

PAPER • OPEN ACCESS

Design of urban parks

To cite this article: N V Meseneva and N P Milova 2018 *IOP Conf. Ser.: Mater. Sci. Eng.* **463** 022015

View the [article online](#) for updates and enhancements.



IOP | ebooks™

Bringing you innovative digital publishing with leading voices to create your essential collection of books in STEM research.

Start exploring the collection - download the first chapter of every title for free.

Design of urban parks

N V Meseneva¹, N P Milova²

¹ Associate Professor of the Department of Design and Technogy, Institute of Service, Fashion and Design, Vladivostok State University of Economics and Service, Gogolya str., 41, Vladivostok 640014, Russia

² Associate Professor of the Department of Design and Technogy, Institute of Service, Fashion and Design, Vladivostok State University of Economics and Service, Gogolya str., 41, Vladivostok 640014, Russia

E-mail: meseneva@mail.ru

Abstract. City parks, built during the Soviet period, do not meet the requirements. Parks form the culture of the city and affect the physical and spiritual health of a person. Designing parks that meet the requirements is an important task, the solution of which involves a number of functional and town-planning tasks. Today, there is a need to define the basic principles of design, management and control, creation and maintenance of natural resources. Parks should correspond to modern technologies; high-tech materials should be used. Innovative technologies and methods of landscape design and construction give the designer much more opportunities to organize the environment of parks. Important tasks in the design of parks are the preservation or restoration of existing landscapes and the creation of new artificial landscapes.

1. Introduction

One of the essential criteria for organizing recreation for citizens is the aesthetic merits of parks. However, despite the large amount of work on the organization of parks, the artistic and compositional level of projects in Vladivostok today does not always meet modern high professional requirements.

The park intended for recreation is an open green area. As a rule, parks are kept by the state and are provided for the rest of all comers [1]. The purpose of design as a phenomenon of modern culture is to promote the improvement of the quality of life of people and the improvement of socio-cultural relations between them by creating a harmonious environment in all spheres of life for people to meet material and spiritual needs [2]. The urgency of the problem lies in the fact that today there are qualitative changes in the landscape design of parks. Increasingly, there is a need for competent organization of the surrounding space, the need for a consistent style solution [3]. Beautiful, creative solutions of parks are business cards of cities. This study is based on research materials and documents on the organization of parks; on the integration of nature into the urban environment; solving the problem of ecology and humanizing the environment by creating a harmonious urban environment.

2. Problem statement

The tasks of the presented work consider the organization of modern city parks, including: functional zoning, landscape formation, creating an expressive image of the park. The importance of the problem lies in the need of systematical comprehension of the processes of globalization, informatization of the urban environment, and also to update the architectural and design theory from the point of view of its humanization and a more attentive attitude to human and social problems [4].

An important task is the ecological renewal of existing cities, which offers the creation a human-friendly living environment in cities, that provides healthy and safe living conditions, harmoniously combining the social and engineering infrastructure created by man and the preserved nature [5].



Important principles in the design of parks are connected with the person, his social and physical qualities. When designing parks, it is necessary to preserve the existing landscapes and create new ones. The object - spatial environment of city parks, is a complexly organized environment that takes into account the laws of artistic unity. The main components in the design of urban parks include the following characteristics.

The artistic image. The artistic image is a form of the reflection of art in reality, representing the general through concrete (individual) and it is realized in the creative process. The artistic image lies in the sphere of the non-material, in the world of art itself, only indirectly influencing the psychology, feelings and line of behavior of a person, "physically" perceiving a work of art. "An artistic image is suggestion, the imposition on the viewer, listener, reader of the individual opinion of the given artist about an event, character, natural or social phenomenon, an attempt to find common points of sense and meaning of life with the viewer" [6]. In the traditional sense, the ultimate goal of designing parks is to create a certain artistic image of the park, the park ensemble, "in which nature, architecture and man are harmoniously interlinked" [6].

The presented research is based on materials and documents on the organization of visual urban environment [4 - 10]; the importance of landscape design in the design of the habitat [11 - 16]; addressing issues of humanizing the urban environment [17, 18]; creation of a harmonious urban environment [19, 20].

3. The results of the discussion

Today, architects create bright, unique solutions for the parks. The understanding of the importance of preserving cultural landscapes is new in the organization of parks, it is focused on the preservation of values associated with natural objects and their elements. Parks include the most important components that are in the center of attention of people, such as a sense of place and a sense of cohesion of society, cultural identity and cultural diversity [7].

