

Effects of Persian Garden's Aesthetics in Social Sustainability of Contemporary Urban Parks in Tehran*

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Abstract | The rapid growth of population in metropolitan areas such as Tehran and consequently the increase of construction cause to reduce the available green and natural areas. The modern urbanization ignored the presence of nature in urban environments and the human needs to interactions with natural spaces. This problem led to the new challenges in urban communities. Constructing urban green areas without considering the quality and identity cannot be a solution of the existing crisis. The need of the residents of modern cities to have relations with the nature in the daily life requires the creation of spaces for the citizens to depend on them. The paper investigated the aesthetic principles of the archetypes of Persian gardens. Then, theories analyzed that how to use these concepts in modern parks of Tehran. Results show that the use of these principles and concepts has successful effects for getting close to the social/economic sustainability of urban parks.

Keywords | Iranian Garden, Aesthetics, Urban Park, Social Sustainability.

Introduction | If the function of elements in urban parks leads to the viability of such spaces, they might go help towards the sustainable development goals. When the social/cultural interactions increase in urban green areas, not only they, result in social sustainability, but also they will lead to economic sustainability (Chiesura, 2004). The aesthetic principles of Persian gardens can be used for designing public green areas and parks, with regards to the history of designing such gardens, to create spaces that people

feel to be dependent on them. Persian gardens are the successful examples of human-made nature, and have specific importance in the life of Iranian people, being a reason for human interactions with nature (Mansouri, 2005).

From the long time ago, Persian garden has been an example of Paradise for Iranians, and they have established a close relationship with nature through the gardens, long before such a relationship has developed between humans and the environment in other parts of the world (Wilber, 1969). However, human relation with the nature has become less important in the modern cities, and despite the

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parks and urban green areas that provide natural spaces for the citizens, the sense of belonging to such spaces is not like before. The Persian garden archetype has left the contemporary cities and designing the modern parks and green spaces is not necessarily a reflection of the user's culture and behavioral needs. If we should talk about the Persian gardens in contemporary era, the best possible way is to design and construct a garden that in addition to inspiring from the Iranian culture, it should remind the values of Iranian culture, use the experiences of other civilizations in localized form, respond to the requirements based on time, have Iranian identity, and play its role as an independent model (Masnavi & Vahidzadegan, 2014). Regarding the nature of Persian gardens that have always been related to people's life, leading to the dynamic life of the cities, returning to this archetype and using its aesthetic concepts, in comparison with modern styles, can be an approach for viability of the contemporary Iranian urban parks. This paper, firstly deals with analyzing the aesthetic principles in the archetype of Persian gardens, and two successful examples of Tehran contemporary parks are assessed with regards to the required principles and concepts.

Research Question

What are the potential of concepts and functions of Persian garden to improve the quality of urban parks and the relationship of citizens with nature?

Method

This paper is based on the review of literature on the concepts of Persian garden and the contemporary urban parks with regard to the question of "how we can use the principles of the Persian garden in contemporary urban parks" for enhancing the relations of people with urban green spaces. The content analysis and semantic layers of the Persian gardens were developed and analyzed in order to use and adapt with modern design in the two examples of contemporary urban parks in the Tehran city. The semantic reflection or the use of Persian garden layers then were

studied in contemporary urban parks. The "Ab-O-Atash" (Water and Fire), a contemporary park in the city of Tehran is used as a medium to examine the research question.

Aesthetics of the traditional model

Aesthetics principles in Persian gardens have its roots in the primary beliefs of Iranians in nature. The elements of water and tree were always respected in the ancient Iran and by different religions of the Iranians, causing the formation of a special type of garden construction. Water and plants in Persian gardens are in such geometric combinations that provide specific order to the landscape, which indicates the appropriate ideas of Iranian human beings in various generations. By going into the garden space, humans are separated from their urban life, and the specific beauty dominating this space invites them to explore the world of existence as well as nature (Mansouri, 2005).

Experiencing Persian garden gives a sense of connection with nature. These feelings are accentuated by trees planted along the central axis. Geometric order and linear corridors bring in deep views creating a unique character for the garden. Tall plants and vegetation filtrate unwanted environmental noise. Experiencing one's surroundings in such a new way can bring in the sense of being away from one's usual set of circumstances (Ramyar, 2011). As a designed complex, Persian garden considers the aspects of environmental-physical and conceptual-perceptive conditions together with each other, making such a generality that causes human-nature relations together with the pleasures of soul and body. The reasons are providing beauty in the Persian gardens, including their specific geometry, spatial diversity, the presence of water in different forms, and eternal outlook, are considered in this study.

