

Several features and contemporary trends in landscaping and design of urban open spaces in Russia

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Abstract

During recent decades, creating a comfortable urban environment through various tools, including landscaping, is getting relevant. Improvement urban design projects in Russia are developed with considerations of the specific climate, regional characteristics, cultural characteristics and features of the particular places, taking into account the contemporary norms and regulations, maintenance and safety requirements. Recently, one of the significant Federal programs in our country is related to the Formation of Comfortable Urban Environment. Projects on Federal and municipal levels are realized, and a lot of various examples have appeared in a contemporary practice. The purpose of this article is to present a few current trends in landscape design in Russia and to analyze some examples. This article is devoted to the following aspects: 1) briefly present approaches to the formation of a comfortable urban environment and improvement of open urban spaces, 2) present and analyze several examples of architectural improvement projects of various sizes and functions from contemporary practice in Russia: as large and unique (pedestrian streets, revitalization of historical city areas, parks and embankments), as well as examples of small objects (for example, small architectural forms and art installations, children's playgrounds at residential courtyards, work-out sport grounds, etc.) from different cities. The brief overview of architectural improvement projects of various sizes and functions aims to get acquainted with the problems solved with the help of landscape design. Research methods include a brief overview of literature on a topic and analysis of some examples. The diversity of urban open spaces is not limited to these examples. It is emphasized that a comfortable urban environment, including architectural and landscape objects of various sizes and functions, is an important component for urban development, considering the needs of residents and creating a comfort environment for residents.

Keywords: urban design, urban sustainability, landscape, comfortable urban environment, visual comfort

Introduction

With the ongoing process of urbanization, many cities worldwide are facing with challenges of growth of building environment density, needs to preserve urban nature and landscape for the comfortable use by their residents and integrate in to cities, and other problems. Organization of urban landscapes and open public spaces can be regarded as a remedy for a monotony of urban environment.

Many previous research overseas and in Russia are devoted to the topic of creating a comfortable urban environment in cities. For example, research of Permyakov & Krasnova (2019) is focused on sustainability of environment, Yaskova et al. (2021) on development of approaches to comfortable urban environment, study of Aksyanova et al. (2021) is focused on environmental design and behavior, study of Mayatskaya et al. (2021) regarded bionic architecture in creation

of comfortable environment. Comfortable environment for people is described in various previous studies overseas. Jan Gehl (2013) defined ideas and principles on organizing a compact walkable urban environment in cities. Robert Cervero et al. (2017) researched mobility, transit in cities. J. Speck (2018) outlined the principles and ways of increasing walkability in cities.

Improvement urban design projects in Russia are of increasing importance during recent years. Creating a comfortable urban environment through various tools, including landscaping, is relevant for different cities.

Purpose of the Present Study

The purpose of this article is to present a few current trends in landscape design in Russia and to analyze some examples. This article is devoted to the following aspects: 1) briefly present approaches to the formation of a comfortable urban environment and improvement of open urban spaces, 2) present and analyze several examples of architectural improvement projects of various sizes and functions from contemporary practice in Russia: as large and unique (pedestrian streets, revitalization of historical city areas, parks and embankments), as well as examples of small objects (for example, small architectural forms and art installations, children's playgrounds at residential courtyards, work-out sport grounds, etc.) from different cities. The brief overview of architectural improvement projects of various sizes and functions aims to see the urban design issues that can be addressed and solved with the help of landscape design.

Method

Research methods include a brief overview of literature on a topic and analysis of some examples through a descriptive case study. The diversity of urban open spaces is not limited to these examples.

Formation of a Comfortable Urban Environment and improvement of open spaces

Federal program “*Formirovaniye komfortnoy gorodskoy sredy*” is designed to subsidize the improvement of public spaces in cities in Russia. Within the framework of that project, public areas, parks, embankments are being improved. An involvement mechanism has been created for residents of municipalities. With that every citizen of the country is able to take part in solving issues of urban development.

