

Landscape Evaluation for an Urban Park in Athens

OLGA SERIFI*, JULIA N. GEORGI**,

**MSc Environmental Biotechnology The
University of Manchester, Oxford Road, Manchester UK M13 9PL*

***Dr. Landscape Architect (MLA)
Tutor of Hellenic Open University
P.O. Box. 13680, 10310 Athens, GREECE*

Abstract: This paper demonstrate the current situation of the urban park (Pedio Areos) in the centre of Athens and deals with its management issues. Two major problems are the daily maintenance and safety.

As it is known, parks offer a locality where the city dwellers might achieve the objectives of a relaxing and pleasant process, such as walk in safety, cycle, enjoy the nature, sunbath and their children play safely as well. All these can be accomplished with assumption that the park proper designed and organized.

Landscape Design is essential to a synthesis of the climate, geography, culture, history, and physical design fields. It is based on "cultural climate" that creates variety and originality of urban views and landscape. The analysis of the structure of regional landscape focuses on the mutual relations between urban structures and natural features. They give new aesthetic design concepts to civic and landscape design.

Some of the results, of the research, also illustrate that people need to spend their free time in a more colourful, natural, aesthetic environment, with variation of landscapes. Following the examination of questionnaires, the designer is given the possibility to take into account the views of users and combining them with his personal identity, be able to create an appropriate master plan of the external area and a detailed design.

Key-Words: - urban park, open green spaces, questionnaire, dwellers preferences

1. Introduction

The existing structural environment where man lives is characterised by the presence of a great amount of non-natural elements. The natural environment has been expelled from cities, succumbing to the “flexible concrete” and disrupting the harmonious relationship between man and the environment. Following a sample taking in a number of Greek cities, we concluded that the amount of green area per inhabitant is 3.12 m², reaching 2.19 m² in the Municipality of Thessaloniki and 2.55 m² in Athens. According to Professor Dafis [1], an amount 20 m² of evenly distributed green area per person is required. The benefits of vegetation and contact with nature have been acknowledged for centuries in a great number of civilizations. From the Ancient Greek, Egyptian, Babylonian, Assyrian and Roman days, trees have been used in cities, mansion gardens or sacred spinneys. The Ancient Greek civilization reached a high level because its people were harmoniously connected with nature (the ancient Greeks of course did not have to take care in planting gardens because they lived in areas of wild vegetation).

The aim of the study is to present the dweller’s opinion and to improve the aesthetic of the park and their life.

2. Urban Spaces

In particular, green areas in big cities are considered not only to be necessary but also beneficial.

“Urban green space: is defined as land that consists predominantly of unsealed, permeable, ‘soft’ surfaces such as soil, grass, shrubs and trees (the emphasis is on ‘predominant’ character because of course green spaces may include buildings and hard surfaced areas); it is the umbrella term for all such areas whether or not they are publicly accessible or publicly managed. It includes all areas of parks, play areas and other green spaces specifically intended for recreational use, as well as other green spaces with other origins. The term ‘urban green spaces’ is used throughout this report as a short hand term for the parks, play areas and green spaces of the title, as it includes all these

categories.” [2]

A more flexible approach to open space definition and usage is proposed, recognizing ‘loose-fit’ landscapes, which allow opportunities for the socially marginalized and the ecologically shifting within a dynamic framework of urban structures and networks [3].

Based on the activities and the variety of activities, recreational open green areas are classified as:

- a) Home-oriented open green areas aim at providing aesthetic quality and informal activities in home outdoor places. It involves natural passive and active recreational activities such as sitting, reading, sunbath, and doing garden work.
- b) Home cluster or sub-neighborhood common open green areas: these provide visual and aesthetical quality, make informal groups getting together possible and enable children to pursue several activities such as walking, playing. Green belts, for example, have walkways, playgrounds, sport complexes, vest-pocket park and parking spaces, the service distance is 250–500 m.
- c) Open green areas in a neighborhood: these involve passive recreational activities (resting, playing, socializing) and various sports activities (basketball, etc.). These can be neighborhood parks, sport areas or recreational centers and can serve several neighborhoods; the service distance is 400–800 m.
- d) Open green areas in community: these are used for social, cultural, physical and educational activities, and involve activities in community parks or in schoolyards such as playgrounds, recreational centers, making new friends and reading. The service distance is 800–1600 m.
- e) Open green areas in towns: these are created in cultural and natural areas, and involve city park and natural reserve areas, sea shores, river banks, picnic areas, special sport areas or play grounds for groups. It takes up to half an hour to reach by car [4], [5], [6], [7], [8], [9], [10], [11], [12], [13], [14].

2.1. Green Spaces in Urban Environment

Around the world, cities are growing while the quality of urban design in the new areas is deeply depressing repeated and poorly designed. Mostly, the problem results from entrusting the design of

each component to specialists, without any afford to design of the space between buildings. Everyone is cared about to design roads, houses, apartment blocks, and industrial sheds, in contrast, few are the people who really care to green-up the space between buildings. If you want your city to have good open space between buildings, and on top of buildings, then landscape plans should precede urban development. The principle applies on greenfield sites and in urban renewal and regeneration projects. Clean air, sunshine, beautiful cities, sparkling streams, colourful gardens, gathering places in which to encounter other people is some of the advantages of a conscientious designed park. Determination of seven (7) fundamental elements that totally characterize it:

Visibility, Feeling of security, Natural support, Opportunities to chose- Seeking for privacy or meeting with others for social contact, is bound by the same problem, close contact with nature. Generally, the profits that result from the parks are:

- It contributes in the maintenance of good health with the paths of walk but also with its remainder departments that contribute in the energetic activity.
- It offers occasions for sociability.
- It gives the occasion for new and interesting activities as observation of birds.
- It contributes in the maintenance of rhythm of body in 24-hour.
- It decreases the stress and it contributes in better natural situation.
- It improves the psychology of the dwellers are they are closer to nature
- Children are more safety to play, enjoy the company with other kinds, learn to act in groups and respect the environment.

Generally, all the elements of a park allow to person to spend his free time in a comfortable environment, contrary to a "cold" room of his apartment [15].

3. Benefits of Parks

A well-designed park offers security, reduces stress, nourishes social contact and interaction, allows visitors to enjoy nature and helps in the development of senses, which can not be developed in the structural environment of a city.

R. and S. Kaplan [16] support the view of a poor designed building such as the hospital environment is stressful because it is considered to be complex

and not friendly. They believe that continuous exposure to such an environment leads to mental (spiritual) exhaustion. In cases like that, they recommend the exposure to a less complex natural environment, which would enable them to rest, develop companionship and burden them with a smaller amount of information.

Men have a natural tendency to the natural landscape in relation to the built environment, particularly when the latter presents an absolute lack of vegetation and water. Generally, people who are under stressful pressure, wish to find shelter in the natural environment, which could made them feel better. Landscapes consisting of trees, grass, water, stone formations, flowers and birds are considered very useful for the dwellers of a big city.

Litton [17] claimed in his visual assessment of river landscapes: "Water in the landscape tends to be dominant because of its visibility, its movement, reflections, and color, its consequent contrasts to adjacent earth surfaces."

It should also be noted that children tend to perceive and evaluate water differently from adults. Zube et al. [18] found that water significantly enhances scenic values for young children but is of minor importance to adults. Kates and Katz [19] observed that "Water is a special part of the play world of the child."

Hartig [20] and his associates first produced stress in individuals with a demanding cognitive task, and then measured recovery effects of either (1) a fortyminute walk in an urban fringe nature area, (2) a forty-minute walk in an attractive urban area, or (3) reading magazines or listening to music for forty minutes. Findings suggested that persons assigned to the walk in nature reported more positively toned emotional states than individuals assigned to the other two activities.