Rectangular geometry

The intervention of Iranians in nature is in the form of imposing geometry, especially of Iranian arts with unknown origins, to the environment structures. In most cases, the Persian garden has allocated a rectangle of the land to

itself, applying its aesthetics without considering the environment forms and its requirements (Mansouri, 2005; Motlaghzdeh, 2002). The rectangular geometry formed not only the main plans of the garden but also the divisions of the garden sections in Persian gardens. In the definition of Persian garden by “Stronach”, he considers it as a rectangular garden divided into four different sections by the paths and water canals (Stronach, 1979). The need for finding spatial directions has been considered within the rectangular geometry and the routes that create its ordered structure, which has increased the readability of the environment.

Humans prefer the spaces and environments that are easy to comprehend, but that are also simultaneously challenging. Furthermore, these spaces include coherence and legibility; whereas, environments that are challenging contain complexity and mystery (Mahdavinejad & Abedi, 2012). Architecture should comply with the human needs towards conduction and should have a share in the readability of position for human. Thus, the concept of direction notifies its necessity in the first place. In architecture, this concept leads to the formation of the bases or routes that always try to aid and be conducted in that respect. A hierarchy of spaces can be placed in succession in Persian gardens in such a way to indicate a direction, to either have physical motion in that route (motion direction) or merely sense the direction (sensing direction) (Masnavi & Vahidzadegan, 2014). These straight networks surrounded by tall trees were able to provide a desirable perspective, defining the path from the entrance to the pavilion. These networks also facilitated the access to the plots of vegetation (Mahmoudi Farahani, Motamed & Jamei, 2016). In fact, rectangular geometry can be observed in all the forming elements of the Persian gardens as a physical factor; formation of main and subordinate routes, presence of passage of water, as well as arrangements in planting trees provide a generality in all the general dimensions and proportions that result in the formation of the spatial concepts in Persian gardens.

Spatial diversity

Physical structure in the Persian garden is such that it creates various spaces, each of which has its specific identity. The garden builder has special concerns about the spatial diversity, in designing and landscaping the spaces in the garden, and his attempts are such that no similar spaces can be found in the garden, unless it is required by the design. Therefore, walking and looking around in the garden are accompanied with diversity, exploration of views, and understanding different attitudes (Mansouri, 2005). The diversity of spaces provides the opportunity to have various experiences. Collective and individual spatial views intensify the right for selection of the path and place (Masnavi & Vahidzadegan, 2014). Spatial diversity of Persian garden is reflected by the definition of independent spaces, through limiting, adjusting the distance vision, utilising of full geometric shapes, different compositions of plant species, spatial applications of water, utilising the materials and so on (Hayaty, Abrishamkar & Tohidipour, 2016). Main and subordinate directions limit the dispersed views of the surroundings by the rows of trees on the sides, encouraging the viewers to move in that route (Ramyar, 2011). The view in the main direction usually ends in the main building of the garden, becoming the centre of attention by the viewer. Moreover, being in the main building or mansion provides another specific space for the viewer, yielding a special view due to the regular structure of the passages, rows of trees, and presence of water between them. In fact, the design of garden spaces is in such a way that being in any of them and any direction of them provide special frames for the viewers, inviting them to explore the diversified spaces (Mansouri, 2005).

Presence of water

The role and importance of water for the Iranian people have roots in their beliefs in the past, when they worshipped the goddess of water. The element of water is also important in the Islamic beliefs, and it has been considered

important since the emergence of Islam. The aesthetic aspects of water appear in combination with other functions and natural and human-made elements. Water reflects the beauty of nature and adds to these beauties (Masnavi, 2012). The element of water is the inseparable part of the Persian garden structure, appearing in various ways. Presence of water in green areas and Persian gardens has been apparent in different ways. Different forms of the presence of water in gardens, including still waters, flowing waters, fountains, colorful waterfronts as the bright points and dark waterfronts as the reflecting parts of the environment, are among the means that are emerged due to the position and spiritual role of water in Persian gardens (Mansouri, 2005). In Iran, designing the gardens were often done in such a way the natural slope of the land was used to run water in the streams and rivulets. Lots of these gardens were designed and made with a deliberate program, and so their lands were often in an ordered and geometric shape (Khademi et al., 2013). The irrigation system influences the geometrical design of the garden, thereby preventing the waste of water. After the water irrigates the trees in each garden, it flows outside the garden to irrigate farms and other lands. There are many ways to display water in a garden. Each way, in turn, has its effect on sustainability (Fadaie & Moidi, 2015). However, the most known form of the presence of water in Persian gardens has been as flowing water and producing fountains in the pools, ponds, and waterfronts are also considered to emphasize the garden space (Shirdast & Farahanifard, 2014).

