Pathology and Investigation of Values of Historical Garden of CHESHMEH EMARAT, BEHSHAHR from Renovation Standpoint Aimed at its Renovation and Revival

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ABSTRACT

Consideration of former features and land use of buildings is a routine task in renewal of historical monuments, intended to resuscitate their frail and wilting bodies. Yet, this aspect is scarcely taken into account due to fading values forgotten by the course of time and urban developments. A monument can never attain its deserved status unless its distinctive values and chronological characteristics distinguishing it from other contemporaneous buildings are perceived. Moreover, the novel technologies of the modern world could be benefitted from to revive these values. Through a library study and taking into mind the theoretical fundamentals of conservation issues, the current research investigates the memorial, garden-building, water circulation, historical, urban development, architectural, decorative, and structural values of CHESHMEH EMARAT Garden located in BEHSHAHR- Mazandaran- Iran. Besides accentuating the significance of this historical monument, the present study then paves the path for revival of the respective garden-palace as a cultural icon of BEHSHAHR City through presenting its renovation pathology using descriptive-analytical method based on field data.

Key words: Valuation, Renovation Pathology, Cultural Landscape, BEHSHAHR CHESHMEH EMARAT Garden

Introduction

Garden-building has been strongly and emphatically recommended in Iranian customs and traditions since ancient times up to now. The most famous post-Islamic city-gardens and garden-palaces date back to SAFAVIDs. ASHRAFOLBELAD (Modern BEHSHAHR) Gardens, FEEN Garden, Nested Gardens of Esfahan, SA’ADATABAD Gardens, and QAZVIN CHEHELSOUN Garden are notable examples of this era. Through analysis of pre-Islamic and post-Islamic gardens, it is clearly found that a sound intellectual trend and an extensive spectrum of simple and calculated geometrical structure and a disciplined and intelligent combination have been governing on the configuration of Persian gardens along the history.

Like other instances, CHESHMEH EMARAT Garden also possesses specific features of Persian gardens. This garden has been also formed by simple and harmonic combination, accurate and stable relations, calculated hierarchy, rational logic and certain geometrical system, regular axles, perpendicular lines, quadrilateral flat plots, balanced divisions, straight and targeted passages occasionally merged with spatial widening, and a pleasantly directional water network developed in open and covered spaces [6].

Today, vast parts of CHESHMEH EMARAT collection with all abovementioned characteristics of Persian gardens have been devastated due to excessive constructions. Since a perfect example of Persian garden i.e. “Shah Garden or BEHSHAHR Municipality Garden” is located in the proximity of this garden, there are some documents and evidences adding to significance of restoration of the respective monument.

Unfortunately, no documented research has been ever conducted on valuation of structural and non-structural aspects of Persian gardens. The current research deals with valuation of historical garden of CHESHMEH EMARAT of BEHSHAHR though analysis of theoretical fundamentals of conservation issues with an emphasis on Florence Charter. The renovation pathology of the garden, as a step to preserve and revive this cultural and historical icon, is proposed based on collected field data and using descriptive-analytical method.
The main questions of the current research include: what are the principal values of CHESHMEH EMARAT Garden from structural and non-structural dimensions? And from renovation aspect, which damages have been imposed to this historical garden in the course of time and by human interventions. The hypothesis of the current research is based on this assertion that appreciating values of renovation pathology of CHESHMEH EMARAT Garden improves chances of its conservation and accentuates the revival and restoration of this cultural icon.

Current CHESHMEH EMARAT:

This great and magnificent garden has been constructed in BEHSHAHR City, Mazandaran Province at the reign of ABBAS Shah in southeastern part of BAGH TAPPEH and BAGHSHAH (Shah Garden) on a rectangular land of approximately 410 m length and 134 m width in the direction of ground slope dipping to the north-west. There are many springs in the flanks of southern heights of BEHSHAHR City. CHESHMEH EMARAT is one of the wateriest springs in this area, which currently supplies more than half of city’s water demand. In SAFAVI era, a building was constructed in this place in two floors with a rectangular map 25 m long and 22 m wide. The building had originally two floors and only one pier of the first (upper) floor is remaining at present. There is a square-shaped pool in the central part of ground floor. A currently-collapsed dome-like ceiling with dimensions of roughly 7-8 meters used to cover this pool. Platforms were constructed in all four sides of pool; each platform has three entries with crescent-like lintel and three windows with lancet arches.

