



Ecological Design of the Urban Environment

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ABSTRACT

The process of urbanization contributes to the increase of production activity in many areas, while simultaneously solving social and cultural-educational problems of society. In this article, the issues of the ecologization and ecologic design of settlements of various sizes to ensure their sustainable development are considered.

Keywords:

Sustainable development of settlements, the greening of cities, pedestrian spaces, green spaces.

Introduction

Cities have a significant potential for economic development, their residents have more opportunities than other forms of settlements, opportunities for education, choice of profession, and familiarization with cultural values.

Large urban settlements, being the best areas for human activity, pose a great threat to the ecological state of the environment [1]. Thus, in modern megacities, there are a large number of problems associated with anthropogenic pressures and an imbalance between the use of resources and the preservation of a favourable environment, such as microclimate change, lack of natural environment, increased levels of pollution, noise, household waste problems, etc. An unfavourable environment is often created in residential areas located near the industrial zone, which, due to the expansion of the urban area, is within the boundaries of a residential area [2].

The main part

A complex of environmental problems is inherent in any territory where there is a concentration of industrial enterprises and population. It manifests itself most clearly in the conditions of the city with its characteristic combination of fairly reliable internal and external connections, population flows, resources, energy and information that enter the city limits and are redistributed on the territory of the city between the individual components of the urban natural and technical geosystem and the people inhabiting the city.

In megacities, a special microclimate is formed. Residential development reduces wind speed, and stagnant air contributes to the concentration of highly toxic industrial pollutants. Smogs - a mixture of smoke, dust and fog, reduce the amount of sunlight and cause serious illness in people.

The air temperature in cities is always somewhat higher than the average temperature of the area. "Heating" of the urban atmosphere occurs due to the combustion of automotive fuel, heating of buildings and their

subsequent cooling, from the release of radiant heat from all urban facilities [3].

The advent of automobiles has led to completely new requirements for the organization of traffic and, of course, countless inconveniences and dangers for pedestrians. The rapidly growing industrial city was becoming a real problem.

At present, the most important task of modern urban planning is the greening of the city, the eco-socialization of the city, regardless of its size, the quantity and quality of city-forming factors, the development of road transport, etc. To this end, programs for the rehabilitation of the urban environment are being developed in many cities around the world.

Green spaces play an important role in shaping a favourable environmental situation in cities. Due to their ability to accumulate harmful substances and release useful ones, as well as generate healing properties, they contribute to the purification and improvement of the environment, especially in cities [4].

Green spaces are involved in the organization of the city, and the formation of the urban landscape. Each element of the landscaping system performs several functions:

- regulates the temperature and humidity of wind conditions;
- provides recreational needs of the population;
- protects against noise, gas and dust;
- participates in the formation of the architectural and artistic appearance.

Vegetation, as the most important part of urban landscapes, is a stabilizing factor that reduces the ecological tension in the urban environment. A city can be considered sustainable if a healthy living environment is created and maintained based on ecological principles and efficient use of natural resources. In the current environmental situation, green spaces are the most important aspect of optimizing the development of urban areas [5].

The formation of an ecologically sustainable environment based on the largest cities, megacities, which are mainly characterized by a large population, insufficient natural and

spatial resources, an increase in the number of vehicles, and environmental degradation, may look like the creation of ecological infrastructure, a landscape-ecological framework - a system of green spaces and water areas of the inhabited item. The ecological frame of the city, being an integral system, serves to maintain the optimal functioning and dynamic stability of the landscape. The concept of unity with nature, the formation of a continuous ecological infrastructure of the settlement, landscape and recreational areas of the city with the creation of landscaped parks, squares, and pedestrian areas - is especially important in large cities. In connection with the unfavourable environmental conditions arising from the rapid growth of the urban population and the compaction of urban development in the late twentieth and early twenty-first centuries, the problem of creating ecological comfort zones in an aggressive urban environment arose.

The created spaces and landscaped areas are combined into boulevards. So, in France, in solving many issues of landscape organization of urban open areas, landscape designers prefer to use a variety of technological solutions.

The experience of the city of Seoul is interesting, where during the demolition of the highway, a public space along the Cheonggyecheon canal, which was very much in demand by the townspeople and tourists, turned out to be very popular. For Seoul, a metropolis with a large number of skyscrapers and a huge number of residents with traffic problems, the project to restore the canal and pedestrian zone in the city centre is certainly a luxury, but this seemingly utopian project turned out to be cost-effective.

Created new thematic routes, a rock park, a space for contemporary artists, reproductions of artists' works, as well as a changed favourable environmental situation in the area contributed to the more active settlement of the surroundings, increasing land prices and stimulating business activity in the area.

Since public spaces are designed for the stay of people of different social groups, where recreation is carried out in contact with the

natural environment, the transformation of environmentally stressed urban spaces into elements of a comfortable environmental infrastructure of the city is the main goal of the transformations aimed at environmental reconstruction.

Creation of pedestrian spaces using the principles of humanization, such as the formation of zones of increased comfort; isolation of vehicular traffic from pedestrian traffic; tangible security of being in various places at any time; accessibility, openness and adaptability for different groups of citizens (children, youth, the elderly, the disabled, etc.), as well as the achievement of aesthetic expressiveness of social spaces by means of urban design, can ensure the achievement of a new quality of the environment of urban spaces.

Conclusion

Thus, one of the important aspects of the formation of harmonious public spaces in cities is the use of methods of modernization and landscape organization of territories to achieve quality their environmental sustainability.

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