The water coming from far distances into the water channels had a significant impact on the design of gardens; to the extent of the claim that the structure of gardens has been shaped according to the irrigation system (Mahmoudi Farahani et al., 2016). Streams were used to show the flow of water, and to create the diversity in the flow, the bottom of streams used to be made in pi-

geon chest form. Moreover, constructing steps was utilised in some sections due to the existing slopes to create water falls. Still, water naturally reflects images, and due to its reflecting potential, it is a determining factor in the required compositions. There mirrored surfaces accept the surrounding environment and then, the images are reflected. The images of views and constructions expand the space. We can say that reflection is one of the main features of a pool in the Persian garden as it creates a special visual effect on the water surface; when pools appeared within pavilions, they were there to reflect ornately decorated ceilings (Fekete & Haidari, 2015). Still water reflects the sky, repeating the depth of sky on the earth, being the symbol of the sky on the land. Due to thoughtful silence and slow collection of water in its place, still, water has the ambiguous secret. The most usual tool to show the spout of water in the gardens is the fountains rising from the bottom of waterfronts. These fountains often fountain materials used to be made by cutting stones, and they might have been higher than or under the water level, for the water to be observed as seethed (Pourmand & Keshtkar Ghalati, 2011). Not only the presence of water in Persian gardens has the aesthetic aspect, but its functional aspect has also been greatly considered, and its designing system has been in such a way that water was used for irrigating the garden plants. Also, the conceptual aspect of the presence of water used to create a poetic and artistic environment in the gardens, and since the presence of water both in Islam and the country has been considered sanctified and holy; it has always been specifically concerned by the Iranians.

Infinite view

The integrity, or in other words, the perfect consideration in constructing a Persian garden if establishing the viewing system, formed according to the human

systems and affected by localised viewpoints and culture (Pourmand & Keshkar Ghalati, 2011). Constructing a place in higher levels than the garden and by the end of the main passage, which is overlooking all the lower levels, giving a unique view of the eyes of viewers is mostly observed in Persian gardens considered as the traditional example of green areas. Organizing the main base (route) in an Persian garden along the longer length is considered for creating a unified area with the originality of the view, more than the taking functionality roles of it into account. This place is a space for pausing, leaving the outer self and paying attention to the inner self; creating the space for thinking via confrontation of human beings and the infinite space and considering the infinite and eternal views in limited fields. The viewer of the space is the element in the viewing spectrum. The view with its intensified spiritual states and expressing the infiniteness is the symbol of existence, in which the viewer is dipped within it (Mansouri, 2005). The created panorama in the Persian garden directs human beings towards peace and submerging in his thoughts, which causes materialistic discretion from the surrounding space and connecting the humans to the spiritual world. Thus, the sense of the created place is due to the promotion of spiritual thoughts of humans within the systematic structure of the garden.

One of the important subjects in the Iranian architectural tradition is combining the architecture and the garden to enjoy natural views, to the extent that using tall elements overlooking the surrounding area has become quite important and considered quite seriously. The basic nature of the viewing place indicates construction of a high place with the appropriate view towards the opposite outlook, and this aspect has been stable in the length of time (Heidar Nattaj & Rezazadeh, 2015). Some researchers emphasize on the attempt of Persian gardens in the infinite extension of the view-

ers' surrounding areas. They believe that the aim of creating the Persian garden has not been to limit human perceptions, but the aim has been creating an infinite place for using all the human senses. Infinity indicates reflecting the world in itself, and not having a large area (Masnavi & Vahidzadegan, 2014).

Analysis of some examples of contemporary urban parks in Tehran

The required green areas should be considered in the contemporary metropolitan cities, such as Tehran. However, increasing the green area per capita cannot be among the aims of sustainable development, without considering the required qualities. Essential provisions should be considered for encouraging the citizens in using the green areas for them to lead to social/economic sustainability within the framework of urban parks.

Urban green spaces can increase the physical and psychological health of urban citizens. Certainly, improvements in air quality due to vegetation have a positive impact on physical health with such obvious benefits as the decrease in respiratory illnesses. The connection between people and nature is important for everyday enjoyment, work productivity and general mental health (Sadeghian & Vardanyan, 2013). First of all, urban nature fulfils many social functions and psychological needs of citizens, which make urban nature a valuable municipal resource, and a key ingredient for city sustainability. Secondly, different age-groups have different motives to visit the park and different activities they are going to undertake. Park's design and management, therefore, should take into account recreational requirements of all target groups (Chiesura, 2004).