Main access ways of building are through four two-by-two symmetrical porches. Symmetrical rooms also exist adjacent to the porches. The building is decorated with tile work and paintings in porch porticos, interiors of platforms, and periphery of blind arcades.CHESHMEH EMARAT building is comparable with SHAH ABBASI buildings of KASHAN’s FEEN Garden and Esfahan’s HASHT BEHEST Garden and has unique characteristics of watering system including circulation and watershow networks. The water is directed to the square-shapped pool in the middle of garden through a canal and flows out of pool from four sides via streams and ponds and enters four pools outside of main building opposite to the porches. Then, water flows down into the streams surrounding the building and moves in echelon form and small waterfalls ahead of streams. Finally, it moves toward exteriors through secondary embranchments of main streams for irrigating different parts of the garden.

According to investigations, water is transmitted to the upper floor and the water-distribution pond using physical laws and through clay pipes. It then enters into four ponds located in platforms of the first floor through the same pipes and flows downward as waterfall into the central spring and four big pools of the garden. According to historical texts, ceiling of this building collapsed around 200 years ago and has been severely damaged by climatic factors and human destructions by the course of time. Mazandaran Cultural Heritage Organization commenced programs for investigating the building, exploring the garden area, and reparation and restoration of the collection. Exploration and unearthing operations led to discovery of internal aqueducts, platforms, pools, streams and brick-paved pathways around the building and also identification of irrigation and water circulation systems in the first floor. Reconstruction of the collapsed ceilings of two rooms in the western front, renovation of entrance lintels and windows and porches, internal and external aqueducts, and pools surrounding the building were among the most important measures ever taken.

It is highly significant and of particular priority to resume exploratory operations and to carry out the final restoration of building in the upcoming years for scientific and cultural benefits. It could also serve as a sort of strategic and purposeful investment in tourism industry and economic self-sufficiency.
**Fig. 2:** Building condition in 1990s: upper floor was completely ruined and just little traces of domed coverage of the ground floor ceiling were remaining (Mazandaran Cultural Heritage Organization).

**Fig. 3:** Urgent roof restoration in 1997-98 (Mazandaran Cultural Heritage Organization).

**Conservation Theoretical Framework:**

Historical monuments, gardens and landscapes formed and developed in response to functional requirements and aesthetic demands during consecutive centuries in the context of economical-social structures of human settlements have either survived by getting along with or compulsorily being adapted to changes in lifestyles and transformations in the respective systems especially property ownerships, or, have demised as a pity for their fanciers and, of course, owing to indifference of officials and authorities. What pursued in the current study is a prospect to significant subject of renewal and restoration of gardens and historical places. This field has widely attracted attentions around the world due to its importance, leading to codification of charters, statements, and declarations. Accordingly, the issues somehow related to historical gardens are briefly investigated as below:

**Definition and Objectives:**

Historical garden refers to an architectural and gardening composition which is publicly paid attention from historical or artistic aspects. For the same reason, it shall be regarded as a historical monument.

Historical garden is an architectural compound whose constituents essentially apply to gardening and are therefore alive; signifying that these constituents are mortal and replaceable.

Thus, garden appearance reflects a permanent equilibrium between rotational changes of seasons and natural downfall from one side and volition of artist and mastered architect in its stabilization from another side.

Since historical gardens are historical monuments, they shall be protected and conserved in accordance with Venice Charter and their conservation must be managed under special rules as stated in the current charter because they are living historical monuments as well [5].

Architectural composition of historical gardens consists of the following items:
Design and shape of each of their distinctive elements
Categories of garden plants including their species, sections, coloring, spacing, and heights
Permanent structure or decorative facades
Flowing or stagnant waters of garden in which sky image is reflected

Historical garden is manifestation of a close linkage between civilization and nature and a place for benefitting from thought and sensation. Thereby, ideal image of world or heaven (paradise) is literally denoted by the word “garden”. Such gardens could represent a certain style, historical era, or even a creative artist.

