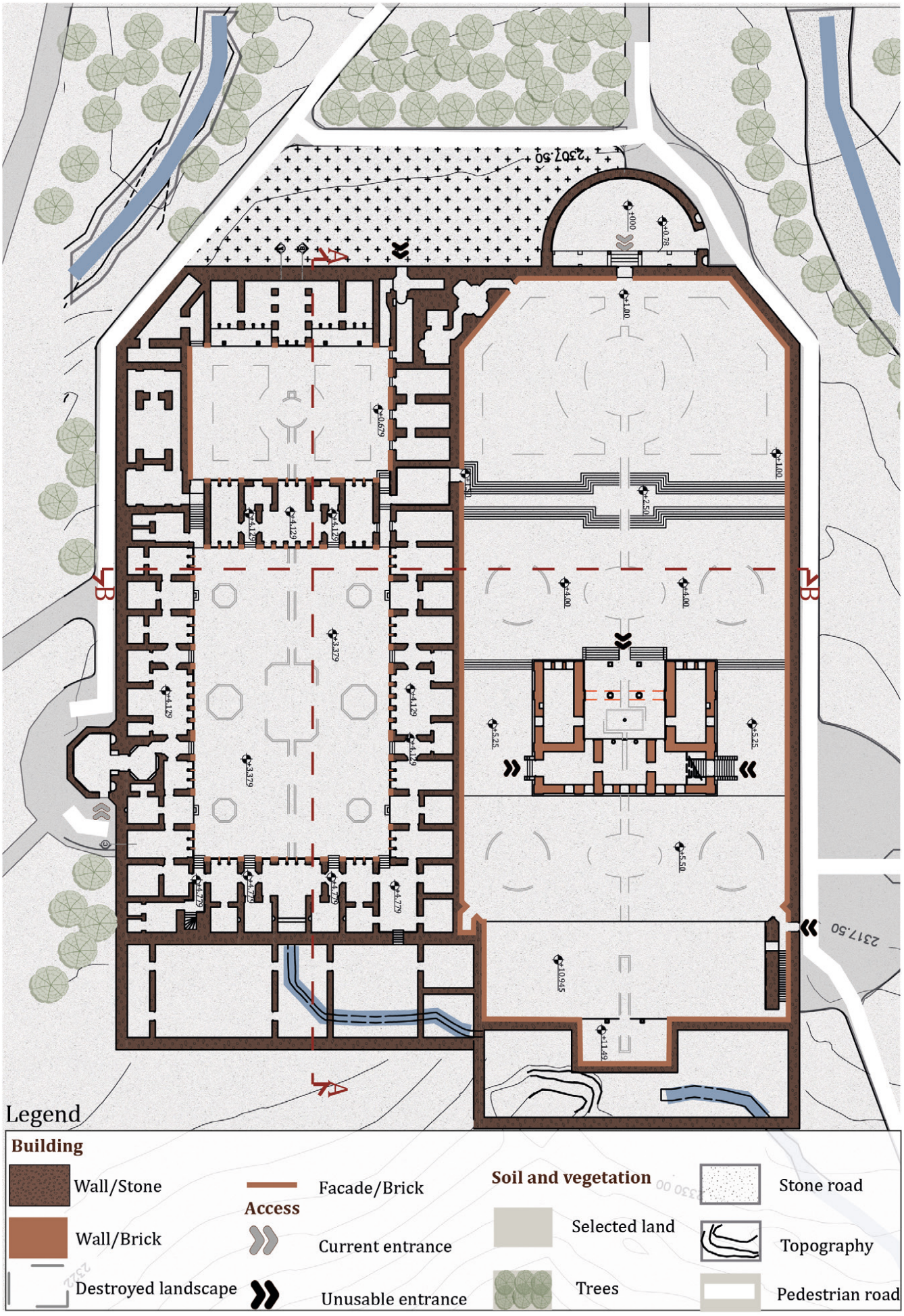


Fig115. Current status plan of whole complex,edited by author, Source: Archive of the Cultural Heritage Organization of Alborz Province

3.2 Introduction to the Shahrestank Complex

The Qajar-era palace known as Naseriddin Shahi Palace is located in the Shahrestanak village, graces the mountainside with its captivating natural backdrop and adjacency to the river. Naseriddin Shah, an architect by the name of Agha Muhammad Ibrahim Khan, ordered the palace constructed in 1878 as the Qajar kings' summer residence.[1]Covering an area of an impressive 3,650 square metres on four floors, the palace complex consists of the exterior, which houses the majestic Main Palace over two floors, the central platform, and the lovely Pool Pavilion. There are rooms flanking the central structure, which adds elegance and functionality to the building.The inner sanctuary, or harem, is tucked away in the lower courtyard and spans 468 square metres. Its layout revolves around the central courtyard. Connected to the Diwankhaneh area, this small room has 19 rooms on the north and east facades, most of which are used for practical purposes. The palace's exterior and interior are constructed separately.[2] The entrance is situated in the shape of a semicircle on the first level, and the exterior courtyard is laid out in four levels with two chamfered corners. The third level's outer mansion was constructed with two floors and 12 by 24 metres of space.In the northwest corner on the border between the inner and outer, private bath of the king is located. There are two courtyards in the inner part on two separate levels. The crew lives in the northern, or lower, courtyard, which measures 18 by 24 metres. The royal harem's residence is located in the southern, or larger, courtyard, which measures 26 by 40 metres. The building's interior has more resemblance to a caravanserai, particularly in the southern courtyard.[3]



Fig116. Shahrestanak complex, Source:Golestan palace album

1.https://tehranica.info/outside-tehran/%DA%A9%D8%A7%D8%AE-%D8%B4%D9%87%D8%B1%D8%B3%D8%AA%D8%A7%D9%86%DA%A9/
2.Revitalization and Operation Fund for Cultural and Historical Sites. Shahrestanak Palace. 1997, p. 6.
3.Ibid, p.7.

3.2.1 Ownership Status of Buildings

1.During the era of Naser al-Din Shah, by his order in 1878 AD, the construction of a grand palace began in the Valley of Shahrestanak, and it continued until 1880 AD.The period of this palace's grandeur was during the time of Naser al-Din Shah.[1]



Fig117. Shahrestanak complex, Source:Golestan palace album, 1894 AD



Fig118. Shahrestanak complex, Source:Golestan palace album, 1894 AD

2.After the fall of the Qajar dynasty and the assassination of the Shah in 1896 AD, the palace began to deteriorate due to neglect, harsh weather conditions, looting, and human destruction. The process of decay and destruction continued until around 1969 in Pahlavi era, when the Iranian Mountaineering Federation decided to restore it as a temporary residence for mountaineers.[2]



Fig119. Shahrestanak complex, Source: Archive of the Cultural Heritage Organization of Alborz Province, 1969 AD



Fig120. Shahrestanak complex, Source: Archive of the Cultural Heritage Organization of Alborz Province, 1969 ADD

1.General Directorate of Cultural Heritage of Tehran Province. Board of Investigation and Identification of Ancient and Cultural-Historical Artifacts of Karaj Governorate. 2001.
2. Shahrestanak Complex. Fund for Revitalization and Exploitation of Cultural and Historical Places, 2019.

3.In January 2000, the Executive Office of the Pardisan Project included the restoration plan of Shahrestanak Palace, based on existing documents, in its program. The Shahrestanak Palace is registered as a historical monument in Iran with the registration number 1925.[1]

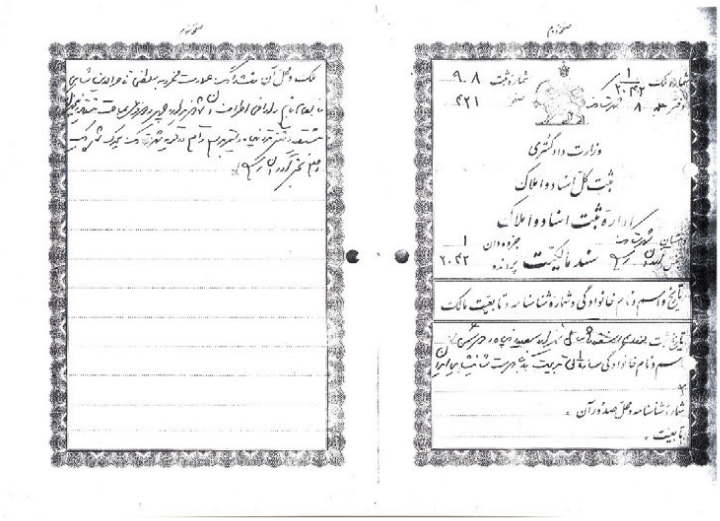


Fig121.Ownership document of Shahrestanak palace, 1969 AD
Source:Registration file of the work

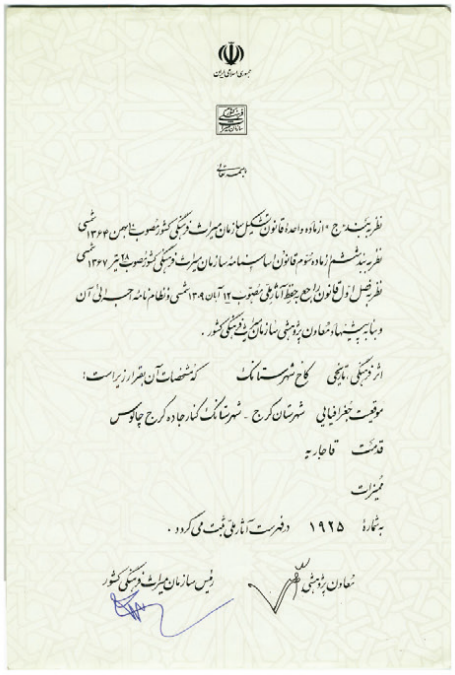


Fig122. Registration document in the list of national works of Iran,1997 AD
Source:Registration file of the work

According to the Sabta Historical and Cultural Sites Revitalization and Exploitation Fund, on December 2014 ,9, the handover and transformation ceremony of the Shahrestanak mansion in Alborz province, known as the Naseri Palace, was held. The event was attended by Ehsan Rasulof, a private sector investor and operator, and Mohammad Reza Pouyandeh, Managing Director and Chairman of the Board of Directors of the Historical and Cultural Sites Revitalization and Exploitation Fund, along with a group of experts in the field. The Shahrestanak mansion in Alborz province has been entrusted to a private sector investor under a -20year contract for its restoration, with 88 billion rials allocated for the restoration of this historic building.[2]



Fig123.Shahrestanak complex,north facade,by author



Fig124.Shahrestanak complex,north facade,by author

1. Fund for Revitalization and Exploitation of Cultural and Historical Places. Shahrestanak Complex. 2019, p. 8.
2. https://www.saabta.ir/detailsnews.asap?idn=.

3.2.2 Description of Architectural Structures

3.2.2.1 Spatial Planning

The plan is a combination of rectangular volumes with chamfered corners. In general, the plan is a square which is divided into two equal rectangles. The Divan Khanah section has an extroverted architecture and the harem with a central courtyard has an introverted architecture.

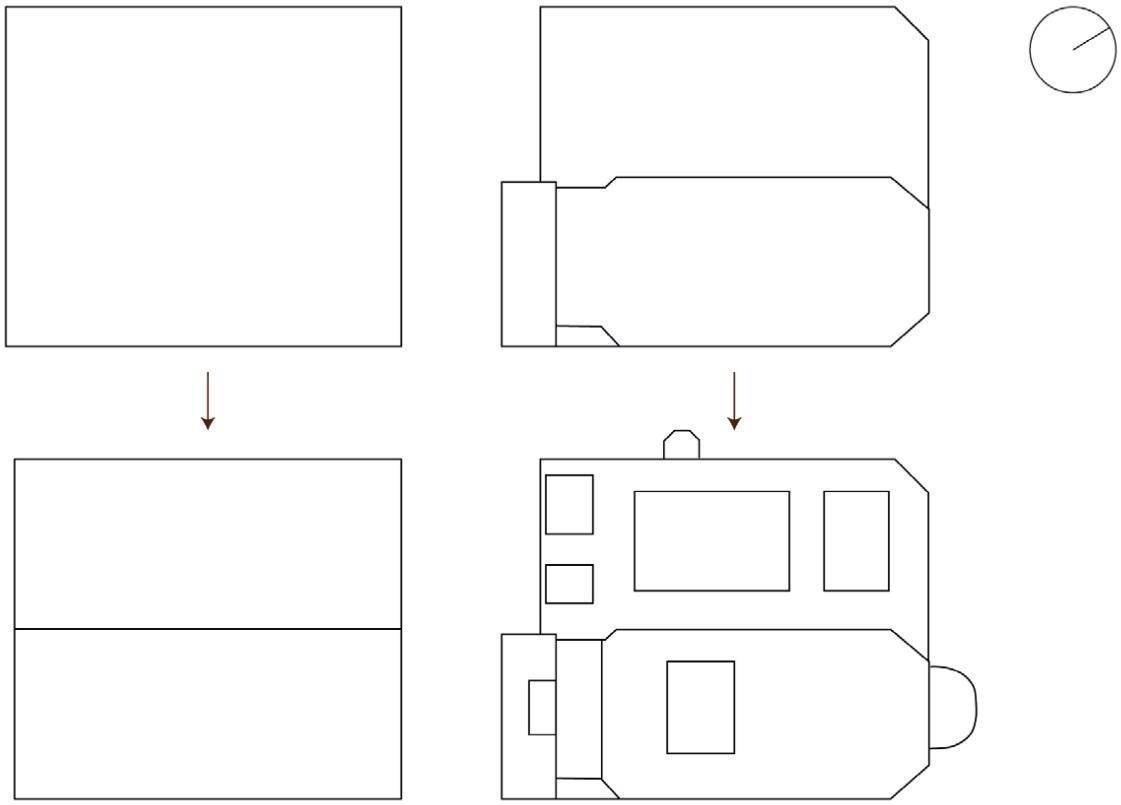


Fig125. Formation of the Complex Plan, edited by author

The plan of the Diwan Khaneh section exhibits symmetry, and the placement of the gardens and ponds conforms to the section's overall objectives. The axis of symmetry and the axis of water in this section of the complex coincide, demonstrating the centrality of water. Shahi's entrance's semi-circular shape also serves the purpose of the gardens and form.

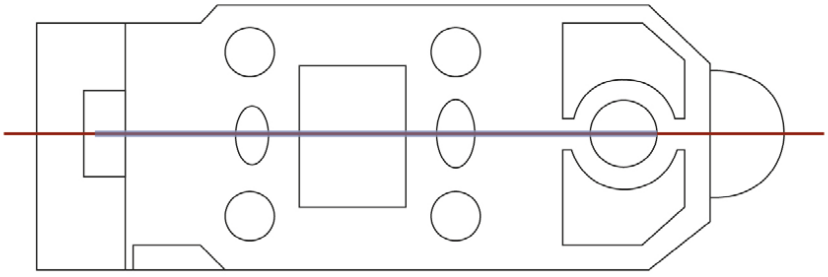


Fig126. Symmetry in the plan of the main palace , edited by author

Similar to the main palace, the axis of symmetry and the axis of water coincide in the harem area to be The perpendicular axis of symmetry, which was absent from the main palace, is the only difference.The service sector in the northern section of the harem still takes the shape of the garden and the pond. Circular ponds and gardens are among the forms found in the main palace. surroundings that blend seamlessly with the pond's shape.

3.2.2.2 Plan showing filled and empty spaces

Scale:1.1000

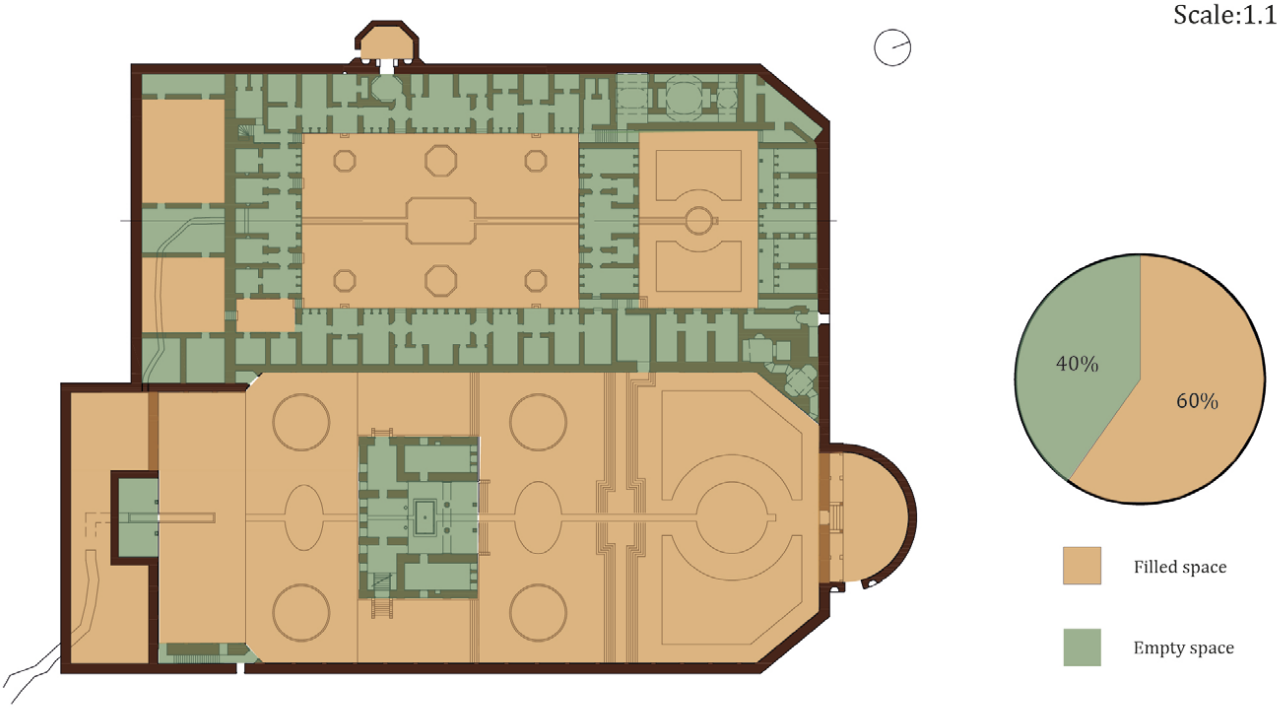


Fig127. The ratio of filled to empty space in the entire complex , edited by author, Source: Archive of the Cultural Heritage Organization of Alborz Province

3.2.2.3 Plan showing open, semi-open, and closed spaces

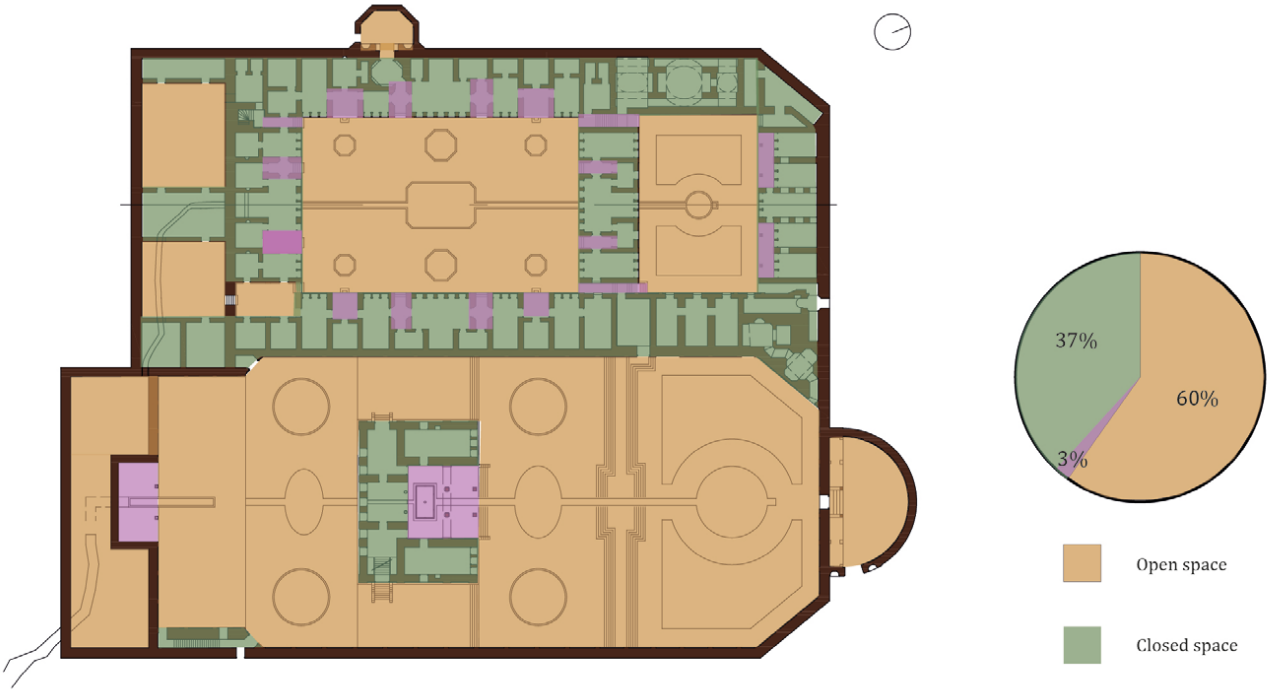


Fig128. The ratio of open, semi-open, and closed spaces in the entire complex , edited by author, Source: Archive of the Cultural Heritage Organization of Alborz Province

3.2.3 Introduction to Building Components

There are two parts to the Shahrestanak complex: the main palace and the harem area reserved for the king's wives. The palace of Naser al-Din Shah is the main subject of this thesis. But we will also provide a synopsis of its constituent parts so that you can fully grasp the structure as a whole.

Current survey and explaining different spaces from Naseri era

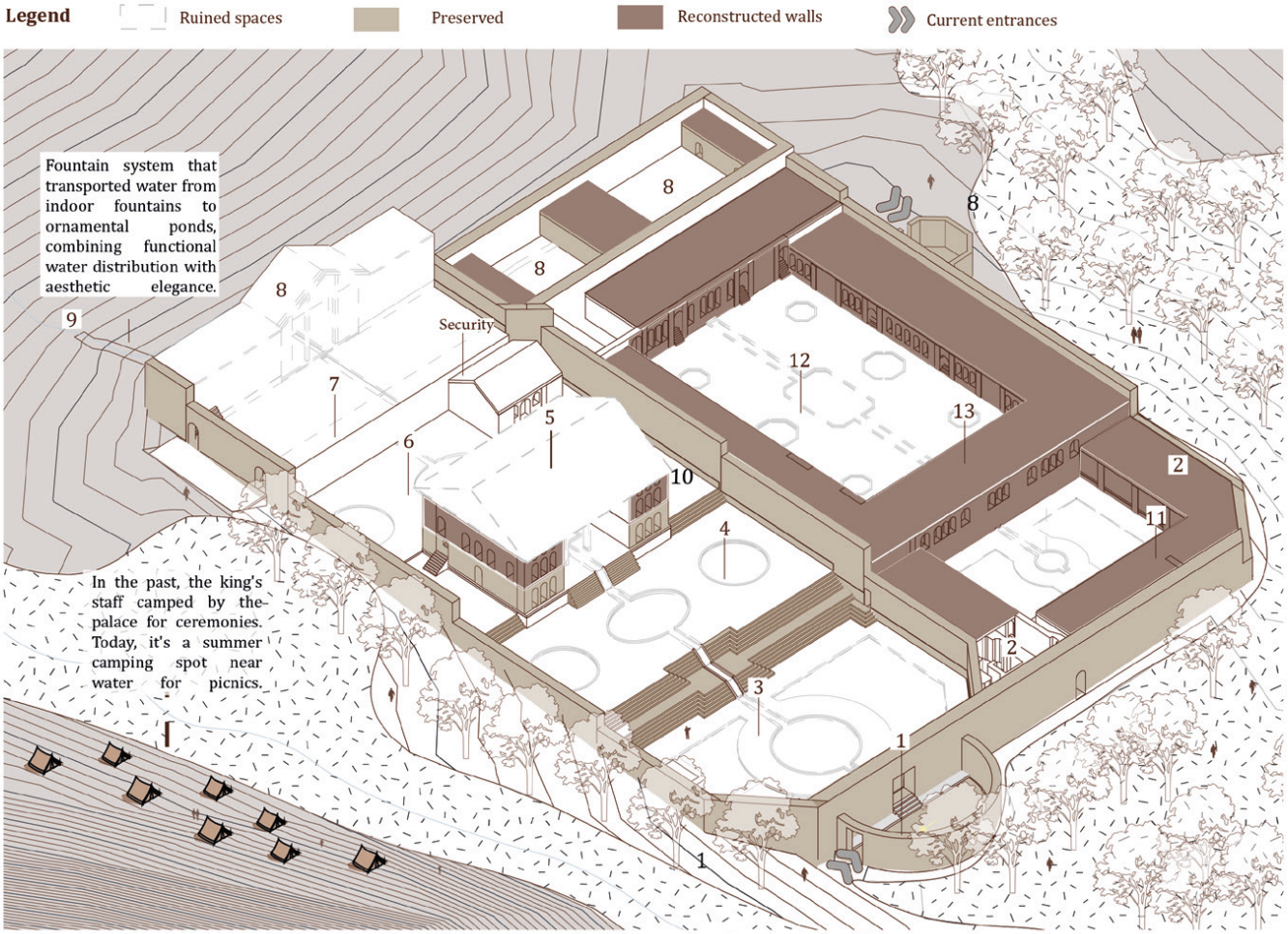


Fig129. View from north to south of the complex in the valley, by author

Building components:

1. Royal entrance **2.**King bathroom **3.**Lower yard **4.**Miiddle yard in front of palace **5.**Main palace **6.**Upper yard **7.**Outside terrace **8.**Water reservoir **9.**Fountain **10.**Lower yard **11.**King staff space **12.**Upper yard **13.**King wifes space[1]

As seen in the site plan, the complex has a longitudinal axis, and the movement is primarily defined by the slope of the land. By ascending 12 steps with a resting point in the middle, we reach the central courtyard or the courtyard in front of the palace. This courtyard, with a pool at its center, is situated in front of the veranda, and the water flowing down the main palace stairs into the pool creates a special visual effect.[2]

1.Report of Nasseredin Shah palace in Shahrestanak, 1997
2. Registration report of Naser al-Din Shah palace in Shahrestanak. Cultural Heritage management., 1997

3.2.3.1 Royal court

"Royal court" means the court of justice, not the inside of the outer house, according to the Dehkhoda dictionary. It refers to the court of justice in the Safavid and Qajar eras according to the Moein dictionary.[1] Pietro Della Valle characterises the "royal court" as a porch-like structure that is three times longer than it is wide. There are multiple windows along the walls on the sides and back, but the front is completely open.[2]

Nasereddin Shah's Palace is in the courtyard on the left in the Clais map. Clais's map showed that there were two ways in which this courtyard was connected to the courtyards on its right. The palace has a distinct spatial organisation because it is located in an almost rectangular courtyard, It is located approximately 42*85 meters, which has a southeast-northwest extension. This yard is designed in four levels according to the slope of the land and proper orientation It seems quite logical. Royal entrance is located in two lower parts of the yard and it is seen in the Clais plan as a semi-circle with a diameter of 18 meters. From this part, we are led to the second level by six steps. This level consists of a circular pond with two gardens on its sides.[3]



Fig130. Shahrestanak palace in 1925, Source: Golestan palace album



Fig131 Shahrestanak palace in 2023, Source: By the author

1. Https://www.vajehyab.com/.
2. Zangeri, Luigi, with Nazica Mandana Rahmati and Brunella Lorenzi. Translated by Majid Rasekhi and Farhad Tehrani. Iranian-Islamic Gardens. Cultural Research Bureau, 2012, p. 403
3. Revitalization and Operation Fund for Cultural and Historical Sites. Shahrestanak Palace. 1997, p. 6.

