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A Comparative Study of Two Persian Gardens and a Critique of Their Restoration

Abstract

The Aliabad Garden was constructed in the Qajar era by Brigadier Mufakham, the ruler of Bojnourd City, as a hunting ground, a resting place, and for recreation. Throughout history, the Aliabad Garden has undergone many changes, as no more than a pavilion in the middle of this Iranian Garden exists today. Meanwhile, failure to focus on these and similar gardens has resulted in the loss of existing documents as evidence of the city's historical background, which may never be compensated for. The recognition of original surviving lines and return of the true face of the Garden not only help preserve the historical identity of the city of Bojnourd but also represent an effort to re-read a part of the culture and the art of this land, which may feature the artistic characteristics of its era. Since previous measures influence restorative measures and affect subsequent measures, it is essential to understand vital processes in the past and monitor restorative processes to adopt proper future decisions. Thus, the present study deals with this subject critically and provides a final plan based on criticisms made about domestic examples (e.g., Yazd's Dolatabad Garden) and the previously presented plan on the case study.

Keywords: *Aliabad Garden of Bojnourd, Dolatabad Garden of Yazd, restoration criticism, restoration and revival*

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Introduction

Iranian gardens are characterized by green and lush trees, a diversity of colorful flowers, dynamism and the vital sign of water, the flow of fish and the joyful game of the aquatics, the charming sounds of birds, the gentleness of pleasant air, odorous and fragrant spaces, an enthralling visage, the utmost of brevity and the endmost of efficiency with all dimensions. Persian Garden plans are founded on the specific application of a square in the overall composition of its components, which have made them unique since old times (Abolghasemi, 1992). In these gardens, a stretched and open space lay in front of the [Garden] building, just sitting in the main perspective. In this space, no tall trees were implanted; instead, some plants could not grow tall and blocked the Garden's perspective while manifesting beauty all the time (Naeima, 2006:32). The quadrilateral form of gardens is quite a few in Iranian gardens. Examples of these gardens are widely seen in Delhi and Agra, where land differs from that in Iran. The quadrilateral garden idea was raised by researchers who studied the Gourkani or Indian Mongols' architecture and garden construction (Jeihani & Ayoubi, 2012).

The Dolatabad Garden was constructed at the order of Mohammad Taghi Khan Bafghi, the ruler of Yazd. He was the son of Mirza Mohammad Bagher Bafghi and was born in 1716 in Bafgh (Naeini, 1974).

Persian gardens refer to gardens built during the government of Iranian kings for their recreation. Apart from their natural landscapes, these gardens feature Iranian cultural and architectural landscapes; remnants of these gardens, also known as historical gardens, are still seen across the country. From a natural perspective, Persian gardens help beautify urban environments, while from historical and cultural perspectives, they help revive Iranian culture and diversity. These gardens combine the living and non-living artificial natural elements to represent a charming view within an urban environment, creating vitality and cheerfulness in life. Unfortunately, with the erosion and destruction of these gardens over time, the relationship between historical gardens and the urban landscape has been undermined, as historical gardens no longer contribute to urban environment beautification and urban space stability. This necessitates the restoration and revival of these gardens and opens up a pathway to urban landscape beautification and urban vitality.

The present study aimed to investigate the restoration and revival of the Aliabad Garden for new land uses. While being a historical site and serving as the sole surviving Garden with an Iranian *Chahar Bagh* pattern in North Khorasan, the Dolatabad Garden is seen as a building with less destruction. In the meantime, the villages surrounding are also suffering from weak cultural weaknesses, thus posing problems for the city of Bojnourd as the capital of the province of North

Khorasan and as a tourism, historical, and cultural environment. For this, this study aimed to provide a restoration plan at the Aliabad Garden to protect this historical artifact and revive it as a cultural and tourism center in the city of Bojnourd.

methods and Case Study Analysis

1. Yazd's Dolatabad Garden

The Dolatabad Garden restoration process commenced by the Technical Office of the National Organization for Ancient Works Preservation in 1969 and continued until 1982. Parts of the complex which underwent restoration were the Talar-e-Ayeneh Mansion, Servant Mansion, Kitchen, Tahrani Mansion, Archway and Cistern section, Haram-Khaneh Mansion, Wind Tower Mansion, Portal Mansion, etc. Also, from 1976 to 1982, Garden- and compound-construction operations were launched in this Garden.(**Figure 1)**

