Quality assessment and development of eco-development of urban development environment for preparing decisions on territory management

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Abstract. To date, there is an accurate understanding of the need for competent formation of a highly functional spatial framework of the urban environment. In order to effectively manage the development of the urban development environment, various projects are being created and implemented to create a comfortable urban environment at the level of the municipality. The author considers the approach of creating and implementing a system for assessing the quality of the urban environment, which would allow the formation of an index of the quality of the urban environment in a particular municipality.

1. Introduction
At the moment, issues of ecology and environmental management in the territorial integrated scheme of town planning development of the city of Tyumen are considered on the “residual principle”. At the same time, in accordance with modern realities, the development of approaches and methods that allow taking into more detail the specifics of the natural-environmental conditions of a locality when developing a town-planning policy is becoming more and more relevant and important.

The purpose of this study was a comprehensive analysis when planning an urban area, taking into account landscape and ecological features of the area. Compliance with the recommendations on the placement of urban facilities based on the landscape-ecological approach will increase the efficiency of urban planning.

2. Materials and methods
Through the development of areas around large cities are formed urban agglomerations. Conurbation is a compact cluster of urban and rural settlements, located in close proximity to each other in a dynamic system with transportation, industrial and socio-cultural ties needed for further economic development.

The development of the agglomeration provides benefits to all its subjects in bringing in this or that form of budgetary funds and funds of private investors to participate in the federal investment programs. As an example, the industrial park, built in the paragraph. Borowski, who in turn is in the first zone of the urban agglomeration of the city of Tyumen city district.

Thus it is necessary to take into account important factors such as literacy development of the built environment, by the spatial organization of the environment and population in the formation of functional-spatial framework of urban environment.

The main requirement for the development of the built environment is sustainable development, the result of which is to meet the needs of the population c preservation of the natural foundations of its existence. Basis in the concept of sustainable development in urban planning legislation of the Russian Federation [1], are the conditions for the preservation and development of natural-resource potential and the favorable environment of urban agglomerations in order to meet the needs of the urban population, as well as the balanced socio-economic development of urban areas. Urban planning development of urban areas should meet certain social, ecological and economic requirements.

In order to effectively manage the development of the built environment are created and implemented various projects to create a comfortable urban environment at the municipal level. For example, in the...
framework of the project for the main direction of the strategic development of the Russian Federation "Formation of a comfortable urban environment" municipalities create and implement a five-year integrated program of improvement of human settlements, taking into account the recommendations of the Ministry of Construction of Russia [2].

In general, the implementation of this priority project provides the most involved citizen participation in the creation and implementation of urban projects for improvement.

According to the population estimates are now the urban population is more than 70% of the total Russian population. As a result of migration from small towns and villages to larger, or in other words, in the "city core" of the urban agglomeration, there is a transformation of the natural landscape, changes in water and land resources, formed a large-scale production of waste released into the air, terrestrial and aquatic ecosystems.

As a result, a number of environmental problems, such as: sokrascheie agricultural lands, reducing the quality of the human environment, changes in the functional purpose, reducing the size of green areas.

Urbanization brings irreversible major city changes almost all components of the natural landscape, transforming it into a man-made, exposing the alteration of the natural state of topography, hydrography, soil and atmosphere. The law of human interaction with the urban environment of scientific studies - applied discipline - ecology of the city.

Ecological arrangement urban environment - is the preservation, maintenance and improvement of the natural complex within the city, the creation of recreational areas, construction of forest parks and forest belt of the city [3].

The main problems of the environmental situation in urban areas is to preserve biological homeostasis. An integral part of the environmental problems and tensions broad and varied and depend on the following factors:

− Size (scale) of the city;
− Natural environment of the Territories;
− And a character of production and emission of pollutants in the atmosphere, soil and water sources urban area;
− Features complex of buildings and structures;
− Property of geo-ecological situation;
− No error engineering networks and communications;
− The degree of the development of culture of the population.

At the moment, ecology and conservation issues in a territorial integrated circuit of urban planning of the city development is seen on the "leftovers." At the same time, in line with modern realities, the increasing urgency and importance is the development of approaches and methodologies that enable more detail to take into account the specificity of the natural environmental conditions of the area in the development of urban policy [4].