3.2.4 Water supply

Water supply system of the courtyard section of the house:

The water supply system of the main palace is supplied from a spring in the heart of the mountain. For this purpose, a reservoir for water was considered in the heart of the mountain, which is clearly visible in historical photos. Currently, this part has suffered a lot of damage. The spring water is collected in the tank and then it goes inside through the channel that passes through the palace and continues to the pond in the lower courtyard of the palace is guided into the pond.[1]

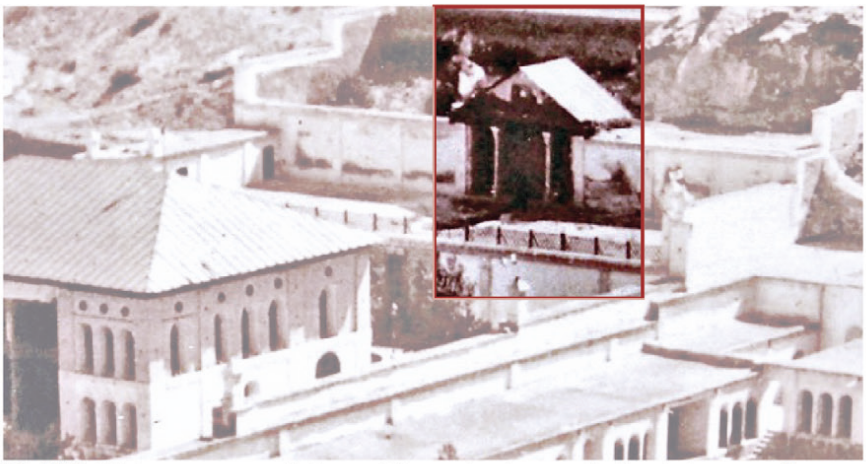
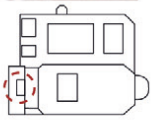


Fig132. Water source and channel for water transmission into the courtyard of the house, Source: Golestan palace album



3.2.4.1 Indoor plumbing system

A channel that directs water towards the central courtyard internally passes beneath the surface of the floor of the northern side of the central room. After exiting the room, the channel continues at the courtyard level towards the pool of this courtyard. After the pool, the channel still continues and reaches up to 3 meters into the southern rooms of this courtyard. Here, the channel goes underground and passes beneath the floors of these rooms and re-emerges at the northern and inner lower courtyard level. The water channel continues towards the north and the central pool of this courtyard. After the pool, the channel goes underground again and passes beneath the northern rooms of this courtyard before being transported outside the complex.[2]

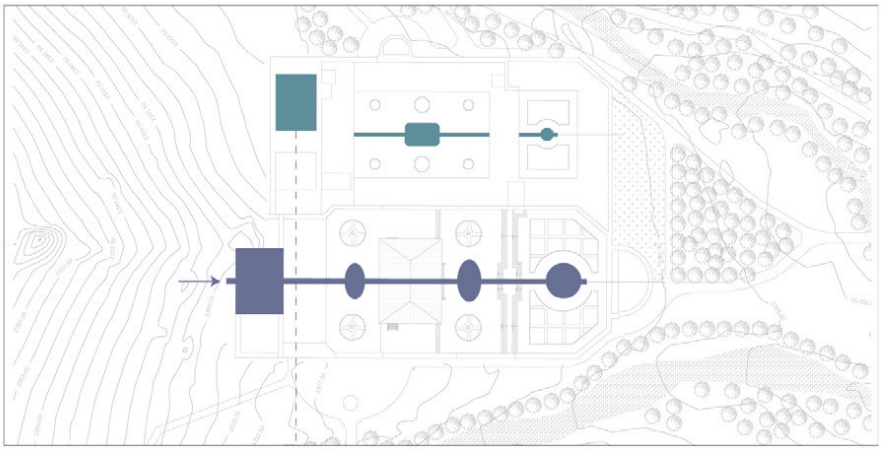


Fig133. Water transfer system of the complex, edited by author
Source: Cultural heritage archive

1. Revitalization and Operation Fund for Cultural and Historical Sites. Shahrestanak Palace. 1997, p. 6.
2.Report of the workshop affairs of exploration and restoration of Shahrestanak historical building, 2013, p. 27

3.2.4.2 Water drainage system

In the northwest corner of the complex, six public restrooms were installed. Investigations revealed that these restrooms did not have septic tanks; instead, beneath the toilet fixtures, channels were constructed where the waste from the fixtures flowed into. The wastewater from the toilets was then directed outside the complex and into the river through two channels embedded within the perimeter walls, connecting to the channel beneath the toilet fixtures. One significant finding in this area was a separate channel branching off from the main water-carrying channel passing beneath the lower courtyard. This secondary channel, located half a meter below the floor level, was connected to the channel beneath the toilet fixtures. Essentially, as water flowed through this channel, it served to wash away the waste from the toilet fixtures.[1]

Furthermore, during the cleaning of the western wall of the complex, they encountered drainage channels behind the indoor bathroom. In fact, the drainage from the bathroom was discharged outside the complex and into the river with the help of two channels.[2]

3.2.5 Exploring building materials

In general, the materials and substances used in the Naseri palace in Shahrestanak can be described as follows:

- Brick, wood, stone scrap, brick carpet, Sarooj mortar , Plaster, Glass, sheet metal

- Brick: Despite the discovery of a brick kiln near the village of Shahrastank, it is possible that the bricks required for the construction of the complex were sourced from the local area. It is worth mentioning that the dimensions of these bricks are 4.5 x 19 x 19 centimeters. The construction of the pavilion building was done with authentic brickwork. Bricks were also used in the exterior façade and the execution of the cornices of this mansion. However, on the exterior façade of the first floor, plaster has been applied on the bricks of the cornices and around them.

- Wood: In the main and original door and windows of the building, as well as in the foundation covering of the main palace and inside the walls, it has been used.

- Stone: Due to the location of this complex in a mountainous area and the abundance of stone as well as specific climatic conditions, stone has been extensively used in the construction of the mansion. It has been utilized in the construction of stairs, fountains, platforms, column bases, column capitals, column shafts, wall lintels, lamp bases, and for constructing the main pool and paving a portion of the complex's floor with carved stones. Primarily, rough-cut stones have been used in the main structure.

- Brick carpet: It used as a oroginal flooring in the building.

- Sarooj Mortar : For insulating certain sections of the bathhouse and the main pool of the house, it has been used. Sarooj has historically been one of the most important elements used for insulation.

- Glass: It used in doors and windows.[3]

1. Report of the workshop affairs of exploration and restoration of Shahristanak historical building, 2013, p. 17,18
2.Ibid, p. 19.
3.Report of the workshop affairs of exploration and restoration of Shahrestanak historical building, 2013, p. 27

- Plaster: Within a few kilometers of the mansion, there is a gypsum mine, and it is highly probable that the gypsum used in this complex has been extracted from this mine. Gypsum has been used in this mansion for decorative plasterwork as well as for plastering the surfaces of the walls.

- Sheet metal: It has been used as the covering for the underlayment of the sloping roof.[1]

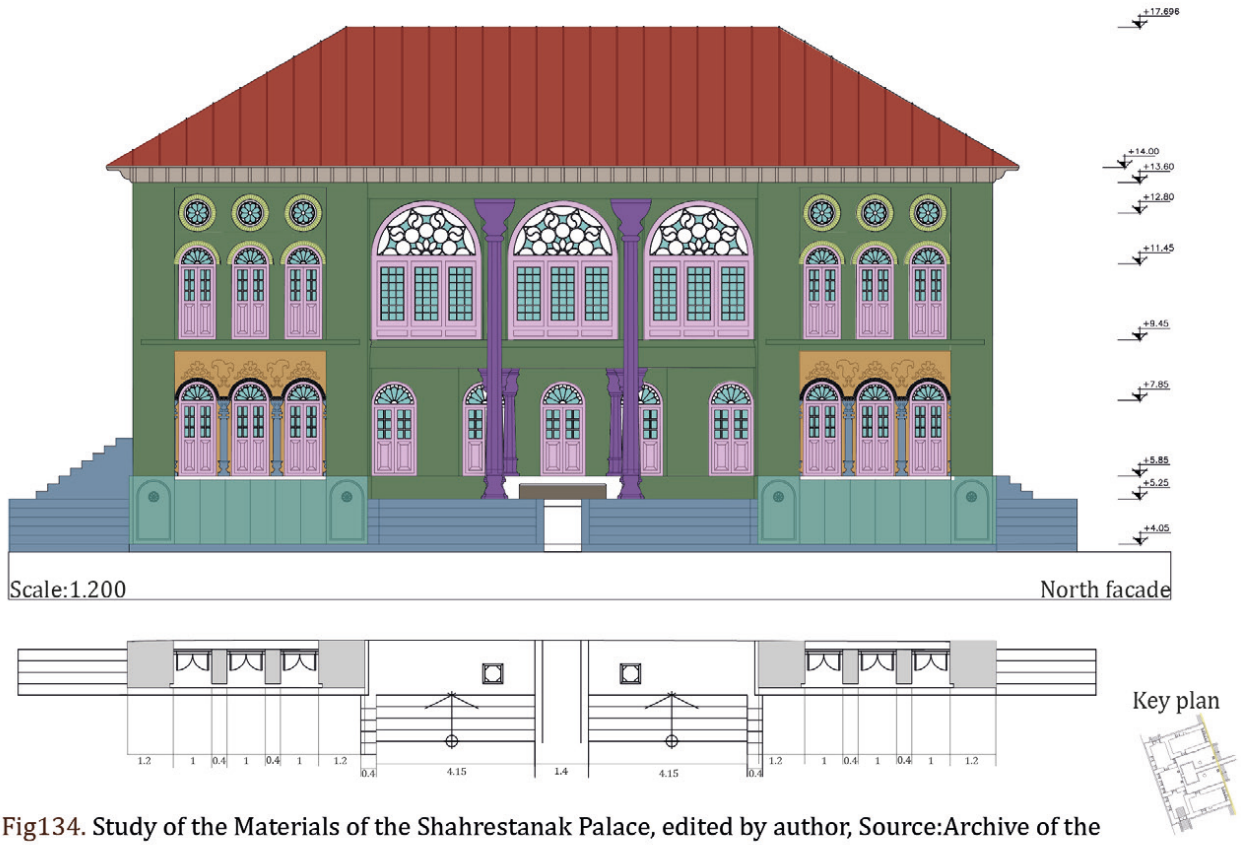
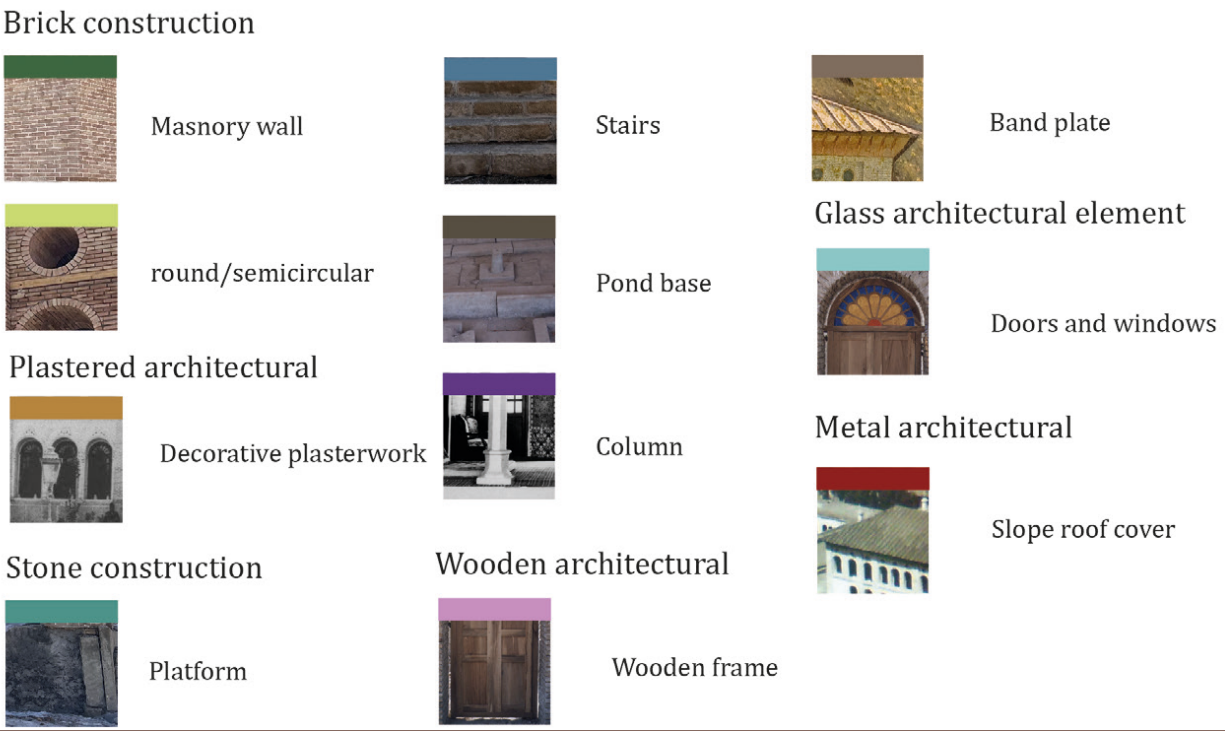


Fig134. Study of the Materials of the Shahrestanak Palace, edited by author, Source:Archive of the Cultural Heritage Organization of Alborz Province



1. Report of the workshop affairs of exploration and restoration of Shahrestanak historical building, 2013, p. 27

3.2.6 Understanding Building Decorations

This building, like all palaces and royal mansions of its time, was adorned with unique decorations and beauty. However, due to various reasons, no traces of these adornments remain today. Nevertheless, by examining historical documents, including the surviving images of this complex, one can refer to them. Based on historical photographs of the building and maps from the Revival Fund, some of the building's decorations have been depicted. The decorations are categorized into three main types: wooden decorations, brickwork, and stone elements.

3.2.6.1 Wooden decorations

Wooden decorations in the Main palace and Harem area were diverse and included doors that could be classified into four types. 2 types for the doors of the palace, which have more decorations than the harem doors, and 2 types Simpler doors are used for the harem, and 2 types of wooden windows are also used in the palace.[1]

During the Qajar era and the reign of Naser al-din Shah, specific architectural elements such as Orsi, which we will refer to below, were used:

3.2.6.2 Orsi:

An Orsi is a type of wooden lattice window whose sashes move upwards inside a frame rather than rotating on a hinge. Each Orsi window consists of a lattice frame and two parts: a fixed section and a movable section. The fixed section also serves as a partition element like a wall, while the movable section is used to better view the outdoor scenery and for ventilation. The lattice surface of the Orsi windows has several functions: it provides indoor lighting, offers a view of the outside to those inside, maintains the privacy of the rooms and halls from the outside, and in the summer, it reduces the intensity of sunlight and the resulting heat. The transoms above the doors and Orsi windows of the Qajar era were arched and crescent-shaped, and many transoms were also designed in circular and oval shapes.[2]



Scale:1.50

Fig135. Wooden door of main palace,edited by author, Source: Archive of the Cultural Heritage Organization of Alborz Province

1. Archive of the Cultural Heritage Organization of Alborz Province
2. Sarikhani, Majid. "A Study of Archaeology in Qajar Architecture." 2006, p 11.

3.2.6.3 Jamkhaneh

Another frequently used element during the Qajar era is the Jamkhaneh. A Jamkhaneh is actually a type of window that was used atop some domed coverings, especially in baths and other types of buildings. A Jamkhaneh typically consists of a spherical clay surface with several circular holes. It was primarily used in spaces where, by removing some of the glass pieces in different seasons, the heat or humidity of the space could be adjusted to a desirable level.[1]

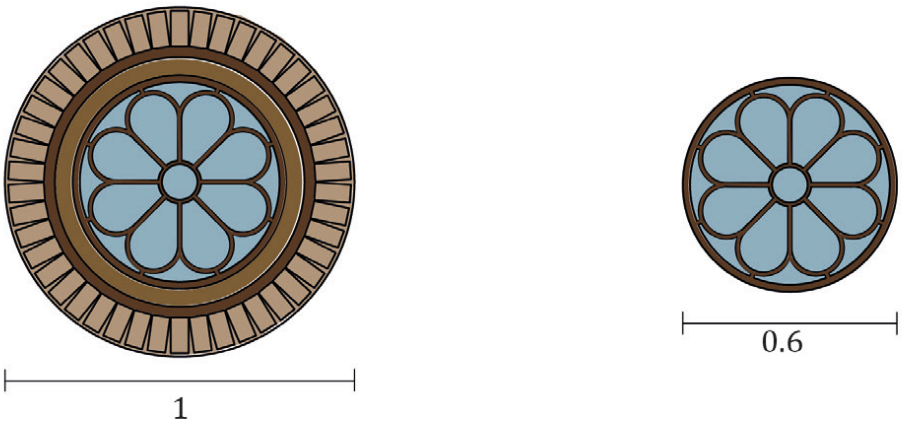
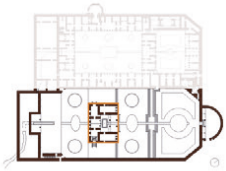


Fig136. Jamkhande window ,edited by author, Source: Archive of the Cultural Heritage Organization of Alborz Province



Scale:1.20

3.2.6.4 Stone decorations

Scale:1.75

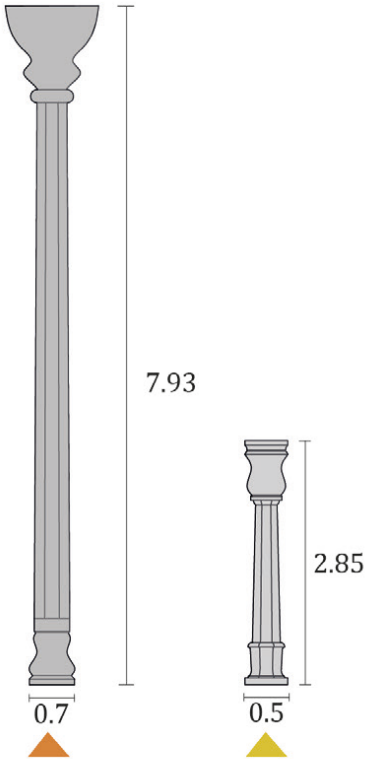


Fig137. Stone decoration ,edited by author, Source: Archive of the Cultural Heritage Organization of Alborz Province



Fig138. Showing stone column of shahrestanak palace, Golestan album palace



1. Pirnia, Mohammad Karim. An Introduction to Islamic Architecture of Iran. Soroush Danesh, 2005.
2. Sarikhani, Majid. "A Study of Archaeology in Qajar Architecture." 2006, p 60.

3.2.6.5 Brickwork

Brickwork is the art of arranging bricks in a building in order to present decorative facades that blend in with the overall shape and appearance of the building. Iranian architecture has a long history of using brickwork as decorative art going back several millennia. Buildings were constructed using a variety of brick sizes and pieces throughout history. During the Qajar era, bricks were primarily square in shape and typically measured 19.5 x 19.5 x 4 cm.[1]

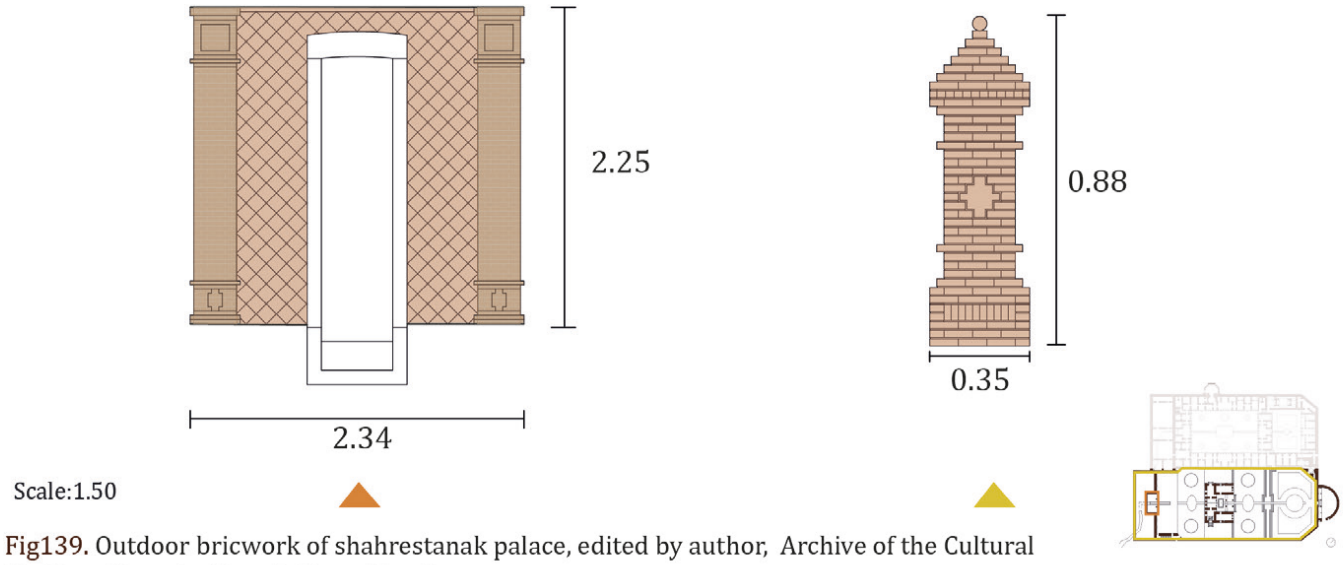


Fig139. Outdoor bricwork of shahrestanak palace, edited by author, Archive of the Cultural Heritage Organization of Alborz Province

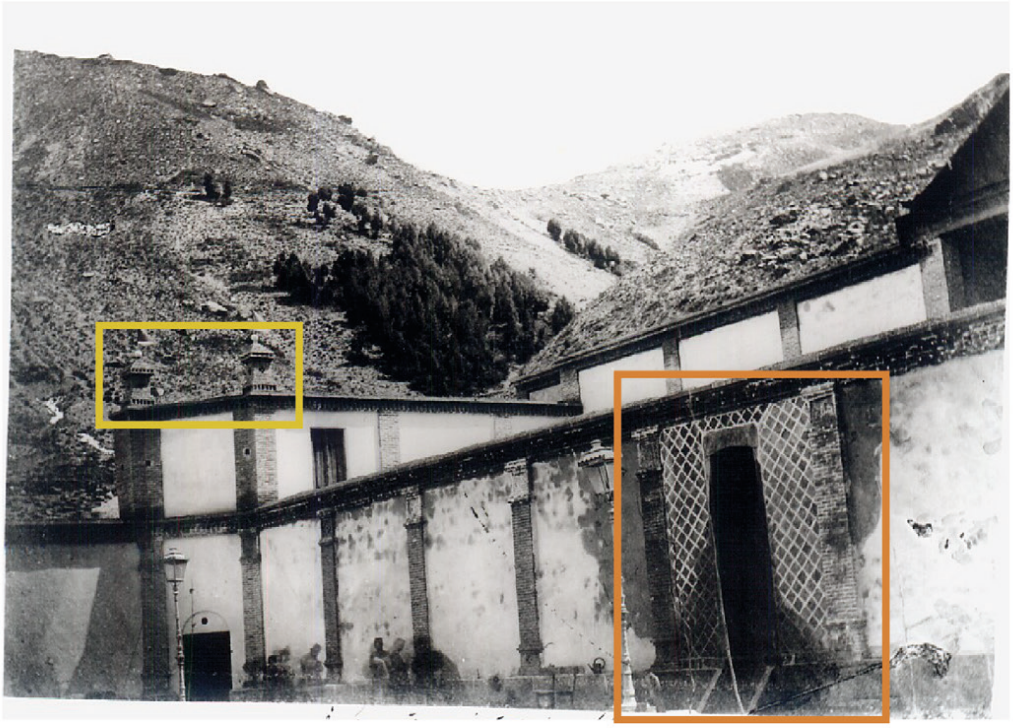


Fig140. Water well from gole kileh water fall, Source: Golestan palace album

1. Sarikhani, Majid. A Study of Archaeology in Qajar Architecture, 2006. P.12

3.3 Current Status and Damage Assessment

We will look at the pathology of the topic in this section. Significant damage has resulted from the building's extreme neglect since the period after Naser al-Din Shah. Up until a decision was made to preserve and restore the palace, its essential qualities were further eroded by climbers using it and the building being turned over to the federation. Many years have passed, and harmful elements have continued to exist throughout that time—most notably, improper maintenance—creating an environment that is conducive to historic building structural damage.

