

## **ECOLOGICAL AND ECONOMIC ASPECTS OF PLANNING OF URBAN DEVELOPMENT**

**Andrey Leonidovich Pozdnyakov\***

**Southwest State University, Faculty of Building and Architecture, Kursk, Russia**

*The article analyzes the foreign and Russian experience of urban development, taking into account the environmental and economic requirements for modern projects. Among the environmental priorities of many countries, the problems of organization of urban territory, development and maintenance of green spaces are brought to the forefront. The main problems, characteristic of large urban agglomerations, are combined in the following groups: transport, waste, energy, water, land use and landscapes.*

*Key words: Ecology, Urban planning, Territorial planning, Urban development strategy*

### **INTRODUCTION**

Russia's transition to market relations presupposes the creation of an effective economic mechanism for interaction between nature and society. In conditions of increasing the role of economic management methods, the solution of economic problems of ensuring environmental safety, protection of the environment and rational nature management becomes more important.

Despite the large number of studies of various aspects of environmental Economics and environmental protection, including those at the regional level, issues of economic regulation of environmental problems of urban activities has remained virtually unexplored. This led to the need for research on the problem of economic regulation of environmental and urban development.

### **THE ANALYSIS OF FOREIGN EXPERIENCE IN THE FIELD OF DEVELOPMENT STRATEGIES OF URBAN AREAS**

A distinctive feature of the modern stage of urbanization is to optimize the management processes of urban development. Structural changes in the world economy make a new order in the hierarchy of cities. As a result of globalization, many cities and Metropolitan areas have taken on a new international significance, they were called "world" cities. These cities include New York, London, Paris, Berlin, Tokyo, Rome, Brussels and others. Currently, cities such as Beijing, Seoul, Cairo, Rio de Janeiro, Mexico City, New Delhi and others, including Moscow, are actively developing and preparing to join the "elite club".

The program of development of settlements at the UN (HABITAT) involves the allocation directions of the re-orientation of the regional strategy and policy planning and management for sustainable development of settlements in an increasingly urbanizing world.

Adopted at the UN conference "HABITAT Principles" encourage governments, regional and local governments

and other influential forces to implement urban development strategies that respond effectively to social and economic needs of the population and do not harm the natural and human development.

Awareness of the importance of environmental problems at the state level, expansion of forms and methods of environmental management and protection of the environment, development and implementation of targeted programs and activities to reduce the negative impact of production on the environment and natural resources have made possible significant environmental improvements in many cities in the US, Canada, Western Europe and Southeast Asia [01].

It should be noted that among the environmental priorities of most capitals, the problems of organization of urban territory, development and maintenance of green spaces both inside the city and in its surroundings are brought to the forefront.

Environmental programs in many cities around the world in the 1990's in addition to traditional approaches (reduction of pollutant emissions into the air and discharges into water bodies, use and disposal of waste, improvement of purification technologies, noise reduction, etc.) were oriented to the ecological optimization of the organization of territories.

An analysis of the "sustainable development strategies" of the European capital regions showed that the priority of environmental quality in spatial development can be defined as the economic regulation of the onset of urbanization.

In general for Europe, the main problems of urban development and environmental protection, characteristic of large urban agglomerations, can be combined into the following groups: transport, waste, energy, water, land use and landscapes.

In foreign countries in the field of urban planning and environmental protection, there are various approaches to the organization of the territory;

the Concepts and Programs of Cities Development, the names of which are very diverse: Landscape Program, Green Plan, Strategic Plan, etc. In common is the fact that they are mostly complex and rarely dedicated to any one aspect of urban development [02]. These works are conceptual and program for the development of the city and the region as a whole. As a rule, they are developed by governmental organizations: in Berlin – by the Senate Department for Urban Development and Environmental Protection, in Paris – by the Institute for the Territory and Urbanization of the Ile-de-France region, in Vienna – by the Vienna City Department of Master in Urban Development and Urban Planning, etc.

The experience of Berlin is of the greatest interest for Russian town-planning practice and environmental protection. When developing the plan for the use of the territory, the Federal Law of the Federal Republic of Germany fixes the task of guaranteeing a decent human environment and the development of natural life bases. Therefore, the plan addresses issues of careful management of the territory, maintenance of ecologically valuable areas and the supply of environmentally friendly activities.

