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**ОРГАНИЗАЦИЯ БЕЗБАРЬЕРНОЙ ГОРОДСКОЙ СРЕДЫ МЕТОДОМ  
ГИБРИДИЗАЦИИ АРХИТЕКТУРЫ И ЛАНДШАФТА**  
ORGANIZATION OF A BARRIER-FREE URBAN ENVIRONMENT BY THE METHOD OF  
HYBRIDIZATION OF ARCHITECTURE AND LANDSCAPE

**Аннотация:** Проблема обеспечения доступности объектов инфраструктуры и зданий для маломобильных групп населения рассматривается достаточно давно. Но несмотря на прикладываемые усилия по ее решению ситуация остается нерешенной в большей части объектов. Организация архитектурной среды посредством ландшафтного урбанизма и с опорой на принцип гуманизации способна реабилитировать города для всех людей, и особенно людей с ограничениями по здоровью, учитывая их особые потребности в организации пространства.

**Ключевые слова:** ландшафтный урбанизм, ландшафт, городская среда, маломобильные группы населения, город, магистрали, перекрестки, дорожно-транспортная сеть, пешеходные переходы.

**Annotation:** The problem of ensuring the accessibility of infrastructure and buildings for low-mobility groups of the population has been considered for a long time. But despite the efforts being made to solve it, the situation remains unresolved in most of the facilities. The organization of the architectural environment through landscape urbanism and based on the principle of humanization is able to rehabilitate cities for all people, and especially people with disabilities, taking into account their special needs in the organization of space.

**Keywords:** landscape urbanism, landscape, urban environment, low-mobility population groups, city, highways, intersections, road transport network, pedestrian crossings.

The continuous process of globalization directly affects the urban environment and the objects architecture, constantly changing the cities appearance. With the growth of cities and an population increase, there is a need to connect different city areas, to reduce the time spent on movement. As a result, the road transport and railway networks are being modernized, complex intersections, highways and overpasses, new lines appear. The area needed for infrastructure is expanding, taking away space from people and nature. The convenience of the road transport network for pedestrians and cyclists is often ignored in the design and use.

It is possible to modernize an adverse anthropogenic urban scene by introducing a landscape into it, in order to create an environmentally friendly and socially oriented environment, comfortable, aesthetically attractive, open to nature and large-scale to people.

This issue should be considered starting with the reorganization of the intersections of city streets. The use of ground crossings on streets with heavy traffic is often impossible and unsafe. They create a large number of conflict points, reduce throughput. The advantage of land crossings is only in a barrier-free environment: no descents and ascents.

Therefore, compromise infrastructure constructions are being built on these sites – underground and aboveground crossings, which has a positive effect on the safety of road and pedestrian traffic, but is uncomfortable for the movement of people. These structures create inconveniences for people with limited mobility when climbing and descending.

Modern design practice in Russia, for the most part, is conducted without attention to the issues of accessibility of facilities for people with limited mobility, despite the standards, regulatory documents and regulations. Attention is usually paid to this at the end of the design, when writing an explanatory note, for architectural and technical supervision, and is limited to the use of additional devices and fixtures. However, it is often simply not possible to meet regulatory requirements wherever necessary.

There is a widespread opinion among architects, designers and other people that the means of making people with limited mobility available negatively affect the internal and external appearance of a building or environment. Among other things, «the untimely and, sometimes even, misplaced introduction of accessibility tools for low-mobility groups of the population negatively affects both the aesthetic appearance of the building and the appearance of the urban environment», says I.V. Kirichkov [1]. However, these means can not only not spoil the architectural idea, but also achieve greater expressiveness of the design, scenarity and quality of the architectural environment, make the object more convenient and functional.

Based on the method of hybridization of landscape and architecture, in order to provide the accessibility of the urban infrastructure, I have developed a project of a square, including an exit from an underground pedestrian crossing.

The square is located in Rostov-on-Don, at the intersection of two central highways with heavy traffic: Bolshaya Sadovaya Street and Budenovsky Avenue. The space needed reconstruction and improvement to match the modern rhythm of life. From the pre – analysis of the site, it followed that the place is not functional and is basically a transit way, without attracting people at all. The project aims to improve the environment by introducing the landscape into the structure of streets. With the project, I propose to transform the transit pedestrian zone into an island of recreation and greenery in an urban environment, as well as to improve the territory, functionally saturate the space and solve the problem of inaccessibility of the underpass for low-mobility groups.

The main feature of the project is the arrangement of a ramp from the pedestrian crossing to the street level. It was created not only as a technical element, but also as a walking area. For comfortable movement of people with limited mobility, it is planned to remove all stairs from the main paths, divide them into levels and connect them with ramps (Fig. 1).

In this project, the ramp, in addition to its main function, is primarily a walking path. With its help, the ascent and descent into the underpass will become more comfortable and interesting.

Functionally, the square is split into two zones. In the first zone there is a small summer café with an open veranda. The volume with a green sloping roof is maximally recessed into the ground (Fig. 2). From ground level it looks like a green hill. Access to it is carried out by ramps, and is also duplicated by a stairs from ground level (Fig. 3). People will be able to choose their path according to their tempo, desires and capabilities.



Fig. 1. Pathway.



Fig. 2. Summer café.

The second zone is raised above the level of the main path and is designed for short-term rest of people. It has two zones: a small amphitheater oriented to the intersection and open to the street panorama, and a space for quiet relaxation (Fig. 4).

As a result of the realization of this project, this square should be transformed and become a comfortable and pleasant place for citizens, so that people would like to stay in it, contemplate and distract themselves from urgent problems.