3.3.1 Classification of disruptive factors

1. Investigate the environment, structures, complications in the building that change in shape

2. Determining the type and nature of imbalance

3. Research about the disturbing factors and identify it

4. Studying the methods of treatment and choosing the most appropriate one[1]

Classification of disruptive factors[1]

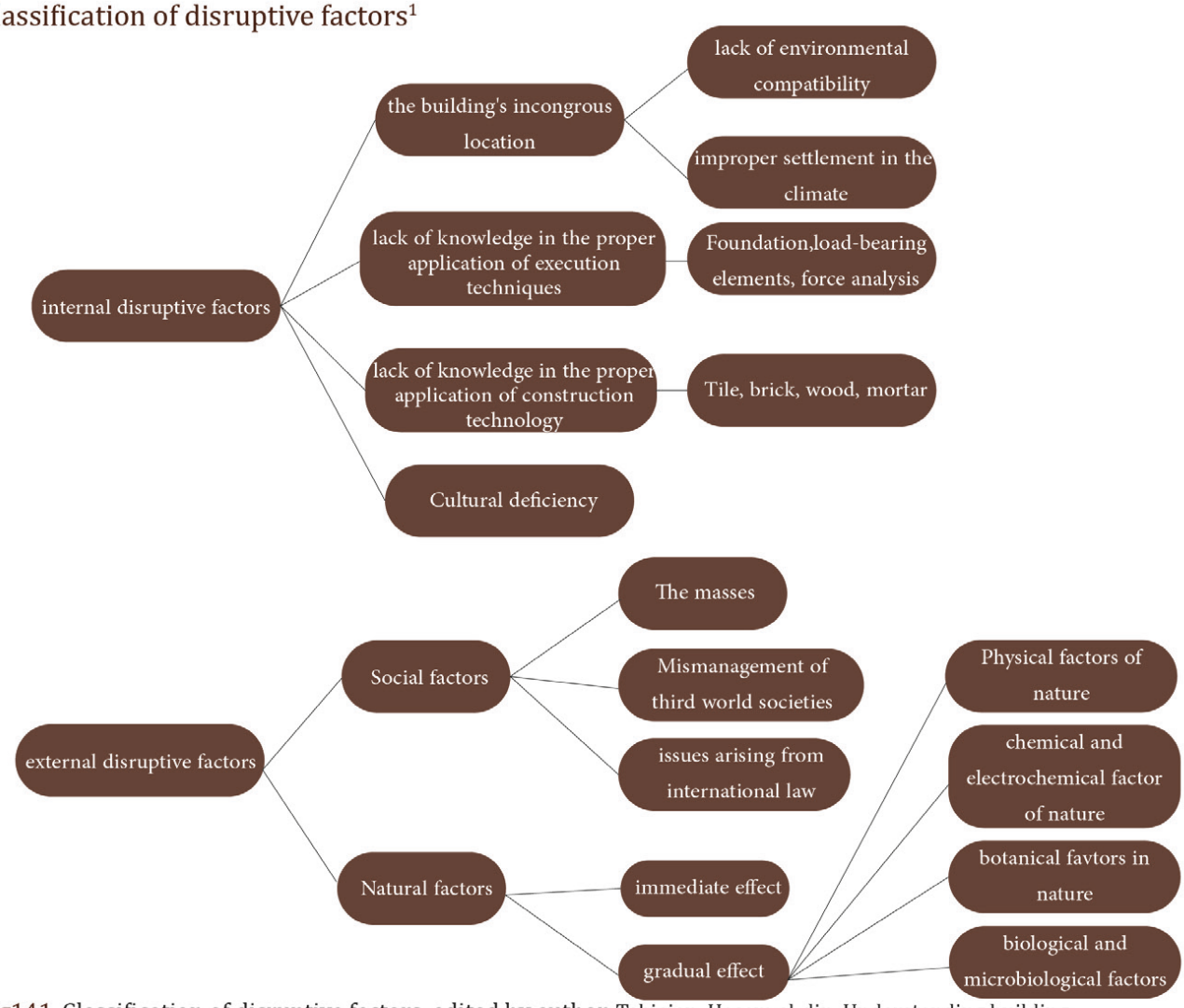


Fig141. Classification of disruptive factors, edited by author, Tabieian, Hesam al-din. Understanding building restoration, First and last publications, 2014, P.,116 .

1. Classification of disruptive factors, edited by author, Tabieian, Hesam al-din. Understanding building restoration, First and last publications, 2014, P.,116

3.3.2 Major damages to the building

In this section, the most important damages to the building are divided into two separate categories Physical and non-physical injuries are provided.Physical damage to the structure is caused by atmospheric and natural factors over time. These damages accumulate, leading to significant deterioration. Additionally, there are non-physical damages related to poor management and visitor impact. These issues arise due to weak management practices and the behavior of visitors.[1]

Physical injuries of complex[1]

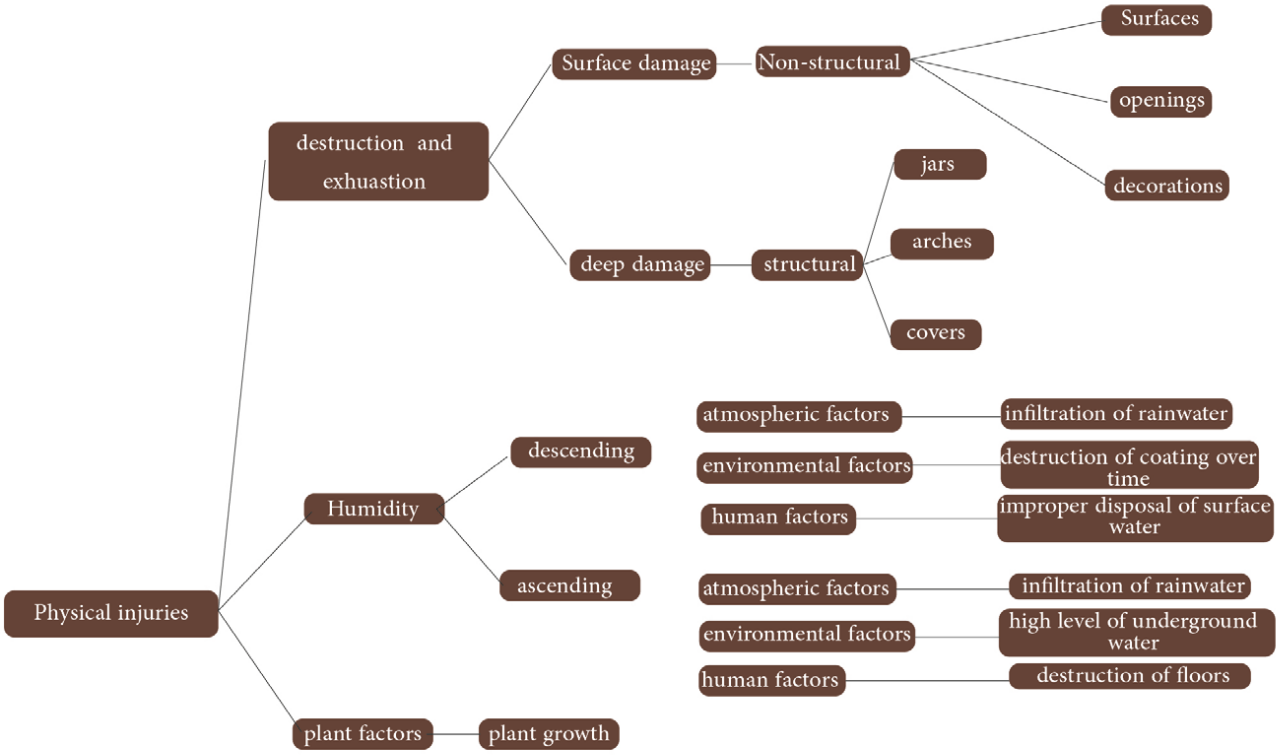


Fig142. Physical injuries of complex, edited by author, Source:Tabieian, Hesam al-din. Understanding building restoration, First and last publications, 2014, P.,117 .

Non-physical injuries of complex[2]

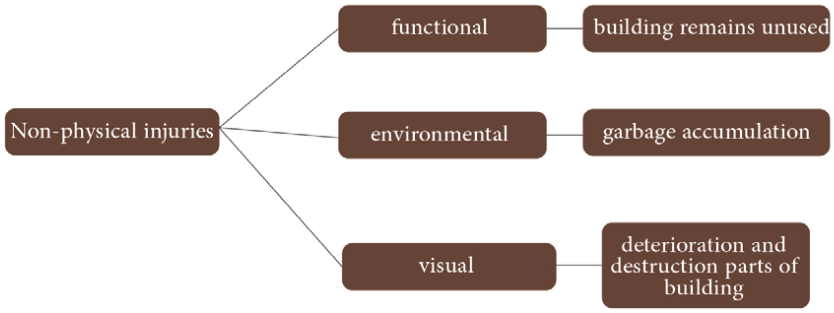


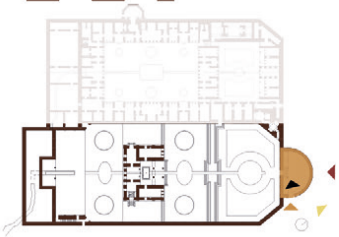
Fig143. Non-Physical injuries of complex, edited by author, Source:Tabieian, Hesam al-din. Understanding building restoration, First and last publications, 2014, P.,117 .

1. Tabieian, Hesam al-din. Understanding building restoration, First and last publications, 2014, P.,117 .

The entrance to this complex is from the direction of the village of Shahrestanak, that is, from the north on the first level and appears as a semicircle with a diameter of 20/18 meters. Its -4.50meter-high wall is divided internally by projections. When viewed from the outside, it leaves the impression of a strong defensive structure. The surface of this section is paved with bricks. The main entrance is located on the east side of the semicircular area and has pentagonal recesses on either side made of bricks. Since the palace entrance is not aligned with the main axis and is rotated 90 degrees, it is not possible to see inside the palace from the outside. This design prevents a person from directly entering or seeing the main courtyard upon entering, which is one of the principles of traditional Iranian architecture. On either side of the entrance, there were two brick gateways, the majority of which had been destroyed, with only the lower layers remaining. Therefore, the two brick gateways were reconstructed up to a height of 1.5 meters. Additionally, the semicircular entrance, which was made of stone, was also restored, similar to the surrounding wall.[1]



Fig144. Photos of different part of complex, By author 2023



1. Fund for Revitalization and Exploitation of Cultural and Historical Places. Shahrestanak Complex. 2019, p. 7.

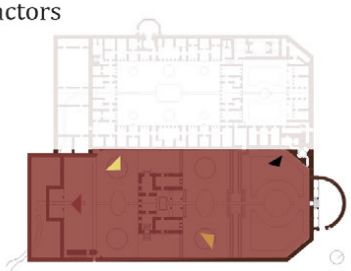
Currently, the exterior space and courtyards of the palace are ruined and unused. The circular pools of the palace are likely buried under debris, and its visual beauty has been lost.



Fig145. Photos of different part of complex, By author 2023

Issues	Destruction of the flooring and wallplastering, loss of water path, and destruction of the water reservoir.
Imbalance	Structural erosion and loss of visual appeal.
Disruptive factors	External/ weather conditions, fluctuations in temperature and humidity, lack of continuous maintenance.

Table4. Damages influenced by external and natural disruptive factors



In the 1970s, after the main palace was unearthed, it was designated for temporary accommodation for mountaineers, which caused damage to the structure. However, in the 1990s, efforts to restore the palace began, aiming to return it to its original form and preserve its visual beauty.



Fig146. Photos of different part of complex, By author 2023

Issues	Destruction of doors, windows, and decorations of the building; visual damage; destruction of the building's gabled roof; loss of the pool and water path; destruction of the main stone columns of the building; and destruction of the first floor of the building.
Imbalance	Structural erosion and loss of visual appeal.
Disruptive factors	External/ weather conditions, fluctuations in temperature and humidity, lack of continuous maintenance.

Table 5. Damages influenced by external and natural disruptive factors



3.3.3 Environmental Damage Assessment

The main environmental damages surrounding the complex are related to the loss of visual beauty within the natural setting. As mountainous spaces attract most athletes to this environment, the lack of services or a place to provide food and drinks, along with a shortage of trash bins, constitutes the major damages.



Fig147. Surrounding environment situation, by author



Fig148. Surrounding environment situation, by author

In conclusion the main damages of Shahrestanak complex are natural external factors, which are mostly due to the lack of covering on the building .The lack of a protective cover has allowed water to penetrate the materials, leading to the deterioration and erosion of the plasters and materials. Over time, this has caused the walls and flooring to deteriorate.#

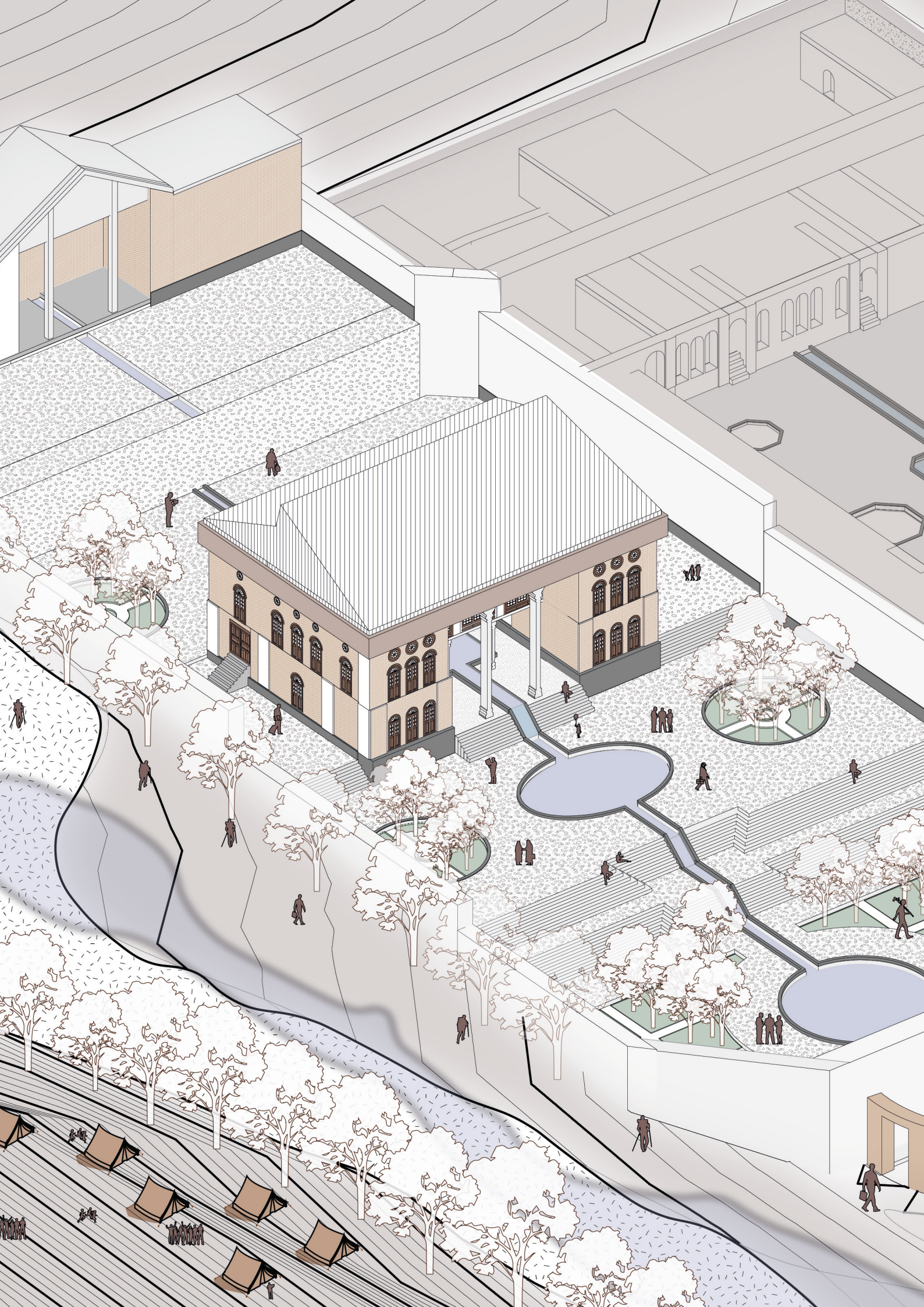
In addition to the mentioned cases, the lack of cover is the main reason for the growth of plants in the building. The growth of plants is seen uniformly and mainly in all parts of the building.In some cases, plant roots and their growth have caused materials to crumble and the structures to become hollow.

Weak management and lack of continuous maintenance of the building is another reason for extensive damage to the building.Primary circulation, unbalanced extensions, widespread destructions...These are some of the evident issues caused by this disruptive factor.

It can be definitely said that this valuable complex has suffered many damages due to lack of use and lack of supervision over the years, and due to its location in a place where there is a lot of rainfall, the mentioned disturbing factors have increased the damage. At the time when this building was used as a residence for mountaineers, extensive damages and additions have been made to the building.

Shahrestanak palace, Karaj, Iran

4. Restoration Project



4.1 Studies

4.1.1 Iran Restoration Today

Generally, the set of actions carried out for the restoration and revitalization of historical buildings can be categorized into three main groups:

1. Understanding the current condition of the building.
2. Developing and analyzing various plans, and ultimately selecting one.
3. Implementing the chosen plan.

Typically, the various factors that need to be investigated include:

1. Aesthetic and artistic evaluations.
2. Studying the current economic situation around the building as well as the building itself.
3. Archaeological studies in the vicinity of the building, along with understanding its structural and architectural state.
4. Examining the cultural, religious, and ideological values across different historical periods, as well as anthropological and social studies.
5.Documenting the history of different parts of the structure and its surrounding areas, thus providing a comprehensive profile for all sections.

There is no single methodology or specific approach that always applies to developing a restoration program, and there is never just one solution. Clearly, the more precise and detailed the studies and analyses conducted, the more accurate and principled the chosen solution will be.
Common Methods of Restoring Historical Buildings:

1.Conservation or Protective Restoration:
Protective restoration is essentially a form of repair where the primary goal is the preservation and maintenance of the building. This approach emphasizes the current condition of the structure. In many cases, protective restoration is necessary and essential. This method focuses on the extent of the conservator's intervention in the existing state of the historical building, ensuring that the restored structure retains its original appearance as much as possible throughout the process.[1]

2.Stylistic Cleaning:
This type of restoration is applicable to buildings that have undergone multiple restorations and renovations. If the conservator determines that certain added parts and elements are unnecessary and extraneous, they should be removed to return the building to its original state. This type of restoration is known as stylistic cleaning.

3.Stylistic Reconstruction or Anastylosis:
The term anastylosis originates from the Greek word "anastilos," meaning "raising the column." The Greeks used the term anastylosis to refer to the restoration process of reassembling scattered parts of a structure. Anastylosis involves the meticulous placement of fragments and elements after a thorough stylistic analysis, ensuring that the final arrangement closely resembles the original appearance. It's important to note that anastylosis is a method that aligns with historical,

1. Tabieian, Hesam al-din. Understanding building restoration, First and last publications, 2014, P.,150.

Cultural, and political objectives, focusing on preserving parts of the structure that have survived the test of time and human impact. Due to the precision and delicacy required in this method, multiple parameters and factors must be carefully considered.[1]



Fig149.Takht-e Jamshid(Perspolis) before reconstruction,Source:https://idehchin.com/wp-content/uploads/08/2021/IMG_1200-2060x1-900.jpg



Fig150.Anastylosis reconstruction,Source:https://idehchin.com/wp-content/uploads/08/2021/IMG_1200-2060x1-900.jpg

4. Historical Revitalization:
This type of restoration is often favored by conservators who focus more on preserving the building's historical essence rather than its modern functionality and dynamism. Like protective restoration, this method has limitations that can make it less desirable. In historical restoration, aspects such as historical documentation, the building's historical role, and its political, national, and cultural context are of great importance. These factors largely determine the restoration approach. Conversely, in historical restoration, less attention is given to the building's relationship with its social environment and its physical and economic context. In summary, this type of restoration involves the conservator focusing on the preservation and comprehensive restoration of the building.[2]

5. Supplementary Restoration:
This type of restoration is considered one of the most complex and delicate methods. It involves reconstructing parts of the historical building that have been lost, making it one of the most challenging restoration tasks. Carelessness in this process can damage the building's identity and authenticity. Supplementary restoration is particularly relevant when sections of a historical building are missing or damaged.

6. Structural Reinforcement Restoration:
As the name suggests, the primary goal of this restoration type is to strengthen and stabilize the historical building, enabling further restoration and preservation efforts. Structural reinforcement can be carried out using various methods, which are beyond the scope of this discussion. However, it is crucial to ensure that the reinforcement enhances the building's structural integrity against both internal loads and external forces such as snow, rain, wind, and earthquakes. Sometimes, due to the weakened condition of the building, localized interventions may be necessary to achieve the required structural reinforcement.[3]

7.Comprehensive Revitalization:
This extensive and detailed restoration method requires thorough research and investigation to select the best techniques and resources for restoring and preserving the historical building. The

1. Tabieian, Hesam al-din. Understanding building restoration, First and last publications, 2014, P.,151.
2. Ibid.,
3. Ibid., P.,152.

aim is to maintain the building's identity and significance in the present context. This process includes examining the urban fabric (the natural setting of the building), historical, social, cultural, religious, economic, and political studies, among others.[1]



Fig151. Ameri House in Kashan Before restoration, Source:http://www.rihfars.ir/PostShow.aspx?i=76

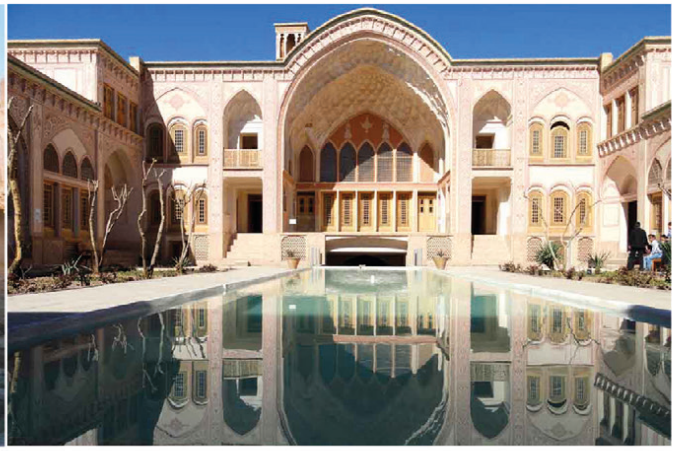


Fig152. Ameri House in Kashan After restoration, Source:https://aoapedia.ir/wp-content/uploads/0/2021 2/shakhes.jpg



Fig153.Manouchehri House in Kashan Before restoration, Source:https://static.the.akdn/164455631/53832 -0akaa-2016-iran-manouchehri_01.jpg



Fig154. Manouchehri House in Kashan Before restoration, Source:https://static.the.akdn/-1644556310/53832akaa -2016-iran-manouchehri_01.jpg

1. Tabieian, Hesam al-din. Understanding building restoration, First and last publications, 2014, P.,152.

4.1.2 Case Studies of Revival

4.1.2.1 Shemshak boutique hotel

At the start of the first Pahlavi period, Shemshak (Shemshak is a ski resort situated to the north-east of Tehran in the Alborz mountain range) was a coal mining site, with coal used for train fuel. Germans helped with mining operations, leading to the construction of a power plant in 1926 and a dormitory in 1933. Both were shut down after fuel technology advanced. During the second Pahlavi period, plans were made to build a ski resort and a hotel in Shemshak. In 1965, the German company Tunberg preserved the power plant building and constructed a three-story hotel above it. The hotel operated until the 2000s, then closed. In 2015, private investors renovated the hotel to international standards, converted the dormitory into a restaurant, and reopened the hotel in 2018 as Iran's first "boutique hotel."On September 8 ,2019 the hotel was registered as a national heritage site of Iran with the registration number 32614.[1]

Shemshak boutique hotel facilities:

The Shemshak Boutique Hotel features a restaurant, café, massage room, and facilities for seminars, training courses, and film screenings for up to 30 people. It is ideally located near three international ski resorts and an ice climbing school, making it perfect for skiers and guests in winter and early spring. Additionally, the surrounding mountains and scenery offer excellent opportunities for hiking and mountain climbing in the summer and autumn.[2]



Fig155. The view of the hotel in 1974 AD , http://shemshakboutiquehotel.com/wp-content/uploads/07/2020/%D%8AA%D%8A%7D%8B%1DB8%C%D8%AE%DA%86%D1-87%9.jpg



Fig156. The view of the hotel in 2024 AD , http://shemshakboutiquehotel.com/wp-content/uploads/07/2020/%D%8AA%D%8A%7D%8B%1DB8%C%D8%AE%DA%86%D1-87%9.jpg

1.http://shemshakboutiquehotel.com/about/
2.http://shemshakboutiquehotel.com/%d8%a7%d9%85%da%a9%d8%a7%d9%86%d8%a7%d8%aa-%d9%87%d8%aa%d9%84/

4.1.2.2 Gachsar boutique hotel

The Gachsar Hotel is one of the most prominent hotels in the Gachsar region of Alborz Province. This beautiful hotel is located in the Central Alborz mountains in the Asara district and the village of Nesa. Parsian Azadi Gachsar Hotel has 23 rooms and suites with adequate facilities, including a bicycle path, a health trail, a restaurant, a coffee shop, and a traditional teahouse in the hotel garden, as well as a sports club. Due to its special geographical location, the Azadi Gachsar Hotel has always attracted the attention of tourists, organizations, and companies. The building of this hotel was established in 1938 and was operated by the Pahlavi Foundation under the name of Gachsar Hotel in 1941. In 1973, modifications to the building added 20 rooms to the hotel.[1]

Gachsar hotel facilities:

Public facilities: parking, lobby, Persian toilet in the lobby, Iranian toilet in the lobby, Iranian toilet in the corridor, toilet Crowd in the corridor

Food and drinks: coffee shop, restaurant, traditional tea house

Meeting and conference: conference hall, wedding hall

Outside the hotel: garden space in the hotel, space for walking, green space, space outside the hotel to sit, summer space, gazebo outside the hotel[2]



Fig157.Hotel Gachsar
https://www.eghamat24.com/GachsarHotels/ParsianAzadiHotel.html



Fig158.Hotel Gachsar
https://www.eghamat24.com/GachsarHotels/ParsianAzadiHotel.html

1.https://www.eghamat24.com/GachsarHotels/ParsianAzadiHotel.html
2.https://www.iranhotelonline.com/karaj-hotels/%D9%87%D8%AA%D9%84-%D8%A8%D8%A7%D8%B3%D8%AA%D8%A7%D9%86%DB%8C-%D9%86%DA%AF%DB%8C%D9%86-%DA%AF%DA%86%D8%B3%D8%B1/

4.1.3 Examining Building Problems and Needs

SWOT Analysis

Positive	Negative
Strengths ● Located at the foothills of the Tochal mountain range ● Presence of the Shahrestanak River and a spring near the palace ● Variety of tree species and the growth of medicinal plants ● Preservation of the overall complex ● Accessibility for athletes via hiking trails ● Proximity of the palace to the village ● Village's potential for investment and tourism	**Weaknesses** ● Lack of river protection ● Abandonment of the site ● Destruction of the original cover ● Destruction of the water reservoir ● Public unawareness of the site's value ● Lack of amenities in the village ● Limitations due to cold weather conditions in winter
Opportunities ● Potential use of the palace as a cultural, historical, and accommodation center for tourism and mountaineering ● Public access to the river view as a vital lifeline for the Shahrestanak area ● Utilization for meeting visitors' needs ● Focus on the restoration of the complex Incorporation of the surrounding environment in the restoration plan ● Attraction of tourists to the historical and tourism environment ● Presence of beautiful nature and scenery Utilization of plant diversity ● Use of local materials ● Economic growth of the village and revitalization of the area ● Involvement and participation of local villagers	**Threats** ● Lack of a designated area and boundary for the region ● Lack of river protection and pollution of the river water by visitors ● Lack of amenities near the complex ● Weak management ● Inadequate protection of the site ● Depopulation of the village during the cold seasons ● Risk of many cultural features of the region being forgotten

Fig159.Swot analysis

In conclusion, If Naser al-Din Shah had not constructed a palace in the Shahrestanak valley, the area would look entirely different today. Naser al-Din Shah brought his distinctive lifestyle, along with princes, women, and eunuchs, to this valley via the Naseri road, significantly impacting the region's natural ecosystem and demographic structure. Some of the valley's natural beauty can be attributed to the modifications made during that time. Over the years, as the valley and Naseri Palace were left to their own devices, the natural vegetation has visibly regrown. Nonetheless, Naser al-Din Shah's interest in this area was due to its unspoiled nature, making it difficult to envision a landscape that does not enhance the environment and conditions of Shahrestanak.The unique perspectives created by the presence of the Naseri building in the Shahrestanak valley are noteworthy. The architectural styles, imported from different climates, showcase the boldness and creativity of the architects of that era. They innovatively designed modern spaces in the heart of the Alborz mountains without being overly concerned with the project's context. The concept of a pavilion in the Alborz is both realistic and attractive, and as the population grows, it is fitting to scale the pavilion accordingly—a change that the Alborz region deserves. The palace's role has also evolved; it is no longer exclusively used by the Shah and his entourage but is now accessible to the people of Iran and visitors from around the world. This allows for an experience of Naseri hospitality and the opportunity to stay in the lush valleys of the Alborz. With this approach, a level of intervention in the Alborz's nature that minimally disrupts and, in some cases, enhances its natural environment upholds the palace's original purpose. We aim to preserve the natural environment while creating a new space without disrupting the fundamental natural setting. This strategy, which combines the strengths of the three studied perspectives and maximizes opportunities, will be supported by restoration, accommodation, historical, geographical, and social efforts to bring this vision to life. Preserving the environment, the Naseri Palace, and the achieved perspectives, while adapting them to contemporary standards, can be seen as a strategy to revive the Naseri lifestyle in today's context.[1]

1.ZAV architects, Intervention vision and general restoration plan, 2016.