Architects design an emotionally comfortable urban environment, connected with historical and cultural traditions. Architects take into account the fact, that architecture is daily included in life and it is always in a living event and experience [8]. But architecture surrounds us constantly and its emotional impact should be moderate enough. The use of spectacular forms, the "emotional approach" in architecture includes: "hypertrophy of perception", going at the expense of the cultural and historical meaning and richness of architectural forms [9].

Today, traditions, culture, natural landscapes are taken into account when talking about parks. Modern parks represent a holistic composite artistic solution and unity, they are connected with the environment, creating a sense of harmony, forming a favorable atmosphere, a unique artistic image: Japan, Osaka: Parks Namba (Namba Parks) - a green oasis in the "jungle" of the megalopolis or park Zaryadye, Moscow. As for the parks, for example, in Vladivostok, there are several parks located on the coast of the Amursky and Ussuriysky Bay. The park at the FEFU campus on the bank of the Ussuriysky Bay is located on picturesque slopes, beautifully opens the landscape at the sea areas and descending to the sea. The park emphasizes the image of the city by the sea overlooking the bridge across the Eastern Bosphorus Strait. A special attraction for the FEFU campus is its proximity to nature. The landscape - park zone and the embankment are excellent places for walking and resting of citizens: a forest, alleys, ponds, waterfalls, footpaths. The main task in designing the park was to create a contrasting architectural and artistic environment. The alternation of open and shaded spaces, waterfalls and reservoirs, colorful floral decoration, picturesque groups of trees and shrubs against the background of lawns, harmoniously included in the natural complex, have a positive effect on the mood of citizens. All park structures and their architectural and spatial solutions, its color characteristics are in harmony with the surrounding green zones (figure 1).



Figure 1 - The campus park of the FEFU in Vladivostok

Functionality. Practice of the modern design is aimed not only at obtaining a highly artistic object, but also in creating a harmonious and comfortable environment for a real person who is able to "treat a person humanly" [10]. The environment of parks is formed friendly, informative, universal, intended for the organization a recreational environment for various age and social groups of the population taking into account their interests and needs. The main principle of creating a city park might be called a harmonious combination of free green areas (meadows and groves) with zones of active and passive rest of citizens. The modern planning of park environment is multifunctional. The boundaries of each zone are clearly defined and at the same time the principles of flexible zoning are observed. Zoning elements, tracks, small architectural forms, color solutions and others are used. The park is a place for citizens to enjoy the nature, relax from pollution of the city environment, noise and admire beautiful groups of trees, bushes, flowers. There are areas of quiet rest or walking and areas of active rest in the parks. Park areas are formed depending on their purpose and location. The coastal strip along the sea in Ajax bay unites all areas of the park. The park's composition is built on contrasts: open landscapes (by the sea) and closed landscapes of the interior parts of the park (geometric, ensembles and natural landscapes). The park is on the slopes of the hills and extends to the campus of the FEFU, composing the ensemble. These green hills are very organic with the park. Green areas of the park include valuable trees, shrubs, flower arrangements. And they are designed for walking and quiet rest areas. Parks should meet the norms of ergonomics, and reserve the health of citizens. Classical ergonomics in modern design significantly expands its boundaries. In the modern information society, ergonomics affects the organization of not only the traditional components, associated with human anthropometry and motility, but also its emotional component.

Ergonomics is focused on the creation of universal design of the urban environment, convenient for all categories of citizens. The main purpose of the design is creation the environment that is the most suitable for using by all without exception. The main principles of universal design are: flexibility in the use of the environment for people with different physical capabilities, safety and aesthetic features [10]. Landscape organization of city parks. The urban environment is significantly different from the natural environment, but a person was and remains a part of a world, so, internal equilibrium, the "sense of place" - connection with natural landscapes, surrounding him - is extremely important for his psychology [11]. Well-designed City Park develops a sense of beauty, positively affects the health of citizens. The natural environment contributes to the creative development of citizens, creates their personal relationship to the environment. The park should be harmoniously inserted in the environment space and be connected with the environment. Landscape design of parks includes green spaces with color compositions from trees and shrubs. The variety of the surrounding landscape makes the park more interesting. The constant change in decorative accents, created by plants (especially those, belonging to the local forest flora) attracts the attention of citizens to the beauty of local plant species and arouse their interest in preserving nature. In the parks, landscape compositions from different species of trees, seasonal flower beds are created. Natural compositions create bright colors, give a positive emotional mood of citizens. Besides, they play the important role and have the following functions:

- Sanitary-hygienic (protection from dust, noise reduction, climate control);
- Spatial planning solution (creation of spatial structure, separation of functional zones);

- Decorative - artistic (creation of compositional accents and background for the park, decoration of objects);

- updating of existing zones with maximum preservation of natural landscapes [12].

