

TECHNOLOGY, CREATIVITY, IMPLEMENTATION**APPLYING EUROPEAN METHODS OF URBAN TRANSFORMATION
TO REBUILD THE URBAN ENVIRONMENT IN THE POST-WAR ERA****Eduard Shyshkin**

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Summary

Traditional methods of urban planning and design that have developed in Ukraine over the past decades do not sufficiently account for the complexity and dynamism of modern urban systems. At the current stage, it is both relevant and urgent to reorient urban development from a sectoral to a social approach, taking into consideration the needs of the population, the interests of the city, its size, development activity, economic and resource potential, environmental conditions, and local traditions. This article examines the European experience of urban transformation as a basis for the restoration of urban environments after military conflicts and identifies prospects for the development of this field in the context of post-war reconstruction of destroyed urban territories. Examples of urban transformation in various EU cities are presented to illustrate different approaches to urban renewal. The study identifies the interrelation between urban environment transformation and the life cycle phases of cities and urban planning objects, as well as the main factors influencing urban transformation. Specific features of urban development management under contemporary conditions are highlighted. The relationship between residential redevelopment and the life cycle stages of urban and architectural systems is analyzed. The paper also reviews current achievements and formulates key issues concerning the comprehensive reconstruction of residential quarters. Particular attention is devoted to the existing legislative framework and its individual articles that require amendments to address major obstacles currently hindering the implementation of residential reconstruction projects. Recommendations are provided for improving the legislative and regulatory framework to resolve these critical issues.

Key words: comprehensive reconstruction, residential development, obsolete housing stock, urban planning system, planning.

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1. Introduction

The current stage of socio-economic development of cities and regions of Ukraine is characterized by a military-political crisis; a decline in the economic efficiency of economic activities in the key sectors of the economy; and a lack of investment in fixed assets, infrastructure, energy, and urban housing and utilities.

The existing methods of urban planning and development management still insufficiently take into account the profound changes occurring in our society, particularly the real possibilities and structure of investments in the development of cities and urban utility systems. These methods are no longer capable of adequately responding to the rapid shifts in socio-political and economic transformations. Modern conditions and prospects for urban development necessitate a reassessment of priorities and the identification of new directions for further global transformations – fundamental changes in the organization of the urban planning process.

The sustainability of urban development in Ukraine is determined by the potential for qualitative transformation, the implementation of new management methods and mechanisms, and the use of innovative technologies, raw materials, and next-generation materials in improving urban areas. The most problematic factor in urban environment transformation is the lack of effective program-targeted management methods and mechanisms based on rational selection of investment priorities, especially under wartime conditions in certain regions of Ukraine.

2. Theoretical background

The expansion of cities significantly affects urban and rural outskirts, which are the most dynamically. Intensive construction and population growth can be observed in such peripheral zones. According to Gábor László Vasárus (*Vasárus G.L., et al., 2022*) the lack of local spatial planning and land-use management in these areas leads to severe environmental damage during urban sprawl.

Researchers such as Jacqueline Bleicher, Ana Oliveira, and Monica Lavagna (*Bleicher J., Kumar P., 2025; Oliveira A., Lopes A., Soares A., 2022; Lavagna M., et al., 2018*) have raised questions about how urban transformation impacts climate change, the environment, and the design of climate-resilient urban areas capable of addressing climate issues in many countries.

Michelle Leichter and Chiara Piccardo (*Leichter M., Piccardo C., 2024*) use the life cycle assessment approach to address the problem of aging and low efficiency in Europe's building stock after reconstruction. While many authors compare renovation and reconstruction scenarios, most focus primarily on the operational phase and energy use, ignoring other relevant stages and indicators. The authors aim to identify patterns in methodological approaches within comparative studies that assess renovation and reconstruction scenarios or evaluate them separately.

At the Department of Urban Construction and Territorial Planning at O. M. Beketov National University of Urban Economy in Kharkiv, Ukraine, researchers study residential redevelopment as one of the key methods of urban transformation. In 2019, the monograph "Problems and Prospects of Residential Development under Comprehensive Urban Reconstruction" (*Haiko Yu.I., et al., 2019*) was published, addressing the effectiveness of comprehensive reconstruction measures aimed at ensuring suitable living conditions and the proper functioning of urban infrastructure.

3. Purpose of the Research

To analyze the problems of urban environment transformation after military actions and to identify prospects for development in the context of post-war reconstruction of destroyed urban territories. To study European experience in urban transformation for the restoration of urban environments in the post-war period.

