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URBAN PLANNING PRINCIPLES AND GENERAL APPROACHES TO THE CONCEPT OF RESTORING URBAN AREAS AND CITIES THAT WERE SUBJECT TO DESTRUCTION

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Abstract. The purpose of the work is to develop basic urban planning principles and conceptual foundations for the reconstruction of highly urbanized territories that have been destroyed for the tasks of restoring the urban settlement system. An analysis of the experience of restoring cities and territories in the post-war period was conducted. Positive examples are based on an integrated approach with compliance with two conditions – the involvement of local communities and the development of comprehensive development strategies. situational response – when solving the tasks of urban development, provided many negative consequences of a significant scale. At the initial stage of anti-crisis management, the priority task is to update the city's general plan. The general plan acts as a key document that formalizes the rules, priorities and tasks of urban development activities.

The restoration of territories in conditions of reduced urban potential has a number of specific features: a decrease in population, loss of industrial production, as well as the degradation of transport and engineering infrastructure. This is accompanied by a general deterioration in the qualitative and quantitative indicators of the development of the urban environment.

During the development of the updated general plan, modern principles of spatial development should be laid down: safety, environmental friendliness, autonomy, energy efficiency, convenience and comfort, transport accessibility, creation of conditions for employment.

It is proposed to structure the restoration process by hierarchical levels and types of objects. It is also worth identifying the subjects of management related to reconstruction and forming an information package for planning and implementing design solutions.

The matrix for analyzing planning units of destroyed territories is proposed as a tool that allows for typology, determining priorities and creating a basis for forming regulatory regulation of restoration. It is proposed to use a subject-oriented restoration model.

Keywords: urbanized areas, reconstruction, rebuilding, restoration, master plan, microdistrict, urban planning, building typology.

Introduction. The restoration and reconstruction of the country in the post-war period is an extremely difficult task, given the scale of destruction, damage, and socio-economic and demographic factors. The war has affected different regions of Ukraine in different ways. For some regions, the

scale of physical destruction is relatively small. The reconstruction of what has been destroyed is fully in line with current development plans. For the regions of eastern Ukraine, where the front line moved over a long period of time, the destruction was widespread and territorial in nature. The scale and nature of the destruction is comparable to that of a settlement, administrative unit, or territorial entity. The process of rebuilding and restoring objects does not involve individual physical objects such as houses, industrial enterprises, or structures, but rather settlements, engineering and technical systems, and territorial settlement systems. In other words, the scale of the tasks is comparable to the level of adjustment of master plans with corresponding physical and time indicators. A retrospective analysis of the reconstruction of the USSR after World War II provides examples of mistakes made at that time. The administrative-command economy set the restoration of industry as its main goal and task. These tasks were carried out using coercion and administration. Rapid urbanization and the large rural population at that time served as a resource for industry. Another resource was forced labor. As a result, after the collapse of the USSR, a significant part of the industry (focused on the defense sector) proved to be inefficient and burdensome. Industrial regions and single-industry towns fell into a protracted crisis and depression. The very concept of prioritizing the development of means of production imposed on a planned economy proved ineffective. The concept of urban development, established in the late USSR, was progressive in a certain sense at that time, but the implementation of the provisions of the master plans of the cities of the Ukrainian SSR led to large-scale imbalances, restrictions on the development of cities, environmental problems, and structural chaos [1]. Thus, as can be seen in certain urban planning decisions, situational responses to the tasks at hand led to many negative consequences on a large scale [2].

Analysis of the latest research and publications. The issue of post-war reconstruction has been analyzed and researched by a large number of scholars. Differences in approaches and directions are determined by the scale, location, and time periods of armed conflicts. Since World War II, Europe has not faced a war of such intensity, scope, and scale of destruction. A distinctive feature is the conduct of hostilities in highly urbanized areas. In these conditions, the front line means the formation of a zone of complete destruction. The absurdity of the goals and preconditions of war also aggravates its consequences. The experience of the reconstruction of European countries and the USSR [3-5] is of scientific interest in the direction of "working on mistakes".

The reconstruction of the Balkan countries provides experience of positive and negative concepts and approaches to reconstruction. The countries of the Middle East have certain regional characteristics, with both positive and negative examples of reconstruction concepts.

Ukraine has not faced similar problems and is therefore not yet ready to offer a clear, comprehensive reconstruction program. The scientific and methodological foundations for the country's recovery are an important and urgent task at the national level. In recent years, thorough domestic research has been devoted to this issue [6-11].