4.1.4 Assessing Building Issues and Requirements

Given the construction period of the building, we see that it was built at a specific time and place for a particular purpose for the Shah of that era. This structure embodies a collection of cultural, historical, artistic, and architectural values that we must be aware of and consider when making any alterations. Here are some of these considerations:

Architecture value	This complex consists of two sections: the Divan Khaneh (main palace) and the harem or Andaruni for shah's wives. The main palace features an extroverted architectural style, while the harem has an introverted style centered around a courtyard. Adhering to climatic principles and geometric proportions in both the plan and facades, this complex was constructed during the Qajar era amidst the natural landscape and valley of Shahrestanak.
Structural value	This building is constructed using indigenous materials combined with special climatic techniques such as sloping roofs, iwans, specific decorations of that period, and domes.
Environmental value	The architectural ensemble of Naser al-Din Shah epitomizes a harmonious blend with its natural setting. Nestled amidst the scenic expanse stretching from Mount Tochal to the Chalus Road in northern Iran, the structure embodies a profound connection with its environment. This integration, marked by a seamless fusion, evokes profound historical and cultural narratives, echoing the spirit of bygone eras.
Cultural value	Registered as No. 1925 in the National Heritage List in 1376, this structure holds significant cultural importance. The thoughtful selection of its new use and function plays a pivotal role in preserving its cultural values, paving the way for its cultural elevation.
Economic value	Ensuring a positive economic performance for the complex benefits both the site itself and the surrounding village and its inhabitants, contributing to the preservation of the structure over the years.
Social value	It fosters public awareness and engagement with the environment and activities of this nature, leading to the preservation and maintenance of one of our heritage resources. Its absence could weaken conservation efforts.

Fig160. Complex values, Source: Tabieian, Hesam al-din. Understanding building restoration, First and last publications, 2014, P.,174.

Now, considering the examination of the existing values of the building, cultural and social conditions, the primary function, and the status of the building, which help in determining the revitalization strategies along the way, we proceed to identify these strategies.



The unused complex in its natural setting risks erasing collective memories and historical significance tied to this building.



The primary focus for the restoration of the historical building is its original intended use. However, since the structure was once under the ownership of the king and the courtiers, its original function is currently underutilized.



The placement of the Shahrestanak complex in the natural environment.



A desirable use is one that does not disrupt the organic order of the site.



In repurposing, the dignity and integrity of the site must be respected.



The new usage and the level of traffic should cause minimal damage to the building.



Capabilities and potentials of the complex.



Attraction of tourists and travelers for the prosperity of the environment.



Most visitors to this area are athletes and nature enthusiasts.

Fig161. Revitalization feasibility study, by author

4.1.5 Functional improvement and change of use plan for the palace

Considering certain features of the Shahrastanak complex, such as its vast area, diverse spaces, the integration of introverted and extroverted architecture, its location on the slopes of the Tochal mountain range, and its pristine nature with favorable weather for six months of the year and cold winters, as well as hiking trails for athletes and nature enthusiasts, there is a significant need for tourism facilities, including accommodation and recreational services, and welfare services. The abandonment and disuse of this building also affect the economic cycle of the area and the village. The original function of the Shahrastanak building was for accommodation and recreation. Given its specific geographical location and climatic conditions, it is not feasible to consider different uses for it. To attract tourists and cater to those who travel this route to reach the palace, it is proposed that this building functions as an accommodation and tourism center. This will not only meet the needs of visitors but also help keep the history and architecture of that era alive, increasing public awareness of the values of this significant historical site. The characteristics of a successful revitalization include economic efficiency, minimal intervention in the building, alignment with the building's original function, spatial orderliness, and attention to the needs of tourists. The proposed function aims to encompass these aspects to both preserve the building and contribute to the development of tourism in the region. Given the building's location in a mountainous region and the lack of any welfare facilities, an accommodation-tourism use has been proposed as the optimal function. Tourism can encompass a range of activities including artistic, hospitality, service, and even commercial ventures. The combination of these activities will increase the attraction of tourists and visitors, thereby enhancing the economic viability of the project. The integration of accommodation and tourism will allow visitors not only to explore and learn about this historical site but also to enjoy a pleasant stay in the beautiful nature of Shahrastanak.[1]

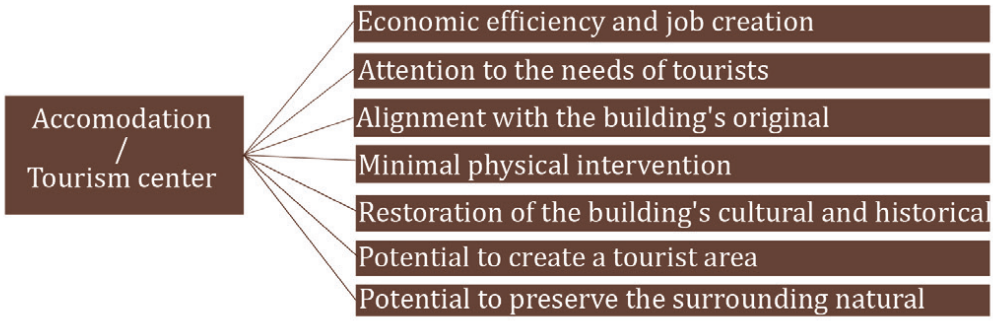


Fig162. Advantages of the Proposed Plan, by author

4.1.6 Strategic Objectives and Policies

Based on the studies conducted in the identification phase, which include quantitative and qualitative assessments of the building, the SWOT analysis, and the potentials and capabilities of the complex, the overall goals of the project have been outlined. Additionally, the strategies for achieving these goals have been listed.

Goal of project and solutions

Goal of project

- Cultural values revitalization
- introducing the complex's values to regional tourists
- reviving the identity function of the complex
- fostering public interest in historical buildings
- reducing environmental damage
- identifying the building and its new use at the national level
- attracting tourists and visitors
- transforming a historical building into a tourist destination
- selling local medicinal plants inside the building
- establishing a tourist route in the region
- creating accommodation for visitors.

Solutions

- Injecting new use into the building while coordinating with its old use
- Injecting a mixed-use function to meet the needs of the area
- Preserving the building and preventing its destruction
- Providing necessary infrastructure for the complex
- Designing necessary facilities for users
- Presenting brochures, articles, website design, TV programs, etc. to introduce the building and its use.
- Utilizing the historical complex to create tourism attractions
- Modernizing the interior spaces of the building and restoring it
- Applying suitable lighting to the building
- Designing appropriate furniture for the complex

Fig163. Goal of project and solutions, by author

4.1.7 Identifying future users and assessing their needs

Our project area is a distinctive travel destination that draws a variety of guests, each with their own requirements and expectations. Four broad categories can be used to group these visitors: tourists, visitors, mountaineers, and locals. Tourists require comfortable accommodations, historical sites, and cultural activities. Visitors look for community spaces, restaurants, and cafes. Mountaineers need accomodations to rest, and safety facilities. Locals desire , gardens, recreational areas, galleries, and performance spaces.We can design our facilities to give everyone a thorough and enriching experience by taking into account the unique needs of each group.[1]

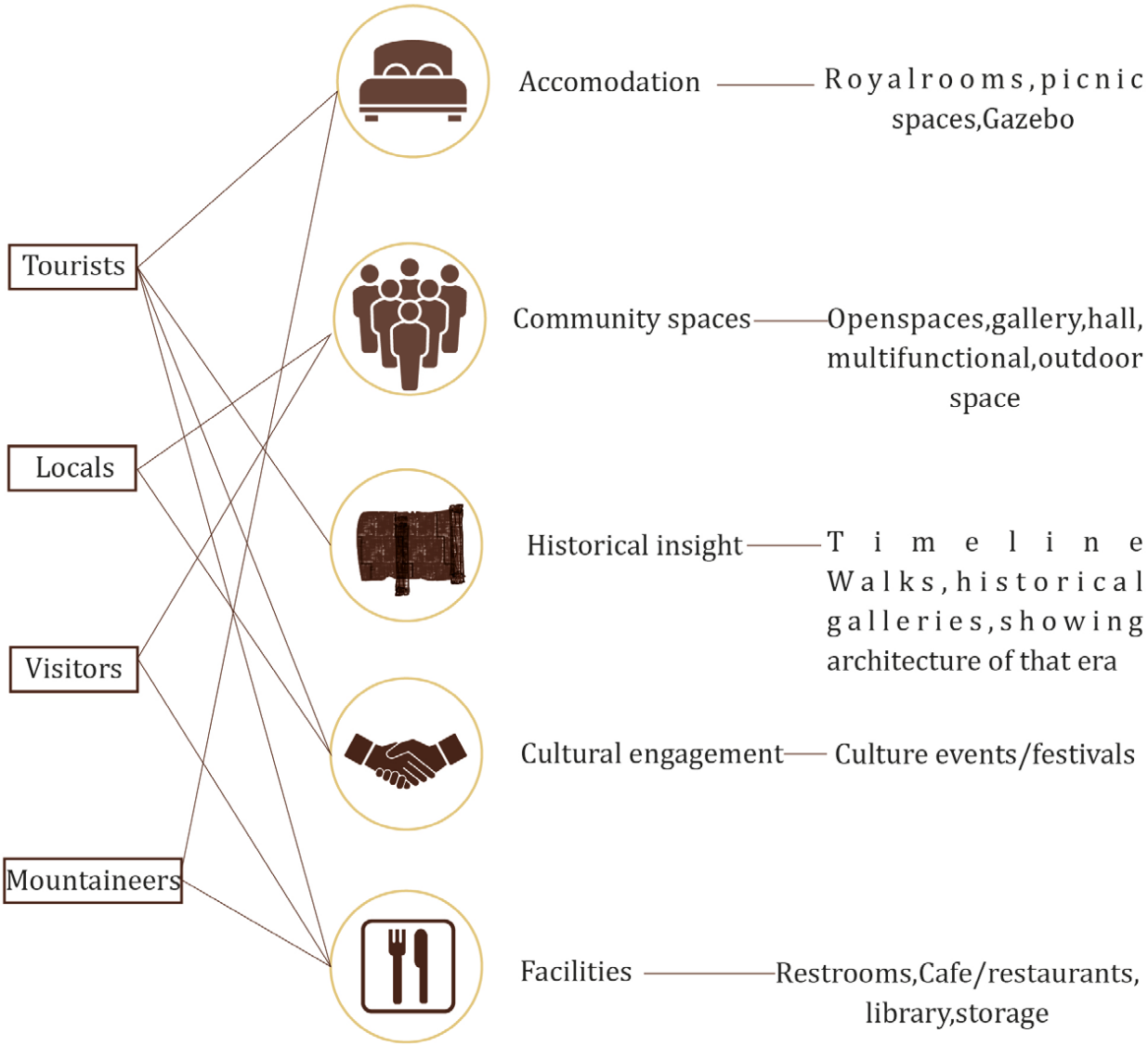
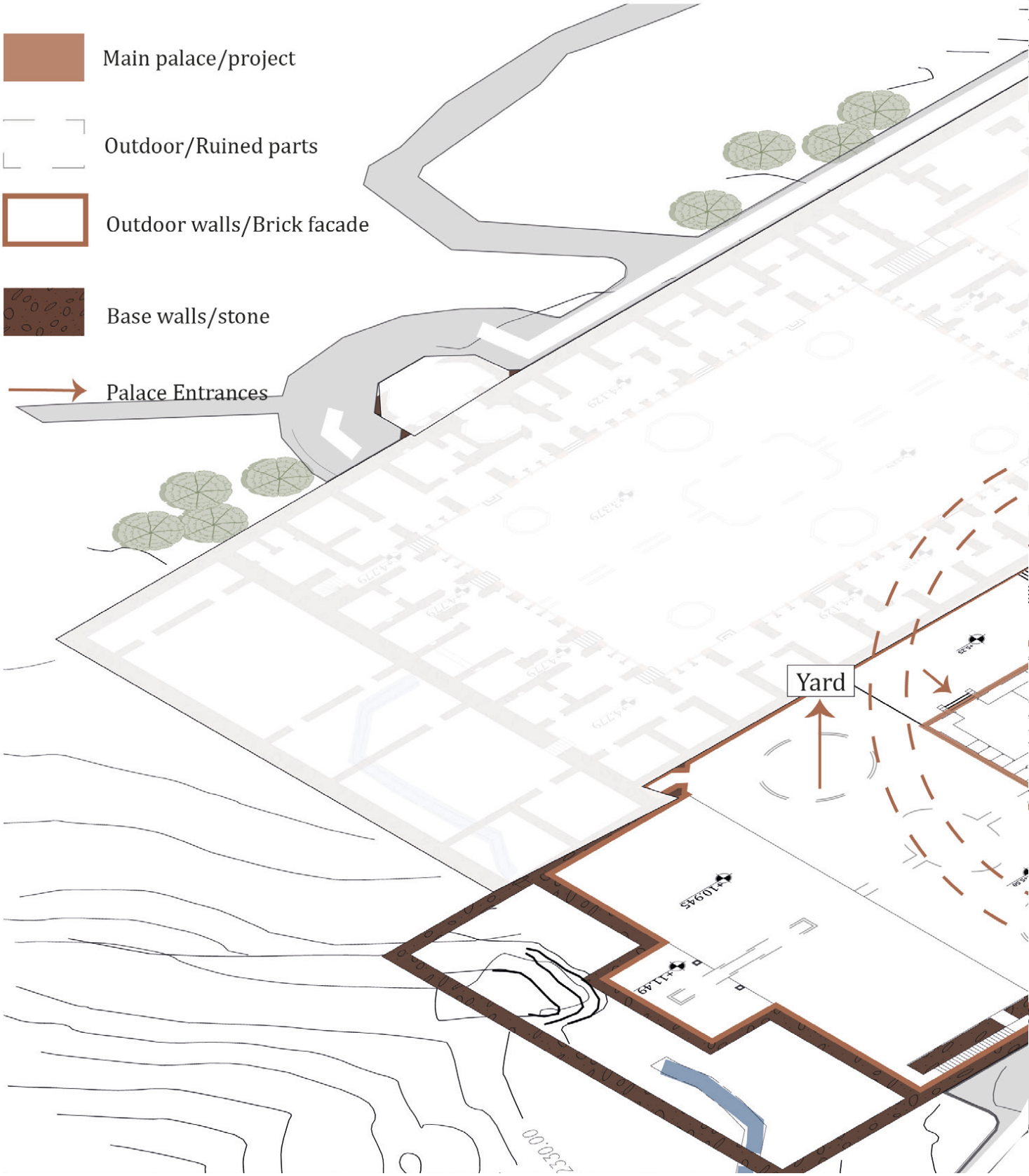


Fig164. Futur users and visitor requirements,by author

1. The Natural Step. Integrated Community Sustainability Planning: A Guide. 2014, https://thenaturalstep.org/project/integrated-community-sustainability-planning-a-guide/.

4.1.8 Assessing Spaces for Functional Modifications

We will examine the characteristics of the existing spaces in the Shahrestanak complex in relation to accommodating the new functions that we have previously discussed. As part of my thesis, I am focusing on one specific section: the main part, which is the palace of this historical complex.



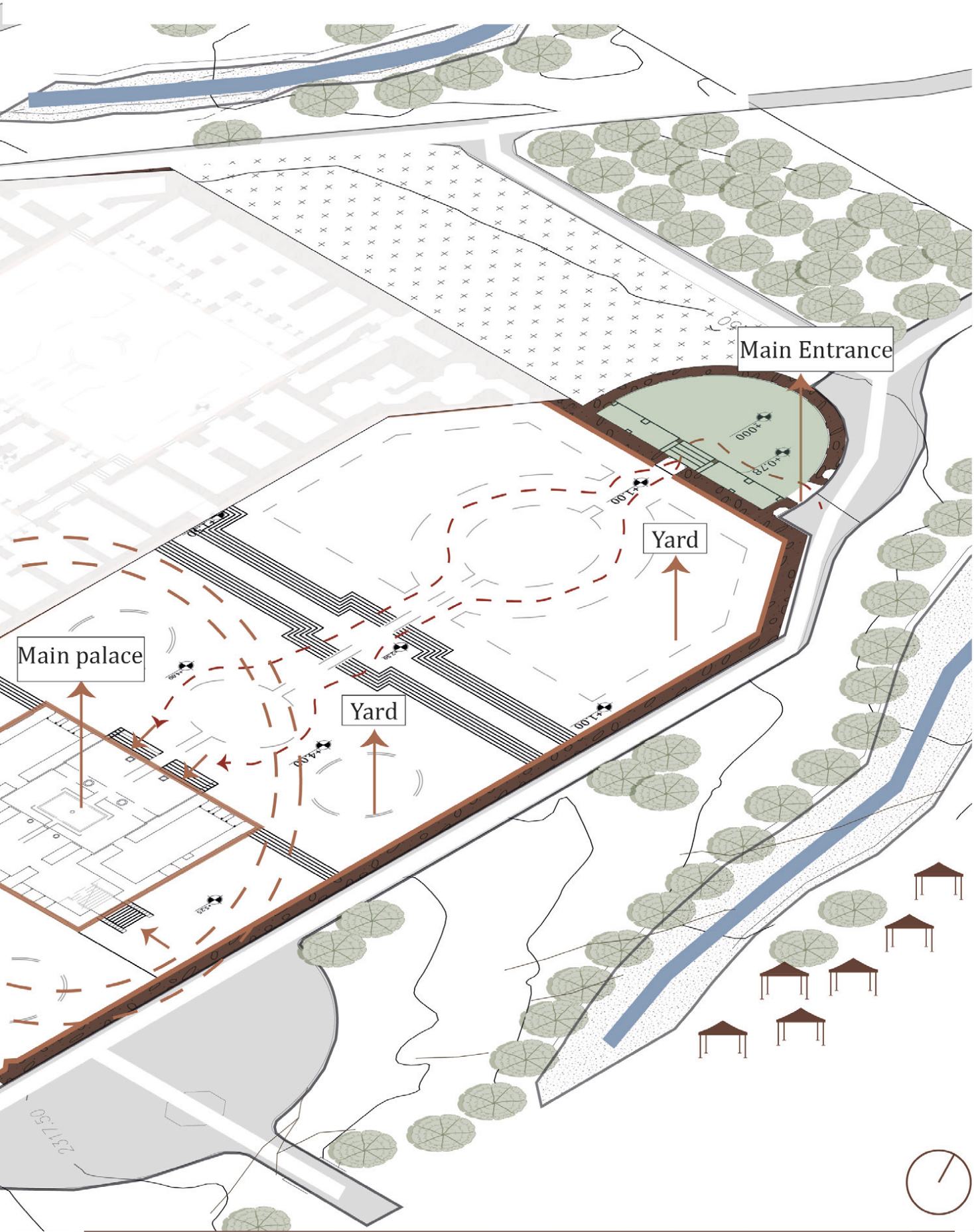


Fig165. Axonometric siteplan of complex, edited by author, Source: Archive of the Cultural Heritage Organization of Alborz Province

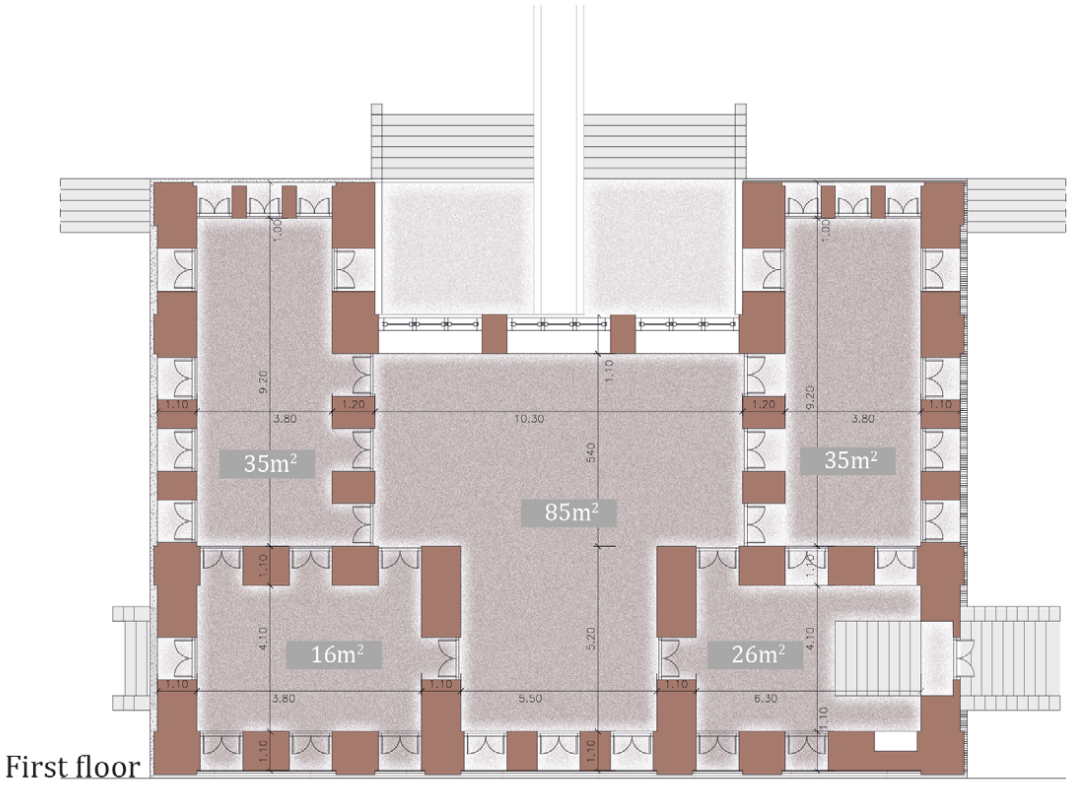


Fig166. Exsiting Firstfloor plan, edited by author, Archive of the Cultural Heritage Organization of Alborz Province

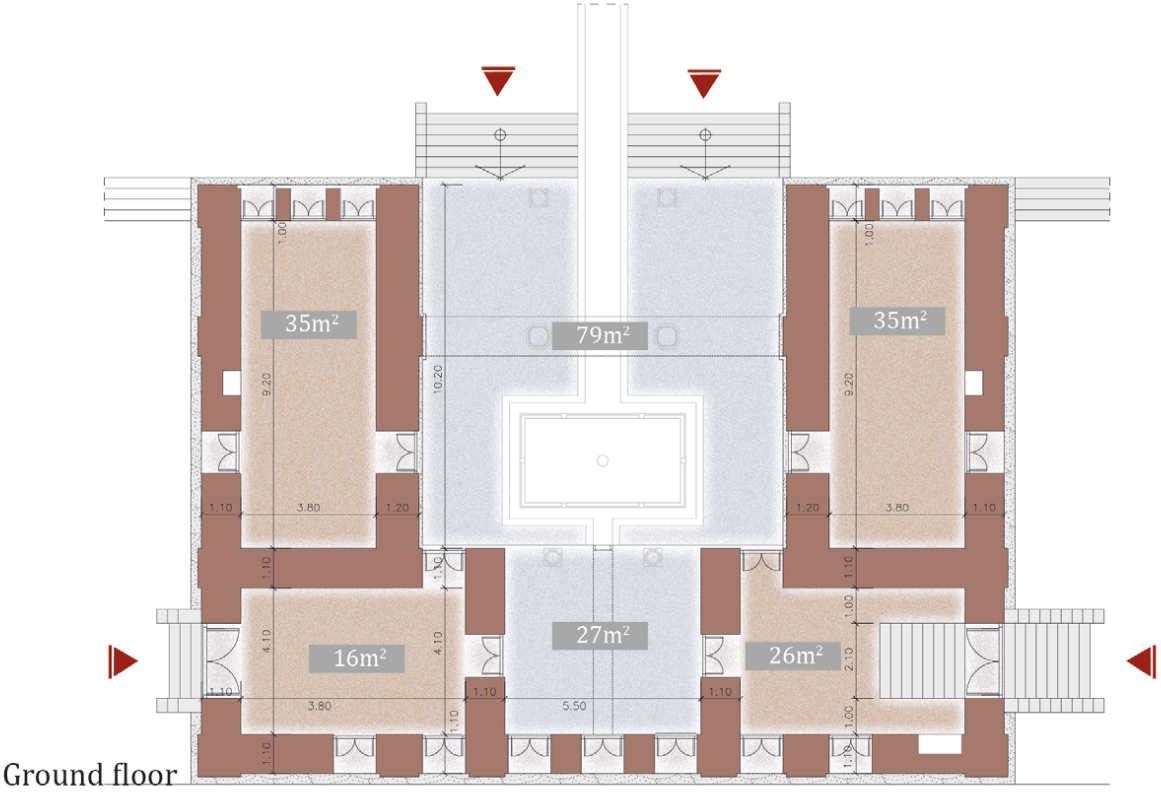


Fig167. Existing Firstfloor plan, edited by author, Archive of the Cultural Heritage Organization of Alborz Province

Legend

Palace wall/brick

Palace entrance

Ruined parts

Stairs/stone

Interior pavement/base stone

Scale:1.200

Space name	Number	Area of square meter
Main Entrance	1	50m^2
Ground floor rooms	5	139m^2
First floor rooms	5	197m^2
Pond place	1	106m^2

Table6. Examination of spaces separately for each space, by author

After the analyzes and studies we come to the Restoration part, which we will define below:

Restoration means returning a place to a known state, distinguished by the use of either old or new materials in its fabric. It should not be confused with recreation or hypothetical reconstruction. The goal at this stage is to revive the original concept and clarify the purpose and theme of the building. Restoration and the completion of existing details and features are often based on adhering to the original materials, the archaeological integrity of the design, and authentic documents of the building. At this stage, conventional methods and techniques are used to identify similar features.