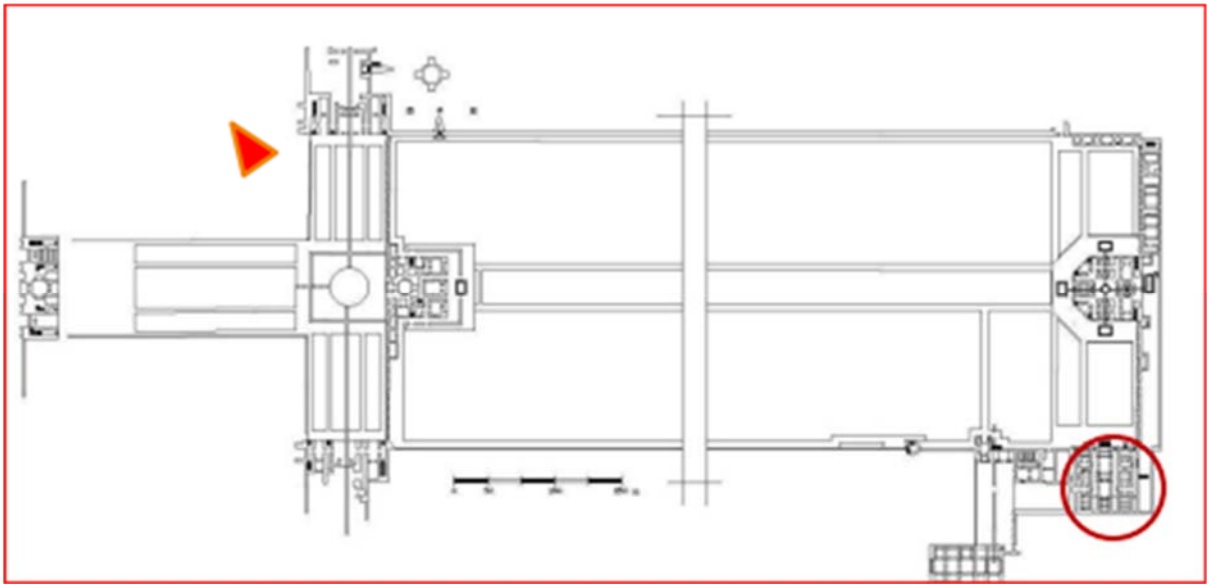

Figure 1: Dolatabad Garden

2. Aliabad Garden

Spaces in the Aliabad Garden Complex

The Garden is detached by an enclosed clay-made fence and an iron gateway, with its entrance remaining unprotected and surrounding walls being half-destroyed. The Garden's plane trees are cut off, without flower shrubs, and most of its trees are withered and eliminated. (**Figure**2)

Figure 2: Current accessibility to the Aliabad Garden

- The exact date when the Garden was constructed is not known; however, consistent with field questions and the Naser al-Din Shah travelogue, the building dates back to around 200 years ago.
- Water is secured through a string of aqueducts originating northeast of the village.
- Brigadier Mufakham first owned the Garden and later ceded it to the late Bazkhanei and his heirs.
- The Garden was irrigated based on its periodic needs, though an exact time remains unknown; also, the water used to irrigate the Garden was secured from a still—existing pond located outside facing the north of the Garden. It is not yet known when the pond was built, but it was probably built with the construction of the building.
- The Garden takes a quadrilateral form, with each section divided into another four sections. Thus, the Aliabad Garden is said to follow the Iranian Chahar Bagh pattern.
- The Aliabad Garden falls under domicile gardens.
- The types of non-fruitful trees were plane trees, acacia, Urs (mountain cypress), and Poplar. In contrast, fruitful trees were pomegranates, figs in a few cases, and an abundant volume of cherries, apricots, pears, apples, and almonds.
- Bushes and shrubs planted in the Garden include various roses, wild barberry, and grass, probably Iranian clover, decorating the trees and pathways dividing some sections.
- The flood irrigation was in a north-south direction, with each section of the quadrilateral parts irrigated from the northernmost to the southernmost.
- The Garden had gates from three northern, southern, and eastern directions, with the main gate of the Garden located in its south and its secondary gate in the northern direction, while the east gate was added over the past decades.
- Architectural and physical spaces in the Garden consisted of three parts: a pavilion, restrooms, and a simple portal over the entrance of the Garden in the south.