The purpose of the work. Development of basic urban planning principles and conceptual foundations for the restoration of urbanized areas and cities that have suffered destruction, for the purposes of updating the system of urban settlements and the planning structure of the eastern region of Ukraine.

Materials and methods. System analysis and statistical studies were used.

Main material and results. The fourth year of the war allows us to draw some preliminary conclusions. We can assume that military-civilian administrations – city and regional – are not instruments of development. Military-civilian administrations are created as instruments of crisis management during difficult periods of war or special circumstances. Regional and urban development is a much more complex task, operating in time categories of decades and relying on development programs that define the general principles, foundations, and concepts of recovery. Unlike plans, programs are not focused on specific indicators or target figures. Programs are aimed at implementing goals, achieving specific structural changes, and achieving quality parameters for the urban environment.

Crisis management can provide impetus – if a scientific and methodological approach is established, appropriate conditions are created, tasks and a management structure are formed – in the

form of an urban development working group. Such a working group, within the administrative-territorial unit – city, urban community – is structured according to the rank of tasks, should be headed by a chief architect, and include an urban planner with relevant professional education.

The task at hand in the first stage of crisis management is to revise and update the city's master plan. The master plan is a document that formalizes the rules and objectives of urban development [12-16]. The master plan is used as a tool for the restoration and balanced development of territories. The master plan must be expedient, effective, balanced, and transparent. Its key role is to systematize up-to-date information on demographic, social, and economic indicators that reflect the real state of the community: its development or decline. It is on the basis of the master plan that programs for prospective development are formed and priority areas for the restoration and expansion of urban territories are determined. Realistic restoration plans should be based on actual data and the current needs of the population. At the same time, the master plan is an important source of information for investors when making decisions about capital investment. Information about the housing market, commercial real estate, and non-residential land plots is particularly sensitive. The master plan also allows for the compensation of shortcomings caused by market distortions. These include distortions in land values and a lack of interest among private investors in financing social or environmental infrastructure, which ultimately reduces the attractiveness of the territories. In addition, the problem of information asymmetry is addressed: internal market participants have more knowledge about local specifics than external investors.

Territorial recovery after hostilities poses particular urban planning challenges: population decline, loss of industrial potential, and degradation of transport infrastructure [17]. Recovery is taking place against the backdrop of a decline in the quantity and quality of the urban planning base, which makes these processes particularly difficult.

Despite this, the reconstruction process must be based on the fundamental principles of sustainable urban development: improving convenience for residents, a safe and comfortable environment, environmental friendliness, autonomy, energy efficiency, transport accessibility, the creation of new jobs, and the provision of a full range of social services in accordance with state standards.

International practice shows that for the effective restoration of degraded areas, it is necessary to focus investment on the development of infrastructure – transport, engineering, and the creation of new jobs. Special attention should be paid to the preservation of the natural environment as a prerequisite for sustainable development.

The master plan also addresses the social development of the urban environment: it provides for the rational planning of the street and road network, the location of kindergartens, schools, parks, green areas, and recreational spaces. In addition, it sets out restrictions and requirements for environmental protection, maintaining a balance between urbanization and natural resources. Since the master plan has the characteristics of a regulatory act, it must undergo an approval and adoption procedure in accordance with the provisions of the legislation on regulatory activity. Approval of the master plan involves publication, public discussion, regulatory impact analysis, and subsequently, procedures for monitoring this impact must be provided for.

The current challenges and organizational constraints in the reconstruction process are due to time constraints and the scale of the destruction. The key problem lies in the urgency of the situation, which requires quick decision-making and tight deadlines for the development of recovery plans and programs. Existing studies emphasize the lack of well-developed general scientific and practical approaches to the organization of recovery processes, which is particularly acute in wartime [18].

Among the main challenges caused by the war, the following can be highlighted: population decline, which has a persistent negative trend; loss of industrial potential due to the destruction or damage of production facilities; partial destruction of infrastructure, with a simultaneous decline in the population of many administrative-territorial communities; the need to formulate approaches to decision-making on the scale and nature of the reconstruction of settlements – partial or complete; the need to identify the responsible authorities and procedures for making management decisions on reconstruction.