This stage is permissible under the following conditions:
A.When it results in the protection, revival, enhancement of cultural-historical value, and dissemination of native technologies of the structure, or prevents the destruction of the cultural-historical and spiritual integrity of the structure.
B. The original architectural style and school of the structure are considered in the restoration.
C. It ensures the preservation, revival, and enhancement of intangible heritage capacities, aesthetic values, and ethnic, religious, and spiritual affiliations.
D. It guarantees the survival of all remaining elements and materials of the structure at the beginning of the restoration operations.
E. The remaining authentic elements and materials of the structure are used in the restoration based on documents and records in such a way that the possibility of future interpretation of the work is preserved without distorting the artistic aspect of the structure.
F. The use of new materials should be distinct from the original parts to ensure a clear distinction from the sections that have been replaced.
G. The maximum amount of existing materials in the building should be allowed to remain.
H. All interventions are carried out with respect and a firm commitment to the aesthetic, historical, and natural integrity of the cultural property.[1]

1. Tabieian, Hesam al-din. Understanding building restoration, First and last publications, 2014, P.,150 .

4.1.8.2 Identifying Restoration Requirements

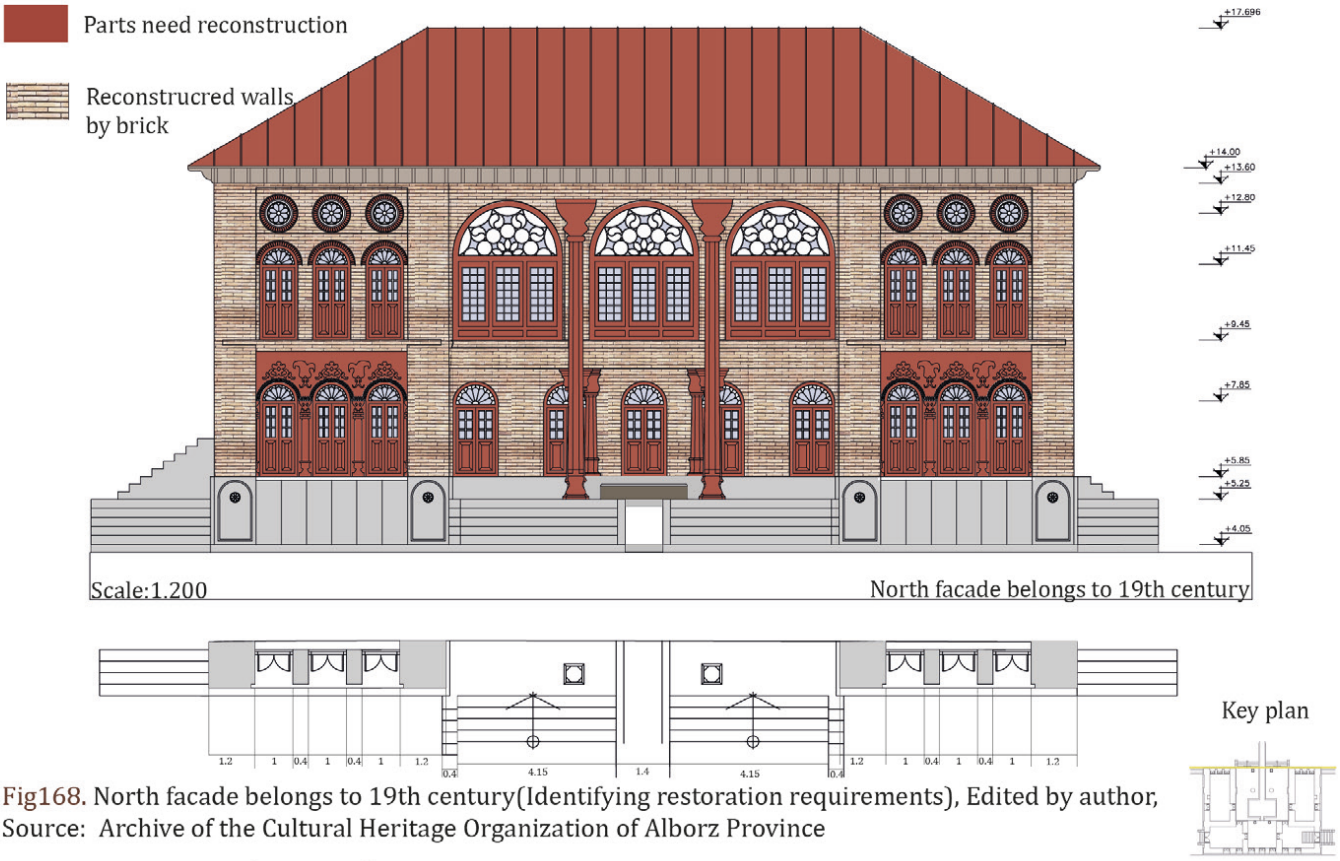


Fig168. North facade belongs to 19th century(Identifying restoration requirements), Edited by author, Source: Archive of the Cultural Heritage Organization of Alborz Province

Restoration and revival

After the preservation and restoration of a historical building, revival or assigning a new function to the building is considered. Revival ensures the building's longevity over time. In the process of revival, a new use compatible with the modern needs of human societies and harmonious with the old structure of the building is envisioned. All these actions must be consistent and coordinated with the old structure of the building. This process of breathing life into the building's structure (bringing people into the physical space) is called "revival." Revival involves assigning a new function to the building that meets the current needs of human societies. Considering that a historical building has a specific structure, one that was designed with a clear plan and has been passed down to us, extensive interventions are not feasible. The new function must be carefully selected and harmonized with the existing space. In any case, the best use for a historical building is often its original function, as this preserves the architectural authenticity of the building and transmits it to the future, with minimal alteration to the original architecture.[1]

The building's roof covering, decorations, doors, windows, and columns have all deteriorated. As a result, efforts are being made to restore the building to its original condition while maintaining the genuine architectural style of the time. In addition, improvements will be made to the building's exterior and open areas, which are essential for drawing tourists. This all-encompassing strategy guarantees the preservation of the building's historical and architectural integrity while simultaneously enhancing its appeal as a tourist destination.
The project intends to revive the historical essence of the building and promote cultural tourism by concentrating on both the structural restoration and the aesthetic enhancement of the surrounding areas. This dual strategy ensures the site's relevance and appeal in the present while simultaneously protecting the legacy.

1.Tabieian, Hesam al-din. Understanding building restoration, First and last publications, 2014, P.,174 .

4.2 Design

After gathering necessary studies and analyses regarding the historical and architectural context of the compound, considering its damages and shortcomings, we have reached the design phase. By examining significant points, we aim to finalize the design of the compound, taking into account factors such as its mountainous location, ensuring usage that does not harm the environment or the historical significance of the site. Additionally, we seek to incorporate suggestions and changes to enhance its overall quality.

4.2.1 Seasonal Access Table for Shahrestanak

Considering the palace's location in a valley and mountains, experiencing harsh winters in the region would make access and energy supply difficult. Nevertheless, we've decided to keep the palace closed during the snowy and cold months to avoid wasting energy on heating it unnecessarily. Additionally, this measure helps prevent visitors from attempting to access the palace via challenging routes during snowy and cold times.The table below outlines the accessibility of the palace throughout the year:

Months	Accessibility	Notes
January	Closed	Heavy snow and cold temperatures make access difficult.
February	Closed	Continued harsh winter conditions.
March	Limited access	Early spring thaw, but weather can still be unpredictable.
April	Open	Milder weather allows for easier access.
May	Open	Pleasant spring weather, ideal for visiting.
June	Open	Warm summer weather, peak visiting season.
July	Open	Warm summer weather, peak visiting season.
August	Open	Warm summer weather, peak visiting season.
September	Open	Mild autumn weather, good for visiting.
October	Limited access	Late autumn, weather starts to become more unpredictable.
November	Closed	Early winter conditions begin, making access difficult.
December	Closed	Harsh winter conditions, heavy snow, and cold temperatures.

Table7. Introduction of the complex activity areas

4.2.2 Physical Revival Plan of the Complex

The spaces designated for the residential-tourism functionality of the complex include:

1. Administrative Area: Reception and management

2. Residential and Leisure Area: Rooms and suites

3. Service Area: Restaurant/cafe, restrooms, bathrooms, security, kitchenette, and rest area

4. Cultural-Artistic Area: Gallery, multipurpose room, and spaces resembling original historical areas for gatherings

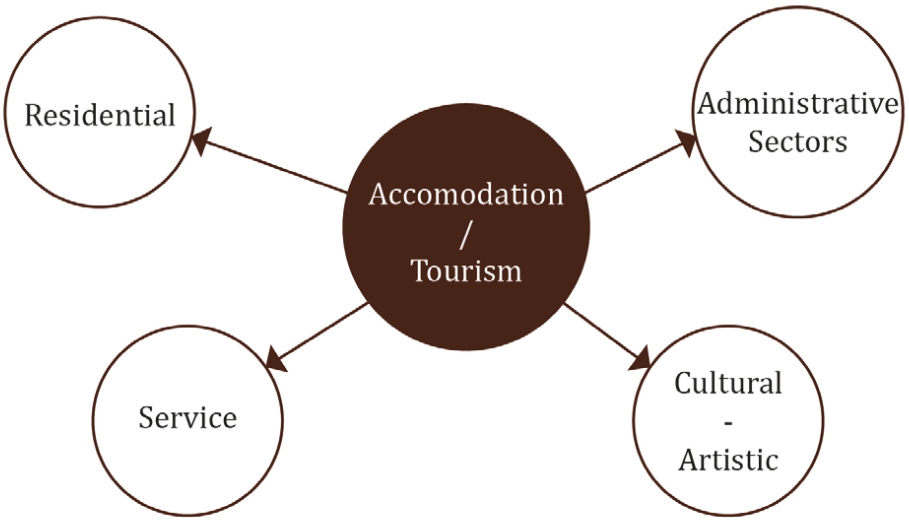
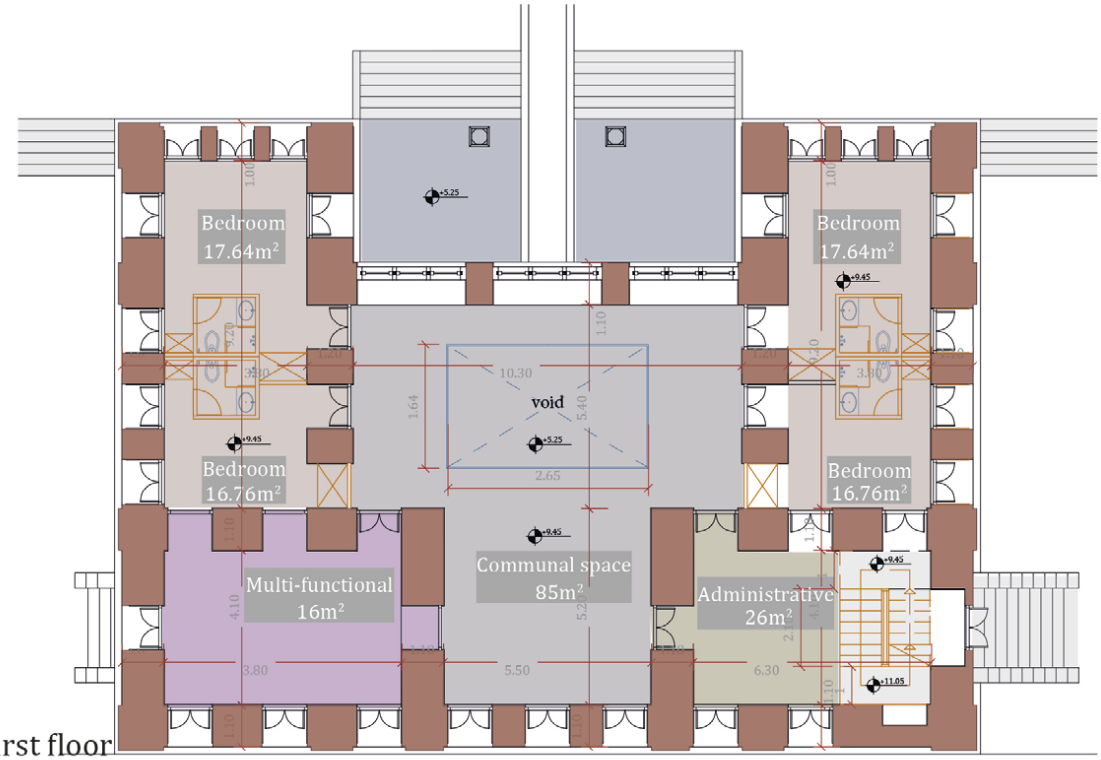


Fig169 Proposed Spaces Based on Selected Functio, by author

We aim to divide the area into spaces that cater to various groups, ensuring suitability for all visitors. The locals will benefit from community spaces that foster economic growth in their village and surrounding areas. Attracting different visitors will be crucial, and we plan to provide accommodations, facilities, and insights into the area's historical and cultural heritage to appeal to tourists.

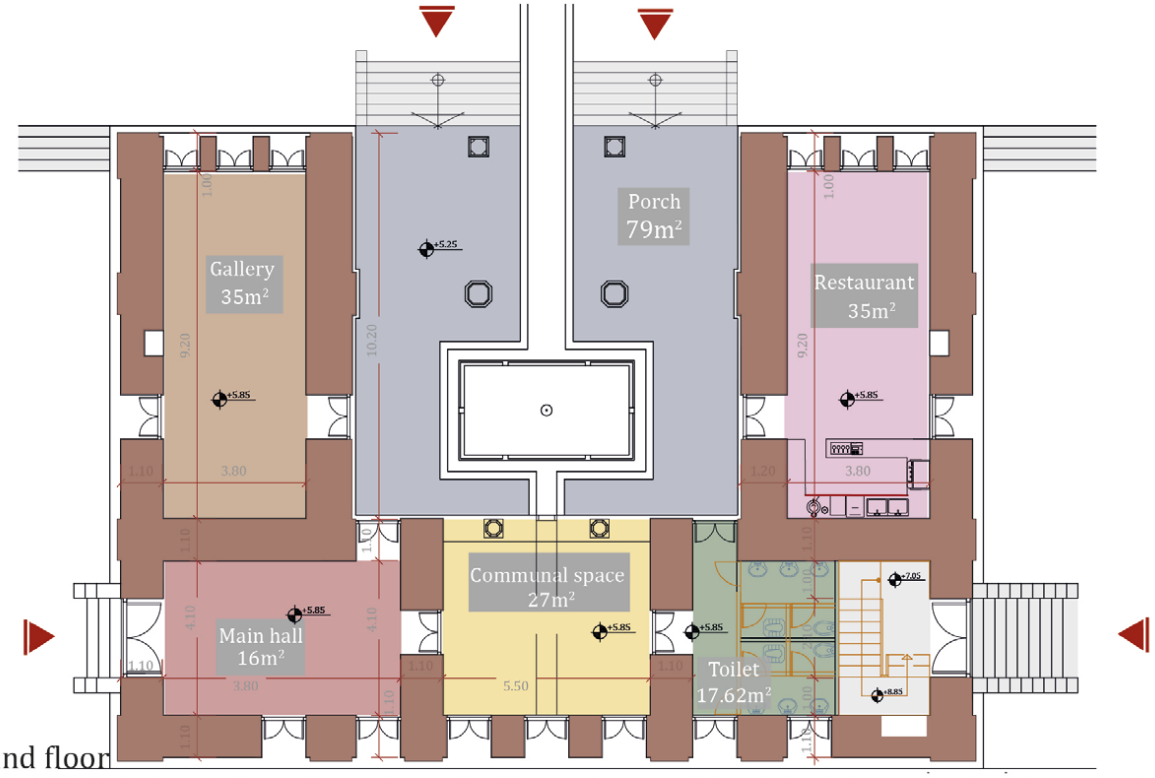
Mountaineers, who have traditionally used the area for rest and accommodation due to its proximity to the mountains, will also be considered. Our goal is to create spaces that offer memorable experiences for everyone. Additionally, we intend to preserve and open up areas from the 19th century, allowing visitors to experience the historical ambiance. While these areas were once exclusive to the king and his staff, they will now be accessible to the public.

4.2.3 Intervention Phases and Scenarios in Building



First floor

Fig170. Redesigned Firstfloor plan, edited by author, Archive of the Cultural Heritage Organization of Alborz



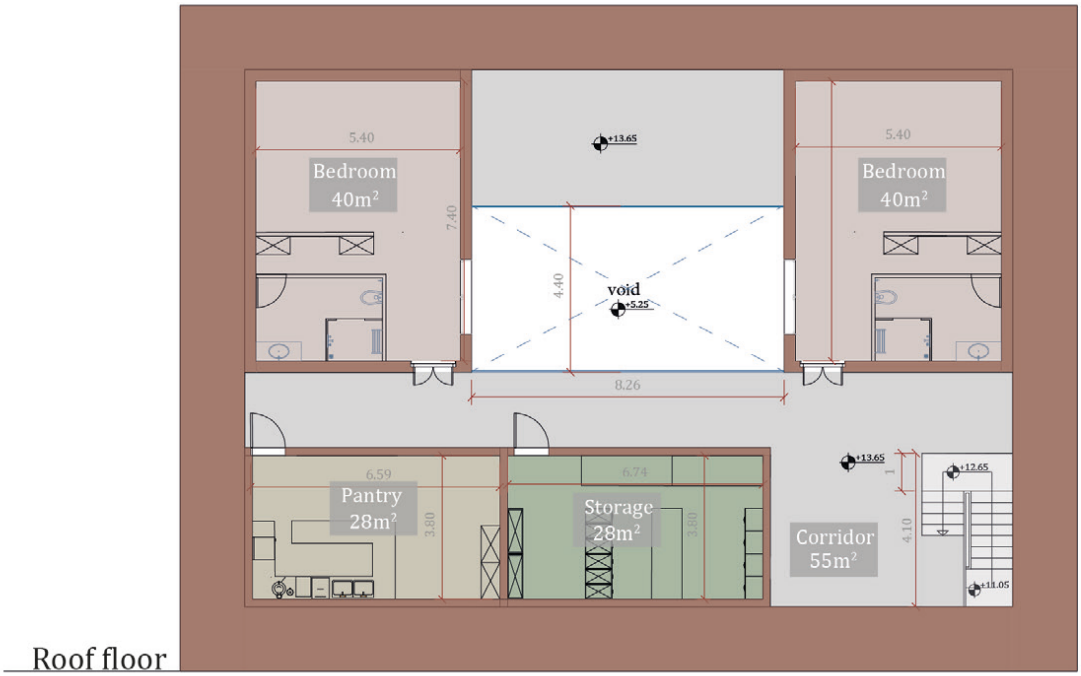
Ground floor

Fig171. Redesigned Groundfloor plan, edited by author, Archive of the Cultural Heritage Organization of

Added parts

Added roof as a attic

The project's new roof plan accomplishes a number of important goals. First of all, it makes more room for lodging. The new roof's design includes voids that let natural light into the attic and other floors below, improving the lighting of the interior spaces overall. Additionally, this design makes ventilation easier, which is especially helpful in the summer when the complex is more accessible and open. We can use the wind for passive cooling thanks to the building's clever placement in the mountains, which improves energy efficiency. This design improvement will also help the attic .rooms, which need a lot of natural light



Roof floor

Fig172. Added Roof floor plan, edited by author, Archive of the Cultural Heritage Organization of Alborz

Scale:1.200

Diagram of added roof

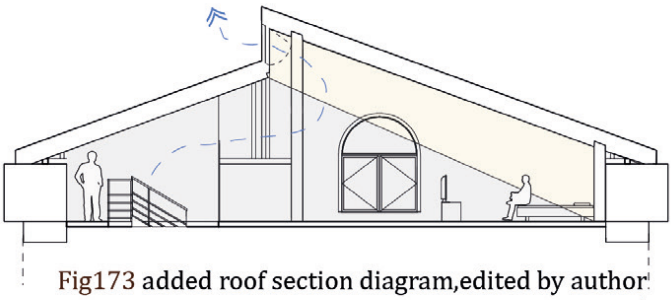


Fig173 added roof section diagram,edited by author

Keyplan

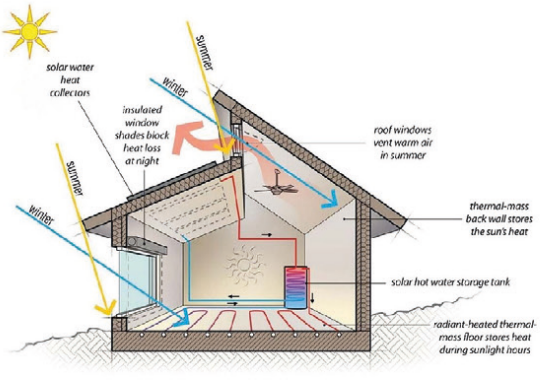


Fig174. Passive solar design retrofits
Source:https://psci.princeton.edu/tips/2020 20/7//passive-solar-design-retrofits

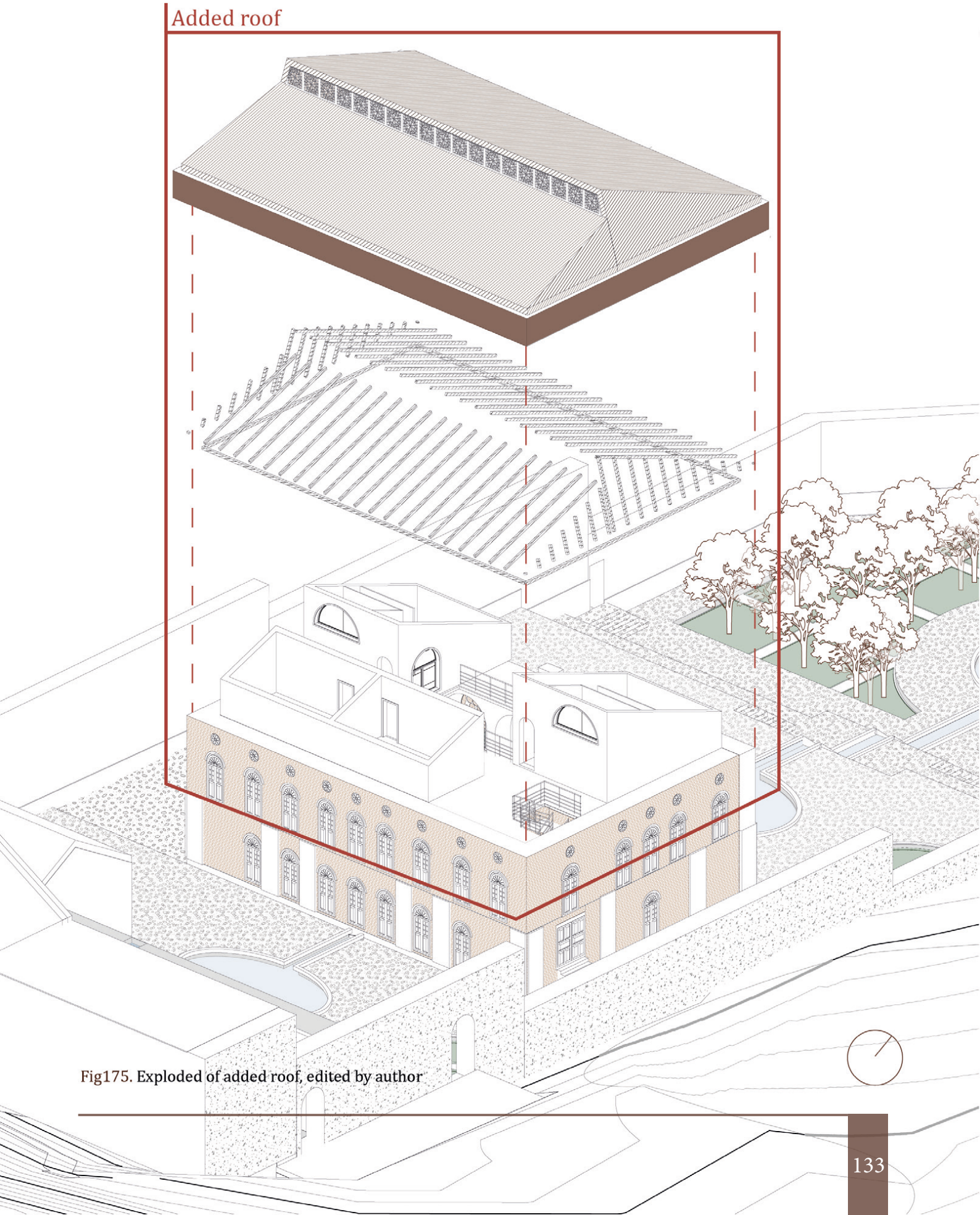


Fig175. Exploded of added roof, edited by author

Glass Islmaic frame design for the pitched roof

Based on existing evidence and artifacts, the history of the art of Gereh-Chini (knot-making) in Iranian architecture dates back to the Seljuk and Safavid periods(10th &15th century), with its origin in the city of Isfahan. This style was typically used in the construction of doors for sacred places, tombs, pulpits, and as latticework in the windows of houses, palaces, and railings. From the Safavid period onwards, the incorporation of colored glass in wooden latticework became common, known as "Orsi," which we mentioned in Chapter . Notably, the art of Orsi-making reached its peak during the Qajar period.[1]

Gereh-Chini is an art form created with cut pieces of wood and colored glass arranged in various geometric shapes that harmoniously repeat within a specified frame. The geometry of the patterns and knotting is an inseparable part of this art. It is worth noting that the design and theoretical stage of the work is called "Gereh-Chini," while the practical execution is known as "Gereh-Sazi." In this process, the components of the knot are joined using the dovetail and tongue-and-groove methods, eliminating the need for additional materials for connection. When the design allows air and light to pass through, it is referred to as lattice Gereh-Chini.[2]

Subcategories of Gereh-Sazi include stained glass Gereh-Chini, where colored glass is installed between the elements instead of wooden pegs, and solid Gereh-Chini, where wooden pieces known as pegs are placed between the elements. The best wood for Gereh-Sazi, especially in non-humid cities like Isfahan, is plane wood, which has a dense texture and high durability. Other woods that can be used include spruce, orange, walnut, pear, and jujube.[3]

The new pitched roof added to the building serves multiple purposes: creating additional accommodation space, utilizing natural light in the interior through the design of an atrium, and improving air ventilation. The glass that connects the two pitched roofs is covered with an Islamic design, similar to the patterns used in the doors and windows of the building. This ensures that the historical and traditional aesthetic of the building is preserved while allowing controlled light and enhancing the beauty of the sunlight through the latticework.

