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The Role of Landscape Elements (Water and Geographic Context) in the Configuration of Bahrol-eram Garden

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Abstract

The gardens of the South coast of the Caspian Sea are prominent instances of Persian gardens which, unlike the Persian desert gardens, are not at variance with their surroundings. According to Eskandar Beig, Shah Abbas' secretary, garden construction in Mazandaran is like paradise construction in the heaven. Despite several gardens in the area, little research has been conducted in this regard because few historic gardens remained; the only sources that refer to these gardens are the few descriptions and pictures in the European travelers' histories and travelogues. Despite climatic variations, most of the Safavid gardens in this area were built based on the spatial geometric pattern of the Persian garden and the only difference between the gardens in this area and those in the central and the southern areas is in their use of the natural elements. Therefore, studying these gardens as a special kind of Persian Garden is necessary. This research is conducted in a descriptive-analytical method and investigates historical documents and images. Moreover, case study is conducted through field investigation in order to recognize the features of Bahrol-eram garden and the role of natural elements in this garden in comparison to other Persian gardens. This paper seeks to understand the role of the landscape elements such as water in the formation of Bahrol-eram. The hypothesis states that the widespread presence of water in this area and the full interaction of the garden with its context have create a kind of garden called the island-garden. According to the historical evidence, historians and travelers' quotes, the garden situation, and also based on the images, Bahrol-eram is an island-garden which was constructed in the area because of its appropriate climate and abundant water. The widespread presence of water surrounding the whole garden which is embedded in the central island makes it a specific instance of the Persian gardens which can be referred to as island-gardens. Despite the lack of climatic justification (increased humidity), the Persians' respect for water and its value for them have caused the garden to be a royal residence and resort. The existence of this garden reflects the natural diversity of Iranian garden, maintaining its basic principles.

Keywords

Persian gardens, Mazandaran gardens, Bahrol-eram, Island-garden, Landscape elements.

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Introduction

● The necessity of the subject

Persian Garden is considered a part of Iranian identity, revealing Persian history, culture and lifestyle. Basically, when it comes to Iranian identity, a garden is reflected as a timely display of the Iranian historical identity (Zandieh, 2012: 12). Therefore, preserving and rebuilding the Persian garden leads to preserving and displaying of Iranian identity to the world. In this regard, understanding the Persian Garden can provide a context for a better recognition of what natural elements in Iranian culture could offer for planners, architects and environmental planners today (Barati, 2004:3). Meanwhile, the identification of the gardens of the southern coast of the Caspian Sea is significantly valuable due to its specific climatic characteristics. Unfortunately, the historical monuments of the region are highly damaged due to the environmental conditions. Thus, the features of the gardens in the southern coast of the Caspian Sea remain undisclosed. Since very few remnants of Bahrol-eram Garden are found intact, the recognition of this garden through historical documents and the topographic condition of the existing context can lead to further understanding of the features of the southern coastal gardens of the Caspian Sea.

● Research goals

A: Recognition of the gardening principles of Safavid gardens on the southern coast of the Caspian Sea and comparing them to Iranian gardening principles in general;

B: Understanding the characteristics of Bahrol-eram Garden by examining the role of natural elements in the garden in particular.

Research background

Latest writers and scholars have studied the features of the Persian garden in numerous books and articles. As mentioned, few studies have been carried out on the historical monuments of the southern coast of the Caspian Sea, including Sarfaraz (2004), who investigated Abbas Abad garden in Behshahr and its central Chataghi (Pergola), and the garden

and Chatahi's structure; Mesbah Namini (2004) who studied the process of formation and water supply in Behshahr gardens; Heidar Nattaj (2010) who discussed the norms of Mazandaran gardens formation and compared it to the Persian gardens in his Ph.D. dissertation to question about the Chaharbagh pattern as the prevailing pattern in the general form of the gardens. Furthermore, one can also refer to the disparate historical descriptions and European travelogues and the few available images. Among the significant works that generally describe Bahrol-eram garden, are the notes of Etemad al-Saltanah (1932) and Travelogues of Demorgan (1956), Wilber (2011), and Melgunov (1989). The final accomplishment of the researches has proved to be consistent with the principles of the gardens of this region compared to other Persian gardens. However, no clear picture is presented on how the elements have influenced the particular shape of some gardens such as Bahrol-eram.

Questions and hypotheses

The main questions of the research can be summarized as follows:

What is the prevailing pattern in Bahrol-eram gardens? And can it be possible to offer a different structural pattern of the Persian gardens concerning the perpetual landscape principles?

What is the role of landscape elements including water in the formation of Bahrol-eram garden?

The hypothesis of the article is that it is possible to introduce Bahrol-eram garden as a kind of Persian garden called island-garden. Despite preserving the main principles of the Persian garden, the natural landscape elements play a different role in the formation of the garden and water is extensively exploited in the garden due to climatic conditions, abundance of water, vegetation, and the particular context of the garden.