The content of reconstruction programs, as well as the initial data for their preparation, should cover a wide range of interrelated issues. Already at the initial stage of organizational planning, a number of burdensome circumstances can be expected:

– shortage of qualified specialists;

– limited time frame for preparing urban planning documentation;

– difficulty in objectively assessing the extent and nature of the damage;

– uncertainty regarding the legal status of ownership, inheritance, and property rights.

In response to these challenges, it is advisable to develop a generalized model for the restoration of settlements affected by large-scale destruction. Such a model should [17, 19]:

– define hierarchical levels and objects of reconstruction (territorial, sectoral, infrastructural);

– outline management entities and types of activities within the scope of reconstruction;

– structure the reconstruction information package – a list of data necessary for decision-making;

– formalize design decisions for the reconstruction of individual objects and functional elements.

Table 1 provides an example of a planning unit analysis matrix (using the city of Rubizhne as an example). The cities of Lysychansk, Severodonetsk and Rubizhne in the agglomeration received updated master plans after 2015. Urban planning documentation was reviewed and adjusted to reflect the situation caused by the occupation of part of the region and the formation of a demarcation line. The master plans for the cities were approved in 2023-24 with the aim of forming a framework document. Changes to urban planning documentation and adjustments to master plans are expected during the reconstruction phase, taking into account the urban planning rationale for the actual state of the settlements. Option/concept of restoration/reconstruction1 is proposed for consideration by individual planning units of the city master plan, taking into account the urban planning analysis of the feasibility of the functional use of land plots. The procedure for developing, updating, amending, and approving urban planning documentation [14, 15] is proposed to be supplemented with an analysis of the concepts of functional use of planning units. A simple "yes-no" dichotomy is supplemented with a SWOT analysis of urban planning rationale.

The city master plan serves as a basic tool for identifying and analyzing planning units that share common typological features, types of damage, functional purpose, and spatial interconnectivity [14]. The identification of such units and their separate processing – with the development of reasonable scenarios and directions for restoration – allows for the rapid accumulation of primary information necessary for strategic decision-making.

Generalised, deductive reconstruction decisions are recorded in urban planning documentation at the city or territorial community level. The general model for the reconstruction of settlements that have suffered large-scale destruction provides for:

– the definition of hierarchical levels and objects of reconstruction;

– generalization of management entities and types of activities;

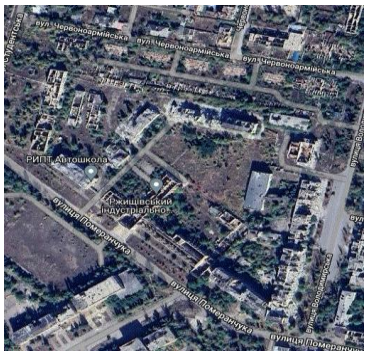
– formation of an information package for reconstruction;

– formalization of design decisions for individual objects and elements of reconstruction.

Conclusions:

1. Effective planning is based on fundamental urban planning principles that must be taken into account when renovating urban areas in eastern Ukraine. These include: safety and quality of the environment, environmental friendliness, autonomy and energy efficiency, transport accessibility, creation of new jobs, and infrastructure that meets the real needs of the population. The problems of modern post-war urban reconstruction include the risk of a "budget trap" in single-function settlements. Young people, as an active part of the population, are leaving the area en masse, while socially vulnerable groups are unable to ensure sustainable development, which provokes a recessionary spiral of demographic and economic degradation. In such conditions, it is important to balance the functional content of cities in accordance with their demographic potential, both at the present moment and taking into account long-term forecasts. Alternative scenarios should also be considered, including: complete or partial reconstruction of a settlement; relocation of a new settlement to another area; or demolition of a destroyed settlement with subsequent recultivation.

Table 1 – Example of a planning unit analysis matrix (using Rubizhne as an example)