The placement of stairs, retaining walls, paths, small architectural forms in the parks allows to designate certain zones (different for their intended purpose), or to place the accents in the required places. Their style should be in harmony with the design of the territory, its internal and external space [12]. Objects of landscape architecture include both natural components (relief, water systems, vegetation), and various engineering structures [13]. When organizing green zones, preference should be given to the local flora. Types of trees and shrubs should be selected taking into account the natural and climatic conditions of the park. The use of natural materials in urban conditions creates a comfortable environment for a person [14]. Trees, which were badly planted many years ago, create negative emotions. Overcoming it in urban parks is one of the tasks of landscape design.

The ecological aspect is essential in the organization of the park environment. The task of ecological renewal envisages the creation of a human-friendly living environment in cities, which ensures healthy and safe living conditions, harmoniously combining the social and engineering infrastructure created by man and the preserved nature [5]. The "economic man" of society today becomes an "aesthetic man" with an integral picture of the perception of the world, and with humane attitude to nature. The development of an aesthetic conceptual approach to the organization of the park environment is important. Tired of civilization, citizens tend to communicate with nature. Parks are designed as a tool for solving environmental problems, such as air pollution, water pollution and the reduction of biodiversity of the natural environment. Today, much attention is paid to ecology, land reclamation, restoration and transformation of abandoned areas, conservation of natural forest park zones [15].

Design in the modern world is dynamically developing and covers more and more spheres of human activity. Parks should correspond to the modern level of technology, use high-tech materials. New technological production capabilities, modern materials give the designer a wide range of possibilities for organizing the environment of parks. The newest technologies are associated with the possibility of using modern technologies (solar power sources, Wi-Fi, rainwater and meltwater collection and utilization systems) in the park, as well as providing connectivity in the park to sources for charging mobile devices. Innovative technologies and methods of landscape construction allow the transforming of degraded urban areas or forming modern landscape and town-planning facilities and complexes that provide eco-stability and improve the environment [16].

Parks themselves become a trend. Today, parks are designed not only in traditional places. Free spaces in big cities are limited, so unusual parks are designed.

The Number Parks is located on 8 levels of a 30-story shopping center (Japan Osaka). The park has numerous stylized natural landscapes. The number of "green regeneration" projects will continue to grow - the organization of parks in waste land areas, industrial zones, and former landfills. [17]. Artificial recreation zones were widely used: they are created under the open sky, under the roof, underwater. There are underground parks, mixed options (part under the open sky, another part under the roof). There are parks, imitating Mediterranean, Italian, fishing villages, fabulous, historical, etc.

"Park for recreation and business." This slogan of the Moscow Park "Sokolniki" is actual today. In the XXI century parks are designed multifunctional. Life in large cities is associated with stress. Parks support the physical and mental health of a person, perform the necessary social and psychological functions. Today, the workplace of the citizens has no spatial certainty and a category of free-working people, freelancers, has appeared. There was a movement to create zones for "Co working", which were included in parks.

The modern tendency of the structural organization of parks reflects the formation of the leisure structure, cultural and intellectual interests of a person connected with scientific and technological progress. Based on the implementation of this principle of designing parks, recreational zones are created in multi-purpose recreation parks, where it is possible to create a higher level of recreational services: free choice of the type of recreation depending on landscape. The principle of differentiation

of the functional basis of each recreation area, natural elements, special types of architectural and engineering structures, external landscaping that define different semantic and architectural planning structures, which simultaneously become an indispensable stage in the formation of an artistic character for each type of park.

4. Conclusion

Currently, the design of urban parks is booming. Parks become multifunctional, adapted for all population groups. In the city park, the idea of achieving the unity of man with nature, with other people and with himself is realized. The designer's task in designing parks is to create a flexible, modern, comfortable, creative, harmonious, holistic environment, using modern technologies, materials, equipment, taking into account existing norms, rules and current trends. Modern trends in the design of parks reflect the development of the leisure structure, cultural needs and intellectual interests of people associated with scientific and technological progress.

Based on the implementation of these principles of our time, specialized recreational zones are created in the parks, where a high level of service is created, a free choice of the type of recreation, entertainment, and landscape. Today, design practice is aimed at obtaining a highly artistic object, creating a harmonious and comfortable environment for a real person who is able to "treat a person humanly" [15]. Our country needs modern parks and practical steps are being taken in major cities to design such parks [18 - 20]. Recommendations for the preservation of the modern comfortable environment of city parks is given on the example of the campus park FEFU in Vladivostok.