4. Directions of urban environment transformation

Traditional urban planning methods developed in Ukraine over the past decades fail to adequately reflect the complexity and dynamism of modern urban systems. In his work (*Pavel S., Jucu I.S., 2020*) Sorin Pavel describes how the small Romanian city of Timisoara was awarded the title of European Capital of Culture in 2021 thanks to continuous urban changes that preserved its cultural heritage. The city's cultural origins strengthened its position among Europe's non-metropolitan cultural centers. Analyzing Timisoara's transformation experience, urban transformation should be viewed through four interrelated subsystems: economic, natural-technogenic, spatial, and socio-demographic. Understanding the structural connections among factors that drive the functioning of the urban system allows identification of those that govern its development and those dependent on them. Economic and spatial factors are largely controllable, whereas natural-technogenic factors tend to impose constraints.

Based on the work of Anna Majewska and Oleksandra Dyda (*Majewska A., et al., 2025*) the main categories of resources and conditions influencing the development of Polish and Ukrainian settlements include: territorial resources, water supply and drainage conditions, ecological state, sanitary and hygienic conditions, transportation connections, labor resources, and energy supply. These parameters determine optimal urban development, management strategies, planning organization, zoning, building density, and methods of comprehensive reconstruction.

Reorienting urban development from a sectoral to a social focus accounting for population needs, city size, development activity, economic capacity, environmental context, and local traditions is an urgent task at the current stage.

Figure 1 below illustrates the relationship between urban environment transformation and the life cycle phases of cities and urban planning objects from a systemic perspective. Recognizing urban structures as complex, evolving systems requires management policies to be based on long-term strategic decisions aligned with program goals and optimal paths toward their achievement.

The strategic goal of post-war urban transformation is to create integrated spatial and material conditions that ensure environmental safety, quality of life (*Iungman T., et al., 2024; Costadone L., Vierikko K., 2023; Ramacher M., et al., 2024*), preservation of cultural heritage (*Hisschemöller M., et al., 2022*), and economic resilience (*Dziecielski M., et al., 2021; Chelleri L., Baravikova A., 2021; Garcia-Ayllon S., 2018*). Planning urban transformation must prioritize human and societal long-term interests. The urgency of transformation arises from social, urban, and economic factors: social – poor housing quality, high maintenance costs, cumulative deterioration; urban – low land-use efficiency amid increasing land shortages; economic – high investment attractiveness of outdated housing areas despite their low market value.

Overall, urban transformation should encompass comprehensive reconstruction, modernization, and improvement of residential areas, aiming to shift from territorial expansion