Research Methodology

This research is conducted in a descriptive-analytic method and completed by a case study. In the

description stage, all information about the garden was extracted by reviewing the present documents including historical texts and travelogues of the tourists, and image documents including pictures and paintings. In the next stage, the characteristics of Bahrol-eram garden were identified by analyzing and evaluating historical data with the help of maps, aerial photographs and topography of the present situation, finding out the reasons for the particular shape of this garden.

According to the ancient Iranian culture and civilization, a garden has a major significance and position. It is considered as one of the fundamental concepts in the social, cultural, and natural subjects in Iran (Banimasoud, 2011: 20). Persian garden is an ordered and organized space based on Iranian aesthetics, created by combination of natural elements such as water, plants and stones, and built elements such as belvedere, wall, and so on. This section discusses the entity and quiddity of elements in Persian gardens in order to draw a distinction between the elements of the Persian garden in general and the gardens of the southern coast of the Caspian Sea in particular. Generally, the elements in the gardens can be classified into two groups of natural elements and built elements.

Despite the presence of built elements in gardens, it is the natural elements that define and identify of the gardens (Heidar Nattaj, 2010: 59). Vegetation and water are the most important natural elements that play a fundamental role in the formation of gardens. Many types of Persian gardens, such as the water gardens, orchards, ornamental gardens, bush gardens, etc. (see Heidar Nattaj, 2010) depend on the way and amount of natural elements used in the garden. The natural context form and the layout of its main elements can be effective in creating the shape of the garden, while adhering to the principles of Persian garden design. Plant as an essential element of the garden has a symbolic meaning that is clearly perceived in the teachings of the Iranian religions and Islam, in addition to offering regulated environmental conditions, shading, beauty and identity. Water is

also a prominent element in gardening.

Plant: since ancient times, the natural elements have been highly considered in Iran. The study of historical, cultural and literary sources suggests that the value and dignity of the plant to the Iranians is far beyond the importance of plants to other peoples and other nations of the world. Plants and trees were sanctified in ancient Iranian culture and were respected in Iranian culture after Islam (Shah Cheraghi, 2010: 102). They play a major role in the spatial organization of Persian gardens due to their significance. For instance, the cypress tree, the symbol of immortality, truth, pride and freedom, was the top theme for Iranian painters. This tree was redisplayed on several buildings, in pre-Islamic gardens, in Iranian Islamic art, and later in the art of the Gurakanis of India. The cypress tree is also one of the most attractive and fascinating features of Persepolis (Ilka, 2011: 103). Despite the use of certain species such as cedar in gardens of all regions, a variety of tree species, shrubs, sheaths and compatible herbaceous species were used in gardening. "The Iranians enjoyed the natural beauty of their gardens simply, free of legendary and imaginative aspects." (Mansouri, 2005). The vegetation pattern in the Iranian Persian garden is designed based on the geometric order of the garden structure. Nature in the Persian garden is a resource of pleasure for human beings; it is a means to create a suitable space for human and environment, which can support the development of spiritual power and offer intuitive contemplation and sincere awareness. "The Persian Garden takes its space and landscape order from the human being and its mentality, and the spaces are ornamented with the authenticity of nature. It can be believed that the Persian garden has a dual order: it is human-oriented in its entity and discipline; and it is nature-oriented in its parts and tangible spaces" (Mansouri, 2005-B: 62).

Water: Water can be considered as the spirit of the Persian garden; in other words, it is a vital force enlivening a garden and upgrading it to a paradise (Zangeri, 2012: 41). The existence of water and its flow in the garden is the most original characteristic

and a common feature of the Persian gardens. In these gardens, humans emphasize on the need for a transparent, cooler vitality by displaying water in different forms (water in motion and stagnant water). In the Persian garden, water flows from a point that can irrigate the entire garden; so water flow, in addition to its functional role, is displayed in various ways and water plays an important role in creating coolness, reflection of light and pleasant sounds by its own presence in any space. This enlivening resource generates life in the garden by flowing in the creeks, waterfalls, and fountains, while offering peace and tranquility in the pools, ponds, and puddles. Considering the categorization of Persian gardens, one type of the Persian garden is built on natural areas with a created lake in between, in which the natural context (Jungle vegetation and lake) is preserved. One of the good examples in this category is Abbas Abad garden in Behshahr (Banimasoud, 2011: 25).

Land: The natural surroundings of the garden can have a significant effect on the overall shape of the garden and the arrangement of its elements. Different topographies create different gardens. Vast gardens are resulted from plain and flat lands, while leveled gardens are shaped in sloped lands. The irregular and uneven topography leads to creation of gardens alike Abbas Abad garden in Behshahr, featuring both double slopes and a lake (Heidar Nattaj, 2013).

