

Iranian Garden, a Forgotten Sustainability

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ABSTRACT

The architectural principles of urban sustainability are formed according to the exploitation principles from natural resources and ecologic elements in formation of work. Plant cover and urban green areas play important role in achieving the sustainable city in the theoretical framework of sustainable development. Iranian garden is the product of thousand years of architecture and Iranian urban planning that could play important role in progress of resistance in urban areas. Iranian garden planning and its specification have caused it to remain sustainable. Using the environmental elements is considered as the main principle in formation of the garden. In the present paper, it is attempted to study the principles of designing and architecture in Iranian garden and its role in achieving the sustainable development in the form of theory. It is tried to illustrate the role of garden in achieving the sustainable city and maintaining the ecologic balance in Iranian cities.

KEYWORDS: sustainability; iranian garden; nature.

I. INTRODUCTION

Sustainable architecture is one of the modern currents that are a logical reaction against the problems of the age of industry and like other architectural subjects have principles and special rules. Nowadays there are many problems in cities and urban life of people and the patterns of sustainable development in urban architecture offer suitable solutions for the mentioned problems. Therefore, using the principles of urban sustainable development, in urban designing could be considered as a solution. Nowadays, resistance has turned to a new concept in the framework of scientific thinking to give a solution in order to achieve a sustainable life and life balance. In this regard, the scientific-theoretical framework of the mentioned concept has been put forward in all dimensions of the life. It caused that key concepts of “resistance in the balance between the city and the nature, need for a justified society and considering the sustainable economy be formed” [1]. In the present time, the concepts of sustainable city are noticed in the reactions of sustainable city to unstable one and in this regard, the urban elements must play role in resistance of city as framework and ordinary elements. Garden is one of the mentioned elements in this regard.

II. SUSTAINABILITY

For defining the concept of sustainability, it is better to convey the concept first. It is less than several decades that sustainability concept in theory level has opened a way into the scientific societies of the world and only in the recent decades has formed in functional level by error and test methods. Moreover, the attempts of the social reformists were not satisfactory in organizing the sustainable culture [2]. Mc Intosh, suggests the following simple definition for the mentioned concept: Sustainability has a simple definition: living together among the natural resources. We must reduce the consumption of the resources and production of wastages and trash and we must be sure that everybody is able to live good as s/he deserves [3].

III. SUSTAINABLE URBAN DEVELOPMENT

The city that nowadays we recognize and live in it, create inconsistency tensions in the environment. From social standpoint, it has different classes, from functional standpoint it is not desired, and it is very expensive [4]. Therefore, in order to achieve a sustainable city, the theoretical issues of urban sustainable development must be performed with functional concepts, local patterns for future development of the city. According to the studied carried out a complete form of urban sustainability does not exist for all cities and every city must prepare a special local pattern [5]. Elkin and Mc laren suggest four principles for sustainable urban development in his book “Urban restoration”: a look towards future, bio-environment, justification and participation [6]. According to the studies, a sustainable urban development plan must have the following specification: stabilizing the general policies of the housing sector, economic development, spending spare time, substituting the persons and goods, preparing a place for cars and vehicles, adjusting rules for car transportations, organizing the space and renewing the urban structures, balancing the available urban spaces and natural ones, agriculture and future of natural spaces, agriculture lands and forests. All these policies and aims such as adjusted development and improving the life quality, dynamic economy, transportation and communications and protecting the natural resources have been defined under the aforementioned policies [7].

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IV. GARDEN AND SUSTAINABLE CITY

Iranian culture does not separate human from nature however, believes him inside the natural elements and an inseparable part of the nature and thinks using the natural landscape causes relaxation in human. Hence, architecture and art in Iran is naturalist. The said principle has caused the appearance of semi-open spaces such as terraces and Summerhouse that connects the natural spaces with the structured part.

Garden in Moein dictionary is defined as Paradise that roots from two words “pairi” and “daz” which means a closed space, garden and its Arabic form is Ferdovs. In Dekhoda dictionary, Pardis is rooted in Agglutinative Median language of Paradez that means garden. From the same root, we have Paliz a Farsi word; however, the word Garden (Bagh) in Pahlavi and Soghdhi has been used in the same form [8].

When Arians entered Iran, they faced a dry land then they tried to make it fresh and green like their homelands and then they achieved some techniques that caused the renewal of land for centuries and they created gardens and farmlands [9].