It is carried out in order to support the creation of projects of comfortable public spaces in small towns and historical settlements, the development of an integrated complex approach to historical territories for the preservation of historical and cultural heritage.

Kompleksnoye blagoustroystvo (complex improvement): a set of measures for engineering preparation for landscaping, installation of pavement, lighting, placement of small architectural forms and objects of art and sculpture, aimed at improving the functional, sanitary, environmental and aesthetic condition of the site.

Complex improvement in Russia is developed for 3 groups of urban spaces:

- Public spaces of city. They are actively visited by residents and are centers of citywide and local significance, for example public spaces at theaters, cinemas, shopping centers, parks, squares or pedestrian areas.

- Residential areas. Requirements for this group are different for adjacent courtyards to residential buildings, for schools or preschool buildings, for parking lots and public spaces inside residential areas.
- Recreational areas. This group includes parks, squares and boulevards, gardens and recreation areas. This group also includes specially protected natural areas - National parks, natural parks and forest parks.

For implementing projects for improvement of the territories in cities, it is recommended to ensure: a functional diversity of the landscaped area - a variety of social and commercial services; connection of the spaces of the city, the accessibility of infrastructure facilities for children and disabled people; creation of comfortable pedestrian and cycling routes; possibility of access to the main significant objects in city and beyond, where the objects most in demand for residents (centers of attraction) are located, using various modes of transport; organizing a comfortable environment for residents; walking distance to the objects of children's play and sports infrastructure for children and adults, including those related to the people with limited mobility; safety and security; protection of the environment through landscaping and use of effective architectural and planning techniques.

Overall, improvement urban design projects in our country are developed with considerations of the specific climate, regional characteristics, cultural characteristics and features of the particular places, taking into account the contemporary norms and regulations, maintenance and safety requirements.

Case studies of landscaping and design of urban open spaces in Russia

Case studies selected for this paper are divided into:

- large and unique objects (pedestrian streets, revitalization of historical city areas, parks and embankments)
- small objects (small architectural forms and art installations, children's playgrounds at residential courtyards, work-out sport grounds)

Revitalization of historical city areas, Tula city center, Russia

Tula is a historical city in Russia that has rich historical environment with architectural monuments, cultural and historical sites.

The architect's idea in the project was to maximize the variety of modern functions that are necessary for residents of different ages. A system of public spaces connected by pedestrian paths has made the historical part of the city the Tula Kremlin, the embankment, adjacent streets and square a single, comfortable area for recreation and walking¹.

¹ source: <https://prorus.ru/projects/revitalization-of-historic-center-of-Tula/>

Figure 1. Revitalization of historical Tula city center, Russia

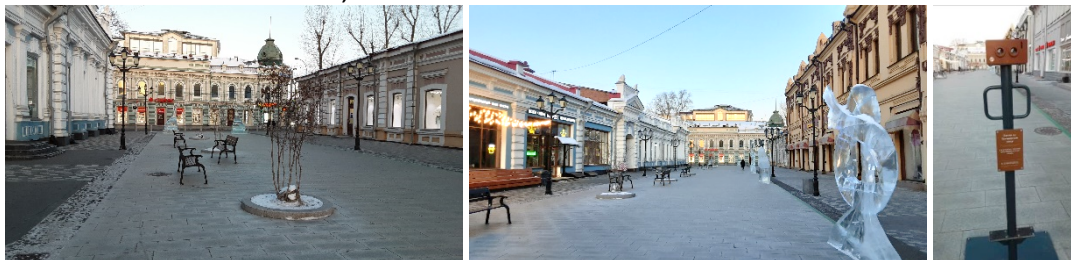


Pedestrian street, Irkutsk, Russia

Irkutsk is one of the largest cities in Siberia, the capital of the Irkutsk region, in Russia. It is characterized with a significant variation of temperatures between seasons with a is severe and prolonged winter season.