Built elements: In contrast to natural elements, built elements in the Persian garden are formed with a regular geometry. Man-made creations in gardens, or in other words, the role of human in gardening is to combine man-made and natural elements as well as arranging the natural elements in order. This will lead to creation of the privacy, transformation of the land form, and the constructions in relation to garden. The main buildings of the gardens are discussed in two scales: a large scale that considers the garden in the whole space, and a small scale that defines the surroundings of the gardens. In the large scale, the gates, the belvedere, and the main building, which are usually located on the main axis, are built in an

order. In the small scale, the adjacent structures, such as baths and service buildings are located along the lateral walls. The main buildings in the Persian garden are often allocated as the official part of the garden, and private buildings are seen in the form of relatively small courtyards or rooms. Small buildings do not disturb the order of the main space and the geometry of the garden. In these gardens, the placement and design of the garden plan is a function of the shape of the garden context and its general geometry.

Historical review of Bahrol-eram Garden

The Iranian kings who used to go hunting with their fellows during their time of Yeylaq and Qeshlaq (summering and wintering place) had a desire to create gardens along their selected paths. As Escandar-beig, the secretary of Shah Abbas, quoted, "The Shah used to hunt most of his time during the Qeshlaq times in Mazandaran" (Petruccioli, 2013: 237). During Shah Abbas Safavid period, the southern part of the Caspian Sea, which was also his mother's birthplace, received a high reputation for being the king's entertainment capital, compared to Isfahan as his political capital. As a result, in many cities, extensive number of gardens and hunting grounds were created for the king to spend his leisure time in this area. According to the historical documents and the remained gardens, important gardens were located in Mazandaran area including Farah Abad, Babol and Behshahr (Ashraf El Belad) gardens.

Due to the climatic conditions of Mazandaran area and the vulnerability of architectural works, including gardens that are very unstable in this region in comparison to other areas, a very few works are remained intact. Therefore, identifying them through historical documents can assist researchers in recognition of this type of gardens. Unfortunately, many of these gardens in the area were destroyed in the early years due to their loss of significance or abandonment. However, the historical evidence and the remnants of some of the gardens can reveal their features and lead to their cognition.

Historical documents, including Alam Araye Abbasi, have described the gardens that were built during Shah Abbas era. Although the description of the gardens in this source does not provide much detail, significant results can be concluded based on the descriptions of some of the gardens. The confrontation of the nature and the garden, the surrounding landscape, the creation of gardens in a heaven-like field (referring to pristine nature), and activities that occur in gardens can lead to understanding of the governing mood in the garden. In this regard, the purpose of the article is to identify Bahrol-eram garden in Babol through historical documents and the remained traces.

Bahrol-eram is the name of a garden in the city of Barforoush (current Babol), built by Shah Abbas Safavid. Historical writings indicate the existence of an island in the middle of a large lake near Babol and the Babolrood River. However, there is no evidence of the garden in the current situation, due to the drying of the lake and the developed constructions in this context. This paper tries to prove that natural elements such as water and garden context play a major role in the formation of the garden and creation of a special type of garden called garden-island in this area through recreating the image of the garden according to the topographic features and historical documents.

Babol has long been considered due to its natural features. "It was first mentioned in history as Dintir, and mentioned as Tintir by Cyrus. This city was a serene and holy city near the sea. The native people called it Mahmitra due to the presence of the great Mitra. During the Islamic era, it was known as the Mamtira "(Barzegar, 2008: 49)."Mamtira or Mamtir is the Arabic for Mahmitra in Persian word and derived from two words; Mah means great and Mitra means light, friendship, kindness and truth" (Barzegar, 2008: 267). During the Safavid period, the business of the city was so thriving that it was renamed as cargo selling. At the time of Pahlavi I, in September 1935, with the approval of the Council of Ministers, it was officially renamed as Babol in accordance with Babolrood River, which flows

from south to north. The existence of water zones in periplasmic gardens such as Bistoon, Tagh-e Bostan Takht-e Soleiman, as well as the fire temple in the region, indicates the sacredness of the place and reminds many of the historical gardens that used a combination of water zones, trees and hills in a holy place.

In the descriptive text of Dekhoda, the meaning of Barforoush is explained: "... there is an area outside the city known as Sabzeh meidan (green field) and a vast swamp. An island is located in the middle of the swamp, consisting of magnificent tall buildings known as Bahrol-eram. The building's origin dates back to Safavid dynasty and it was developed during Qajar era "(www.mibosearch.com).

In Hodoud Al-Aalam (361 AH), it is mentioned "Mamtir is a city with flowing waters where thick straws rise up in the summer" (Ibn Esfandiari, 1320: 568). Unfortunately, there is not much information about the creation of the city in different historical periods; until the time of Shah Abbas, who was interested in the political and economic development of Mazandaran because his mother was related to Sadat Marashi Family in Mazandaran. Barforoush was one of the cities of Mazandaran that was highly adored by Shah Abbas. "By his decree, the streets of this city were widened and paved and the number of markets increased" (Barzegar, 2008: 41-40). The most important quotations from Babol relate to Bahrol-eram Lake and its central garden.