Nowadays, designing green areas with the mere imitation of European parks has transformed our parks to similar areas without identity and with extensive maintenance costs. However, in case space promotes

and makes alive the memories of the person and provide a subjective mind for him, it can have great effects on him in that respect (Masnavi & Vahidzadegan, 2014). Historical Persian gardens, like many cultural landscapes, are significant to Iranian urban dwellers who have considered urban green spaces as city symbols and sources of local identity. These attitudes make gardens not only physically and visually noteworthy but also socially and culturally viable. Therefore, historical Persian gardens can be categorized as contributing to the sustainable cultural heritage, which potentially contributes to city sustainability (Rostami, Lamit, Khoshnava, Rostami & Fitry Rosley, 2015). Creating the sense of belonging and providing identity via using the aesthetic principles for Persian gardens, as spaces with identity and backgrounds of life, history, culture and Iranian ideologies can be effective approaches for the liveliness of such areas. This paper considers two successful examples of Tehran contemporary parks, as follows.

"Persian Garden" Park

"Persian garden" park is located in the old district of Vanak village in Tehran. It is an old garden belonging to Nasser al-din Shah's era, which was designed and exploited as a public park in 2012. The old trees in this garden have established a suitable basis for designing it according to the aesthetic principles for Persian gardens.

The "Persian garden" project has considered the following goals in designing: Creating the basis for considering the concept of Persian garden, as a symbol for providing the identity of Iranian civilization, providing changes in designing urban parks, and hoping to effect the urban management (Atashinbar, Mortazi Mehrabani & Vahidian, 2015). The direct-line geometry is used in designing the physical structure of "Persian garden" park. Designing the main and subordinate routes of the garden and the water passage in them in the spatial division indicates the effected rectangular geometry in a Persian garden (Fig. 1).



Fig. 1: Plan View of "Persian Garden" Park. Source: Nazar Research Center, 2012.

The routes that together with the main concept form the Persian garden are considered as the main structural elements in the "Persian garden" project (Atashinbar et al., 2015). The pitched structure of the garden is also affected by the model of Persian garden, which can be observed more tangibly in the north-south direction with regards to the slope of the land. Old sycamores on both sides of the main north-south and east-west routes provides spatial direction and higher readability of the routes. The main north-south route (Fig. 3) of this park is designed according to Chehel-Sotoun garden in the city of Behshahr, and the main east-west route (Fig. 2) is designed according to Fin garden in Kashan (Heidar Nattaj, 2013). The landscapes with Iranian aesthetic model has absorbed many viewers to this garden, and it can be

claimed that the landscaping of the garden has been effective more than the other factors in absorbing the population (Atashinbar et al., 2015) and (Motlaghzadeh, 2002). Main and subordinate routes of the garden that creates spatial direction for the viewer provide various outlooks in each of the passages. Trees in the margin of the passages have limited viewing the surrounding areas, and by locating in the main route, human attention is diverted to the pathway and the mansion building at the end of the passage. In addition to the variety of spaces created in moving along the main and subordinate routes of the garden, providing various spaces such as platforms for the picnic and sitting on, sports areas and playgrounds for children cause different age groups to use the park for their purposes.



Fig. 2: East-West Route of "Persian Garden" Park .
Photo: Maryam Mohseni Moghadam, 2017.



Fig. 3: North-South Route of "Persian Garden" Park.
Photo: Maryam Mohseni Moghadam, 2017.

Presence of water that is an important aspect in the Persian garden model has been considered in this park, and it can be observed by entering the park and walking along its different routes. The water stream exists from the beginning to the end of the passage in the north-south direction, and it is designed in pitches in the east-west direction due to the slope of the land. There is a water pond in front of the main building of the garden, with seats considered around it for sitting. The still water in it has the role to reflect, causing the space to look larger (Fig. 4).

Providing the internal sight viewing is considered by locating the viewer in high altitudes in the north-end

of the main route, due to the mansion being in the highest part of the garden (Heidar Nattaj, 2013). Due to overlooking all the garden areas, the view in this section is having special attractions for the viewers. The point that could make the role of the "Persian garden" park memorable in the minds of Tehran residents, as a collective space, is its location by the edge of Chamran Highway, which demonstrates a part of west Tehran as a landscape. This section is designed as the western entrance of the garden from Chamran Highway, but the administrative obstacles for the land ownership have caused this part of the landscaping not as yet to be constructed (Atashinbar et al., 2015).



Fig. 4: Mansion and The Presence of Water in The "Persian Garden" Park. Photo: Maryam Mohseni Moghadam, 2017.