To achieve progress in the ecological urban planning is necessary to develop the project of adaptation of the population, as well as the engineering and construction of the complex to the conditions of "habitat". To achieve this adaptation of the various means to be used, including:

− cultural-educational;
− technology;
− town planning.

Under the urban development funds meant the creation of a "natural" or "ecological" city skeleton [5].

The concept of "ecological framework" is widely used in urban planning science, but at the same time, it has no generally accepted interpretation. Depending on the specific task, this concept displays different views on the most important objects and landscape components for the life of the city.

The optimal environmental frame of the city is a spatial network which covers the whole territory of the city and its areas in which nodes are portions protrude natural nature associated through environmental corridors.

The environmental frame of the city as basic elements protrude woodland urban area, they are natural nuclei, which in turn are connected ecological corridors, which perform the role of landscaped urban areas, for example along the transport infrastructure.

The master plan of the city establishes the principle of the maximum preservation of existing forest parks, the use of disturbed and uncomfortable areas to transform them into recreational parks.
Park - is peculiar landscape architecture objects that represent partially landscaped timber in a suburban area or in the boundaries of large cities, they are designed for a short rest citizens and given by gradual reconstruction plants, water surfaces and relief to a specific landscape-planning system.

Throughout all public areas should be a system of gardening. Specific landscaping weight must not be less than 40% of the total area - for the urban district is a perfectly acceptable figure [6].

According to the councils of administrative districts of the city of Tyumen on 01/11/2018 the total area of green areas is 17,380,078 m2, which is 29% of the city. The total area of the city of Tyumen urban forests is 2062.7 ha.

Since January 1, 2017 in the Federal Law "On Environmental Protection" entered into force changes, in particular, added the head IX.1 "Forest and park green belt".

Park forest "Green Belt" of the city to be more state protection, in its area, which largely entered the forest surrounding area, which is limited to natural resources and human activities. In the summer of 2018 in Tyumen "Green Belt", an area of 66,849 hectares, has received an official status.

Modern forest in the border city differ in the degree of preservation other. Most recreational load subjected Gilevskaya Zatyumensky grove and park. Best preserved was relatively isolated from residential areas Gagarin Park. Here, it noted the greatest variety of trees and shrubs.

The role of green spaces in the organization of a comfortable healthy human environment in the city is so great that it is difficult to overestimate. Just why green spaces system should be the basis of ecological and urban planning framework of the city.

An integral component of the city of Tyumen forested areas are reservoirs in the flood plain of Tours and Pyshma: lower curve, curves. The riverbeds are residual lakes, which are adjacent to a forested area: Large, Small Taraskul, Swan, St. Andrew's system of lakes, Tulubaev, Zubarevskoe. However, overgrown, the lake gradually turned into swamps.

In the green zone of the city arranged artificial ponds: ponds Chernorechenskij, Tsimlyansky. In the residential area of residential development are among the natural and artificial ponds. Border greenbelt advocate green area and agricultural land use. Natural border green zone of the city of Tyumen in the south is the river Pyshma.

According Forestry Department of Tyumen field crops forested Tyumen zone preferably presents first and second resistance classes, forest environment broken only 1.2% of the (small inclusions), which favors the development of recreational use without imposing restrictions.

**Figure 1.** Map of location of forests and parks of the city of Tyumen. 1 - Forest Park "Zatyumensky"; 2 - Forest Park "Gilevskaya Grove"; 3 - Forest Park "to them. YA Gagarin".
3. Results
Within the city, parks are the main elements of the environmental framework and carry out a number of important sanitary, environment protection and environment-forming functions. In this urban forest parks are used for public recreation and experiencing strong anthropogenic pressure, so it is important to maintain their ecological condition.

In urban greening system includes not just parks, but also areas of the park, protecting green areas of industrial enterprises, highways, railways, and county parks and landscaping shore.

In the city of Tyumen, at present, many of the existing inadequate landscaped residential areas (with a tight capital buildings, such as micro-district "East").

Under current rules of land use and development of municipalities under the greenery provided half of intra-area. For this reason, planting inland residential areas, contributing to the creation of favorable conditions for living and leisure of the population, improving the architectural appearance and sanitary conditions inside the quarters is a significant problem.