Results

The present section concerns the pathology of the building and provides relevant protective and therapeutic solutions.

1. Human Factors Pathology

According to the essential criteria of landscape privacy, no structure taller than the garden building within its immediate area should be erected. However, we are witnessing buildings around the Garden's visual privacy, as well as residential two- and three-story buildings surrounding the main walls of the Garden, breaking the skyline and affecting the historical landscape.

2. Natural Factors Pathology

The hot effects of ascending moisture are seen on many of the walls.

Climatic and geographical conditions that involve an architectural structure can be considered naturally degrading factors. Harms of natural origins include ascending moisture, descending moisture, subsidence, etc.

Mortar degradation is also caused by moisture in materials, mainly seen in gypsum materials.

Other compound deficiencies come from the destruction of water supply systems, like pipes implanted in the ground.

Excluding a smaller section, garden walls have fallen off and require renovation.

The comparative analysis of two gardens is given in Tables 1

Table 1: Structural Analysis of Dolatabad and Aliabad Gardens and Comparing them with Persian Gardens

	Dolatabad Garden	Aliabad Garden	Persian Garden
Number of entrances	3 Northern, southern, and western	3 Northern, southern, and eastern	
Main entrances	Western	Southern	
Current entrances	Southern	Southern	
Number of axes	2	1	1
Number of pavilions	10	1	1
Organization	Axis-dependent double foci	Axis-dependent centralist	Axis-dependent centralist
Building situation	Along or at the intersection of axes	At the intersection of axes	Along or at the

			intersection of axes
Number of sections	2	1	1
Functional typology	Residence-government	Hunting ground/-recreational	
Physical typology	Garden-courtyard	Garden-courtyard	
Structural system	Garden-in-garden intersection Garden is made of two sections with an internal and external rectangular environment.		
Water system	**Past**: Aqueduct **Present time**: Water well	**Past**: Aqueduct **Present time**: Water well	
Plantation system	**Terracing**: In a different way on the two sides of a large fountain **Vegetation**: Sour orang, pomegranate fields and vineyards Fig trees	**Terracing**: Symmetrically on the two sides of the Garden **Vegetation**: Pine and Cedar Plane tree and Poplar Almonds	

The strategies are presented in Table 2

Table2: Providing Solutions

Florence Chart	**Violation in the Dolatabad Garden**	**Violation in the Aliabad Garden**
Article 1) "A historical garden refers to a composition of architecture and gardening, which is publicly seen from an artistic or historical point of view"; thus, it should be considered a "historical monument"	In the Dolatabad Garden, this composition is not preserved because its vegetation has been neglected.	In the Aliabad Garden, this composition is not preserved because its architecture and vegetation have been neglected.
Article 2) A historic garden is an architectural composition whose constituting elements are alive and primarily related to gardening; this denotes that these elements are "mortal and replaceable."		In the Aliabad Garden, there is no sign of life, both in the Garden and the pavilion.
Article 3) Because a historic garden is a historical monument, it should be preserved according to the spirit of the Chart because it is also a "living historical monument"; its preservation should be in line with specific rules, which are subjects of the current Chart.	The monument has not been preserved.	The monument has not been preserved.
Florence Chart	**Violation in the Dolatabad Garden**	**Violation in the Aliabad Garden**
Article 4) The architectural composition of a historical garden is as follows: - The form and shape of each section stand out - The class garden's flowers include types, sections, colors, distances and heights	Regarding vegetation, this classification is not observed, with only some plants replaced.	This composition is not observed in the Aliabad Garden.