The term “historical garden” is used for small modest gardens and large recreational gardens either for their appearance or kind of scenery.

Historical garden necessarily contains a building with which form an inseparable whole. Historical garden cannot be differentiated from its particular environment, urban or rural, artificial or natural. Historical landscape is some specific scenery associated with an important historical event, a famous legend, and an epic battle or visualizes a well-known picture.

Florence Charter – Italy – 1982 ICOMOS:

The main contents of the charter include:

1- Objectives
- Introducing historical gardens as historical memorials
- Introducing historical gardens as significant cosmological living buildings and ideal images of world

2- Recommended application
- Updating by taking into account the landscaping and aesthetic principles

3- Scope of involvement
- All regional, national, and international levels

4- Implementation Method
- Restoration (renovations)

5- Involvement Method
- Protective-Decorative

6- Recommended Principles
- Enhancing level of access to all elements of historical gardens and buildings commensurate with their damageability
- Conservation of structural texture and delineation and specification of their cultural message (Ahmed, 2006)

Taking into account the excerpt of attitudes in Florence charter and also recognition and appreciation of values of CHESHMEH EMARAT Garden, conservation and renovation issues of respective monument are expressed as follows:

Valuation:

Historical Significance:

Palace of CHESHMEH EMARAT was constructed in the current location at the order of ABBAS Shah between the years 1021-1027 (lunar Islamic colander) as one of the most gorgeous garden-palaces of SAFAVI era in “ASHRAFOLBELAD”. It is therefore of specific historical importance.

Fig. 4: The Landscape of CHESHMEH EMARAT garden (Mazandaran Cultural Heritage Organization)
Memorial Value:

Although only slight segments of pleasant garden-palaces of ABBAS Shah the Great have remained but people attribute construction of BEHSHAHR City to the same king. Fortunately, the two aforementioned gardens have remained as memorials of those nested garden-palaces. Citizens recall many memories of their magnificence and quote their ancestors as complementing about glory and marvels of these gardens. Although half of architectural space of CHESHMEH EMARAT garden has ruined during the centuries but the structural entity of its building, as the sole remaining palace of SAFAVIDS, is a glorious memorial always regarded by citizens as a national honor and provoker of sensational-patriotic pride for themselves and the region. Name of “CHESHMEH EMARAT” reminds people of adorable palaces and gardens of SAFAVIDS in this land which were once founded by the greatest and most powerful kingdom of the Islamic world making BEHSHAHR one of the most prominent and noblest cities of the empire.

Garden-building Significance:

Generally, two knowledge attitudes, special of Persian Garden, can be observed in contemplation of design, construction and preservation of the Garden (Fig.3):
1. Climate Ecology
2. Commitment ecology
Fig. 7: Main Components of Persian Garden Structure

Finally, it can be said that Persian Garden can be known as wise relationship of human and the heavenly nature. Recognizing secrets and mysteries of this relationship is possible in a systematic approach through the identification of Iranian traditional culture [6].

CHESHMEH EMARAT Garden also enjoys specific characteristics of other Persian gardens. This garden has been similarly formed by simple and harmonic combination, accurate and stable relations, calculated hierarchy, rational logic and certain geometrical system, regular axles, perpendicular lines, quadrilateral flat plots, balanced divisions, straight and targeted passages occasionally merged with spatial widening, and a pleasantly directional water network developed in open and covered spaces.

Today, vast parts of CHESHMEH EMARAT Garden, with all abovementioned features of Persian gardens, have been destroyed due to excessive house constructions. Yet, since a perfect archetypal Persian garden called “ABBAS Shah DIVANKHANEH” is situated in the vicinity of CHESHMEH Garden and regarding the credible documents and evidences at hand, one can contend that the latter garden is worth renovating. Consequently, if this objective is realized, a spatial and architectural linkage will be established among CHEHLSOTUN or DIVANKHANEH, BAGH TAPPEH and CHESHMEH EMARAT gardens besides gaining advantages of renewing another instance of Persian garden.

CHESHMEH EMARAT Garden is located on a sloping land covering an area of around 6 hectares in the eastern side of collection. The palace was designed and constructed on a watery spring in the terminal part of the garden. Presence of this spring bestows a special popular holiness and respect to the garden as well as supplying requirements of the vegetations.