Wilber quotes: "... A garden was constructed in the vicinity of Barforoush city that differed from the other gardens of this period in terms of design. In the garden, a lake with perimeter of 3.2 km was created and the surrounding was embarked with stone. A built island was expanded in two acres, and wooden columns connected a long bridge that stretched from the land to the lake. Other columns that are observed in the lake indicate the existence of a belvedere in the middle of the lake, which was only accessible by boat. This garden was called Shah's garden or Bahrol-eram "(Wilber, 2011: 134). This quotation suggests a very unique garden in terms of design in

this area, with few intact remnants (Fig. 1). There existed a beautiful island in the middle of the lake; Shah Abbas built Aliyeh mansion on this island, called the Shah garden. The island was full of orange trees and wonderful shrubs and a beautiful hunting ground. The lake was covered with lotus flowers and filled with various kinds of birds, especially ducks. The island was connected to the city by the bridge from the period of Shah Abbas. The presence of regular rows of cedar trees in the garden reflects the regular geometry on the island.

The palace of Shah Abbas was abandoned in the late period of Zand dynasty. Agha Mohammad Khan Qajar founded another palace in the southern part of the island. Later, Fath Ali Shah Qajar repaired those tall mansions and spacious spaces that were built during Shah Abbas era. However, the repairing did not last very long so that Charles Stewart, a traveler in 1735, and some years later, when Melgunov came to Bahrol-eram, the garden was in ruins. "The Palace of Agha Mohammad Khan Qajar was repaired at the time of the Sahebqaran's Sultan, Nasir al-Din



Fig. 1. Dermorgan's drawing design from the King of Babol's garden (Bahrol-eram); drawn from one of the plots to the main building where the rows of cypress trees indicate the main axis along the garden mansion. Source: Sotoudeh, 1987: 988. 1

Shah; though, at the end of the Qajar era, the water of the lake declined gradually and the lake became a swamp, and the eastern side was at the same level to the island” (Barzegar, 2008: 890).

Nasser-al-Din Shah has visited Bahrol-eram on Saturday, 26th of Dhi-al-Hija in 1282, and describes the garden in his diary as: “Bahrol-eram is a circular lake that is as big as the horse-racing area in Tehran. There is an island in between with more than thousand meters in perimeter. The distance between the lake and the island is estimated to be about one hundred and fifty meters. The sugar factory is also located near the lake. a wooden bridge is built near this factory that connects the central island to the adjacent

land. The bridge columns are in brick. The lake water is fully covered with everglade and the lotus flowers” (Barzegar, 2008: 883); (Fig. 2 and Fig. 3). In a visit to Barforoush city in 1875, Mirza HassanKhan Etemad al-Astaneh along Naser-al-Din Shah, mentions in his travel newspaper that: “In 1903, when the royal masters were visiting Mazandaran, construction of new buildings such as multiple rooms, court house, private buildings, and bathrooms was ordered to be started in Bahrol-eram. These buildings are now completed, accommodating the King’s employees. The island perimeter is almost 1,500 meters. The width of the lake from the island to the lake edges is more than 1000 meters.... In the



Fig. 2. Aerial photo of the current situation of Bahrol-eram garden. Source: google earth.



Fig. 3. The ruins of Shah Abbasi mansion in Bahrol-eram island. Source: Elahi, 2006: 18.

middle of the west bank, a foundation of five or six basements of bricks is leveled up that can be accessed by boat. Apparently, it is used as a place for hunting ducks. A deck is constructed above the foundation. Shah Abbas used to sit there, while the hunters flew the ducks, and directed them so they can be hunted.” (Etemad al-Saltanah, 1932). The above descriptions clarify that Savavid buildings have been completely destroyed at the time of Nasir al-Din Shah’s first trip to Barforoush (1865). The approximate expressed dimensions, and the description of the building and the other buildings located next to the garden, could lead to preparation of the garden’s initial map.

This building was stable during the reign of Naser-al-Din Shah and was restored in his second visit to Mazandaran in 1913 (Etemad al-Saltanah, 1934.76). Finally, in 1931, during the reign of Reza Shah, the lake, which turned into a swamp, was dried up and the island was also paved (Saleh Tabari, 1999: 77).

At the time of the Melgunov’s visit (from 1958 to 1960), some part of the lake still existed in the

northern part of the island, which was known as the swamp (Melgunov, 1985: 107). This narrative suggests that the lake water was in decline at that time. “Now, there are four large rooms and a few small rooms in this garden. The Andarouni (interior private) building is less ruined ... This place is 220 meters in length and width. The swamp is turned into an everglade and a hunting ground for people of Barforoush”(Maelgunov, 1985: 107); (Fig. 4).