The result of the study showed that with a proper attitude to the design of accessibility tools for people with limited mobility, the existing urban space can be positively transformed. By means of hybridization of architecture and landscape, it is possible not only to increase the connection between the urban environment and nature, but also to competently organize the safe movement of transport and pedestrians in conditions of difficult road interchanges and situations, to provide convenient and easy communication with all objects of urban infrastructure.



Fig. 3. Square scheme.

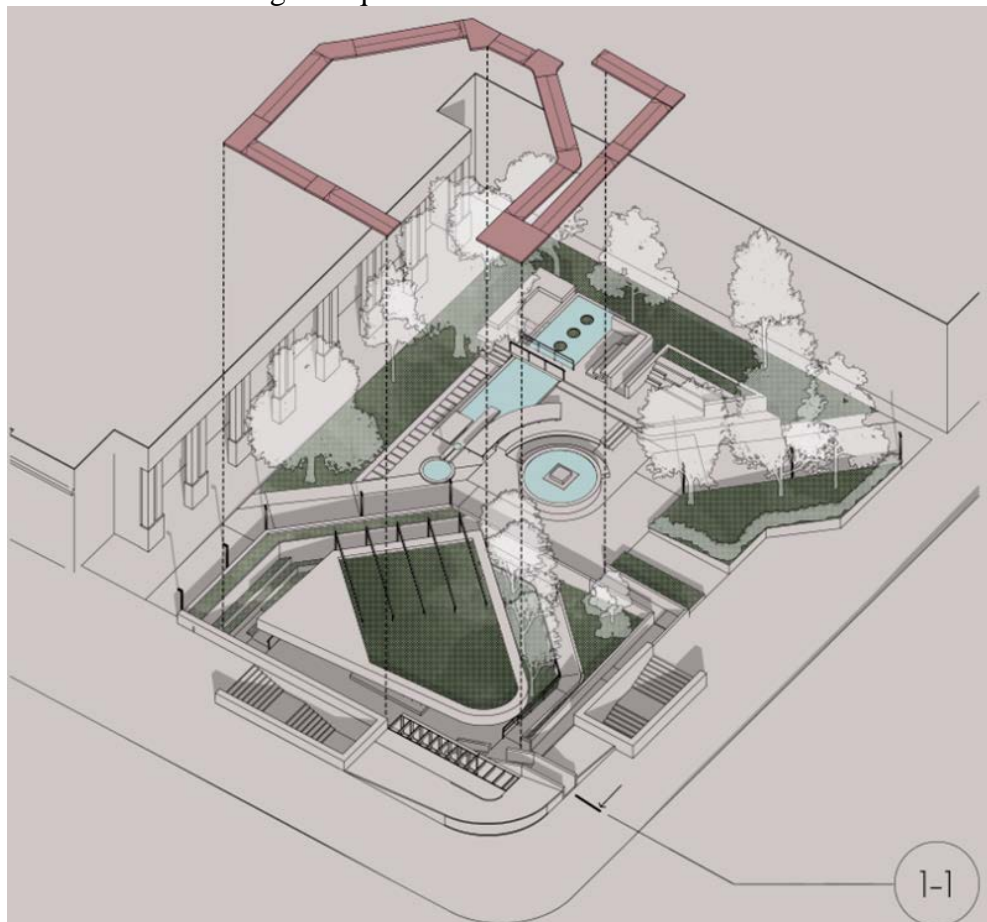


Fig. 4. Square scheme

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## **КЛАСТЕРНЫЙ АНАЛИЗ «ЗЕЛеноЙ» ИНФРАСТРУКТУРЫ ГОРОДА CLUSTER ANALYSIS OF THE «GREEN» INFRASTRUCTURE IN THE CITY**

**Аннотация.** Исследовались объекты «зеленой» инфраструктуры Санкт-Петербурга. Предложен математический аппарат. Выполнен сравнительный анализ количественных показателей территорий зеленых насаждений общего пользования городского значения. Выявлена линейная зависимость натурального логарифма по площади территории и ранга территории. Объекты ранжировались по медиальному значению. Установлено, что порядка 10% из исследуемых зеленых зон относятся к крупным и требуют отдельного подхода к изучению.

**Abstract.** The objects of the «green» infrastructure of St. Petersburg were investigated. A mathematical apparatus was proposed. Performed a comparative analysis of quantitative indicators of the areas of accessible public green spaces in city. The linear dependence of the logarithm of the area on the rank of the territory was revealed. The objects were ranked by medial value. It was found that about 10% of the green spaces under study are large and require separate clustering.

**Ключевые слова:** город, устойчивое развитие, зеленые зоны, Санкт-Петербург, территория, площадь, ранг.

**Key words:** city, sustainability, green spaces, St. Petersburg, territory, area, rank.

**Введение.** Расширение и уплотнение городских территорий носит проблематичный, междисциплинарный характер, требует учитывать различные конкурирующие интересы, имеющие место на том или ином историческом этапе освоения [1]. Развивать рекреационные территории в городах целесообразно на основе принципов баланса и функциональной обеспеченности [2]. Ценность городских озелененных территорий зависит от непрерывности и равномерности их расположения в черте города, занимаемой ими площади, процента их частей, покрытых зелеными насаждениями и пр. [3]. Под организационно-технологической надежностью городских озелененных пространств автор [4] предлагает понимать «способность организационных, технологических, управленческих, экономических решений обеспечивать жизнеспособность биоэкологического каркаса города в условиях случайных возмущений, присущих градостроительству и городскому хозяйству как сложным вероятностным системам». В [5] авторы отмечают необходимость совершенствования классификации природных территорий в городах, применяют кластерный анализ для