Nakamura and Fujii [21] performed studies in Japan that also recorded brainwave activity as unstressed subjects viewed either vegetation or human-made objects. In an innovative experiment, they recorded the electroencephalogram (EEG) in a field setting while subjects viewed either a hedge of greenery, a concrete fence with dimensions similar to the hedge, or a condition consisting of part hedge and part fence. Results showed that the ratio of alpha activity to beta activity was high when persons viewed the hedge; the ratio reversed, however, when the same persons looked at the concrete fence.

4. Methodology

4.1. Area of Research

The research was carried out in the Pedion Areos park, which is located in the centre of Athens (fig. 1) and is developed along the crossroads on main avenues. The park occupies approximately an area of 350 acres.

The park was constructed at the beginning of 20th century, express the need of green space in the urban environment. Since then the management of the park belong to different public sectors.

The surroundings of the park are a very densely populated and structured almost without open spaces. Moreover, in Athens there are only two large parks, Pedion Areos and national garden.



Fig.1 Aerophotograph of the park and the surroundings.

It has formed as followed: athletic fields, two churches, three playgrounds, two café, one Sculpture Park and two open theatres (fig.2).



Fig.2 Open theater in the park.

The two main entrances are highlighted by two sculptures one is the goddess of Athens (fig.3) and the other one Constantine.



Fig.3 The sculpture of goddess of Athens in the one of the main entrances.

The park has a great variety of vegetation including 74 different species of trees and 85 different species of shrubs (fig 4), although it is not enough for its area. In addition, there are large extensive paved parts that are not covered by trees, shrubs and groundcover therefore the microclimate could be improved with additional planting (fig 3).



Fig.4 A well planted area.

4.2. Existing Problems of the Park

Although the vegetation is necessary, initially some others problems should be worked out. For instance, there is not existed an overall management plan of the park, as listed below:

- there are not enough staff (skilled or unskilled),
- weeding, remulching, replacement of damaged materials, and any other practice that will ensure the health of the plant, pruning, fertilizing, and pest and disease control, these actions are not repeated frequently as concern the specifications of maintenance,
- the irrigation system is not well constructed and not automatically,
- it is fenced recently, although without placing gates in the entrances,
- guards personnel is not hired . The factors above reveal the real situation of the park, which is adontance and unsecured.

4.3. Method

The research of present paper was based on the inclusion of various individual factors that concerns in Pedion Areos Park in Athens (fig. 1). Thus, they were taken into consideration:

- The opinions of dwellers (different ages), some of just cross the park while others visit it.
- Analysis of environment.
- Literature review

5. Results and discussion

The results of the analysis found that great majority of respondents' perceptions is not satisfied with the current situation of the park. They express a wish for a well-design landscape park, because it would positively affect their psychology and offering them the opportunity to spend part of their free time. Some of the results that spring from the analysis of the questionnaire are plotted in figures, which are listed below.