1. It is necessary to take into account and preserve the artistic "image of the city", connected with the historical traditions of the city of the port, the city by the sea.
2. Preserve the picturesque, unique landscape of the park, beautifully opening to the sea.
3. Perform complex design and reconstruction of the existing environment of the park.
4. Preserve and correct by means of landscape design the existing environment of the park.
5. To create a tolerant, friendly environment in the park, taking into account natural and climatic conditions, sanitary and hygienic and microclimatic requirements.
6. Create a park environment that takes into account modern requirements, trends which can be changed.
7. The financing of the organization of parks should be increased

References

- [1] Dictionaries and encyclopedias on the Academic [electronic resource] <http://dic.academic.ru/>
- [2] Medvedev V Yu 2009 *The Essence of design: theoretical basis of design: study Guide - 3rd ed., corrected and added* (St. Petersburg.: SPUTD,) 110 p.
- [3] Zueva I L 2013 *Short course of lectures on the subject "fundamentals of landscape design"* (tutorial, Ukhta) pp. 5-7
- [4] Maslovskaya O V, Ignatov G.E. 2015 Current trends in the creation and transformation of urban areas. *The territory of new opportunities. Bulletin of Vladivostok State University of Economics and Service 2015 №1 (28)* pp. 91 -95
- [5] Potaev G A 2013 *Architectural and landscape design: theory and practice: textbook* (FORUM, INFRA-M) 3 p.
- [6] Minervin G B, Shimko V.T., Efimov A.V. et al. 2004 *Design. Illustrated dictionary-reference* (Moscow: "Architecture-S") 288 p.
- [7] Smolitskaya T A, Korol T. O., Golubeva E. I. 2012 *City cultural landscape: traditions and modern development trends* (Moscow: LIBROKOM) 272 p.
- [8] Zabelshski G B, Minervin, G B, Rappaport A. G. Somov G. Yu. 1985 *Architecture and Emotional World of a Person* (Moscow: Stroyizdat) 208 p.
- [9] Rappaport A G Somov G Yu 1990 *Form in architecture* (M. Stroyizdat) 344 p.
- [10] Davydova E M, Radchenko V Yu, Radchenko A.S. 2016 The principles of universal design as a basis of formation of professional competences of designers. *Philological Sciences. Issues of*

- theory and practice* (Tambov: Gramota, access: www.gramota.net/editions/2.html) No. 4(58): in 3 parts. part. 1. pp.186-190
- [11] Khrapko O V, Kopiyova A V, Savin S.A. 2006 Some aspects of optimization of the intercity environment by means of landscape design. *Modern problems of regional development: 1st Trans Regional Scientific. Conference., Birobidzhan, 17-20 October 2006* (Khabarovsk: DVO RAN) pp.208-210
- [12] Teodoronsky V S, Bogovaya I.O. 2003 *Objects of landscape architecture: textbook* (Moscow: MGUL) 380 p.
- [13] Teodoronsky V S 2003 *Construction and operation of objects of landscape architecture* (publishing house of the MSFU) 336 p.
- [14] Rattle Nancy, Yo com Kun 2011 *Basics Landscape Architecture 02: Ecological Design*. AVA Publishing (UK) Ltd. p 178
- [15] Evchenko Yu I 2017 Modern trends of landscape design in the design of urban parks. *Federal state budgetary educational institution of higher education "Bashkir state Agrarian University" conference proceedings 2017* pp.140-144
- [16] Khrapko O V Kopiyova A. V., Koldaeva M. N, Golovan E. B. 2013 Landscape style in landscape architecture of the far East cities. *The New Ideas of New Century-2013: The third International Scientific Conference Proceedings* (Khabarovsk: Publishing house of the Pacific State University, 2013) Vol. 3 pp. 395-399
- [17] Vavilova T Ya 2011 Retrospective review of UN documents on sustainable development of the living environment *Vestnik SGASU. Town Planning and Architecture* 1 24–28
- [18] Dalia Hussain 2014 Six new trends in the development of urban parks (<http://urbanurban.ru/blog/space/481/Shest-novykh-tendentsiy-v-razvitii-gorodskikh-parkov>)
- [19] Rosenson A A 2007 *Foundations of design theory: Textbook for Universities* (SPb.: Peter) 200 p.
- [20] Razumovsky Yu V, Fursova L. N., Teodoronsky V.S. 2012 *Landscape design: tutorial* 144 p.