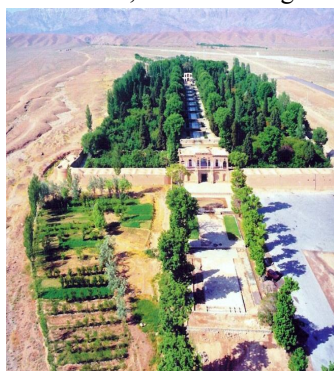
However, nowadays the garden play important role as spaces with diverse capabilities and emphasizing the historical heritages of the land and development of the cities. One of its main roles is to increase the resistance in the city and achieving a sustainable city in the form of urban sustainable development. Considering the mentioned subjects and regarding the “needs of the future generations” the role of garden is influential as a basic part in Iranian urban planning and as a catalysis process for achieving the sustainable city. Thus we are able to confess that Iranian garden plays more important role in the movement of the city for capturing the concept of sustainability [10].

The concept of sustainable development and following it the sustainable city, entered the world of theory considering the environment and future generations. However, after some years, the discussion around environment and achieving a sustainable city, existence of gardens and green areas as national and international heritages deserves importance. In sustainable ecology, the main element is environment. Among the aims of sustainable development, we can refer to healthy environment that includes following sustainable scales:

- Protect and enhance the characteristics of settlements
- Protection of natural habitats
- Protection of existing green belt
- Re-use of land
- Sound and light pollution reduction
- Protection of quality agricultural land
- Protection of water quality
- Protection of landscape and perspective[11].
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V. IRANIAN GARDEN A MANIFESTATION OF SUSTAINABLE CITY

Iranian garden is decorated with order and symmetry, owns the respect and privacy, lacks the uselessness and extremism, and is suitable for economy and resistance. The religion of Iranian from ancient era has respected the trees, and green areas. In a case that, holiness is experienced as a scientific and objective issue, the mentioned experience could be observed in using the four elements of soil, water, fire and wind inside the gardens, which roots, in the ancient beliefs [12]. In designing the Iranian garden in addition to the said simple elements, their essence also are considered. In this regard, wind is referred as breeze, soil is referred as a cultivates creature and fir as the flame, and water is added to them from different standpoints that comforts the life environment. Thus, Iranian gardens are created in different scales such as hunting areas like, Tagh Bostan, valley gardens like, Saad Abad garden in Tehran, gardens inside gardens like Safavid gardens in center of Isfahan, and different shaped ones like Pardis, Golestan, Golzar, Golshan, Golgasht, etc. four elements all have special place separately and together. Considering these elements and creating a pleasant environment, the idea of a great place is shaped [13].



VI. THE GENERAL SPECIFICATIONS OF THE IRANIAN GARDENS

Iranian gardens are built in level lands and are plain and if they are built in land with slope, then waterfalls and more trees makes them beautiful like Tajnazar garden, Shahzadeh garden in Kerman, or some gardens of Mazandaran. The main characteristic of Iranian gardens is the existence of geometrical order in division of the spaces. The garden spaces such as green areas, streams and docks, access paths and buildings are located with geometrical order. Mostly right angles and direct lines are used in the sections.

Figure 1 & 2. Pictures from Shahzadeh garden in Mahan in Kerman, Iran
(The archive of cultural heritage of East Azerbaijan)



Figure 3. Ghadamgah in Neishabour (Mazar garden)
(The archive of cultural heritage of East Azerbaijan)



Figure 4. Dolatabad garden in Yazd
(The archive of cultural heritage of East Azerbaijan)

Generally, two right axes divide gardens to four main parts and buildings have a dock house in the center. The gardens, which are designed in aslant lands generally, have a main axe and a summerhouse in the last part, and the minor paths are cut by right angles and transversely. The garden is divided to four main parts, which are mostly square, or square like rectangles that they are divided to four other squares and this division continues according to the total area of the land. The main axe of the garden mostly is for decoration. The other parts are covered with fruit trees. As the area of the land increases, more fruit trees are planted in direct lines in the gardens. Every part of the garden is allocated to one type of fruit and good smelling flowers such as rose and damask roses are planted beside the water paths. Shading trees are planted in marginal line of the axes which divide the internal parts and create paths (alleys).