Melgunov writes about the bridge over the lake: “Having passed through the city, one will approach a stretched out garden by whose side there is a bridge with 46 big stone pillars. 180 meters from the length of the mansion is now in ruins. One can cautiously pass the bridge with difficulty” (Melgunov, 1976: 108). Another description of the place by which the bridge location can be understood is quoted as: “the way of connecting the city to the garden passes from the neighborhood of Sabzeh Meidan, located in the south of the city, and directed to the Shah’s garden” (Ibid: 110); (Fig. 5). The term stretched out garden

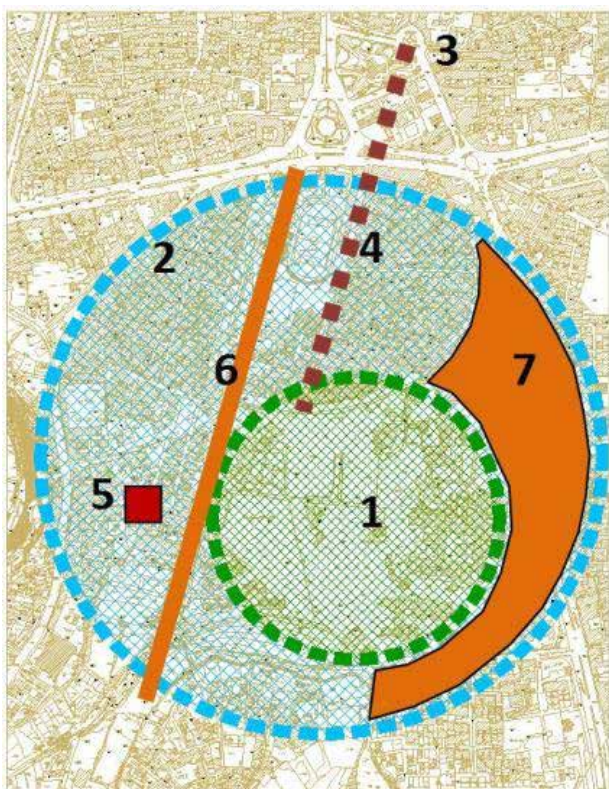


Fig. 4. The schematic position of elements based on historical references; 1. The island (Garden area) 2. Approximate area of the lake 3. Sabzeh Meidan 4. Access to the garden and the wooden bridge 5. Hunting ground in west side of the lake. 6. Created path in Reza Khan's period 7. Eastern part leveled to the island. Source: author.

from the city (Sabzeh Meidan) to the lake indicates the existence of a garden or a recreational street, about which no further information is provided (the possibility of the existence of an external and public garden before entering the king Garden can be suggested).

William Richard Holmes is another person who had traveled to Iran in 1894 and published a book entitled "General Introduction to the Coast of the Caspian Sea." In his book, Holmes has written about the lake of Barforoush city and its middle mansion and the paved road of Shah Abbasi in Mazandaran. "According to Holmes, the Shah's garden was constructed in the middle of the circular lake with half a mile in diameter, near Babolrood River, by the order of Shah Abbas "(Taheri, 1968: 35); (Fig. 6, 7 and 8). Dr. John Wishard, an American physician, had a



Fig. 5. Wooden bridge of Bahrol-eram in 1891; composed of 29 stone pillars and a wooden floor, which provided the only access to the lake, located along the street leading to Sabze Meidan. Source: Elahi, 2006: 19.

trip to the southern coast of the Caspian Sea and Barforoush city when he was in Iran from 1891 to 1910. He introduces this place as one of the largest cities in the area in his diary, noting that "the city trades with Russia extensively. He speaks of the city lake, which is covered by beautiful lotus flowers that are sent to Russia for extracting their fragrance" (Zaryab,151-152).

In 1931, when the lake water shrank, Reza Khan ordered to refill a part of the lake and to build a castle on the adjacent site, known as the Shahpour Palace (which is currently used as the library of Babol University of Medical Sciences) (Fig. 9 and 10). Gradually, the site surrounding the island was also purposed for residential use, sport and green spaces. Barzegar quotes from the Pars journal: "The swamp in the city that was the origin of illnesses and diseases was embarked and filled by the royal order of Reza Shah and turned into agricultural fields ... the royal mansion displays have become magnificent due to adjacency to this land.... "(Bazegar, 2008: 884).

Garden enclosure in contemporary times²

According to the mentioned descriptions, Bahrol-



Fig. 6. The wooden bridge and Naser aldin Shah's camp in the background. Source: Elahi, 2006: 20.



Fig. 7. Kolah Farangi building in 1891. Source: Elahi, 2006:20.

