

We are IntechOpen, the world's leading publisher of Open Access books Built by scientists, for scientists

4,800

Open access books available

122,000

International authors and editors

135M

Downloads

Our authors are among the

154

Countries delivered to

TOP 1%

most cited scientists

12.2%

Contributors from top 500 universities



WEB OF SCIENCE™

Selection of our books indexed in the Book Citation Index
in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?
Contact book.department@intechopen.com

Numbers displayed above are based on latest data collected.

For more information visit www.intechopen.com



The Role of Trees in Improving the Urban Landscape, (Case Study Vli Asr Street of Tehran city)

Fardad Edalatkhah¹, Mahdi Shafaghati^{2, *}, Akram Norouzi²,
Somaye Motaghi², Maryam Mirbahaie³

1 Municipality of Tehran, Tehran, Iran

2 Payame Noor University, Taleghan, Iran

3 Payame Noor University, Varamin, Iran

* Corresponding author, Tel.: +982122446512; fax: +982122488550.

Email: m_shafagati@yahoo.com

Abstract

City landscaping is the art of visually and structurally integrating the complex of buildings, roads and elements present in them, as well as all those spaces which give shape to urban environments. These include natural spaces inside city precincts which play a decisive role in creating urban landscapes with a decisively different appearance. Among natural elements influencing urban landscapes, trees are of paramount importance owing to their particular structure and spatial function. Like buildings, trees have structures which help create plant-based architectural styles. In lieu with overall changes that a city experiences in the course of its subsequent historical stages, the selection criteria for the varieties of trees to be planted in the city change, too. Meanwhile, almost all cities in the world today host a large proportion of open space with distinctive physical characteristics each. These include streets, squares, and spaces adjacent to car parks. Tree selection criteria for each of these spatial categories vary accordingly as determined by professional city landscaping architects. Based on research findings and the field study carried out, this article tries to assess and highlight the role played by landscaped and natural elements in the greater urban architecture, and draw up certain conclusions as a result.

Keywords: urban landscape, tree species, Vali Asr Street Tehran, Urban environment

1. Introduction

Exactly as the establishment of developed urban areas is considered to be one of the greatest achievements of human civilization, city landscaping is can also be taken as a measure of the degree and nature of a civilization and the collective psyche of a nation. Although the view which regards cities as phenomena independent of the human will is not held as widely to date (3), there is still a deep-seated approach to the subject which has strong following and tries to interpret and analyze the city and her landscapes regardless of humankind as their simultaneous creator and perceiver (7).

2. Concepts

The urban landscape is a concept that lingers in the human memory even after one has evacuated a landscaped spot and results from the interaction between man (the onlooker) and his living environment. (1)

The most decisive feature of such a concept is its being subjective-objective, human-concrete, social-spatial which can be comprehended solely via the human experience and his interaction with his surrounding environments.

There are three major approaches to the qualitative entity of the urban landscape:

- a) The view that regards the urban landscape as a quintessential feature of the physical environment of a city, independent of the humankind as the onlooker and the perceiver;
- b) The insight which regards the urban landscape an entirely subjective element created by the onlooker, independent of the structure and other characteristics of the physical environment;
- c) The approach which considers the urban landscape to be an event emanating from the interaction between palpable physical characteristics of the surrounding environment and the existing paradigms, cultural symbols and intellectual competencies of the observer. In this phenomenological approach, the concept of the urban landscape can be interpreted in various ways. As compared to the previous two approaches, this is the most credible take on the concept of the urban landscape nowadays (7), (3).

3. The case study on Vali Asr Avenue in Tehran

This is a major thoroughfare 18 kilometres long linking the northern and southern tips of the city along an almost straight north-south vertical line. Yet, perhaps the most important reason behind the outstanding role of this road in Tehran is the fact that it acts like a historical bridge connecting the junctures the city went through before and after the road was built. This road is, in effect, a showcase of Tehran's social, cultural, political, religious, etc developments, especially, over the past 100 years, and therefore, her historical backbone.

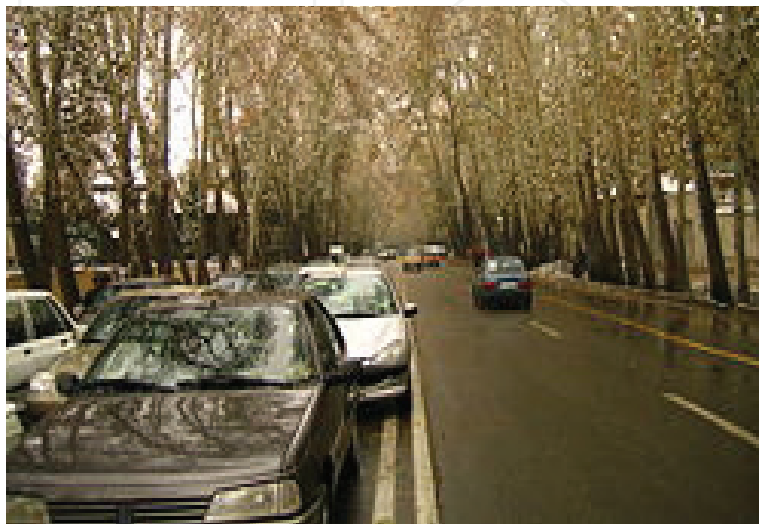


Figure 1. New picture from vali Asr street in Tehan city,Iran

4. The plane trees of Vali Asr Avenue

These have been lining the road ever since it was built over 80 years ago and now amount to a total of 11,000. The plane trees of the Avenue are long considered to be a unique symbol of Iran's capital city, a national treasure and a cultural heritage which for many residents of the older generation revive endless nostalgic memories of the city's rich and exciting history.