Figure 5. Fin garden in Kashan, Iran
(The archive of cultural heritage of East Azerbaijan)



Figure 6. Delgosha garden in Shiraz, Iran
(The archive of cultural heritage of East Azerbaijan)

Water illustrations were exaggerated in designing the gardens since Iran is a dry land with low water. The dock mostly is built in big dimensions. Besides the paths, mostly there are water docks and streams to illustrate the water better or to have more sounds and movements of the water. These minor streams have right angles with the main stream or are in parallel position to them. The entrance of the garden is very important according to the ancient architectural tradition of Iran and if there was not any transom because of the little size of the garden, a wall was built behind the transom, which was called Oros and prevented the others to look into the garden. Behind the transom or Oros there was a place which shading trees were planted there and it was covered with carpets for accepting the guests. Sometimes there was a dock there, either and it was called Bonehgah [14].

After a short glance to the principles of Iranian gardens, we discuss the resistance dimension of the gardens and their role in sustainable urban development. Among the sustainable dimensions, we can refer to the social sustainability, ecologic, anatomic and economic sustainability.

The specifications of social sustainability in Iranian gardens:

- Making connection with modern cities (time sustainability)
- Natural connection and artificial nature
- Enforcing the naturalist spirit of human
- Using the designs and traditional Iranian architecture
- Considering the individual characteristic of the garden and making internal-external relation
- Dividing the spaces (public, semi-public and private)

The specifications of ecological sustainability in Iranian gardens:

- Following the topographical shape of the land in gardens

- Garden as the breathing point for cities
- Using the local materials
- Increasing the per capita green area especially in desert areas
- Creating an urban landscape
- Finding the best location for optimized uses of natural elements (river, duct, ..)
- Better use of the four elements

The specification of the anatomic-economic sustainability in Iranian gardens

- The suitable formation of the garden with the environment and urban areas besides the garden
- Combining different functions in the garden (residential, economic, recreational and touristy)
- Observing the principles of sustainable architecture (centrality, symmetry, hierarchy and repetition)
- Suitable placing the garden elements (water, tree and building)
- Increasing the tourism and international eco-tourism

CONCLUSION

The studies show that the concepts of the urban sustainable development are multi-dimensional. In order to achieve this resistance all the dimensions must be studied in interaction with each other. Considering the principles and elements of the sustainable development and sustainable city in connection with Iranian garden show, that Iranian garden was able to introduce itself as a sustainable element. According to the logical system of component to whole and vice versa it has played important role for achieving the sustainability in cities.

Here we have some results of the studies that mostly are confirmed:

- Considering the Iranian architectural elements such as symmetry, centrality, hierarchy, repetition and diversity to achieve sustainability in the building
- Achieving the sustainability according to the primary definitions of the sustainable development in Iranian gardens regarding the time path in the buildings
- Respectful interaction to the environmental elements as one of the main philosophical-logical principles in Iranian gardens
- Achieving the sustainability in the bed of time and environment by considering the cultural and local principles
- Observing the local designing principles in designing the Iranian gardens
- Creating diversity in the color and urban appearance
- Increasing the interactive relation with the eco-system
- Considering the cultural heritages and increasing the tourism for the city and the country according to the concept of sustainable development
- Increasing the anatomic role of breathing for the residents of the city by the gardens in urban planning in contemporary cities

According to the results of the present research, we could say that Iranian garden, as a historical element was able to play its role according to sustainability elements in the cities. New movements in city planning in new towns were unable to reduce the role of garden affectively in order to increase the sustainability of the cities (although we must consider that exact determination of the sustainability needs more studies). Hence, it must be considered that developments of the cities and civilized human's distance from natural environments, increase of pollution, growth of machine life, necessity of need to nature and natural elements more and more surrounds human life. In the contemporary method creating the green area in the form of parks in the cities, which rarely has been formed according to the Islamic and Iranian principles of garden building, was unable to fill the empty place of garden in Iranian urban planning. Hence, the role of Iranian gardens in the cities seems more affective in increasing the sustainability. As it was mentioned, Iran's reach heritage concerning the role of garden in urban structure is able to be a valuable guide in urban planning by relying on the concepts of sustainable city designing. However, unfortunately, the culture of paying attention to the nature in the current life has faded away and the gardens around and inside the cities has been divided and turned to apartments. We cannot smell the flowers and basils any more. Unsuitable designing has caused the disappearance of the main parts of the historical gardens and the urban communication between the gardens and urban system is very weak and without designing. Restoration of the gardens, in many countries has reached to scientific stages. The activities of the general association of Ikimos in the international association of monuments and historical places in Dec 1981, in Florence approved the subject and created vast discussions over the necessity of paying attention to protection and restoration of historical gardens. We read in a part of the charter that: "since the garden is artificial one, then it is considered as art work and because of its cultural value, architecture and environment is the heritage of people that use it".

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