Architectural Significance:

All Persian gardens are harmonic and beautiful compositions formed by a thoughtful and picturesque mixture of water, plant, route, shade, colors, space, and architecture on the basis of a sound geometry and in the framework of traditions and principles [3].

CHESHMEH EMARAT building has specific situation coordinates in addition to being influenced by prevailing rules and principles of Persian garden-palaces and also CHESHMEH Garden. Similar to most of contemporaneous garden-palaces, the building is composed of a ground floor, upper floor, and a central cross-shaped space; the latter part is regarded as a leading attribute of Persian gardens. The palace has been built over the main axle on a watery spring in the terminal section of garden in approximate dimensions of 22 and 25 meters. The building has four porches opened to the garden in four sides of the ground floor. Main pools are located in front of porches so that porches of main axis are deeper and wider as if they welcome the garden with open arms.

The upper floor is also characterized by balanced, symmetrical, and equal proportions the same as the ground floor. Four platforms have been designed in four sides of four porches in the ground floor; platforms are supported by two rooms and cross-shaped space in two sides and middle, respectively. It is architecturally significant to note that rooms of major front of garden have larger dimensional ratios. Location of larger rooms in the main axis of garden is indicative of further accentuation on the major axe. Smaller service spaces with specific uses are situated behind the building.

Arrangement and configuration of spaces and selection of shape and function of architectural elements are suggestive of further emphasis on and necessity of pursuing garden-building and beautifying system despite the fact that location of this garden is completely on contrary to other garden-building records in Iran (desert architecture and garden-building in green northern regions of country). In other words, cultural and faith orientations associated with garden-building issue
have not prevented from construction of gardens in a mild climate and environment based on general Persian garden-building principles. Therefore, among the most notable architectural and garden-building significances of BEHSHAHR Garden collection was expression of cultural and philosophical impressions of Iranian architects and application of precise and rational order and discipline to convey spiritual concepts with greatest influence.

Decorative Significance:

Building decorations have special features because CHESHMEH EMARAT had been the personal garden and mansion of ABBAS Shah. Main decorative elements of CHESHMEH EMARAT include tile work, gypsum plastering, coffering, painting on plaster, and stone decorations. Central cross-shaped space of palace in the ground floor from plinth up to coffering used to be covered with seven-color clay tiles of which only some traces have remained on the walls today. Tile decorations of this palace are not comparable with those of other contemporaneous palaces; perhaps, so many tiles never have been used in any other palace during SAFAVI reign. In addition to large depth of main porches, their facings are decorated with tiles to further emphasize on the main axis of garden. Two other porches (minor axis porches) are gypsum-plastered.

Interior of room blind arcades and outer surface of high-traffic spaces including stairway of upper floor were decorated and painted using ESLIMI and flowers and plant patterns with utmost delicacy, from which a slight potion is remaining. Overall, high significance and remarkable performance of this palace can be realized taking into account the diversity of decorations used.

Urbanism Significance:

BEHSHAHR gardens collection can be contended as the first comprehensive urban development and civil planning and archetypal instance of city-construction in SAFAVI era in northern Iran. As formerly experienced in urban development of the capital city Esfahan, BEHSHAHR garden was designed and constructed in the northern flank of the mountain adjoining the downstream lands of the city. Construction on gentle slope, specified axes and domains, and enjoying natural capacities and attractions are among the fundamental advantages of this garden. Hence, CHESHMEH EMARAT Garden shall be viewed and analyzed in comprehensiveness of its formation and in urban development scales of SAFAVI era [4].

Location of the respective ensemble in the heart of old artistic and cultural-historical hub of the city, as the only remaining historical place, is regarded a specific value and credit. Places such as “BAGH SHAH” junction, “SHAH ABBAS” or “CHESHMEH EMARAT” Street play the role of identifiers for city space besides expressing the position meaning.

Extension of north-south Main Street of the city along the Major Avenue of DIVANKHANEH Garden, in addition to emphasizing on the structural significances of SAFAVI city-gardens, substantially impacted new urban development plan of city which had been designed in 1970s.