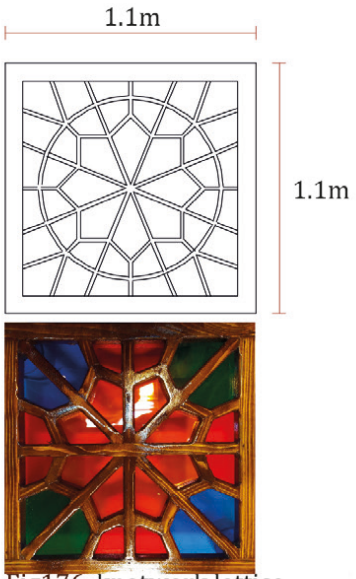


Fig176. knotwork lattice
https://www.sonatidecor.ir/wp-content/uploads/150213_20180812/01/2021.jpg

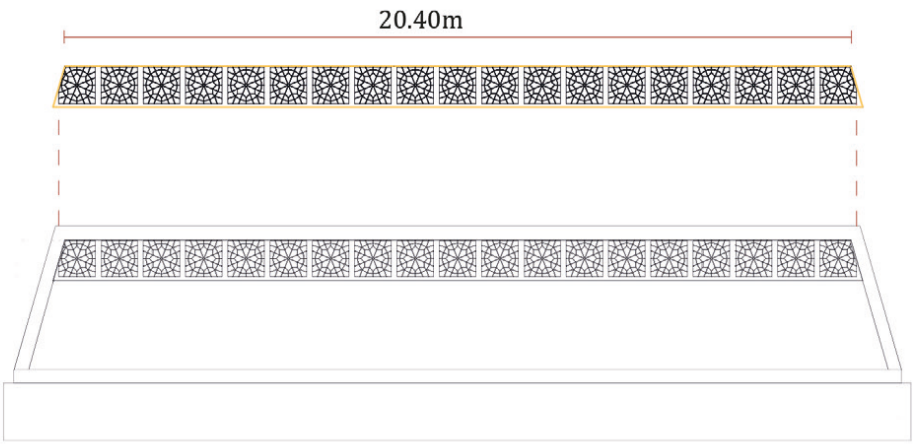


Fig177. knotwork lattice, by author

1. Hattstein, Markus, and Peter Delius. Islam: Art and Architecture. H.F. Ullmann, 2013, p. 448.
2. "An Overview of Gereh Tile Art." IRIB News Agency, https://www.iribnews.ir/fa/amp/news/3321138.
3. https://www.salatinpars.com/traditional/

4.2.4 Future vision of Shahrestanak Complex

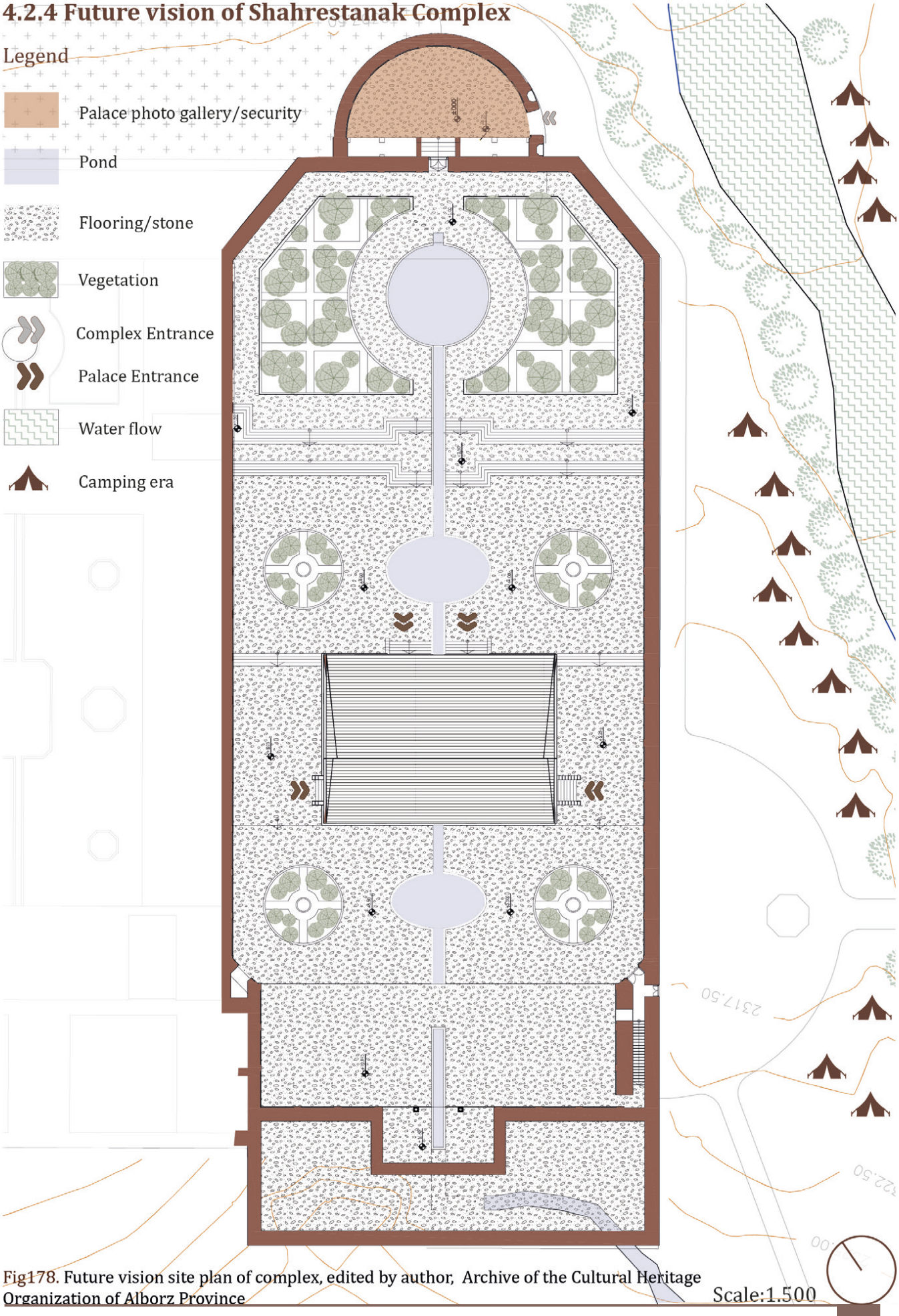


Fig178. Future vision site plan of complex, edited by author, Archive of the Cultural Heritage Organization of Alborz Province

Explanation of the Different Sections of the Palace

Accomodation:

Bedrooms:

In the accommodation section of the complex, the upper floors, which offer more privacy compared to the ground floor, are dedicated to guest rooms and accommodations for various visitors. There are two suites with a capacity of 2 to 3 people and two rooms with a capacity of 1 to 2 people on the first floor. Additionally, there are two larger suites, each with a capacity of 2 to 3 people, located in the newly added attic. The design of these rooms takes into account the site's location, aiming to provide suitable accommodations for different types of guests.

Facilities:

Toilets:

Another important consideration in this complex is the provision of restrooms. Efforts have been made to utilize space efficiently so as not to encroach on other areas. The restrooms are located on the ground floor, close to the public areas, and are designed in two sections: one for men and one for women. Given the space limitations, four toilets have been included. The accommodation areas have separate, dedicated restrooms.

Restaurants/Cafe:

Another important service provided by the complex is the restaurant, which is located on the ground floor of the palace. This area is designed to connect with the outdoor space and the palace veranda, offering a seamless dining experience.

Cultural-Artistic

Gallery/Communal spaces:

Another important space in the complex is the gallery. One gallery is located on the ground floor in the public area of the palace, and another is situated at the entrance of the complex, guiding visitors towards the courtyard. Since the main entrance area serves as a connecting space, tourists can view historical photographs of the complex and the building upon entry. The ground floor gallery has a

multifunctional purpose, serving as an artistic and cultural space that showcases the history of the building, including documents and artifacts from the past. Additionally, considering the flora and fauna discussed in Chapter 2, a section can be dedicated to displaying and educating visitors about the local wildlife.

Furthermore, in the connecting areas of the building where tourists explore, historical works can be displayed to keep the heritage and architecture of ancient Iranian times alive. This approach enhances visitors' awareness and provides them with a unique and educational experience.

Multi-functional:

Given that this building has been a destination for mountaineers and athletes and was previously owned by the Mountaineering Federation, we propose a multipurpose space. This area will be designed for meetings, guest receptions, and gatherings, with flexible furnishings that can be rearranged to accommodate various types of events.

Light and ventilation Atrium:

Void:

In the original plan of the building, there was no atrium, and such a design was not common at that time. In this proposal, we have introduced an atrium to make use of natural light throughout the building, which also includes a veranda and semi-open space on the ground floor. This design aims to improve air ventilation, allowing us to control the energy consumption of the space effectively.

4.2.5 Design Documents

Furnished plans

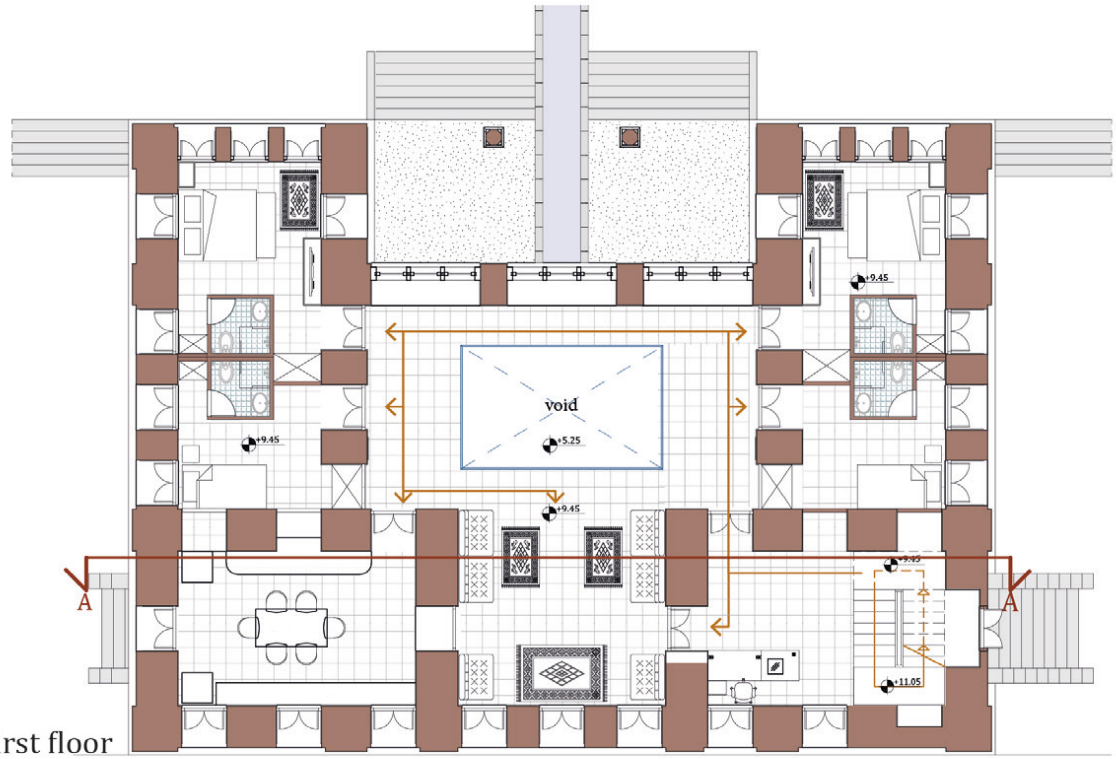


Fig179. Furnished Firstfloor plan, edited by author, Archive of the Cultural Heritage Organization of Alborz **Province**

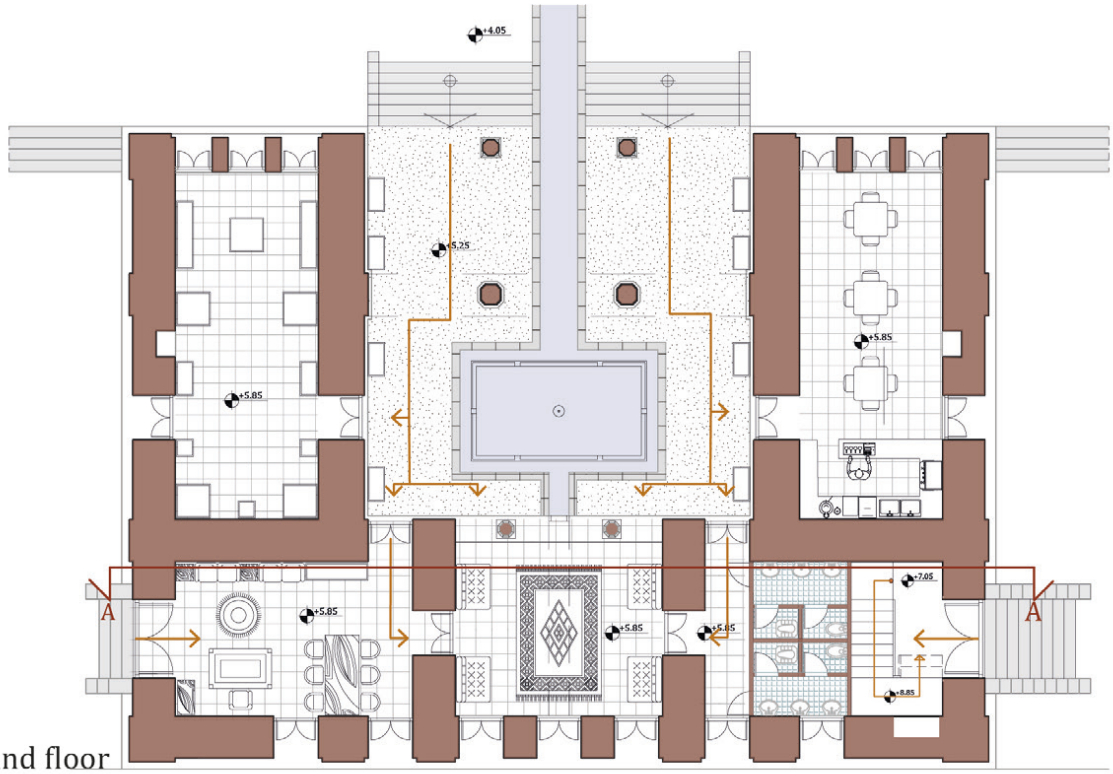
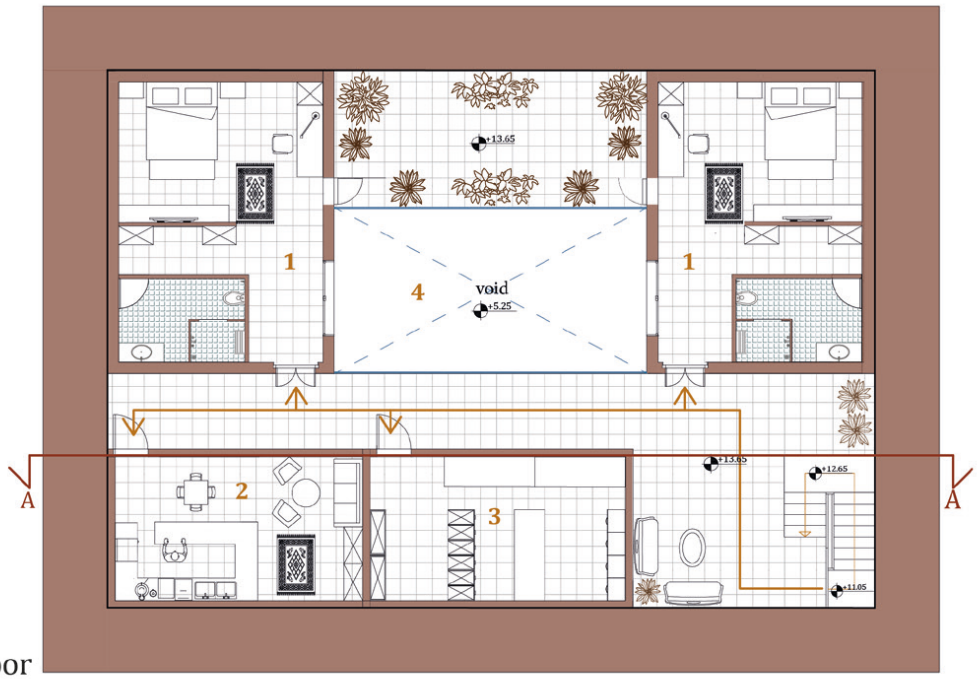


Fig180. Furnished Groundfloor plan, edited by author, Archive of the Cultural Heritage Organization of Alborz **Province**

Scale:1.200



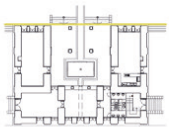
Roof floor

Fig181. Furnished Roof plan, edited by author, Archive of the Cultural Heritage Organization of Alborz Province

Scale:1.200



Fig182. North facade Projected Future Restoration, edited by author, Source: Archive of the Cultural Heritage Organization of Alborz Province



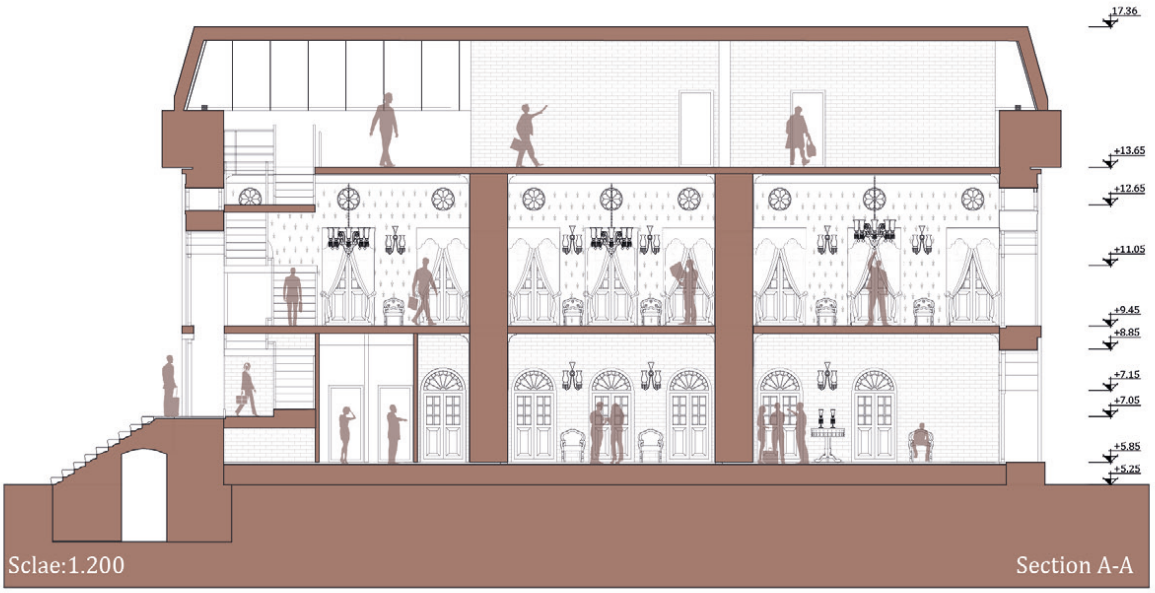
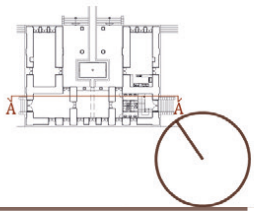


Fig183. North facade Projected Future Restoration, edited by author, Source: Archive of the Cultural Heritage Organization of Alborz Province