- Permanent structures with a decoration effect - Running or resident water in the Garden that reflects the sky image		
Article 5) A historical garden represents a close link between civilization and nature and serves as a place for thoughts and feelings; for this, the ideal image and a "heaven" are evidence of the style, the epoch, and perhaps the principles of a creative artist.		The only surviving pattern of the Garden is the Iranian Chahar Bagh pattern.
Article 7) A historical garden has a building in itself, with which it forms an indivisible whole. A historical garden cannot be detached or isolated from its specific urban rural environment or natural or man-made processes.	However, assuming good land use proportionate to the garden land use can help preserve its totality as a historical garden and protect its buildings.	Over the past years, pavilions, which were subjected to emergency restoration, are now abandoned.
Article 8) A historical scenery is a special one associated with a memorable event, a major historical event, a famous myth, or an epic battle; for this, it features the subject of an image.		
Article 9) To preserve historical gardens, they should be first identified and listed. Historical gardens require all types of care, i.e., maintenance, preservation, and restoration. On special occasions, serious reconstruction is advised. Preserving the "originality" of various garden parts and plan is required.	The originality of the Garden's vegetation has not been preserved.	The originality of the Garden's vegetation has not been preserved.
Article 10) A historical garden's maintenance, preservation, restoration, and reconstruction should simultaneously consider all its constituting elements.	In the Dolatabad Garden, restorative measures have been taken over the past years in different sections of the Garden, though these measures were not simultaneous in all parts.	In the emergency restoration operation of the Aliabad Garden, only the pavilion was repaired, while no measures were taken to repair the Garden itself.
Article 12) The selection of tree species, shrubs, and flowers supposed to be periodically planted in the future should be confirmed and verified in the gardening and vegetation section.	No expert measures on plantation and vegetation are taken.	No expert measures on plantation and vegetation are taken.
Article 13) The removal or dislocation of movable or immovable architectural features, statue-making, or decorative aspects, which are parts of the Garden's complementary actions, should only be made if the measures are taken to restore and preserve the gardens.	For example, destroying the wind tower in 1941 was a willful action, contrary to preserving historical monuments.	No removals or additions are made to the Garden.
Article 14) A historical garden should be preserved under good conditions. Thus, any alterations or changes to the physical environment of the Garden, which may eliminate its ecological power, should be avoided.	Irrigation system changes: Blocking the aqueduct path Street construction	Irrigation system changes: Blocking the aqueduct path Damages to the western pool of the Garden

	On the western angle of the Dolatabad Garden (the construction of Novab Safavi St.)	Destruction of the Garden's northern pool and conversion of it into a garden
Article 15) No restorative measures or reconstruction in a historical garden should be taken without initial and complete investigation.	The pool, built in 1991 between the Wind Tower Mansion and the Portal Mansion, lacked any investigative measures; if complete investigation were to be taken, the trees on either side of the Garden could be preserved.	No particular restoration measure has been taken except for the emergency repair of the pavilion.
Article 16) With respect to restorative measures, attention should be paid to the consecutive stages of garden development, as no period should be prioritized over others.		
Article 17) In an area where the Garden is fully destroyed and there is no evidence except for mere speculation over its consecutive stages, there is no room for reconstructing anything within the environment of that historical Garden	The reconstruction of the dome of the Talar-e-Ayeneh based on speculation over similarity and symmetry with the Tahrani Mansion	Unfortunately, the author of this study found no document except for an aerial photo of Bojnourd's Aliabad Garden.
Article 18) Since gardens are designed for sightseeing and recreation, they should be accessed in a way to prevent any vulnerability, which can help maintain their physical texture and cultural message.	The inappropriate use of gardens in the past years has inflicted many damages on the Garden	Unfortunately, the Aliabad Garden has sustained serious damages due to the destruction of the fence in the various parts of the Garden, the lack of entry and exit controls, and the inaccessibility of entry into and exit from the pavilion due to the loss of an entrance gate.
Article 19) Because of its nature and goal, a historical garden is a tranquil and conducive place for human contact, peace of mind and contemplation about nature.	The kitchen space of the Garden has turned into a restaurant.	
Article 20) Although historical gardens are appropriately conducive for playing calm and daily games; it is better to determine some separate areas in the adjacency of these gardens to perform vital and vibrant games there.		According to the Revival Plan presented for the Aliabad Garden, administrative, cultural and service uses are also considered.
Article 21) Maintenance and preservation measures, scheduling adjusted with seasons, and brief operations that help restore garden originality should always be prioritized over practical needs.	The Dolatabad Garden was restored based on evidence the author collected since 1976; however, violations have been made during the restoration process.	The Aliabad Garden was again restored based on evidence the author collected since 1976; however, violations have been made during the restoration process.
Article 22) If the Garden is already fenced with walls, the walls should not be removed without primary investigations, which may change the	Parts of the Garden's northwestern wall has been eliminated due to the destruction of the Garden as a result of street construction.	All parts of the Garden's fence, except for smaller parts, have been eliminated, and parts of the surviving fence have sustained damages.

garden space and negatively affect its preservation.		