"Ab-o-Atash" (Water and Fire) park

"Water and Fire" park is one of the parks in the city of Tehran, which was established in 2009. Due to its special location, this park has a suitable view. Location of this park adjacent to Shahid Moddaress and Shahid Hemmat Highways has provided an extensive open space in its surroundings, providing an appropriate view for the city of Tehran and Abbasabad region lands. A pedestrian bridge on Shahid Moddaress Highway that connects near "Water and Fire" park to Taleqani park has also provided more vitality for this park. "Tabiat" (Nature) Bridge in three floors is the largest pedestrian bridge in Iran, which provides a very interesting landscape for the passers-by on the bridge due to its situation on the north-south highway that ends to Alborz mountain in the north of the city. In fact, the turning point of the considered park is the existence of this bridge and the landscape that is created on two levels, making space for the better understanding of the sur-

rounding environment and the city (Yarahmadi et al., 2015 & Mansouri, 2015), (Fig. 5).

Human beings are frightened due to their lack of perception and their relations with their surrounding world. Therefore, they try to find peace. Certainly in this regard is the aspect for humans to get released from abeyance and link them to the pieces of existence (Pakzad, 2006). One of the important roles of "Tabiat" Bridge is its landscaping role towards the modern city of Tehran, since it creates various views to the city, and people experience different viewing angles to the city of Tehran. Regarding the location of this bridge in a special natural area, the possibility of specific viewing of the city is provided for the citizens that help the general perception of the city (Yarahmadi, Lotfollahi Yaghin & Tashakori, 2015). By preparing the landscaping space, beauty is provided in the design of "Tabiat" Bridge, and the space has made the best use of the geographical situation and the required positioning in the city, dealing with



Fig. 5: "Tabiat" Bridge and the Landscaping Role of It in "Ab-o Atash" (Water and Fire) Park. Photo: Maryam Mohseni Moghadam, 2016.

imaging and creating the common visual memory, via the aesthetics of the mountain and the highway (Mansouri, 2015). The element that can extensively be seen in the traditional examples of Persian garden construction, which provides a space for the viewers to pause and think. In fact, one of the important principles in urban landscape development and sustainable management is considering the improvement and creation of the views of the urban landscapes along with developing and promoting the quality of natural environments.

Presence of water is seen in a section of the park in a different way to what is in the Persian garden archetype; the area with water fountains that is the centre of attention of the children (Fig. 6). Spatial diversity is also considered in designing this park, and vari-

ous views of the city of Tehran from different parts of the park encourage the viewers for explorations as well as entertainments. Various facilities and spaces are designed for this park for different age groups, including sports spaces and children games, spaces for sitting and resting, picnics, restaurants and various coffee shops, views from "Tabiat" Bridge, and open amphitheatres. Although there no forms of Persian garden models in the physical structure and geometric shapes of this park, but the effects of aesthetic concepts can be found in some areas of the park that includes infinite views towards the surrounding landscapes, considering the spatial diversity, and presence of water in different ways and with modern styles from the Persian garden, which have caused the extensive welcome by the citizens.



Fig. 6: Presence of Water in "Ab-o Atash" (Water and Fire) Park. Photo: Maryam Mohseni Moghadam, 2017.

Conclusion

The main purpose of this study was to analyze and review aesthetic principles of the Persian garden archetype and its using for the contemporary urban public parks. Regarding its history, the Persian garden is the space with the identity that according to the thought of Iranians, it is inspiring the nature peace with regards to the relation of water, plants, and appropriate view within the framework for the creation of the variety of spaces. Due to the dominance of technological aspect of life, human beings require more relations with nature and using urban green areas. Hence, proper solutions should be sought to create the sense of belonging to such areas for the users. The two contemporary urban parks that are analyzed in this study indicate the importance of paying attention to the aesthetic principles in Persian gardens. These principles that contain the presence of water in different forms, the rectangular geometry, paths, spatial diversity and the variety of landscapes have been regarded in the garden build form. The required concepts are

considered in the “Persian garden” park, illustrating the traditional Persian gardens that the citizens have the sense of belonging to them. This place consisting of the sense of peaceful nature among the urban life pressures. For the “Water and Fire” park and despite not observing the effects as the Persian gardens in its spatial structure, but the effects of Persian garden aesthetic principles exist in its spatial concepts that have developed the relations of the citizens and their sense of belonging. For example, the presence of water in a modern form, spatial diversity, infinite view and the variety of landscape to the city have been considered in this urban park. Thus, it can be concluded that in case the existing traditional aesthetic principles in the archetype of Persian gardens with long history and proper identity are considered in designing new parks to be constructed, the contemporary green areas and parks shall be utilized for the aims of sustainable development, and the citizens shall have more effective relations with such spaces with respect to their identities.

Footnote

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