1. Do you think that the park needs renovation?

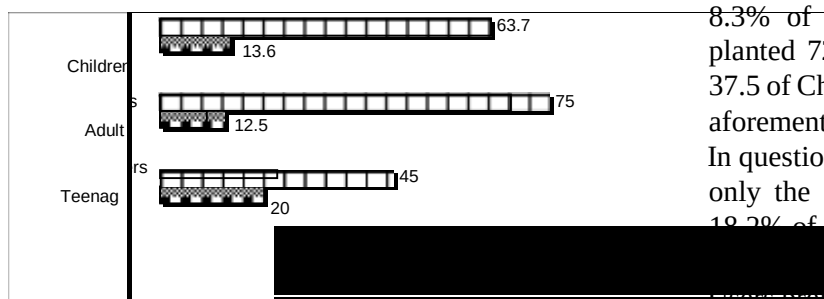


Fig.5

2. What kind of vegetation would you wish to be planted in the gardens?

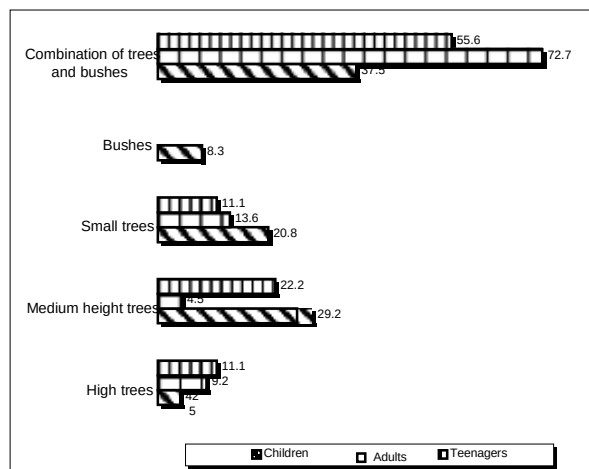


Fig.6

3. Are the park facilities enough?

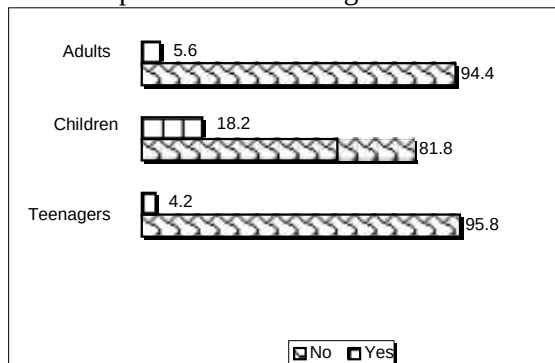


Fig.7

In question 1 asking do you think that the park needs renovation, the 75% of Adults, 45% of Teenagers and 63.7% of Children supported "yes" (Figure 5).

In question 2 asking what kind of vegetation you would wish to be planted in the park's gardens, 9.2% of Adults, 11.1% of Teenagers and 5% of Children would wish it to be very high trees. 4.5% of Adults, 22.2 of Teenagers and 29.2 of Children would wish for trees of medium height to be planted 13.6 of Adults, 11.1 of Teenagers and 20.8 of Children would wish for trees of small height to be planted. 8.3% of Children would wish for bushes to be planted 72.7% of Adults, 55.6% of Teenagers and 37.5 of Children would wish for a combination of the aforementioned trees and bushes (Figure 6).

In question 3 asking if the park facilities are enough, only the 5.6% of Adults, 4.2% of Teenagers and 18.2% of Children agreed (Figure

Users prefer an urban park where they could have an experience of naturalness, and the feeling of freedom. They also felt that it could be a good place to socialize, relax, inspire. Ozguner, H. and Kendle A.D (2004) have founded similar results. Moreover, was gathered important information, concerning the interventions they would like for the urban park. A great percentage, wishes for the planting of various types of plants and would like areas to be emphasize by a great variety of colors with vegetation. The majority of dwellers, wish to see vegetation of different sizes grow (mainly focusing on the characteristic of its height), meaning tall, medium size and short trees and bushes. Moreover, water features, such as lake, ponds or even technical steams is another request. This renovation (plants, water features) can also improve the microclimate [22] of the park especially during the summertime where the temperature can be reached 40^o C in center of Athens.

Finally, as the park situated at the center of Athens the security seems to be a significant issue for the users. For instance, it has been observed at the national garden of Athens, that since it was guarded the criminality was reduced drastically.

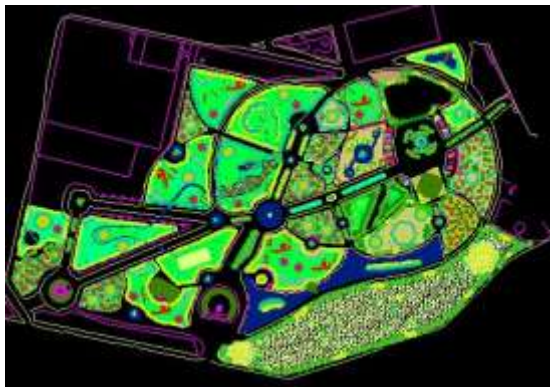


Fig.8 Indicated plan.