Structural Significance:

Structure of CHESHMEH EMARAT obeys the structural design of imminent palace-gardens of contemporaneous period. Structural elements and constituents of the building resemble constructions in central regions of Iran Plateau; or in other words, this garden-palace has an Iranian structure. Foundation of building is made of concrete and lime mortar and mixture of pebble and rubble stones at the depth of around 80 cm considering the moisture and underground water currents. According to estimations, thickness of supporting walls in the ground floor is 140 cm decreasing to 110 cm in the upper floor for lowering the building load. Arcades cover the space in both floors in cross and ribbed vaults. Variety of Iranian arches including acute lancet arches and KLYL are observed. According to tourists, central space of palace was domed similar to contemporaneous buildings (FEEN Garden Palace in Kashan); no vestige is remaining, however.

In terms of architecture and structure, this palace is the only structurally recognized instance in northern Iran resembling the constructions in central regions of Iran Plateau. This precious monument is the only analyzable and examinable remnant of desert margin architects’ experience in the coasts of Caspian Sea.

Significance of Water Circulation System:

Undoubtedly, water circulation system of palace and transmission mechanism and utilization of natural potentials of the region are the most significant values of the respective monument.

Water transmission and movement through clay pipes to the upper floor of mansion with unique details and delicacy and its distribution into four ponds over four platforms as well as water show in streams, pools, and waterfalls along the main axis of garden mark this garden-palace one of the masterpieces of Iran’s architecture and garden-building, especially SAFAVI architects, manifested and flourished in this collection.
Intelligently taking advantage of natural potentials and blessings of region and logical association of elements are among other values of these garden collections and CHESHMEH EMARAT garden-palace. It is essentially vital to conserve the entity of remaining elements and outline the hydraulic knowledge used therein.

An Introduction to Pathology:

Cultural and historical heritage and specifically non-material cultural heritage are constantly prone to devastation and deterioration. Deterioration factors result from either natural phenomena or actions done by human beings; these devastating agents are divided into two main categories: gradual factors like natural process of aging, and, abrupt and unexpected factors such as earthquake, flood, fire, etc. Gradual factors normally come in effect as a result of certain location and topographic orientation of building or unawareness about climate type of region and use of lowly stable and poorly durable construction materials. Wind, rain, solar radiation, plant growth, and biological agents and so on cause erosion and gradual deterioration. Devastation and demise process is absolutely different for abrupt and rapid factors. Earthquake, flood, volcanic eruption, etc all lead to abrupt and immediate destruction [2].

In addition to abovementioned factors, political decisions or mismanagement of rulers and kings, transformation or weakening of economical and production trend, lack of attention and routine life, unawareness and lack of information about monuments during interventions, improper decisions to change land uses and other causes also affect the durability of historical places.

Strength of materials and logical relationship of constructional elements, appropriate distribution of forces, and resistance of foundations against exerted loads among others are regarded as necessary conditions for stability and durability of buildings. On the other hand, any disrupting factor could negatively impact static state and equilibrium of building as a whole. Accordingly, if the alterations and impacts exceed beyond certain thresholds they could result in disequilibrium in the structural framework and static system or appear as defect and damage to the building.

Erosion effects and their causes are elaborately explained in the book “renewal of historical buildings and cities”. Despite the difficulty of differentiation, the various causes are briefly divided in two general categories for recognizing origin of destructive agents: (A) intrinsic causes of building and (B) Extrinsic or ambient causes [2]. The essential and critical point to be taken into account is “buildings never live as a distinctive and individual entity and Quiddity independent of urban-structural, economical, and cultural textures of their ambient environments; and, the phenomena which link buildings to larger environment are different. Studying them, including geo-biological environment phenomena and relationships of functions of different parts of building and their structural, geometrical mechanisms and combination with other elements of the main architecture (as mentioned earlier) will be the strongest guarantee for success and assurance in the strenuous task of architectural restoration and renewal. Their utilization requires the maximal scientific cooperation among different fields of environmental sciences and exceedingly highlights the importance of appropriate and resolute selection and decision-making for the renovating architect.”