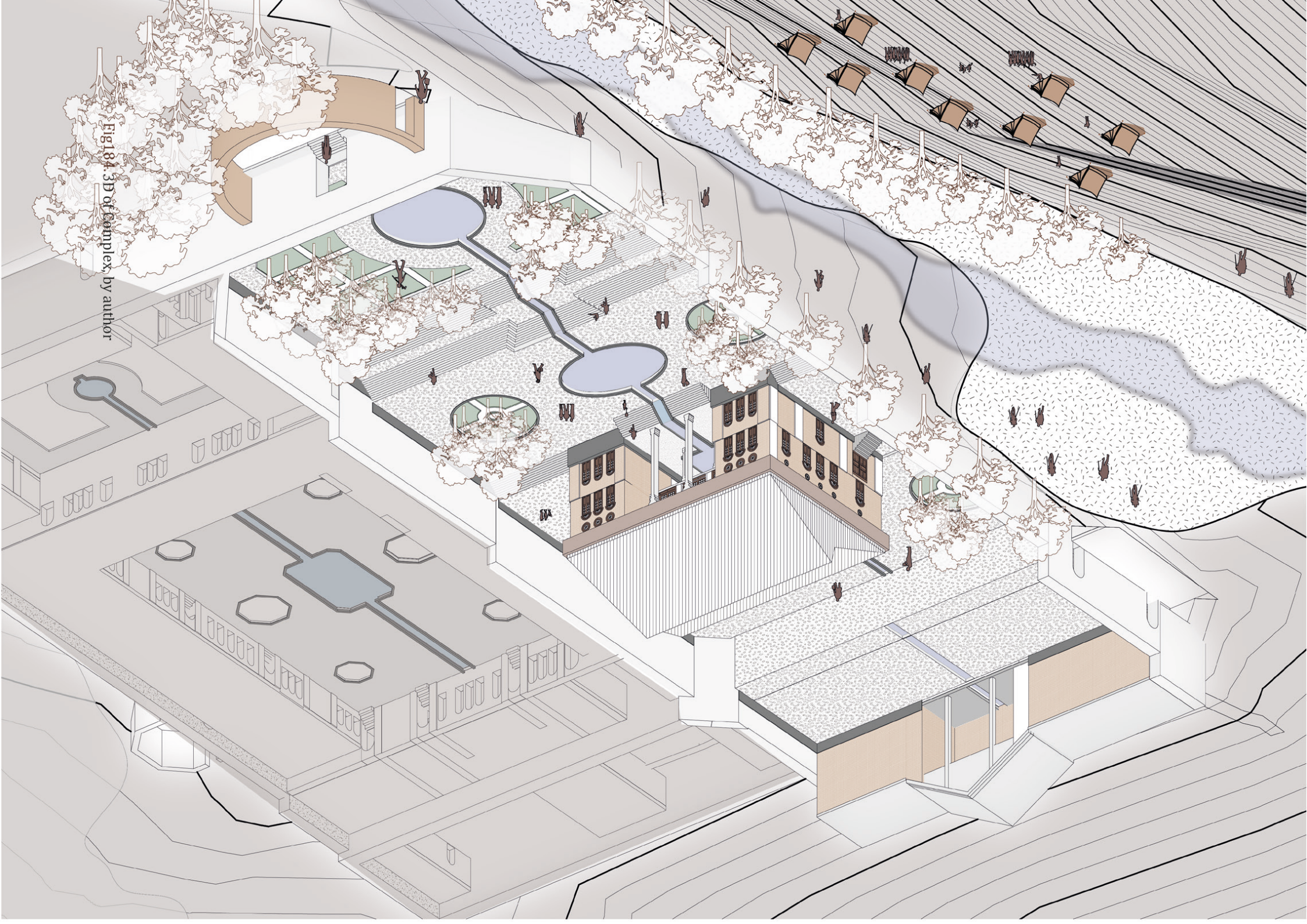


Fig184. 3D of Complex, by author

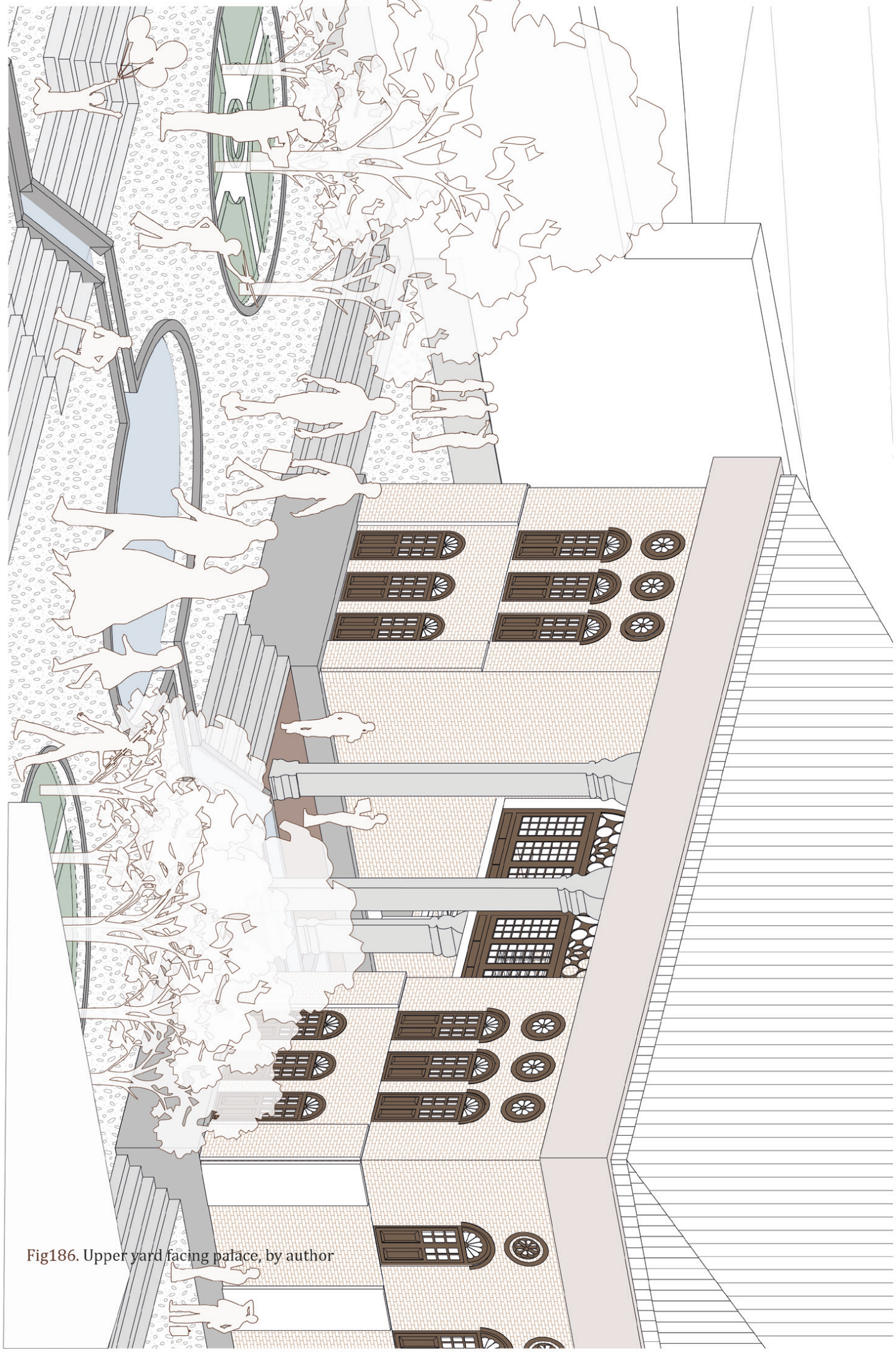


Fig186. Upper yard facing palace, by author

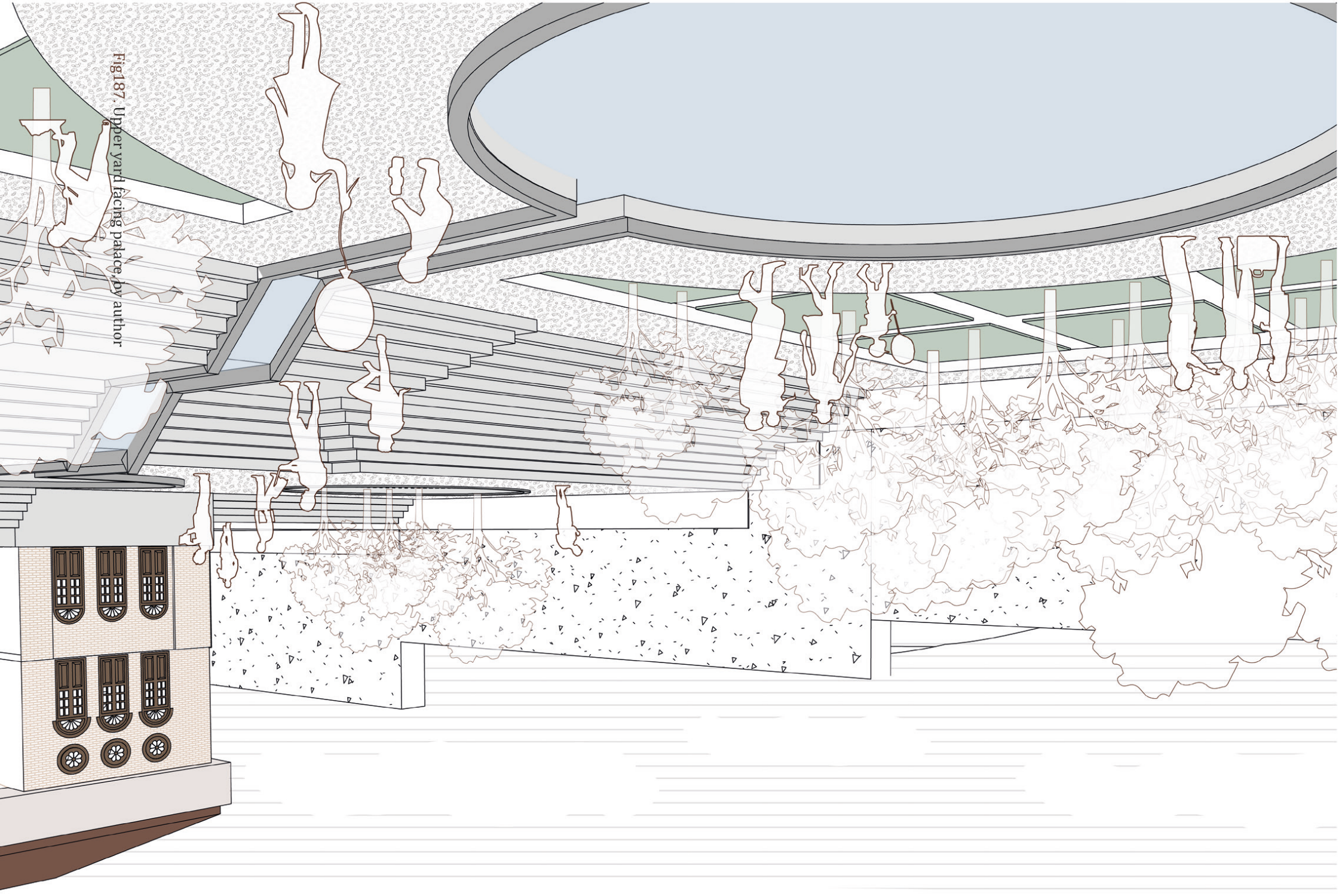


Fig187. Upper yard facing palace, by author

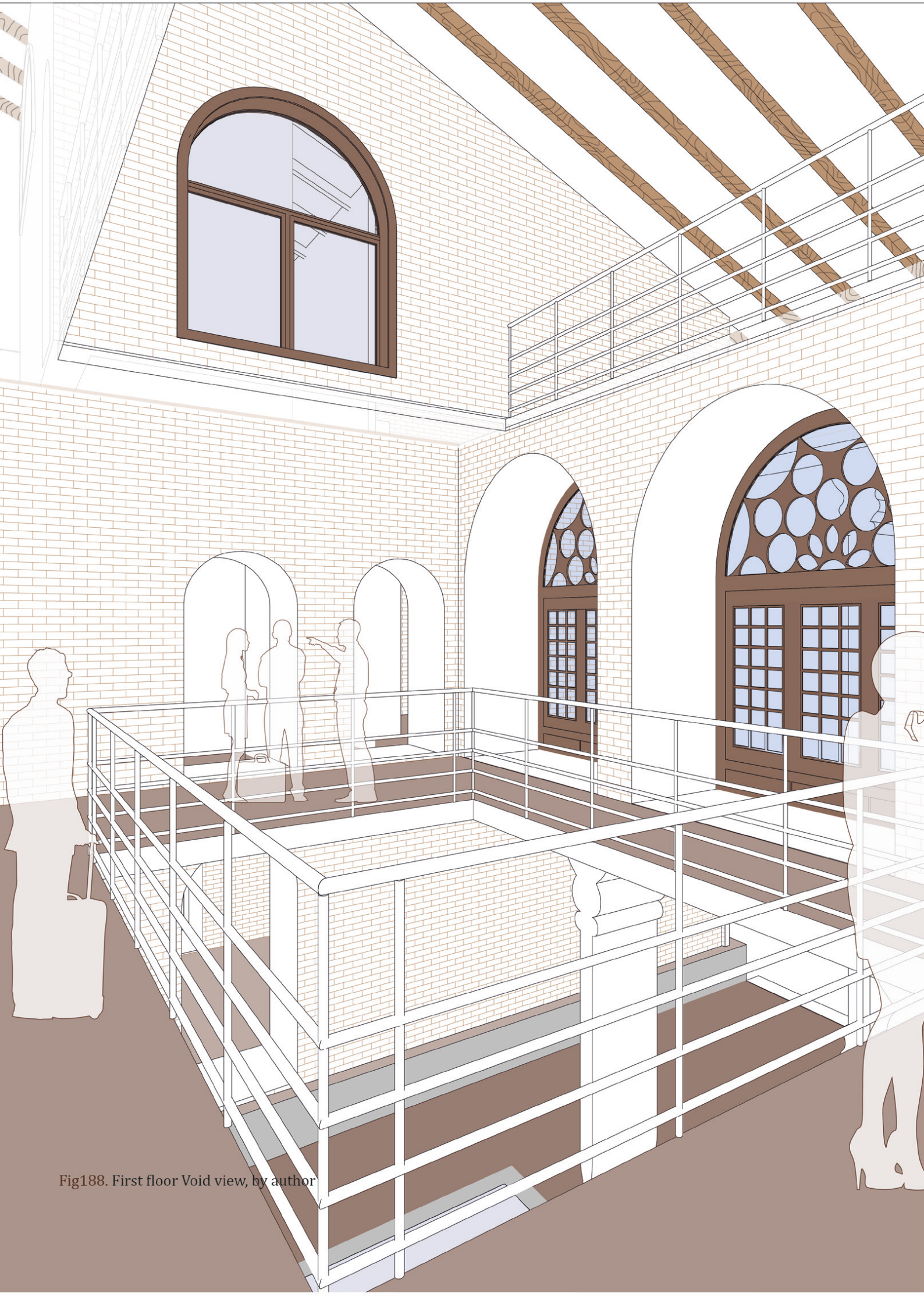


Fig188. First floor Void view, by author

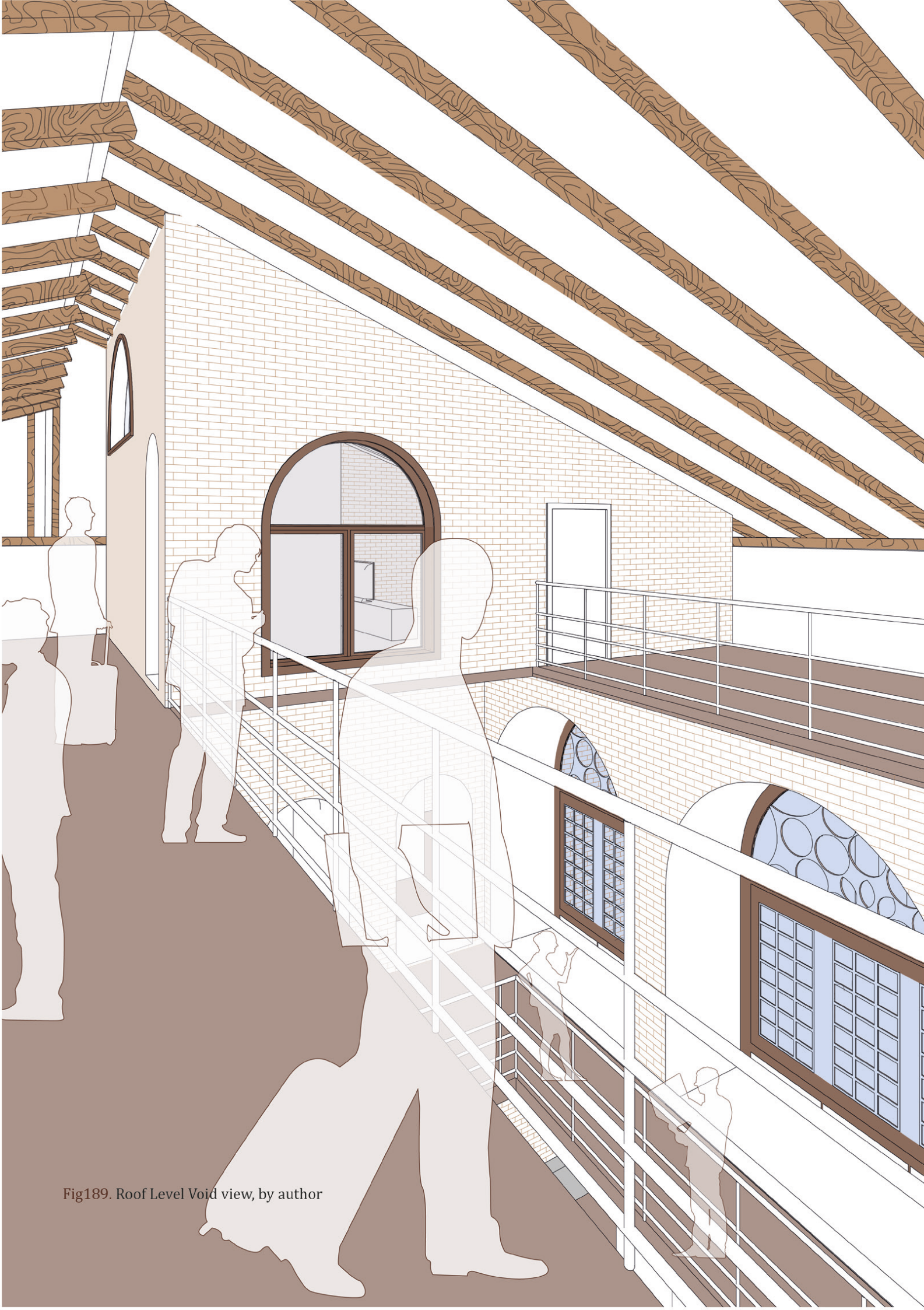


Fig189. Roof Level Void view, by author

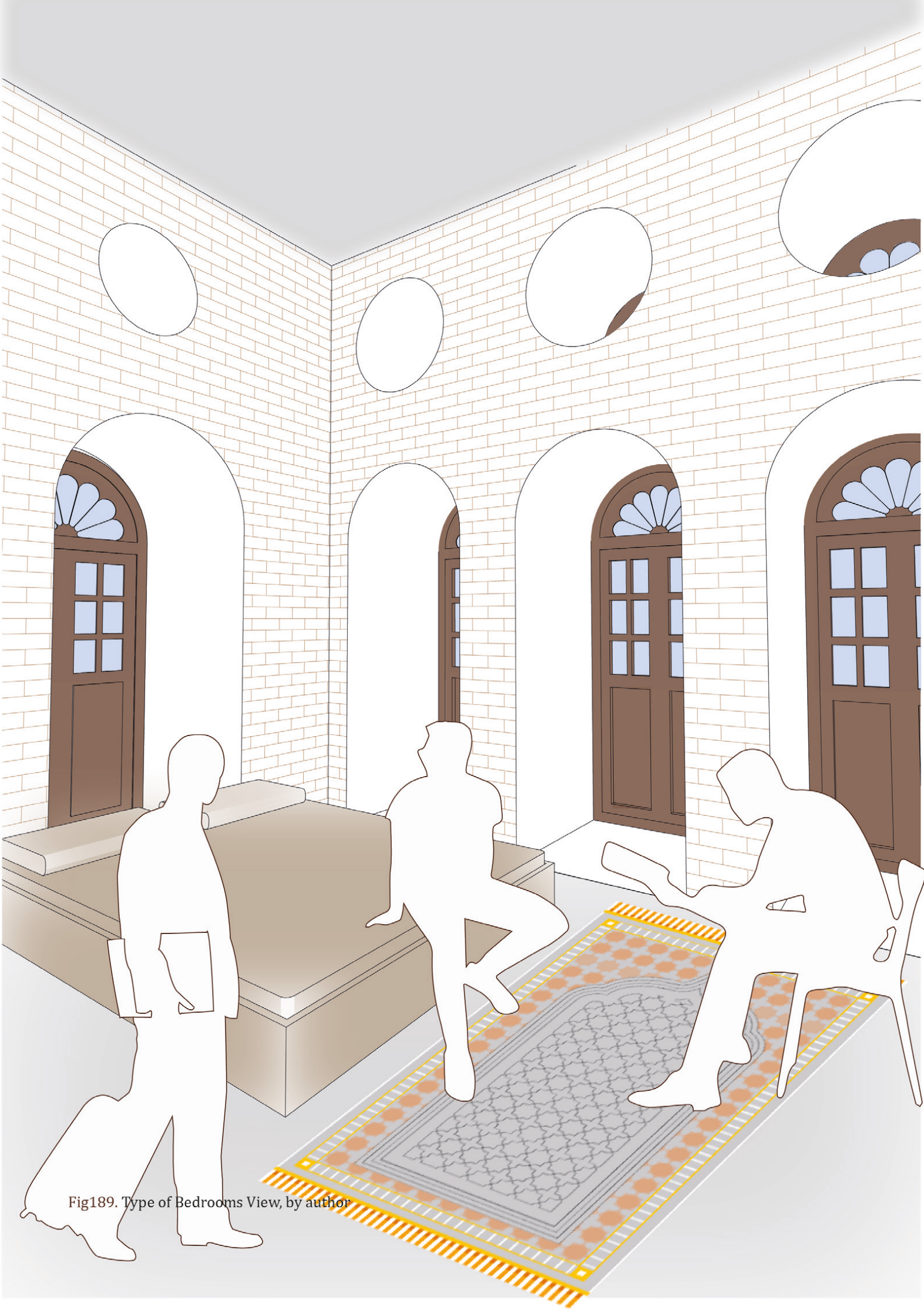


Fig189. Type of Bedrooms View, by author

Conclusion

An important step has been taken in the ongoing effort to combine historical preservation with modern sustainable practices with the restoration and revitalization of Shahrestanak Palace, a monument that exemplifies the beauty of Iranian architecture in its distinct geographic setting. Through examination of the palace's geographical, historical, and architectural contexts throughout this thesis has established a solid basis for creating a project that honours the past while also looking to the future.

The main idea behind this project is to turn Shahrestanak Palace from a private royal retreat into a public space. The project aims to provide a captivating experience where the past and present collide by constructing a space that satisfies the needs of contemporary visitors while maintaining its historical essence. Through tourism, this reimagining seeks to promote community involvement and boost regional and national economic growth. The palace's adaptive reuse is emphasised by the addition of new functions catered to different visitor needs, guaranteeing its continued relevance in modern society.In addition to showcasing the palace's architectural and cultural significance, this project helps people connect with their roots and deepens their awareness of Iran's past.

The project's dedication to eco-friendly and sustainable practices amplifies its influence. Shahrestanak Palace restoration is in line with the larger objectives of sustainable development, as it prioritises the preservation of cultural heritage and encourages naturalistic activities.

In summary, this project shows how historical landmarks can have a vibrant and sustainable future while still preserving their cultural legacy. Shahrestanak Palace's restoration and adaptive reuse provide a model for similar projects, showing that treasures that have been abandoned can be given new life through careful planning and a deep respect for history.
Shahrestanak Palace's revitalization aims to build a bridge to a sustainable and inclusive future in addition to conserving the past.



Fig190. Sustainable Development Goals,
https://it.m.wikipedia.org/wiki/File:Sustainable_Development_Goals.png

Annex

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Tables

Reasons for the king's palace construction

19th

Among the people of the land of Iran in the mid19-th century, the most powerful of them, the Qajar king, during his summer travels to Mazandaran (northern Iran), turned his attention to a strategic area along his own Naseri Road. A very beautiful and pleasant valley, an ideal place for stopping, camping, and setting up a royal camp, and perhaps staying for a few days to hunt and escape the pains and commotions of ruling the country, recuperating health in the middle of summer, and considering his gout. So, he decided to build a palace.



Picture of Nasreddin shah and one of the hunted animal,From Golestan palace



The time Shah used to go hunting and camping in Shahrestanak,Shah tent highlighted in the picture, Golestan palace album

Naser al-Din Shah's lifestyle revolved around traveling between summer cottages, hunting grounds, and the city, with each place serving a different purpose and requiring specific accommodations and facilities. These retreats allowed him to enjoy nature, escape the city's heat and congestion, and indulge in hunting and relaxation.

Naser al-Din Shah annually held a unique cooking ceremony at Shahrestanak. During this event, his ministers, men, princes, and about a hundred of his women participated, with nobles and princes washing vegetables by hand.The first such event took place in 1906 AD.



Cooking place next to Naseri Palace,From Golestan palace album,1868

Construction,destruction and reconstruction phases

19th



The first layer is nature. Nature understands and lives with humans. The Gelleh Kileh Valley and the Shahrestanak River have been interacting with humans for thousands of years.

The palace was built with both local and imported materials. The spatial organization of the palace is like a literal translation of the royal camping style: the king's tent is the largest, next to it are the tents of the king's women, separated by a fabric wall. The entire complex is also separated from the rest of the camp by a fabric barrier.





The king's life, in addition to hunting and summering, included cooking ceremonies meant for regaining health and warding off illness. These ceremonies involved cooking ritual meals accompanied by music and singing, or during times of mourning, mixed with sorrow. These events took place in the area outside the palace.

Different perspectives of the palace in the 19th century



North facade of the palace

The only available painting and colored photograph from that time are the works of KAMAL-OL-MOLK





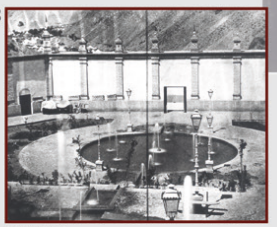
View of the palace from the east



From inside of the ground floor to the lower yard



View from the access route to the inner quarter of the shah' women



Lower yard pond



View from the inside of first floor



View to the upper yard facing the palace

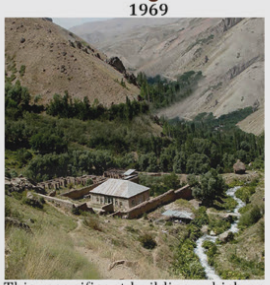


The king is assassinated in 1896, and afterward, the palace is looted due to lack of maintenance. Nature slowly engulfs the palace, making it part of itself, gradually burying it.

Subsequent Qajar kings neglect the palace, as rapid modernization takes hold in Iran. The inner quarters of the women become more buried in the earth, and the villagers in the area make the region more fertile and greener.some looted the other parts.



1969



This magnificent building, which no longer had its past beauty and charm, was along the route of mountaineers. In 1969, during the Pahlavi era, it was converted into a temporary lodging for mountaineers by the country's Mountaineering Federation.

20th



In the late 1999s, during the Islamic Republic era, excavation, cleaning, and preservation operations for the palace began. The inner quarters of the women were unearthed, and walls and arches were reconstructed. A restoration plan for the palace was drafted, but operations were halted for a decade until it was put up for auction by the Revitalization Fund and leased to an individual for 20 years.



Ref of photos: Official document center of Golestan palace in Tehran/ ZAV architects, Intervention vision and general restoration plan, 2016

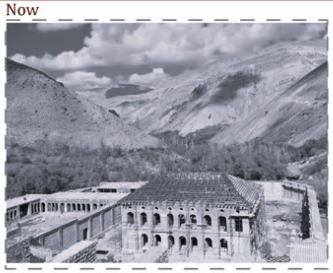
Territorial Framework of the Shahrestanak Palace, Alborz Province, Iran

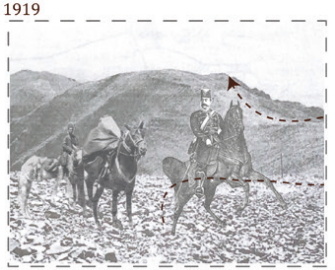
Shahrestanak Palace, also known as the Green Palace, was built in the late 19th century during the Qajar dynasty in Iran. It was constructed as a summer residence for Naser al-Din Shah, who ruled Iran from 1848 to 1896. The palace is located in the city of Karaj, which was a popular summer retreat for Persian kings due to its cooler temperatures and natural beauty.

Naser al-Din Shah constructed Shahrestanak Palace in the Karaj province primarily for its favorable climate and as a hunting retreat. The shah appreciated the location's weather conditions, and the palace provided a suitable setting for his recreational activities, especially hunting. This choice allowed him to escape the routine of the capital and enjoy the natural surroundings and hunting opportunities in the Karaj region.

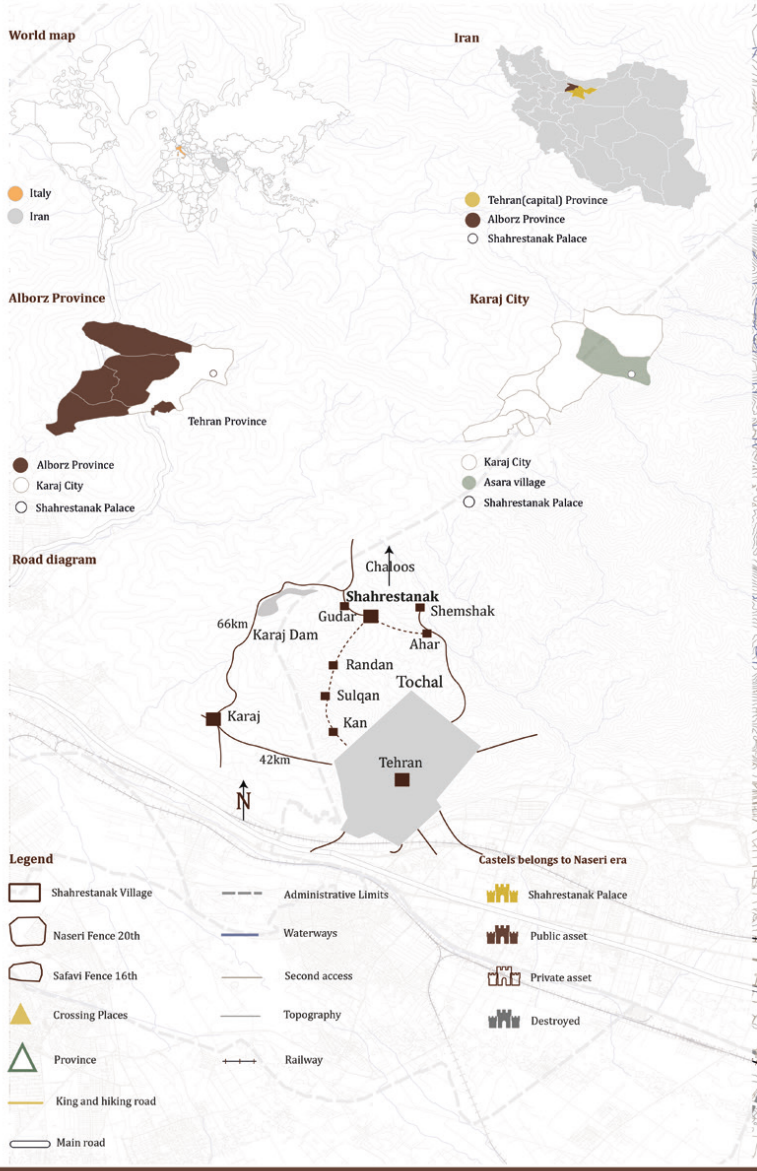
The family camp of Naser al-Din Shah Qajar used this road as a means of passing the time. They departed Tehran for Shahrestanak Palace in the summer along with the crew and harem members. Along this route, which usually took a day, it occasionally took several days.