However, even now, it does not always take into account the sanitary-hygienic role of green spaces and individual species during the construction of new residential complexes [7].

It is important to understand that questions about ecological arrangement urban environment to be taken seriously, the reason for such a significant strength of the ecological situation in big cities is that their territorial space is undergoing intensive development of anthropogenic load, with mutual conglomeration of factors and different at the same time a large population density. A powerful threat to man-made components of development of production, energy, and utilities. In cities with old agglomeration centers, to the present day preserved historically specific series of functional areas - industrial, municipal, residential, recreational. If you lack the necessary sanitary - protective measures, it sets a very high level of pollution. Furthermore, it should be taken into account, that the anthropogenic component of changes in the environment are largely determined by energy-intensive technology that contributes to the deterioration of environmental quality as a whole. In this context, the problem of creating environmentally friendly technologies becomes paramount in the planning of sustainable urban development.

In his works, Doctor of Technical Sciences Tetior Alexander Nikanorovich develops scientific basis for architectural and construction ecology and environmental infrastructure, research and introduction of new types of green buildings and engineering structures, basics of creating a sustainable city. In his writings described the problems and methods of forming and strengthening ecological urban environment as a complex of natural, social, economic and natural-anthropogenic factors that have a serious impact on the residents. The ways of creating environmentally friendly settlements with energy-efficient, energy-active, "smart" buildings and structures, economical water consumption, lighting and ventilation. It shows a tendency to improve the existing non-ecological urban environment: ecological reconstruction of buildings and ecological restoration of landscapes [8].

![Figure 2. The transition to greener cities (A. N. Tetioru).](image)
After analyzing the scientific literature and the term "ecological framework of the city", we give our definition of the ecological framework of a city - this is a medium-stabilizing territorial system, purposefully
shaped to improve the situation of urban areas by isolating the most dangerous sources of technological impact, preserving historical elements of the cultural landscape, reconstruction of valuable fragments of natural ecosystems, improve the comfort of the living environment. The ecological framework of the city should be assembled from elements of the cultural landscape (parks, squares, boulevards and embankments) and fragments of the surviving nature (suburban forests, parks, floodplain forest meadows) [9].

4. Discussion

According to the author, in order to effectively manage the development of the urban environment, it is necessary to create and implement various projects to create a comfortable urban environment at the level of the municipality.

For example, within the framework of the project on the main direction of the strategic development of the Russian Federation “Forming a comfortable urban environment”, municipalities create and implement five-year comprehensive programs for the improvement of human settlements, taking into account the recommendations of the Ministry of Construction of Russia. In general, the implementation of this priority project provides for the most involved assistance of citizens in the creation and implementation of urban improvement projects.

Thus, on the basis of the principles developed by the Ministry of Construction of Russia, the subjects and municipalities of the Russian Federation should adopt new criteria for improvement, including taking into account the opinions of citizens in the formation of such programs, and also adopt a mechanism for supporting improvement activities initiated by citizens, and financial participation of citizens and organizations in their implementation. The tools of public control in matters of improvement should be taken into account.

Also, in our opinion, it is necessary to create and implement a system for assessing the quality of the urban environment, which would allow the formation of an index of the quality of the urban environment in a particular municipality. It is planned that such an assessment will be conducted with the mandatory participation of citizens.

5. Conclusion

Currently, in the United Arab Emirates is under construction, the only city in the world, completely provided by renewable energy of the sun and wind, without cars. City will be fully processed, and use their waste. Thus, the city is not carbon dioxide emissions, but all the energy will be provided by photovoltaic panels, concentrated solar power, wind and other renewable energy sources as well as energy from waste.

For the construction of buildings and structures from recycled waste materials to be used. The stores are extremely bio-products, the population of the city will use half as much water as, in general, across the country, and all waste water will be reused.

Definitely, it is a unique project of the city. However, in existing cities still have a reserve in order to become more environmentally friendly.

Thus, with the aim to make the city more stable and environmentally friendly, it requires not only specific urban planning, design and operation of buildings, development of public transport, the solution the problem of waste, but also a lifestyle change and consciousness of its people, their high level of ecological culture.

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