Taking into account the above introduction and previous discussions, following investigation and examination of building and identification of causes, defects, and damages, leveled and unequal plans will be designed and one of them will be selected after evaluation. Eventually, the final and operational renovation plan will be prepared and codified.

Erosive Agents in CHESHMEH EMARAT Garden, BEHSHAHR:
Destruction causes of garden and palace are investigated taking into mind the above introduction:

Firstly, it must be reminded that CHESHMEH EMARAT garden and its internal palace have been built in northern Iran according to climatic characteristics of central and arid regions of the country. It is an experience repeatedly executed in climatic and atmospheric conditions of Iran’s desert areas. Hence, incompatibility and mismatch with regional climate and weather coupled with abandonment are among the most important causes of destruction and damage to the collection of BEHSHAHR and FARAHABAD SARI palace-gardens.

Professor HEALEN implies an important point in this respect: a general rule was followed for durability and strength in construction of mosques, caravan sites, schools, and other public buildings. But this rule, which seemed very critical, was not observed in palaces.

He holds the opinion that palaces were built hastily by using low-quality, cheap, and poorly durable materials; the major focus was on their external façade.

He also adds in this regard that the notion that a building must serve as governmental headquarter of a monarchy dynasty for unknown duration had never been adopted in Islamic world. Consequently, the priority for a ruler was to quickly erect a palace in a location chosen by himself at the very beginning of his governance.

Generally, BEHSHAHR garden-palaces and particularly CHESHMEH EMARAT, not only are not exceptions of this rule but also represent perfect example of garden-building in the very same style. And, since speed was a priority for ABBAS Shah, the respective collections were designed and constructed not taking into consideration the regional climate and exactly the same as garden-building styles formerly applied in central regions of Iran (Esfahan, Kashan, Yazd, Kerman, etc). Accordingly, this factor is regarded as one of the most important causes of early erosion and destruction of the collections.

Another agent contributing to the destruction of garden and building was interventions by local residents and also organizations such as Waste Water Department. When life does not exist in a historical building, no protection and conservation measure is taken, and as a consequence, destructive atmospheric, natural, and human agents become effective. Thereby, non-existence of life is significantly related to damaging factors.

As implied in the former sections, the palaces are not built for long times. These constructions undergo numerous alterations following change of dynasties and kingdoms. ASHRAFOLBELAD (BEHSHAHR) palace-garden collection can be recognized as an archetypal example of such buildings.

Lack of attention to and abandonment of CHESHMEH EMARAT palace-garden led to people’s using its materials (bricks) for their house constructions so gravely that one floor was completely destroyed and its bricks were stolen by locals. On the other hand, the garden which had almost survived until the years 1971-1979, was distributed among people and houses were built in due to population growth and unawareness of state organizations. Based on the aforementioned arguments, the major factors in destruction, damage, and erosion of CHESHMEH EMARAT garden-palace can be concisely classified into the following categories:

A: Intrinsic factors of building and phenomena dependent on building situation:

1- Non-existence of life (abandonment)
2- Non-compatibility of building with regional climate
3- Instability of final facing of building against climatic agents
4- Haste in construction of the building
5- Unawareness of some state and private organizations as well as some local residents concerning cultural, spiritual, and architectural values of the garden-palace

B: Extrinsic factors:

1- Cyclic or periodic natural agents with continual impact on the building such as wind, rain, snow, and so on
2- Human and environmental agents, interventions in building, use of materials, occupation and seizure of garden area, separating and converting the lands into residential, educational, commercial, and organizational units.

In this section, structural damages of CHESHMEH EMARAT garden-palace caused by abovementioned factors will be investigated by pictures respectively from south-western, north-western, north-eastern, and south-eastern sides, and central space of palace. All along:

A general review on damages to the building and renovation efforts in the past

The pictures include main structural damages. Comparison of old images of building with its current status is the noteworthy point of this discussion. It is really crucial to consider the renovation programs and to determine the location of destroyed and restored segments in terms of mechanism of implemented operations.
The extent of interventions in garden can be estimated through comparing these two images. Around 90% of garden space was destroyed after 1979.
Fig. 12: Main axis or major route of garden which is now transformed into a lane in the residential area

*Palace and its surrounding space:*

Major spatial-architectural damages to the palace and its surrounding space can be listed as below:
- Destruction of large part of site works (stretcher bond brick flooring), pools and ponds of central space of palace, and the surrounding stone flooring as well as destruction of pool and brick floor of rooms.