Plan information is the result of balancing all the diverse issues and requirements of urban development, including the requirements of landscape planning.

When checking proposals for new development of territories under construction, an analysis of possible environmental conflicts is carried out. First of all, the compliance of project proposals with legal documents on nature protection, landscapes and water resources is monitored, then the degree of interference in nature and landscape is assessed, measures are planned to protect temporary impacts. Threshold load values are established, and in the subsequent stages of the project it is necessary to develop compensatory ecological measures.

Thus, the Land Use Plan and the landscape program of Berlin together form the basis for the long-term planning of urban development and the planning legal framework for the development of construction plans and landscape plans.

In the draft General Scheme of the Paris district for the period up to 2015., made in 1992., the main objectives of long-term development are priorities for the protection and development of green spaces and agricultural lands as natural counterbalances of the continuous urbanization of the metropolitan region.

Further specification of these provisions is reflected in the developed in 1994. a special “Green regional plan for Ile-de-France”, which deals with 3 levels – city, agglomeration and region..

The urban green frame, concentrated in a radius of 12 - 15 km from the center of Paris, serves territories with a population of more than 6 million people. In the future, this skeleton will develop due to the reorganization of the territories in the central core of Paris: for example, at present a large park has been established on the former territory of the Citroen plant.

Paris is a more or less integral territorial formation, but one cannot but pay attention to the existing considerable internal diversity and, to some extent, the chaotic nature of the planning organization.

Views and approaches to the management of Paris changed throughout the 20th century: at the beginning of the century, the tone was set by hygienists, in the 1950's – by functionalists, and from the 1960's, aesthetic considerations prevailed. Currently, one of the most discussed issues is the preservation of the historical heritage of Paris, slogans such as “Paris Village”, “Quiet Area”, etc. are popular. Thus, in the modern development of Paris there are three main areas – “conservation”, “revitalization” and “concentration”.

The basic position, fixed in the concept of development of Vienna, is the creation and improvement of the urban environment, favorable for human life. The program documents adopted in accordance with this concept envisaged a whole range of environmental measures.

In the concept of development of Vienna, special attention was paid not to the maximum spatial growth of urban territory, but to optimizing urban development. Therefore, the Vienna concept is still known as the concept of a soft urban renewal. One of the characteristic features of this concept is the orientation toward the “family cell”, which resides in its own house (apartment), but not as an isolated island, but in a specific society. At the same time, the environment of a person (family) should be an attractive urban environment.

According to the concept of development, new areas of the city will move in the north and north-east direction, “mastering” areas for development, which in the recent past were used as farmland. One of the peculiarities of the decisions of the new development areas is the preservation of the already existing green spaces and their organic inclusion in the “apartment complex”.

In order to prevent land speculation, especially expensive within the historic building, and maintaining “face of the city” all the territories were identified, over which special control was established. Already in the autumn of 1991 in the central part of Vienna a special zone in which any construction and reconstruction activities could be carried out only by special permission was allocated. In similar “rehabilitation zones” in other parts of the city almost all objects classified as “property” were included.

The following programs have been adopted in Great Britain:

- “Urban Development Coordination”, which aims to develop unitary urban development plans that combine a functional strategy for their development with local authorities' plans for improving the environment;
- Strategies and environmental restrictions for the development of industrial areas;
- Development of urban green and suburban forest-park zones (with the introduction of economic regulations on their territory);

- Regeneration of specialized urban areas (for example, 582.6 hectares of port warehouse areas are subject to regeneration in London);
- Reduction of man-caused loads in urban areas.

In environmentally-oriented planning of the largest cities in the United States priority is given to the analysis and assessment of the risk to public health from environmental factors.

In Japan, projects are widely being developed for the organization of green buffer zones that separate industrial zones and other sources of man-made loads from residential and recreational areas. The second direction is to ensure a guaranteed comfortable level of living in the residential areas.

The Tokyo Metropolitan government in 1992. adopted a Plan of action for the protection of the environment in the framework of the development of ecopolicies (eco-regions) in the current cities with developed systems of air and water treatment, recycling of excess heat and waste.

In Finland in 1992. the General plan for the development of Helsinki was adopted, which established a course for sustainable development by ensuring control over changes in the use of the city's territory and the selection of territories for new construction [03].