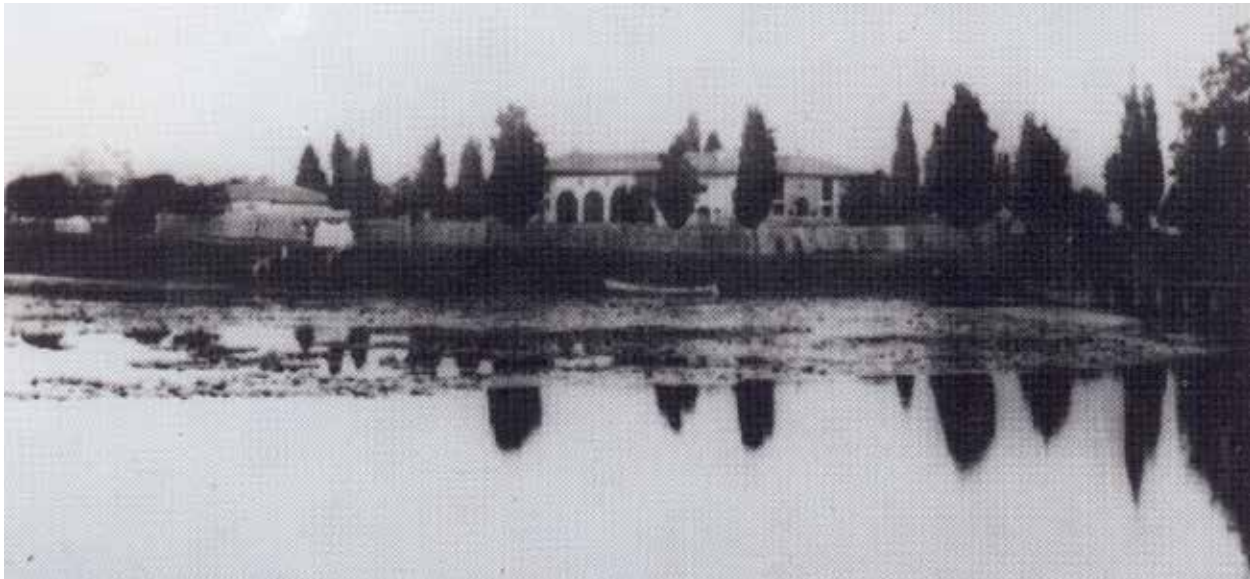


Fig. 8. The royal building of the Naseri era in 1282 AH. Source: Elahi, 2006: 21.

eram garden was built on the natural context of a large lake with an island in the middle, during Shah Abbas period. Owing to topographic conditions of the area, the river originated from Bobolrood River pours out to the existing lake. According to the historical evidence, it can be presumed that this situation also existed in pre-Islamic period and was characterized by the presence of abundant water as a sacred area. Understanding the status quo and the added functions in the topographic context is important for understanding the original archetypal landscape. The middle island of the lake is currently possessed by the University of Medical Sciences and the lake surface was transformed to residential and public buildings after being drained and dried. Nevertheless, one can find the garden design and the surrounding island and lakes through studying the topographic lines and the current situation. The various parts of the garden are currently as follows:

1. University of Medical Sciences in the central part of the garden (Island);
2. Residential neighborhoods called the East Bahrol-eram and West Bahrol-eram (Dozdakchal) and Sports fields in the northern part of the lake;
3. Park, Cultural Complex, Fruit and Vegetable

- market and the Terminal in the west side of the lake;
4. Hospital complex and administrative building in the east side of the lake (flattened section in Pahlavi period);
5. Lady Park and Mollakola neighborhood in the south side of the lake (Fig. 11).

Discussion based on historical documents and field reviews

The Bahrol-eram garden in Babol has been undergoing many changes over the years since its construction. The reasons for these changes can be summarized as follows:

- Instability of the building in Mazandaran environment due to the climatic and excessive penetration of moisture in the building;
- Abandonment of the collection at different periods (between Safavid and Qajar);
- The Lake's being dried and repurposed during Pahlavi I era;
- Infringements and construction of various buildings in the lake area by various organizations and people as well as creation of residential neighborhoods.

In spite of all the occurred changes, the original structure of the garden can be recognized by deep



Fig. 9. Shapoor palace; built during the reign of Reza Shah. Photo: author, 2009.



Fig. 10. The garden gate on northeast side, built during the reign of Reza Shah. Photo: author, 2010.

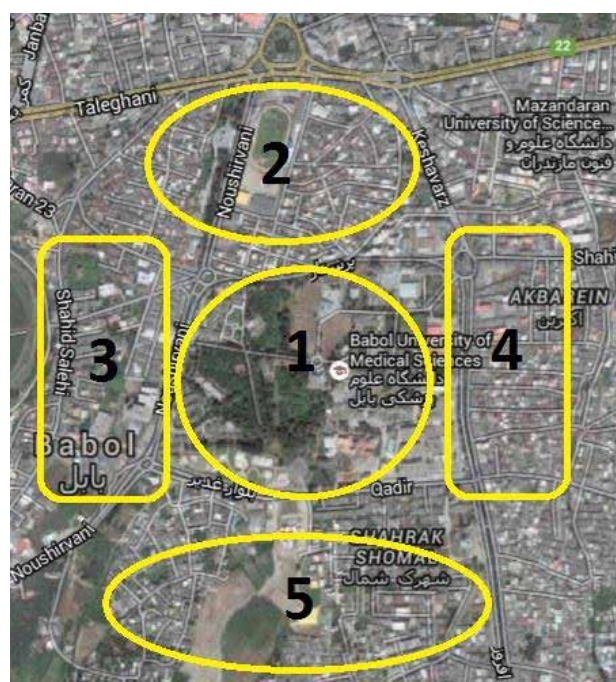


Fig. 11. Aerial photo of the current situation of Bahrol-eram garden. Source: google earth.