The history of this pedestrian street begins in the 18th century. Along the street there are mainly one- and two-story stone historical buildings with modern shops. Commercial, public and business functions are located nowadays along the street. At a special point it is possible to see the historical view of the street. In winter, the street is decorated with ice sculptures. This street is mainly shaped by stone buildings. Wooden architecture historical buildings have been preserved in Irkutsk.

Figure 2. Pedestrian street in Irkutsk, Russia



130 Kvartal, Irkutsk, Russia

Irkutsk is filled with unique historical wooden buildings. It carries within itself the memory of a truly Siberian merchant, and at the same time a character of culturally rich city.

In 2009, a decision was made to recreate the historical environment for the 350th anniversary of the Irkutsk city. It was decided to create a new public space inside the block and connect it with “*Zelenaya liniya*”, a city tourist walking route².

² source: https://tatlin.ru/articles/kvartal_-130

Figure 3. 130 *Kvartal*, Irkutsk, Russia



Reconstruction, renewal and creation of new embankments, Moscow, Russia

Nowadays, Moscow is implementing a large-scale embankment improvement program – over 80 km of areas nearby Moscow river have been improved. The example is recent project of a new embankment creation named after artist Marc Chagall. This embankment contains of three piers with access to water, two playgrounds, an exhibition hall, an amphitheater in a single structure with a cafe, cafe-buffet and bicycle racks.

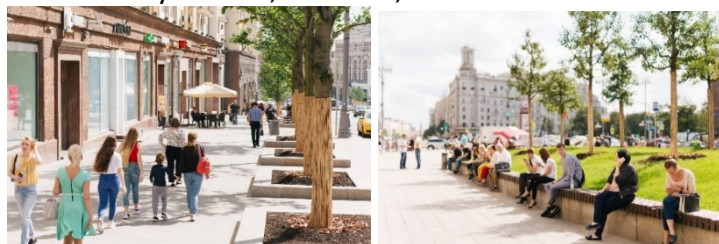
Figure 4. Marc Chagall embankment, Moscow, Russia



Improvement of pedestrian pathways in cities, Moscow

The selected example of street improvement is reconstruction of Tverskaya street in Moscow. The architects solved the task of making it comfortable for different people at different times of the year. The project involved optimizing the width of the roadway while simultaneously widening sidewalks by 5-7 m, planting linden trees to Tverskaya street and organizing raised pedestrian crossings. The project provided a creation of several levels of lighting that stylistically correspond the architecture of surrounding built environment. In addition to functional lighting, the project uses decorative lighting, navigation accessories and other details³.

Figure 5. Reconstruction of Tverskaya street, Moscow, Russia



³ source: <https://prorus.ru/projects/Reconstruction-of-Tverskaya-street/>

Artplay, Moscow

The Artplay Design Center is one of the first art clusters in Moscow. Nowadays it is a creative and business quarter, where workshops, design and architectural bureaus, showrooms, shops are open, as well as infrastructure for a leisure time: cafes and restaurants, cinema hall, bookstores, etc. Created in 2003, since 2008 it has been located on the territory of former industrial zone near Kursky railway station⁴.

Figure 6. Artplay design and creative cluster, Moscow, Russia



“Novaya Gollandiya” in Saint-Petersburg, Russia

A historical island within a city is nowadays opened to a public, after restoration and landscaping works. It was decided to preserve historical spaces by creating a new city park on the island with modern infrastructure and a rich cultural component. The cultural activities are planned for summer and winter season⁵.

Figure 7. “Novaya Gollandiya” culture space in Saint-Petersburg, Russia



Botanical Garden of Moscow State University “Aptekarsky Ogorod”, Moscow, Russia

Botanical Garden of Moscow State University “Aptekarsky Ogorod” is a monument of history and culture of Moscow, the oldest botanical garden in Russia.