No	Planning unit	Parameters	Status. Typological description	Option/concept of restoration[1]
1	2	3	4	5
1	 	Rubizhne Industrial Pedagogical College. Founded in 1944. 730 students. 109 employees, including 50 teachers. Relocated to Kolomyia, Ivano-Frankivsk region.	The college is located on a 6-hectare site. The academic building (1939), workshops, dormitory, sports grounds, and driving course training ground. Completely destroyed. The main building is beyond repair.	Change of functional purpose together with the site. *Restoration is possible only in the case of the formation of an educational institution with complete reconstruction of the complex.
2		Rubizhne Polytechnic College named after Poray-Koshytsia. (1927 Rubizhne Chemical and Mechanical Technical School.) 9 specialties, 290 licensed places	The college is located in a park area. Main building, educational buildings, workshops, dormitory, sports grounds. Private buildings around the perimeter. Completely destroyed. The main building cannot be restored.	Change of functional purpose together with the site. *Restoration is possible only in the case of the formation of an educational institution with complete reconstruction of the complex.
3		Pomeranchuk Street. Old town center.	Forms the planning axis of the old city center. An area of complete destruction. Combines residential buildings with administrative facilities.	Preservation of functional purpose. Restoration is advisable on the basis of developing a new planning solution that complies with the updated master plan for the city.
4		Luhansk State Medical University Complex	A separate complex located in the northern part of the city. Relatively preserved.	Preservation of functional purpose. Easy adaptation for educational institutions. Rational structure of the site, convenient transport links.

Continuation of Table 1

1	2	3	4	5
5		The Khimikov-Gorky residential area	Yuzhny residential area, Zabirkyne. Zorya National Nature Park. Forms a separate planning area. Practically destroyed.	Rational structure of the territory, convenient transport links. Preservation of functional purpose. Restoration is possible in the event of the reconstruction of the city-forming enterprise NPP Zorya.
6		The individual sector of the city.	Residential houses are almost completely destroyed	Situation analysis. Status determination. Updating the functional purpose of the site. Concept of the site restoration program.
Option/concept for restoration/reconstruction [1] – alternative concepts based on the updated master plan for the city [14, 15]				

2. Such decisions should be made by local authorities, but the standard algorithm for urban planning in post-war conditions is complicated by many factors. An analysis matrix is proposed as the basis for the model.

3. Inter-level coordination is necessary to justify strategic priorities for reconstruction: coordination of planning documents at the local, regional, and national levels. An important task is to develop adaptive models for the restoration of territories that have suffered various types of destruction, taking into account their functional load, typology of development, level of engineering support, and population density.

4. The formation of analysis matrices for planning units in destroyed territories is the foundation for building an adaptive reconstruction model. It should: structure the restoration at the level of territories, objects, and functions; ensure coordination between management entities; lay the groundwork for regulatory procedures; and ensure the prompt formalization of project decisions in accordance with the current situation on the ground.

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МІСТОБУДІВНІ ПРИНЦИПИ ТА ЗАГАЛЬНІ ПІДХОДИ ДО ЗАСАД ВІДНОВЛЕННЯ УРБАНІЗОВАНИХ ТЕРИТОРІЙ ТА МІСТ, ЩО ЗАЗНАЛИ РУЙНАЦІЇ

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Анотація. Метою роботи є розробка основних принципів містобудування та концептуальних засад реконструкції високоурбанізованих територій, що зазнали руйнувань, для завдань відновлення системи міських поселень. Проведено аналіз досвіду відновлення міст і територій у післявоєнний період. Позитивні приклади базуються на комплексному підході з дотриманням двох умов – залучення місцевих громад та розробка комплексних стратегій розвитку. Ситуативне реагування – при вирішенні завдань містобудівного розвитку, що супроводжувалося багатьма негативними наслідками значного масштабу. На початковому етапі антикризового управління пріоритетним завданням є оновлення генерального плану міста. Генеральний план виступає ключовим документом, що формалізує правила, пріоритети та завдання містобудівної діяльності.

Відновлення територій в умовах зниженого міського потенціалу має ряд специфічних особливостей: зменшення чисельності населення, втрата промислового виробництва, а також деградація транспортної та інженерної інфраструктури. Це супроводжується загальним погіршенням якісних і кількісних показників розвитку міського середовища.

Під час розробки оновленого генерального плану слід закласти сучасні принципи просторового розвитку: безпека, екологічність, автономність, енергоефективність, зручність і комфорт, транспортна доступність, створення умов для зайнятості.

Пропонується структурувати процес відновлення за ієрархічними рівнями та типами об'єктів. Варто також визначити суб'єктів управління, пов'язаних з реконструкцією, та сформувати інформаційний пакет для планування та реалізації проектних рішень.

Матриця для аналізу планових одиниць зруйнованих територій пропонується як інструмент, що дозволяє проводити типологію, визначати пріоритети та створювати основу для формування нормативно-правового регулювання відновлення. Пропонується використовувати предметну модель відновлення

Ключові слова: урбанізовані території, реконструкція, відбудова, відновлення, генеральний план, мікрорайон, містобудування, будівельна типологія.

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