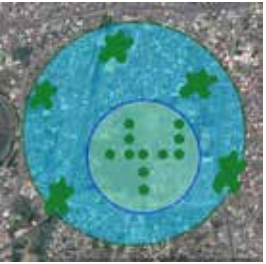

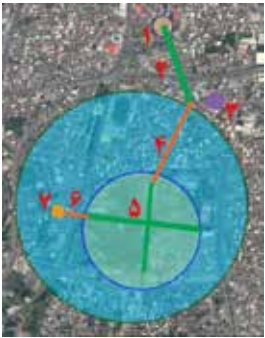

scrutiny of historical documents and travelogues, as well as field and topography observations; In this section, in order to verify the hypothesis, the characteristics of the mentioned garden, which are the result of historical documents and field observations, are investigated in the categories of garden structure, vegetation and water, and compared to the common characteristics of Iranian garden in the next stage.

Conclusion

Comparison of the characteristics of Bahrol-eram garden with the common features of Persian garden (Table 2) reveals that this garden is a type of Persian garden with the dominance and prevalence of the natural element of water.

Despite benefiting from common features of spatial organization in the Persian Gardens, the context conditions have affected the shape and pattern of different natural and built elements in this garden to a great extent.

Table 1. The characteristics of the mentioned garden. Source: author.

Pictorial reconstruction	conclusion	Current situation	Historical documents		feature
	<p>The bold presence of water (surroundings the island and the entire garden) as the main feature of the garden</p>	<p>Existence of pits around the island The presence of small swamps in the southern part</p> 	<p>Emphasis on the abundant water and the circular lake</p>	<p>A town with flowing water (Hodoud al-alam). A circular lake as vast as horse-drawn-ridden field (Nasereddin Shah). A circular lake with an area of 3.2 km (Wilber)</p>	<p>water</p>
	<p>Referral to pristine nature Existence of cedar rows along the garden paths.</p>	<p>Row of old cedar trees. The orange trees in the croutons. canebrake and lotus marshes. Types of New Vegetation</p> 	<p>Cedar tree with regular planting Fruit trees. Irregular vegetation.</p>	<p>Thick Straws rise up (Hodoud al-alam). Orange and Cedar trees (Morgan). Lotus (John Wishard) Trees (Elahi)</p>	<p>vegetation</p>
 <ol style="list-style-type: none"> 1. Sabzeh Meidan (green square). 2. Possible long gardens 3. Sugar factory location 4. Wooden bridge 5. Crossing paths 6. Wooden bridge 7. Belvedere or hunting ground 	<p>Maximum use of the natural context in the construction of the garden Organizing the island and creating straight axes in contrast to the pristine nature of the surrounding area</p>	<p>An almost circular island. The presence of sugar factory in this section. An almost circular lake (the construction and leveling of the lake has changed the circular shape). The existence of another building in the middle of the lake, other than the constructed buildings in the island. The existence of direct paths with cedar trees on the sides of the paths. Enclosure of the garden with the natural element of water.</p> 	<p>Circular shape. Access to the island through the wooden bridge. Unaccompanied building existence in the lake of the outer garden</p>	<p>Circular island (Wilber). A lake and the circular island - the wooden bridge near sugar factory (Nasereddin Shah). The presence of a bridge from the land to the lake – a belvedere in the middle of the lake (Wilber). A garden alongside the bridge - the way that connects the garden to Sabzeh Meidan (Melgunov). Bird hunting ground in the middle of the lake (Etemad al-Saltanah)</p>	<p>Garden structure</p>

Therefore, in contrast to the prevailing premise of the Persian garden with a certain geometric pattern, such as rectangle or Chaharbagh, more different types of shapes are observed in Persian garden. The main purpose of this paper is to introduce a type of the Persian garden that was built on the southern coast of the Caspian Sea during the Safavid period and to offer an example i.e. Bahrol-eram island-garden in Babol. Due to the climatic conditions of Mazandaran area and the vulnerability of architectural works, including gardens that are very unstable in this region in comparison to other areas, a very few works are remained intact. Therefore, identifying the garden through historical documents can assist researchers in recognition and understanding of this type of garden. In this regard, Bahrol-eram garden in Babol is no exception and it has undergone major damages during the historical process. Today, no significant elements from Safavid era exist, except for the island, the topographic conditions, and some rows of cypress trees.

The current research introduces and restores the garden’s image based on historical documents and the current condition. Having reviewed and analyzed the documents and the structure of the garden and compared it to the features of the Persian gardens, it can be concluded that Bahrol-eram garden is a type of Persian garden called garden-island (the construction of the whole garden on an island in the middle of the lake that is accessed by a boat or a bridge). This garden, with its special shape, manifests the diversity of Persian garden typology, the vast water zone, and the total garden arrangement on the central island. The sacredness and significance of

Table 2. Comparison between features of Bahrol-eram Garden and Common Characteristics of Persian Garden. Source: author.