Fig. 13: Pathological and pathographic plan of ground floor and palace yard

Fig. 14: the site works surrounding the palace, pool and northwestern flooring (main facade) were ruined during excavation for piping and transmission of central spring water around 30 years ago. Some remnants of flooring were unearthed in the recent excavations (Photo by Mazandaran Cultural Heritage Organization).
**Fig. 15:**
1- Aggregation of rain water in borings of the recent excavations intended to access the main flooring which led to erosion of the overt flooring. Excessive moisture infiltration into rock texture and upper levels caused their color to change.
2- Transmission of central spring water into yard and finally out of garden; destruction of brick channel and construction of concrete duct

**Fig. 16:** A view of palace and its surrounding area, due to presence of a watery spring in the middle of palace and inappropriate transmission of water and also blockage of streams in four directions, the water level rises especially in rainy seasons resulting in water overflow on the external surface of area and erosion of flooring.

**Fig. 17:** Due to blocking of other streams in the central space, the spring water is obligatorily transmitted through only one stream. Hydraulic pressure has damaged the surrounding earthy layers creating hidden water channels.
Destruction of flooring and the pools inside the rooms:

The pools inside the two big rooms of the palace were filled with collapsed materials resulting from destruction of upper floor and parts of walls in the ground floor rooms. The debris was removed during different periods by archeological teams. It is noteworthy that the water enters into the pools in rainy seasons when water volume of spring in the central space exceeds and also water level rises and hydraulic pressure is exerted onto the adjoining bodies and layers. It is occasionally observed that the water flows to the room floors due to blockage of streams. This problem imposes serious damage to the foundation soil leading to exceeded moisture and erosion of materials. Fortunately, no subsidence or profound fracture is currently found in the building.
Fig. 21: Pool inside the room

Attachments:

During different periods, some doorways were temporarily or permanently sealed with brick for fulfilling functional or particular requirements. Positions of attached elements are shown in blue in the following plan (ground floor).

Fig. 22: A number of room doorways were sealed temporarily or permanently in order to provide the space for storing construction materials, restroom, and working or support room. Although, these attachments have not caused damage to the building structure, but in the first look, negatively affect the impression and view of palace regarding the principles governing the architectural and spatial plan.

Fig. 23: Following the fine works in the subsequent eras, some of palace openings were mounted as water transmission path to the upper floor or water transmission path of large pool fountains ahead of yard porches; clay water pipes were passed through these openings. Hence, openings were filled after installation of water pipes and their positions were designed as panel in side view of the building.
Destruction and Erosion of Plinths:

Some stone plinths were installed in two rows with approximate heights of 90 cm (main building front) and 50 cm (other sides); also, some plinths were mounted around the building with average thickness of 20 cm. Most stone plinths were lost due to multitude of reasons and the remaining instances have been severely eroded by atmospheric agents. Only a couple of them are available.

Fig. 24: Erosion and fracturing of main stone plinth.

Fig. 25: Mounting a new plinth considering the main ones.

Fig. 26: Stone plinths of building in two rows; empty position of plinth board is illustrated in the view

Destruction and collapse of coffering and deambulatory of central space of palace:
Fig. 27: Destruction of coffering and deambulatory of central space on the renovated or restyled coffering: Main destructive cause of this space is collapse of upper floor and excessive pressure of earth, clasts, and concentrated burden.

Fig. 28: This photo was captured in 1973; extent and development trend of damage are revealed through comparison of two images.