⁴ source: <https://artplay.ru/maps>

⁵ source: <https://www.newhollandsp.ru/>

Figure 8. “Aptekarsky Ogorod” in Moscow, Russia



Improvement of the embankments of Kaban lake in Kazan, Russia

Kaban lakes in Kazan is a natural system within the city. The project idea was to create a “green-blue belt” along the lakes, which integrates natural and cultural objects, with careful attitude to natural ecological ecosystem. Pedestrian paths were designed to appear directly above the surface of the water, as well as upper promenades along the shore and a bicycle path. Throughout the entire embankment, the lighting system was changed, lighting and small architectural forms were added, and various plants have been planted⁶.

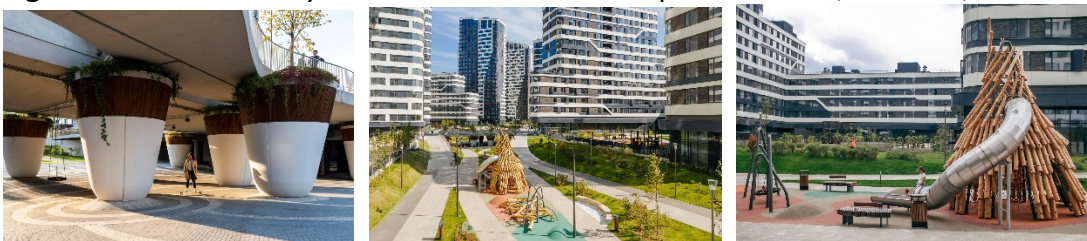
Figure 9. Improvement Kaban lake embankment in Kazan, Tatarstan, Russia



Park «Zelenaya reka» in residential complex «Simvol», Moscow, Russia

This example is a contemporary courtyard at residential area with promenade and children playgrounds. “Zelenaya reka” is a public city park, the main attraction of which is an unusual automobile-pedestrian bridge on “plant pot” supports. Wooden art object became the architectural dominant and decoration for a playground and also for entire park. The natural oak planking creates a contrast with the modern materials of the surrounding residential complex⁷.

Figure 10. Park «Zelenaya reka» in residential complex «Simvol», Moscow, Russia



⁶ source: <https://prorus.ru/projects/blagoustrojstvo-naberezhnyh-ozer-kaban-v-kazani-1-ya-i-2-ya-ocheredi>

⁷ source: <https://prorus.ru/projects/park-zelenaya-reka-v-zhk-simvol/>

Park named after Kazimir Malevich, sculpture “Black Square” near Moscow, Russia

Art object proposed in the project is a contrasting object in relation to the environment, which at the same time dissolves in the natural environment of the park due to large mirror surfaces⁸.

Figure 11. Park named after Kazimir Malevich, sculpture “Black Square”, Russia



In recent years, architects with other specialists have managed to change the appearance of many cities in Russia for the better, in accordance with the needs of city residents.

Considering the selected examples, it is noted that for large and unique objects the following issues can be solved using tools and techniques of landscape and open space design:

- creation of new pedestrian connections, modeling and more convenient and effective organization of transportation, reducing transportation load;
- an incentive for economic development due to a proper organization of landscape space, revitalization of a territory with organization of open landscape space (appearance and development of public and commercial facilities, stores, cafes, etc. nearby and in adjacent buildings);
- considering needs of residents of all ages, proposing a balance and variety of functions and cultural events, taking into account independent activity of children and teenagers, family activities, and creating a continuity between generations;
- conveying associations and artistic, semantic impressions to a viewer through an architectural object, putting it into the context and history of the country and city, preservation of historical and cultural heritage.

For small objects the following issues can be solved using tools and techniques of landscape and open space design:

- creation of local landmark object and a place of attraction for the city residents (for example, art installation, entrance group to a park, small architectural object) that is meaningful to residents;
- creation of small architectural objects integrated into natural environment (for example, small park pavilions, pergolas, gazebos, canopies, etc.), development of environmental friendliness, flexibility, multifunctionality of places;

⁸ source: <https://prorus.ru/projects/skulptura-chernyj-kvadrat-dlya-parka-immalevicha/>

- creation of functional and interesting children playgrounds and sportsgrounds, for the development of skills and play;
- and other issues.