Persian Garden	Bahrol-eram Garden	features	
Regular shape according to land conditions- Similar samples of Il-Goli, Lenjan and Abbas Abad Straight Linear Geometry	The island and the regular lake Straight-ordered Lines in the Garden Plan (Island)	Whole geometry of the garden	structure
The garden foundation on the main axis Straight axes in the garden	Direct axis from city to garden Direct axes leading to garden buildings	Garden axis	
Enclosure with walls or natural elements	Enclosure with water element (water area)	enclosure	
Deep views in the garden axis	Deep views in the garden axis	interior	View and landscape
Wide landscape to the exterior of the garden due to the topography of the land and the location of the belvedere	A wide view to the water (the lake) and the surrounding pristine landscapes	exterior	
Regular vegetation along the geometry of garden axis	Regular vegetation along the garden axis (island)	order	vegetation
Evergreen trees like cedar as a ritual tree and fruit trees deciduous Trees to create diverse landscapes throughout the year	Cedar (legacy of ancient garden trees) Lotus	type	
Maximum use of water Broad water areas in gardens located in water- filled areas	The vast water area (lake) surrounding the garden	whole	water
All types of water in motion and stagnant water systems (pond, creek, etc.)	Archaeological exploration requirements	parts	

water for the Iranians has made the site to turn into a garden and a recreational resort, despite no justification for this design in this climate (increasing the humidity of the environment). Despite the aesthetic aspect provided by the geometric order of the Persian gardens and the dominance of order in the natural elements and the overall geometry of the garden, it is impossible to ignore the role of the context, site, and the presence of natural elements such as water in the design of the garden. Having analyzed this garden, it can be concluded that the aforementioned garden and accordingly, the Persian garden try to use the context ideally in order to offer a maximum area for the landscape (Fig. 12).

1. Lake 2. Island 3. Wooden bridge 4. Available paths (with old cedars alongside the paths) 5. Possible paths (along existing paths) 6. Palace (final construction in the first Pahlavi period) 7. Cedar trees 8. Sour orange trees and current diverse vegetation 9. Water belvedere or hunting grounds. Source: author.

Endnote If a garden is abandoned in the north of the country, the abundant water and fertile land in this climate transform it into a dense jungle. Figure 1 displays De Morgan's drawings and other existing images that admits the subject. This situation is contradictory with Iranian gardens constructed in the central desert.

Given the ancient name of Babol – MahMitra - which refers to a sacred place, the presence of a sanctuary and fire temple of Mitra in this place, and indications of the existence of a lake before the period of Shah Abbas, suggests the presence of garden in this place. The similarity of the garden confirms the descriptions of prehistoric gardens and their respective ideas. Understanding this possibility, however, requires further research and archaeological excavations.

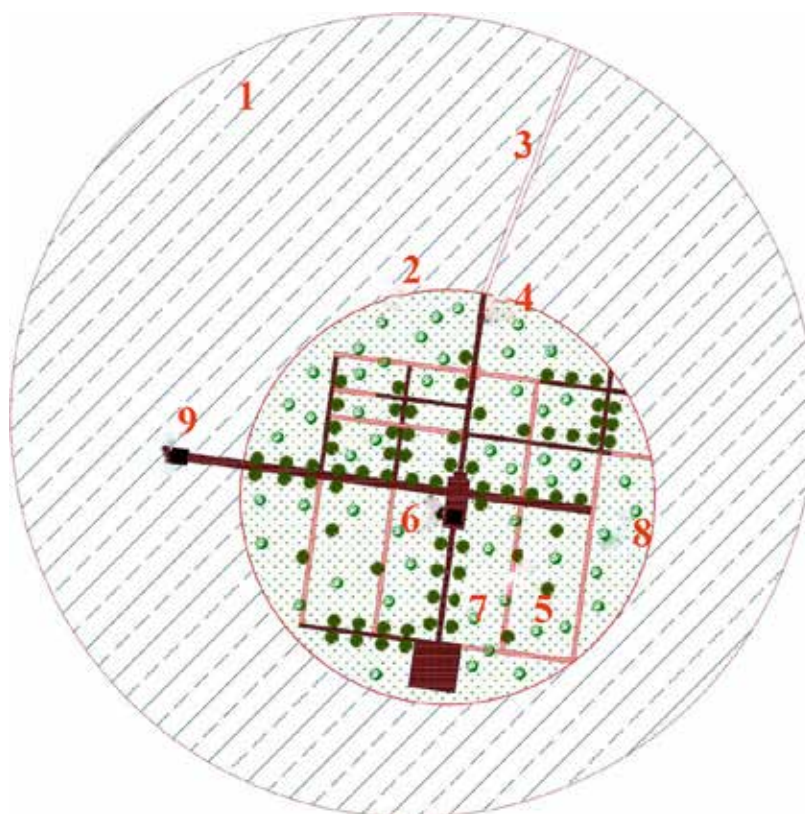


Fig. 12: The plan of pictorial reconstruction of Bahrol-eram garden based on historical documents and field observations. Source: author.

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