An indicative concept plan is a solution to the above problems, as shown above. (fig.8)

References

- [1] Dafis S. *Urban Forestry*. (Eds) Art of text. Thessaloniki (in Greek). 2001. [2]Dunnett, N et al. *Improving Urban Parks, PlayAreas and Green Spaces*. London: DTLR.2002.
- [3] Thompson C.W. *Urban open space in the 21st century Landscape and Urban Planning* Vol.60, No 2 , 2002, p.p. 59-72.
- [4] Patmore A.J. *Land and leisure*, Pelican Books, Middlesex. 1972.
- [5]Maw R. Analysing demand for leisure facilities. *Built Environment*, 1972, p.p.519–22.
- [6]Welch et al. *Guidelines for developing public recreation facility standards*. Sports and Fitness Division, Ontario, 1984.
- [7]A.B. Gallion and R. Eisner.*The urban pattern city planning and design*, 55 ed, Van Nostrand Reinhold, New York, 1986.
- [8]Westover.T.N. Perceived crowding in recreational setting an environment-behavior model. *Environment and Behavior* Vol. 21, No 3, 1989, pp. 258–276.
- [9] B. Yuen. Use and experience of neighbourhood parks in Singapore. *Journal of Leisure Research* 28, 1996, pp. 293–311.
- [10] J.D. Chiara. Time-saver standards for residential development, McGraw-Hill, New York, 1984.
- [11]Schreyes R. and Knopf R.C. The dynamics of change in outdoor recreation environments—some equity issues. *Journal of Park Research* Vol.1, 1984, pp. 9–19.
- [12]R. Jackson. Recreation and generic urban housing form. *Environment and Behaviour*, Vol. 18, 1986, pp. 502–532.
- [13]More TA, Stevens T, Allen PG. Valuation of urban parks, *Landscape and Urban Planning*, Vol.15, 1988, pp. 130–52.
- [14]Hillman J. *The role of urban parks, the future of our urban parks*. Findings of the Symposium Church House Conference Centre, London, 1994, pp. 6–7.
- [15] Georgi, J.N., Anthopoulos P., Landscape Preference Evaluation for Therapeutical Gardens. *IASME TRANSACTIONS Journal*, ISSN 1790-031X, Issue 3, Vol. 2, 2005.
- [16] Kaplan, R. & Kaplan, S. *Cognition and Environment: Functioning in an Uncertain World*, New York, Praeger Publishers, 1983.
- [17]Litton Jr., R.B., River landscape quality and its assessment. In: *Proceedings of the Symposium on River Recreation Management and Research*. Gen. Tech. Rep. NC-28, Northcentral For. Exp. Stn. US Department of Agriculture, St. Paul, MN, 1977, pp. 46–54.
- [18]Zube, E.H., Pitt, D.G., Evans, G.W. A lifespan developmental study of landscape assessment. *J. Environ. Psychol.*Vol.3, 1983,pp.115–128.
- [19]Kates, R.W., Katz, C., The hydrologic cycle and the wisdom of the child. *Geogr. Rev.* Vol.67,No,1, 1977,pp.51–62.
- [20] Hartig, T., M. Mang and G. W. Evans. Restorative Effects of Natural Environment Experiences”. *Environment and Behavior*, Vol. 23, 1991, pp. 3-36.
- [21] Nakamura, R. and E. Fujii. Studies of the Characteristics of the Electroencephalogram when Observing Potted Plants Pelargonium Hortorum ‘Sprinter Red’ and Begonia Evansiana. *Technical Bulletin of the Faculty of Horticulture of Chiba University*, Vol. 43, 1990, pp. 117-183.
- [22] Georgi ,N, J. Zafeiriadis K. The impact of park trees on microclimate in urban areas , *Urban Ecosystems* (accepted for publication, in press), 2005.