Positive points in the restoration and revival of Dolatabad Garden, located in Yazd

Considering the [individual personality] characteristic of the garden and establishing a relationship between the outside and the inside
Flourishing and environmental prosperity Improve the landscape
Use of compatible materials consistent with structural originality and integrity
considering the topographical aspects during the restoration of the garden
Proportionate placement of garden elements (i.e., water stream, the locations of trees, and the main skeleton)
Considering sustainable architecture principles in the building (symmetry, centricity, hierarchy, and repetition)
Integration of different land uses in the garden (i.e., residential, commercial, and recreational buildings)
Structural and design compatibility with surroundings.

The Revival Plan of the Aliabad Garden

The selection of new land uses was performed in two stages:
The first stage investigates the status quo of the building in terms of its physical and land use dimensions to understand the spatial capacities and existing needs, as well as the typology of the values in the historical building and the values of the Aliabad Garden. Survey results in this stage led to some alternatives for new building uses. The second stage evaluates the proposed alternatives with such criteria as the principles of preserving historical building values and the extent to which the proposed plan meets users' needs. This evaluation helped distinguish the new building use from other options. It is worth mentioning that the stages of evaluating new building uses could result in developing overall policies on preserving historical buildings and understanding their special characteristics. This section concerns the definition of the criteria for preserving the historical values of the building, such as historical identity, a reminder of the past of the historical building, its relationship with today's generation visitors, the preservation of original spaces, the preservation of the general character of the building, and the extent to which the building stands out within its sphere of influence. (table 3 ,4)

Table 3: Criteria for Preserving Historical Values

Evaluation criteria	Priority to be evaluated in this criterion
Reserving historical identity	The plan requires preserving the Garden's historical identity (Qajar era) and making effort to consolidate and emphasize this aspect of the building as per the Preservation, Repair and Revitalization Plan
Reminder of past events of the building and the surrounding environment	The plan requires establishing and strengthening a link between the Garden, its historical use and historical events related to its historical background
Establishing communication with the Garden	The plan requires establishing a link between the new generation and today's visitors with the Garden to potentiate historical-cultural values.
Preserving the original space of the Garden	The plan requires preserving the Garden's original spaces and its pavilion, as well as its special architectural characteristics to represent the Garden's historical form for the user; this can help strengthen the Garden's historical values.
Preserving the general character of the building	The plan requires preserving the Garden's character as a public space along with other public spaces.
Making the building stand out within its sphere of influence	The plan requires strengthening the Garden's symbolic aspect as the only surviving example of the Iranian Chahar Bagh pattern in the north of Khorasan

This section evaluates the criteria to remove the existing and future needs, such as economic return, flexibility against possible future changes, and preserving historical values.

Table 4: Criteria for evaluating the extent to which the plan meets existing and future needs

Evaluating criteria	Priority to be evaluated in this criterion
The plan's correspondence with the criteria of preserving the building's historical values	All cases listed in the table should be observed when selecting the target plan.
Plan's economic return	The plan requires an economic return to account for the building's future repair and maintenance costs.
Plan's flexibility against future changes	Administering the existing plan by considering necessary changes in the future
Considering the owners' views	The extent to which the plan is similar enough to the owners' views

The proposed alternatives are examined based on the above table and quantitative evaluation (out of score 10).

First Alternative: Creating tourism (Garden), cultural (café books), educational (classes and art workshops), welfare (restaurant), and relevant administrative section uses.

Second Alternative: Creating an education and tourism (botany garden: consistent with previously proposed uses), cultural use (museum), and relevant administrative uses.

Table 5 gives the results of the proposed alternatives.

As noted in Table 5, the first alternative was proposed as the final plan after gaining the highest score in preserving historical values and meeting existing needs.

Evaluating criteria / Proposed alternatives	Preserving historicla values	Meeting existing needs	Final plan score
First suggestion: Creating tourism (Garden), cultural (café books), educational (classes and art workshops), welfare (restaurant) and relevant administrative section uses.	53	44	97
Second suggestion: Creating an education and tourism use (Botany garden: consistent with previous proposed uses), cultural (museum) and relevant administrative uses	46	37	83

In the hope of restoring, reviving, and ultimately preserving the only example of Iranian Chaharbagh in the region.

Conflict of interest:
None.
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Ethics statement:
None.

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