5. The current situation of the trees

Unsettling reports have been published in ever-growing numbers on the immanent extinction of Tehran's historic plane trees. One of the best-researched among reports published very recently blames the following factors for the growing threat that has put the life of these priceless trees on the edge:

- a) The demolition of the surface- and ground-water runways of the city;
- b) Mismanagement in irrigation;
- c) The release of sewage and other pollutants into the running water resources of Tehran;
- d) The disposal of a wide range of toxic chemicals such as detergents, industrial chemicals, cement and other construction materials, industrial oils and gasoline in the city's soil and water resources;
- e) Physical damage incurred on the root system of the trees as a result of constant diggings, curb lining and concrete injection projects;
- f) Changes in top soil levels exposing the trees' root systems to ambient, erosive climatic factors;
- g) Physical mistreatment of the trees by humans;
- h) High-rise buildings which block solar radiation reaching the canopy of the trees;
- i) Highly polluted air all the year round (6), (2).



Figure 2. Old picture from vali Asr street in Tehan city,Iran

6. Spotting optimal locations for landscaping

Landscaped plots must be centrally positioned, that is, they must be located at the heart of a neighborhoods, zone or district of the city. Moreover, such plots should be consistent with the physical structure of the environments that surrounds them. Another crucial criterion is accessibility. City landscapes must be linked with the traffic and transport grid in their four directions to become easily accessible for the greatest number of people and to become safer places for the public as enforcing public security measures in such locations is optimized thus.

7. The role and effects of trees in urban landscapes

City landscaping is the art of visually and structurally integrating the complex of buildings, roads and elements present in them, as well as all those spaces which give shape to urban environments. These include natural spaces inside city precincts which play a decisive role in creating urban landscapes with a decisively different appearance. Among natural elements influencing urban landscapes, trees are of paramount importance owing to their particular structure and spatial function. Like buildings, trees have structures which help create plant-based architectural styles. In lieu with overall changes that a city experiences in the course of its subsequent historical stages, the selection criteria for the varieties of trees to be planted in the city change, too. Meanwhile, almost all cities in the world today host a large proportion of open space with distinctive physical characteristics each. These include streets, squares, and spaces adjacent to car parks. Tree selection criteria for each of these spatial categories vary accordingly as determined by professional city landscaping architects.

8. Recommendations

Any successful management of urban green space requires the serious enforcement of the following measures and/or principles:

1. **Granting a greater role to the public as the direct benefactors:** This can be realized through raising public awareness and strengthening public responsibility among others;
2. **Boosting the ecological productivity of urban green space:** this can be realized through the protection and management of urban green space, the informed selection of the right plant varieties, integrated management systems in planting, growing and training the selected plant varieties, urban woodland management, intelligent plot spotting for the expansion of urban green space, evaluating the feasibility of extending urban green space to abandoned plots and mountainous ecosystems;
3. **Raising the social productivity of urban green space:** this can happen via ensuring safety and security, the provision of basic facilities and amenities, ease of access, consistency and cohesion with the greater physical environment, proactive management, balanced geographical distribution, etc.

9. Conclusion

Both from an architectural-aesthetic point of view and in order to raise the quality of the essential elements in urban livelihoods, paying attention in urban management processes to the image of

urban areas overall and urban landscapes in particular is of paramount importance. However, the scientific study of these elements and their contribution to urban development in view of their economic as well as budgetary repercussions is no less significant. In other words, image- and landscape-related projects should not be taken into account barely from an architectural and aesthetic but also from an economic standpoint. As regards important traffic axes, strategic decisions must be made in accordance with the prominent position of spatial planning and landscaping projects in urban areas. In other words, the simple fact that budgetary provisions are available to municipal managers must not automatically lead to the illusion that such resources can be allocated to imagined beautification projects arbitrarily to boost development efforts in urban areas in turn.

10. References

- [1] Soltani,B.2010,view to green area of Tehran city, journal of environmental science,environment organization press.
- [2] Bijan zad,M,2010,evaluation of green area of Tehran city, jihad daneshgahi ,press, Tehran.
- [3] Satari,J,2006,Myth of Tehran city, office of cultural research, environment organization press.
- [4] Rasouli, A, 2009, buttonwood, holy tree in Iran, cultural heritage press, Tehran
- [5] Riyazi, B, 2009, Development of green space in Tehran, proceeding of green space seminar, Tehran city parks and green space organization, Tehran
- [6] Majnoniyan, H, 2010, Debates about parks, green space and promenade, Tehran city parks and green space organization, Tehran
- [7] <http://www.darioush-shahbazi.com>
- [8] McPherson, E.G & Nowak,D.G, 2011,The Chicago urban forest climate project.