Destruction of upper floor of palace:

Fig. 29: The only distinctive remaining architectural element of the upper floor of palace and there exists another pond in water distribution room. The damages are as follows:

Of the upper floor, except for the above-mentioned single pillar, little segments of the main wall of building with low heights (10 to 50 cm) have remained. Four ponds are situated on four platforms
documents and accounts of tourists and visitors dating back to around 250 year ago, the palace was reported as semi-abandoned and partially destroyed. According to this argument, main and substantial cause of excessive destruction of building might be attributed to abandonment and absence of surveillance and conservation in addition to non-compatibility with climatic and atmospheric conditions of the region. The other places and gardens underwent more adverse circumstances

Fig. 30: Erosion of lime plaster of pond over the platforms in upper floor

Fig. 31: Plan of upper floor of building: position of the sole remaining pillar of the upper floor is specified in the map

Fig. 32: Destruction and relocation of water transmission clay pipes of the upper floor by the archeology team (2003) and renovation group

**Damages to Decorations:**

Tile work is the main decorative element of building, which was publicly renowned in its time. Seldom palaces can be found with tile decorations as much as CHESHMEH EMARAT palace. Central cross-shaped space had been completely decorated and embroidered with seven-color clay tiles (in 15*15 dimensions) from bottom to the deambulatory. It must be noted that tile works have been performed
in subsequent periods following the gypsum decorations. Remorsefully, tile decorations of building were destroyed during the long years and in particular rapidly since 1950s onwards. Only, slight segments of panels and edges of panel rims have remained.

Fig. 33: Erosion and destruction of gypsum plasters and face work of rooms and openings

Fig. 34: Erosion and lack of adhesion of gypsum mortar (decorations) from one side and large thickness of underlying layers of tile decorations from other side have led to collapse of extensive parts of the tiled surfaces. Sparse pieces of tile work are visible. Traces of tile works in the central space are indicative of the glory and magnificence of the palace in the past.

Fig. 35: Destruction of paintings on gypsum and modeling of room walls and collapse of tile decorations

Conclusions:
In addition to relatively desirable atmosphere of CHESHMEH EMARAT building for dramatic activities, suitable ground elevation of region and location of building in garden axle ending to BAGH SHAH and spectacular perspective of MIANKALEH bay all provide a peerless landscape for the visitors. Genius and wisdom of SAFAVI architects in selecting site and form of building could be further comprehended by any viewer if the anomalies caused by current disarrayed and heterogeneous
constructions were not existent. Also, according to former discussions, it could be asserted concerning decorative values and tile works of building that the traces remained as of today are themselves historical witnesses to presence of SAFAVI decorations which worth preservation and maintenance plans. However, the remaining surfaces of these decorations are too negligible to think about restoring and completing them. Nonetheless, presence of analogous decorations in other SAFAVI buildings in the region such as SAFIABAD Palace, ABBAS Shah Mosque of FARAHABAD, and ABBASABAD Garden Collection of BEHSHAHR enables us to help the future visitors in visualizing the original building through presenting our conjectures and speculations in the form of exposed frames separate from building and merely for displaying.

Concerning the values related to urban sceneries and natural landscapes, the future measures will require long time and enormous expenses. Thus for the time being, the actions are limited to proposing controlling regulations for overseeing future constructions and prevention from continuation of this chaotic trend. But, an initiative might include taking use of novel technologies and manipulating physical properties of light in order to at least revive a touch of invaluable and splendid landscapes and sceneries of those periods in the imagination of visitors. The efforts pursued in the revival plan will incorporate this objective.

Taking into account the abovementioned discussions, the following points can be summarized as determiner of the proposed path to attain a future commensurate with values of building and also regional requirements. Simultaneous utilization of these findings will lead to an optimal result:

1- Next land use of CHESHMEH EMARAT building shall be a center for introducing the historical city of ASHRAFOLBELAD (modern BEHSHAHR) taking into mind the potentials contained in the garden-palace either in terms of its location and situation or regarding its tremendous landscapes.

2- Re-motivation of viability in a city which has been once among the important cities of country but currently is orientated into a declining path resulting from its residents’ unawareness of their identity.

3- Along with prediction of long-term programs in order to possess the occupied lands and organize the former constructions on the ruins of the old gardens of this city aimed at restoring and renovating the building which need sufficient credit and budget, using novel technologies in the short term, the possibility to benefit from historical sceneries of this palace-garden shall be provided for visitors, even if virtually.

4- By incorporating and familiarizing the local residents with tourism potentials of the region, the grounds for earning great deal of revenues will be provided for them, and in this way, paying attention to historical monuments will be a priority for the posterities.

References


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