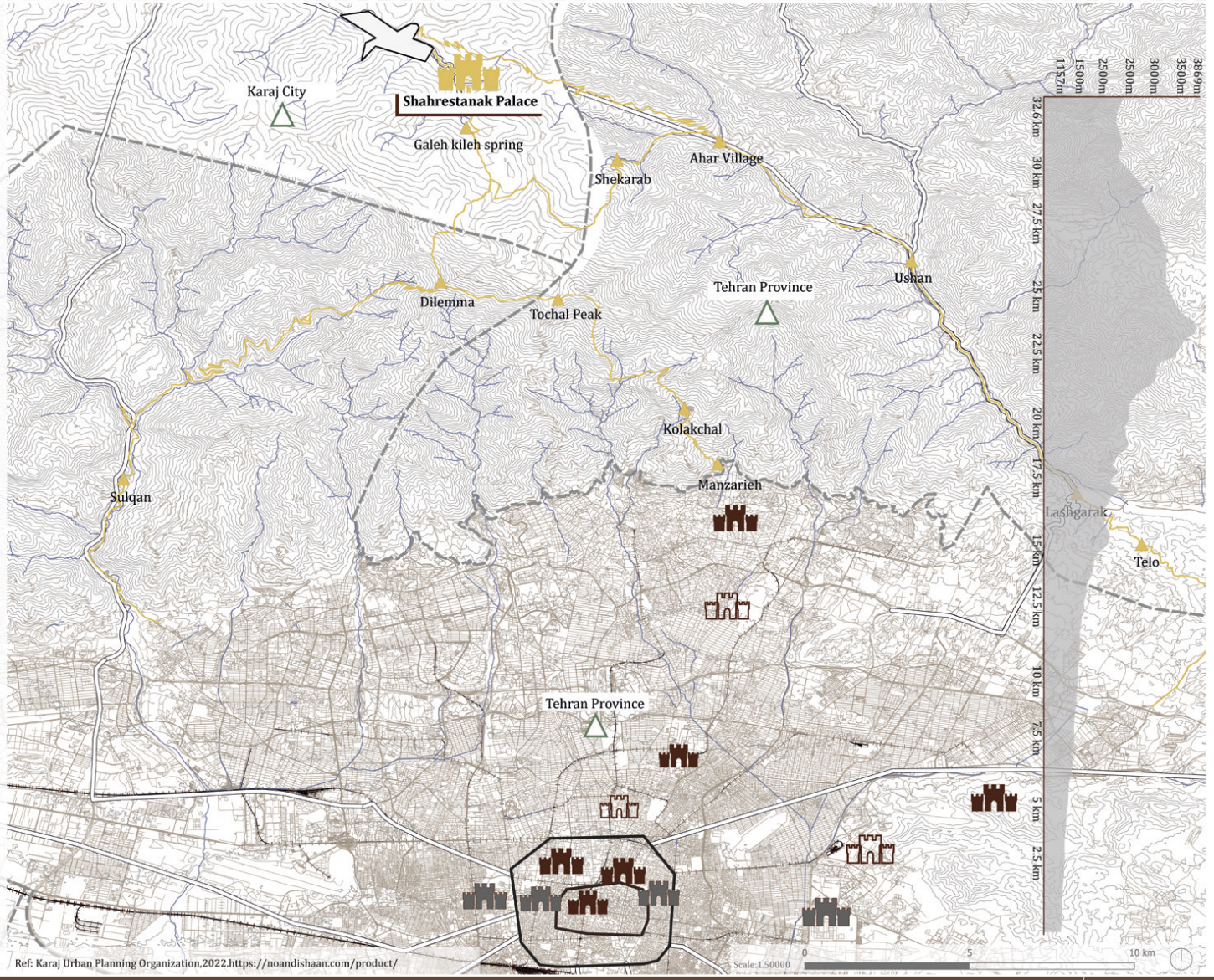






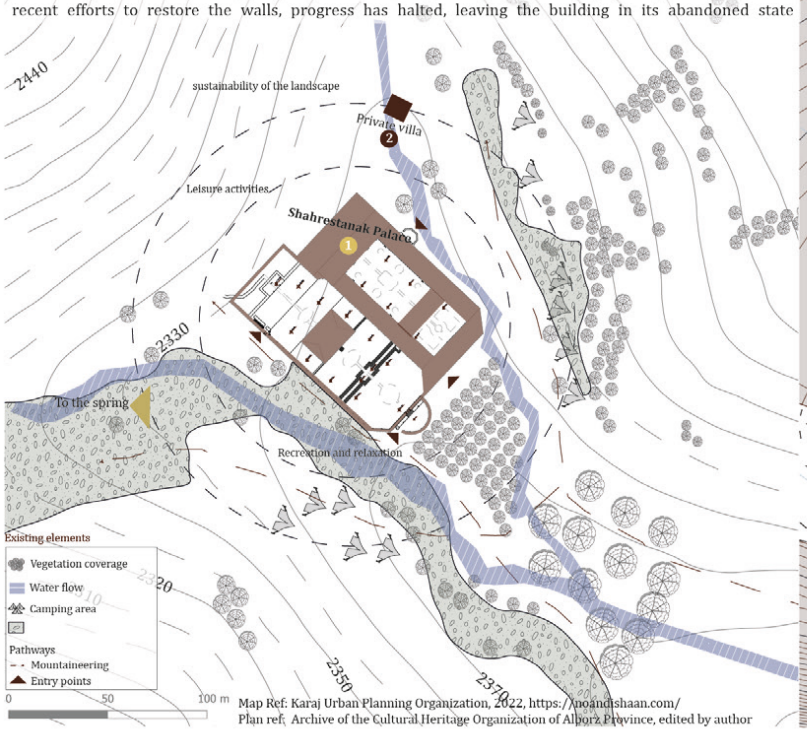






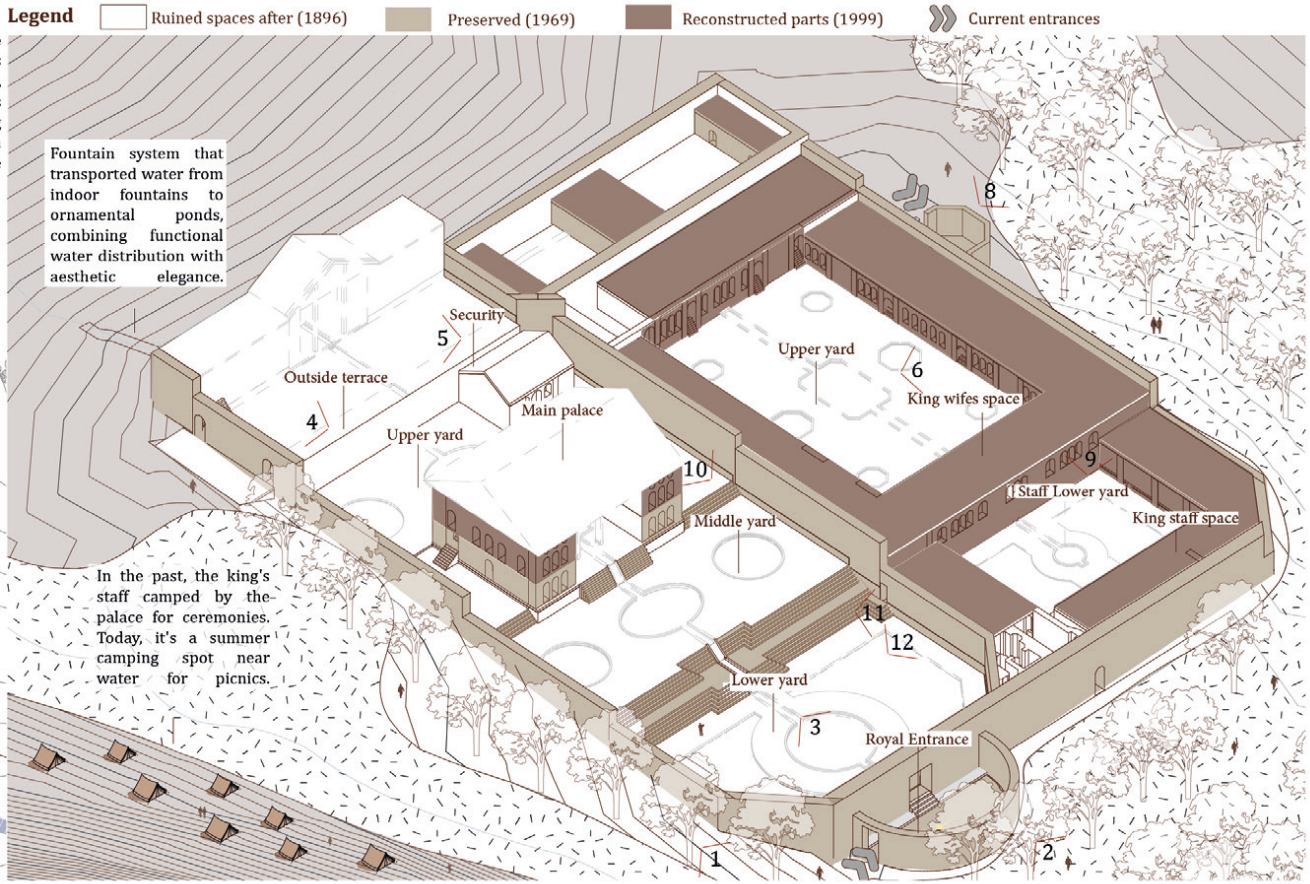
Planimetry survey

Shahrestanak Palace comprises three main sections. The first section, part of the main palace located on the left side, features expansive outdoor spaces designed in the style of Persian gardens, complete with ponds and fountains. The fountain system not only adds aesthetic value but also sources water from nearby springs, enriching the green areas and trees. The second section, known as Haramsara, was designated for the king's wives, while the third section was for the king's staff. Unfortunately, the palace has been abandoned, resulting in the complete ruin of its outdoor spaces, now affected by weather-related decay. Although there have been recent efforts to restore the walls, progress has halted, leaving the building in its abandoned state



Map Ref: Karaj Urban Planning Organization, 2022, https://noandshaan.com/
Plan ref: Archive of the Cultural Heritage Organization of Alborz Province, edited by author

View from north to south of the complex in the valley



Survey Ref of photos: By author



Shahrestanak Complex

Scale:1.200



Section A-A

Section B-B

Legend

Building

- Wall/Stone
- Wall/Brick
- Destroyed landscape
- Facade/Brick

Access

- Current entrance
- Unusable entrance

Soil and vegetation

- Selected land
- Trees
- Stone road
- Topography

Roads

- Pedestrian road

Ref: Archive of the Cultural Heritage Organization of Alborz Province, edited by author

Current state of Shahrestanak complex

Scale:1.100

Following the recent renovations of Shahrestanak Palace, remnants of its decorations on windows and columns have been preserved to maintain the building's original appearance. We endeavor to reconstruct these adornments in line with the palace's historic embellishments.







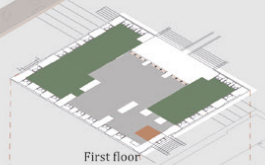


Legend

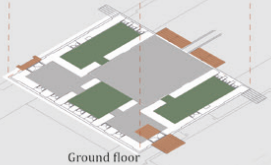
- Masonry vertical brick mortar/covered with brick
- Interior pavement/base stone
- Stairs/stone
- Ruined parts
- Entrance

Circulation plan

- Pause Area
- Divided and pause space
- Communication space

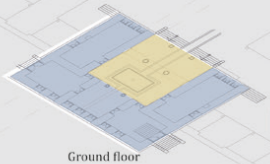


First floor



Ground floor

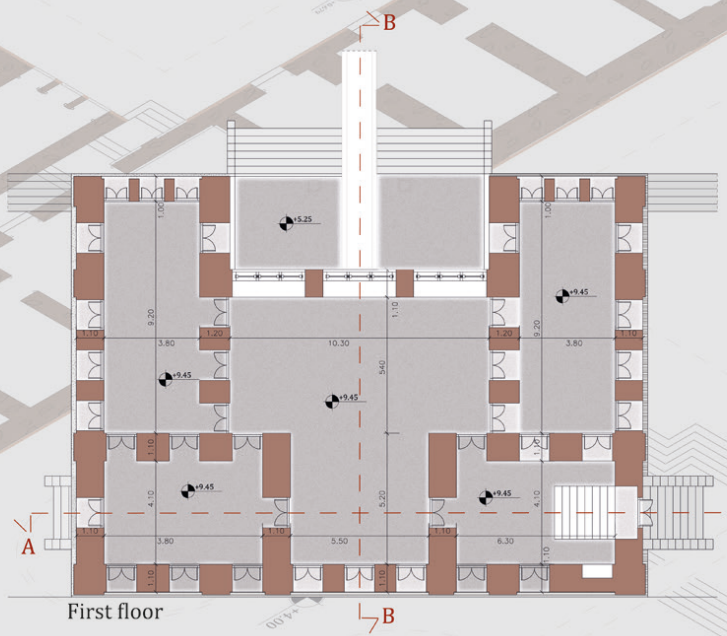
- Semi-open space
- Closed space

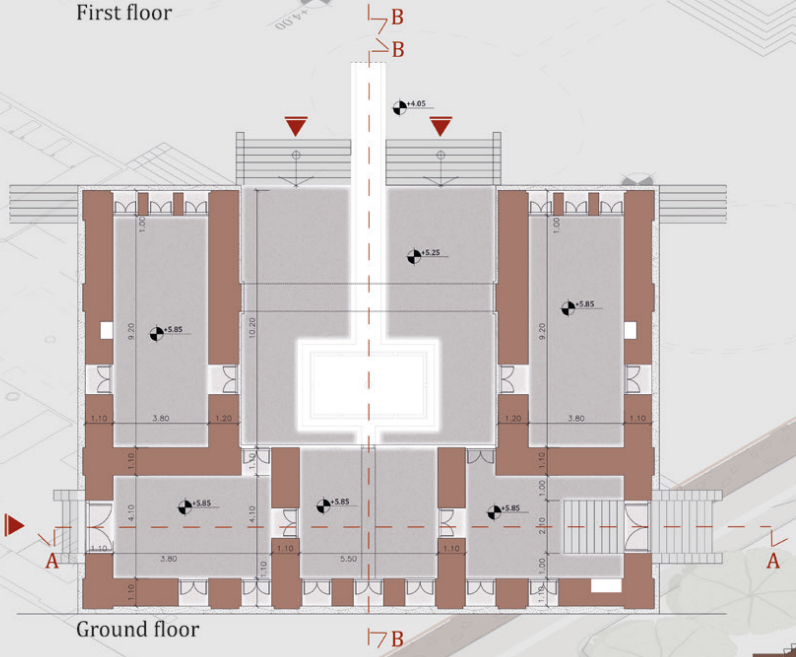


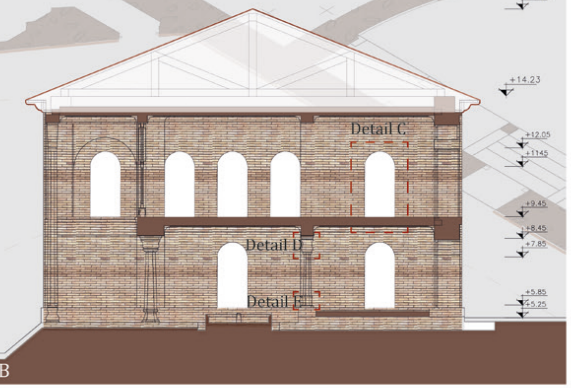
Ground floor



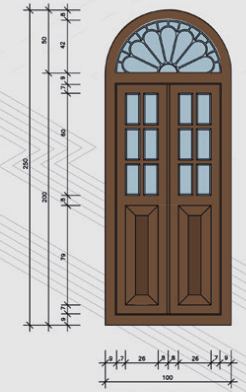
Ref: Archive of the Cultural Heritage Organization of Alborz Province, Edilted by author





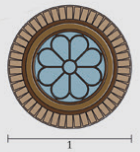


Previous decorations of the palace that have been destroyed

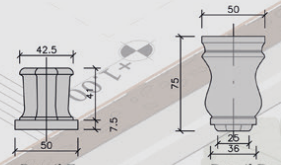


Scale:1.20

Detail C:Type of door and windows



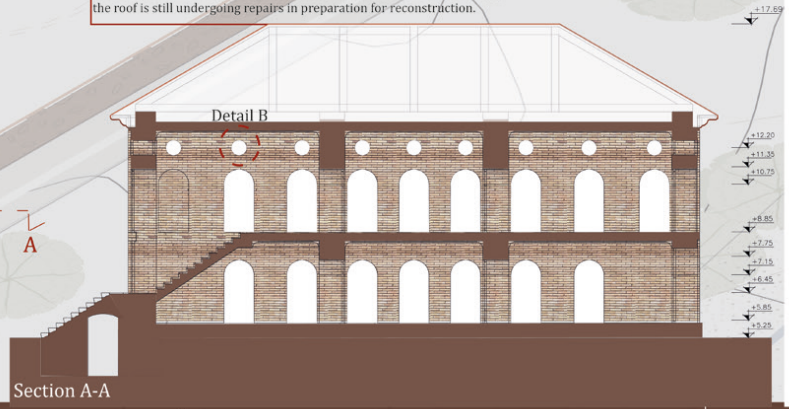
Detail B:Jamkhaneh window



Detail E Scale:1.20 Detail D

One Type of Coloumns

Over the course of many years, the roof covering of the palace, much like its walls and other parts, deteriorated and disappeared due to mountain erosion. Recent restoration efforts have seen the walls and materials reconstructed to resemble their original appearance. However, the roof is still undergoing repairs in preparation for reconstruction.



Restoration and Functional Enhancement

Idea of the Project

Accomodation/Tourism

3D View of Complex

The Shahrestanak Palace's roof covering, decorations, doors, windows, and columns have all deteriorated significantly. Restoration efforts aim to return the building to its original condition while preserving the authentic architectural style of the era. Improvements will also be made to the building's exterior and surrounding open areas, which are crucial for attracting tourists. This comprehensive approach ensures the preservation of the building's historical and architectural integrity while enhancing its appeal as a tourist destination.

The project involves revitalizing Shahrestanak Palace, transforming it from an exclusive royal retreat into a venue accessible to the public. By repurposing the palace for public use, such as tourism and community engagement, the project

S W O T

Strengths:

Presence of the Shahrestanak River and a spring near the palace, Accessibility for athletes via hiking trails, Village's potential for investment and tourism, Main walls and elements of the palace have been restored, The palace is surrounded by scenic landscapes, creating a picturesque setting that adds to its aesthetic appeal and tourism potential.

Weakness:

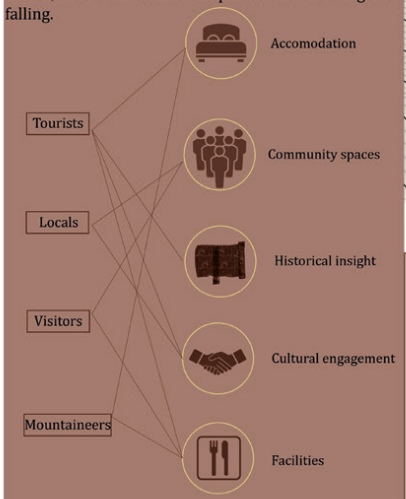
deterioration and destruction of its outdoor spaces and greenery areas, limited or impractical access from various entrances.

Opportunities:

Embracing sustainable design practices to attract environmentally conscious visitors, Cultural and economical growth,Tourism boost.

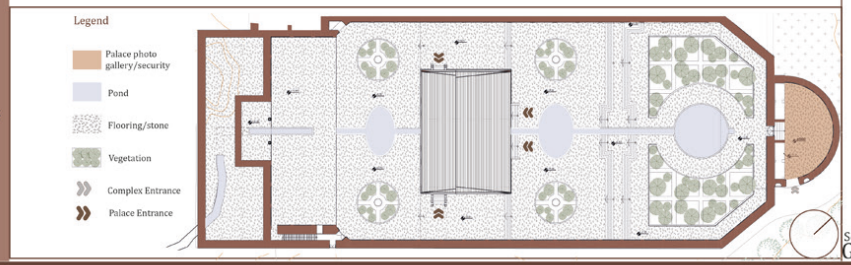
Threats:

Atmospheric and climatic conditions due to cold winter, Mountain behind the palace and the danger of falling.





Site plan of Complex



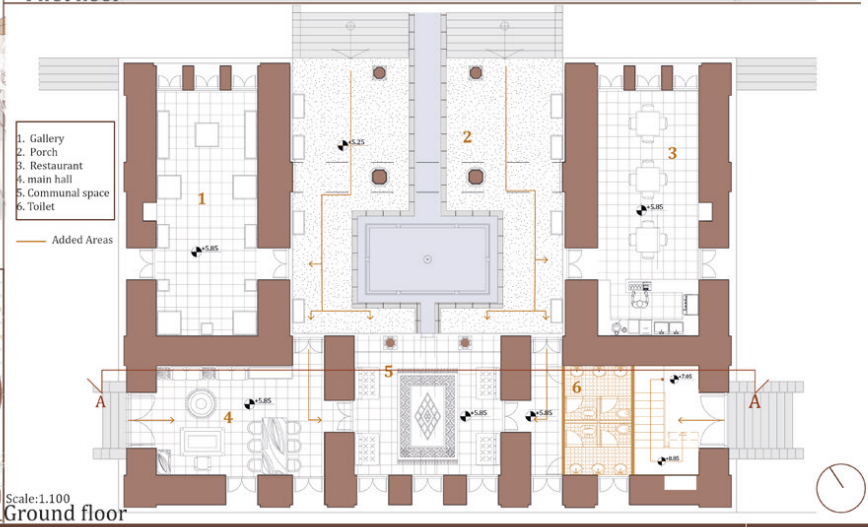
North Elevation Prespective





Scale:1.100

First floor



Scale:1.100

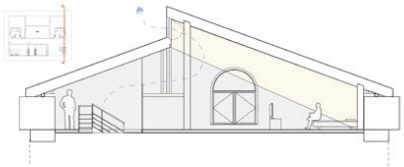
Ground floor

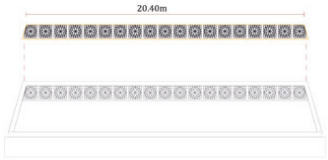
Added roof as a attic

The project's new roof plan accomplishes a number of important goals. First of all, it makes more room for lodging. The new roof's design includes voids that let natural light into the attic and other floors below, improving the lighting of the interior spaces overall. Additionally, this design makes ventilation easier, which is especially helpful in the summer when the complex is more accessible and open. We can use the wind for passive cooling thanks to the building's clever placement in the mountains, which improves energy efficiency. This design improvement will also help the attic rooms, which need a lot of natural light.

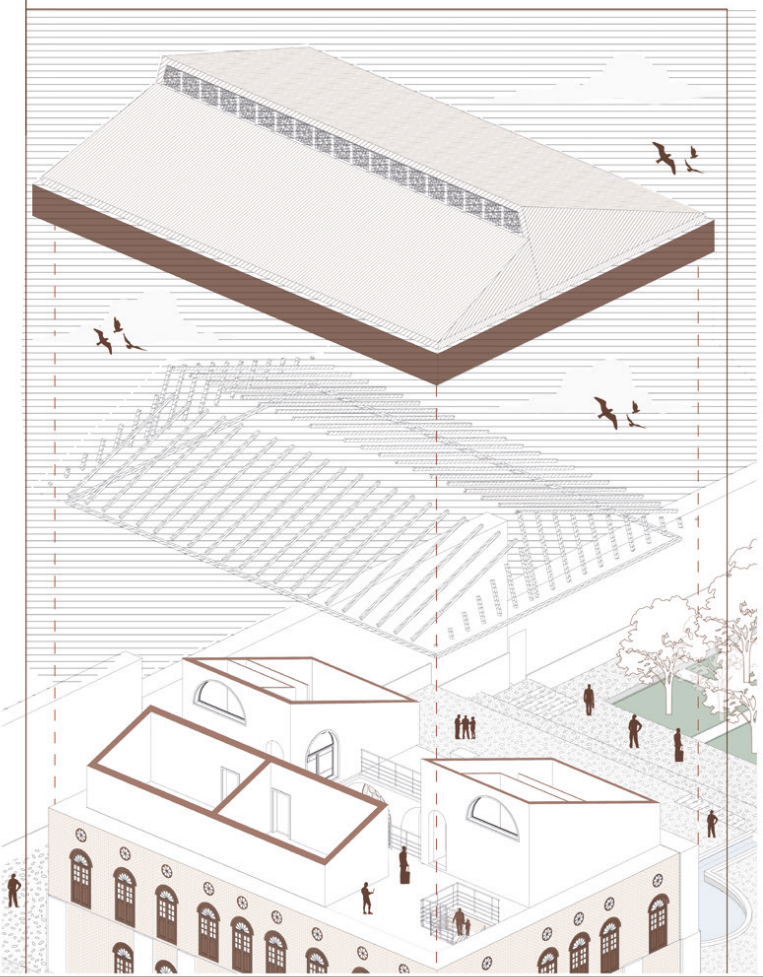
Diagram of Added Roof

Keyplan





Added roof





1. Bedroom 2. Pantry and staff restroom 3. Storage 4. Void

Roof Level

Scale:1.100

Section A-A 1.100:Scale

Key Plan

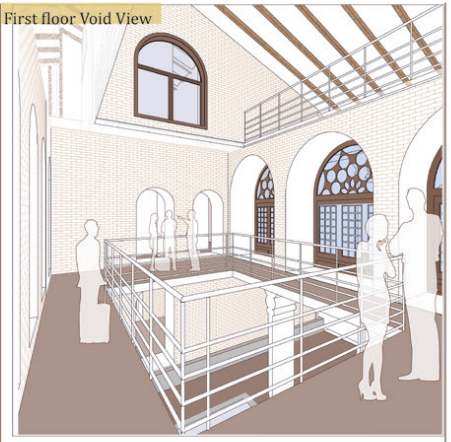


North Elevation 1.100:Scale

Key Plan



First floor Void View



Roof Level Void View



Type of Bedrooms View