### **THE SYSTEM OF PLANNING AND MANAGEMENT OF URBAN DEVELOPMENT IN RUSSIA**

The main legal document regulating relations in Russia in the field of creating a settlement system, town planning development, improvement of urban and rural settlements, development of their engineering, transport and social infrastructure, rational nature management, preservation of historical and cultural heritage and environmental protection is the Town-planning Code of the Russian Federation .

Systematization of information on the state of the urban environment in general, on the interaction of its elements, on the development of positive and negative processes should correspond to the following levels of problem-solving and decision-making.

Federal level:

- strategic decisions on the territorial development of the region, city, urban agglomeration;
- long-term forecasts based on models for forecasting the development of the situation under different scenarios;
- assessment and forecast of the influence of the region on the state of urban areas;
- assessment and forecast of the city's influence on the state of the territory of the region.

City level:

- strategic decisions for the development of urban areas;

- retrospective analysis and general assessment of the state of urban areas with a view to their zoning according to the degree of town-building value, environmental hazard (safety) and the nature of various processes.

Local level:

- tactical decisions on district and microdistrict planning;
- regime observations, cadastral valuation of territories [04].

Development of town planning documentation in modern conditions becomes the main element of the territorial planning. The basis for improving the town-planning organization of the regions laid down the principles that ensure:

- balanced development of natural and urbanized areas;
- optimal combination of intensity and types of functional use of the territory from an ecological, social and economic point of view;
- formation of a unified system of settlement, a natural and urbanized landscape and a spatial environment;
- organic introduction of new forms of settlement and development—low-rise development zones, business complexes, technoparks, etc.

The system of documentation on urban development planning for the territory consists of:

- General plan of the city development;
- urban development plans of the administrative districts, districts and territorial units with special status (TUSS);
- planning projects;
- integrated and sectoral territorial schemes.

Documents of this level define the basic principles and principles for the development of the territory for ten to twenty years and the specification of tasks in short-term projects.

In accordance with all-Russian legislative and other normative legal acts, the General Plan of the city is the main town-planning document determining the directions and boundaries of the territorial development of the city in the interests of the population and taking into account state and socio-economic tasks. At the same time, the General Plan fulfills the role of the main territorial document determining the environmental conditions of the population, restrictions and requirements for the rational use of natural resources for environmental protection, conservation of ecosystems and historical and cultural heritage [05].

An analysis of strategic town planning documents shows that the development strategy of the Russian regions takes into account the main trends and directions for regulating the urbanization process based on the environmental priorities of sustainable development.

## CONCLUSION

Environmental requirements for town planning documentation are established to ensure sustainable development of the territories, early detection and recording of any consequences of negative environmental impact in the preparation of decisions on urban development planning of the territories, and for the purpose of economic assessment of the feasibility of the development options under consideration.

The integrated approach applied in town planning design allows to consider all components of the urban environment in their interaction with each other; issues of environmental protection are reflected in the functional zoning of the territory, engineering training, proposals for the architectural and spatial organization of the city-

Ecologization of urban planning is also explained by the need to assess the environmental performance of design solutions, options for development at the decision-making stage and development of conceptual approaches.

## ACKNOWLEDGEMENT

Author thanks the Rector of the Southwest State University, Doctor of Technical Sciences Yemelyanov S.G.

## REFERENCES

1. Shevtsov, K.K. (1994) Environmental Protection in construction, 240 p.
2. Reimers, N.D. (1992) Hope for the survival of mankind. Conceptual ecology, 366 p.
3. Kuleshov A.S. (2000) Natural space – the basis for the development of the planning structure of the city // Industrial and civil engineering. No. 1, pp. 33-36.
4. Pozdnyakov, A.L., Pozdnyakova E.V. (2016) The Main Trends in the Development of Industry in Cities and Towns from the Position of Environmental Safety. // International Journal of Applied Engineering Research, Volume 11, Number 23, pp. 11331-11334.
5. Pozdnyakov, A.L., Samokhvalov, A.M. (2014) Urbanization and its impact on the ecology of cities and towns // News of Southwest State University, №6 (57), pp. 74-78.

*Paper submitted: 26.07.2017.*

*Paper accepted: 05.09.2017.*

*This is an open access article distributed under the CC BY-NC-ND 4.0 terms and conditions.*