Visual comfort of public places, assessment of quality of spaces

The landscape objects and ensembles contain certain aesthetic information. For a person contemplating a landscape object, its individual elements, everything is involved in perception: volumes, proportions, and rhythm.

The value of aesthetic information is often associated with surprise, originality. Therefore, the aesthetic merits of the landscape objects and ensembles can be assessed from the standpoint of impressions caused by the artistic appearance, idea of architectural and landscape complexes.

The impression received depends on the individuality of a person.

A comfortable urban environment is an environment created for a person. The scientific definition of a *comfort zone* is the optimal ratio and combination of all environmental factors, which includes: air temperature in winter and in summer; wind speed in winter and in summer; air humidity and noise levels.

Another definition of a *comfort zone* is a familiar psychological state where people are at ease, minimizing level of stress, etc. A comfort zone, in addition to definition of physical condition, can be supplemented by such concepts as safety and visual comfort. The safety of public places is, for example, associated with the visibility of the territory, where a person has the opportunity to view the area without significant obstacles. Visual comfort can be regarded in a way that a person perceives space around as a series of visual pictures that include material environment: architecture, buildings, advertising, green spaces.

Architectural psychology deals with the search for optimal characteristics of visual space for humans. Video ecology, is a field of research that studies the physiological perception of the built environment.

In this way, the consideration of various aspects related to architectural psychology (such as visual comfort and safety) is essential for the projects of urban design and landscaping.

Conclusion and Discussion

Creating a comfortable urban environment through various tools, including landscaping, is prominent for cities. In Russia, based on considered examples, several features and issues that can be solved using tools and techniques of landscape and open space design are described. Contemporary practice has a wide variety of landscape tools and techniques in organization of spaces, creating small architecture forms, art objects and sculpture, accessories, details. Certainly, it is not limited to the examples mentioned in this study.

It is emphasized that a comfortable urban environment, including architectural and landscape objects of various sizes and functions, is an important component for urban development, considering the needs of residents and creating a comfortable environment.

References

Aksyanova, T. Y., Livak, N. S., Lebedikhin, V. V., & Smirnaya, A. A. (2021, March). On the issue of creating a comfortable environment to improve the ecology of urban ecosystems. In *IOP*

Conference Series: Earth and Environmental Science (Vol. 677, No. 5, p. 052058). IOP Publishing. <https://doi.org/10.1088/1755-1315/677/5/052058>

Cervero, R., Guerra, E., & Al, S. (2017). *Beyond mobility: Planning cities for people and places*. Island Press.

Gehl, Jan. *Cities for people*. Island press, 2013.

Permyakov, M. B., & Krasnova, T. V. (2019, December). Architectural and design approaches to creation of comfortable urban environment. In *IOP Conference Series: Materials Science and Engineering* (Vol. 687, No. 5, p. 055062). IOP Publishing. <https://doi.org/10.1088/1757-899X/687/5/055062>

Speck, J. (2018). *Walkable city rules: 101 steps to making better places*. Island Press.

Mayatskaya, I., Yazyev, B., Demchenko, D., & Yazyeva, S. (2021, December). Creation of a comfortable environment in urban and rural settlements based on bionic principles. In *IOP Conference Series: Earth and Environmental Science* (Vol. 937, No. 4, p. 042026). IOP Publishing. <https://doi.org/10.1088/1755-1315/937/4/042026>

Yaskova, N. Y., Sarchenko, V. I., & Khirevich, S. A. (2021, March). Main principles of comprehensive approach to formation of comfortable urban environment. In *IOP Conference Series: Materials Science and Engineering* (Vol. 1079, No. 3, p. 032031). IOP Publishing. <https://doi.org/10.1088/1757-899X/1079/3/032031>