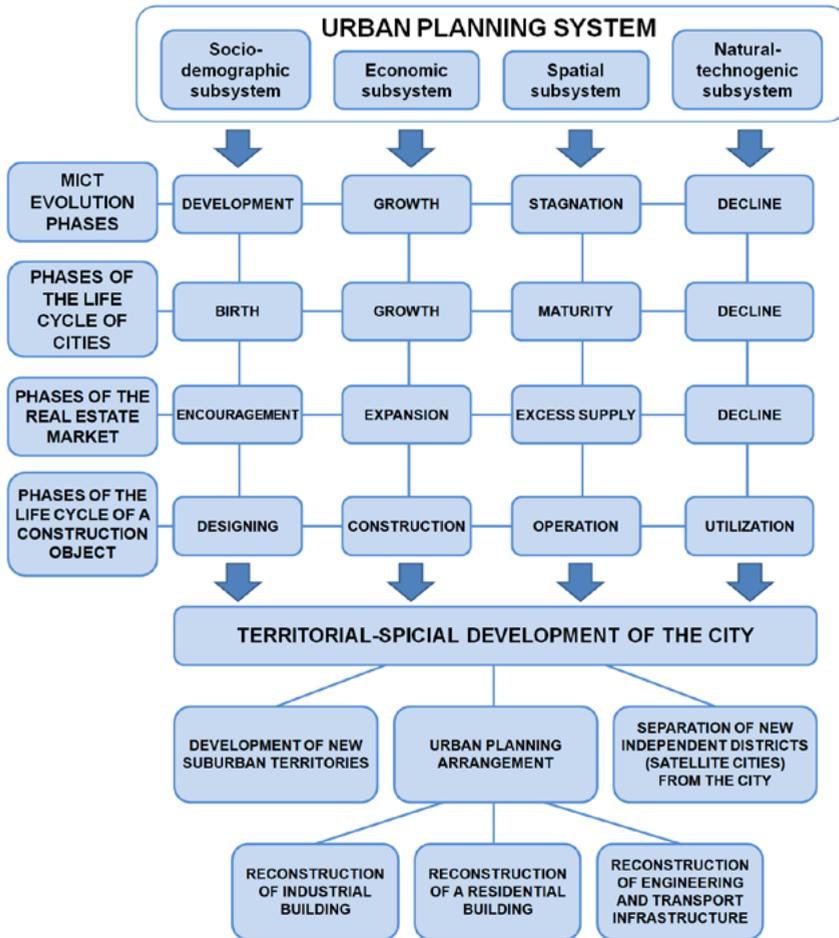


Fig. 1. Relationship between urban environment transformation and phases of the life cycle of the city and urban development objects

toward qualitative redevelopment of existing structures through balanced urban and housing policy solutions.

Following the war, urban transformation in Ukrainian cities will proceed through two main approaches:

- extensive methods – without changing land-use intensity or increasing housing stock;
- intensive methods – through reconstruction and modernization, adding floors or replacing outdated housing with new developments.

The complexity of the investment process lies in attracting multiple stakeholders – state authorities, local governments, banks, developers, real estate managers, and housing owners, who all seek investment returns. In a post-industrial, globally interconnected society, more equitable relationships among all urban actors are essential for an effective and modern urban policy.

5. Comprehensive reconstruction as a key direction of urban environment transformation

In his publication Benedetti A. (*Benedetti A.C., et al., 2025*), explores the issue of sustainable urban regeneration and the reduction of the environmental impact of urban areas. Using the example of the urban periphery of Bologna (Italy), the author compares three scenarios of intervention in an existing high-density urban block – reconstruction, deep reconstruction, and conservation – over three different time periods (10, 30, and 60 years). Applying the life cycle assessment method allows for an evaluation of the environmental impact of building reconstruction in terms of primary energy consumption. Experimental findings indicate that the application of deep reconstruction is not the most economically advantageous in the long-term perspective, whereas standard reconstruction proves to be the most effective approach.

In Ukraine, the issue of comprehensive reconstruction of obsolete housing was first addressed at the national level in 2004–2005. As a result, the Law of Ukraine No. 525-V of December 22, 2006, “On Comprehensive Reconstruction of Quarters (Microdistricts) of Obsolete Housing Stock” was developed and adopted (Law of Ukraine “On Comprehensive Reconstruction of Quarters (Microdistricts) of Outdated Housing Stock” No. 525-V, 2023). The law came into force on January 16, 2007, and remains the principal legislative act governing this area.

According to the provisions of this law, obsolete housing stock is subject to reconstruction within the framework of investment projects implemented in accordance with local comprehensive reconstruction programs. Obsolete housing stock refers to a collection of residential buildings up to five stories high (excluding detached housing) that, due to their technical condition, do not comply with current standards of safe and comfortable living, where the service life has expired or the wear of primary structural elements constitutes at least 60 percent.

The implementation of investment projects for the comprehensive reconstruction of quarters (microdistricts) of obsolete housing stock is carried out under the condition of prior and full compensation to the owners of residential premises for their losses – either by providing alternative housing upon their consent or by financial reimbursement. Owners of non-residential premises are granted, by mutual consent, equivalent non-residential space or financial compensation. Resettlement of tenants of residential (or non-residential) premises is conducted only after they have been provided with equivalent housing in terms of area and number of rooms within the same quarter (microdistrict) undergoing comprehensive reconstruction, in accordance with the legal procedures established by the state.

Certain aspects related to the comprehensive reconstruction of housing are also regulated by other legislative acts of Ukraine, in particular:

- Article 34 of the *Land Code of Ukraine (Law of Ukraine "Land Code of Ukraine" No. 2768-III, 2025)*;
- Articles 33, 34, and 37 of the *Law of Ukraine "On Regulation of Urban Planning Activity" (Law of Ukraine "On Regulation of Urban Planning Activities" No. 3038-VI, 2025)*;
- Article 31 of the *Law of Ukraine "On Local Self-Government in Ukraine" (Law of Ukraine "On Local Self-Government in Ukraine" No. 280/97-VR, 2025)*, among others.

At present, existing legislation requires adjustments aimed at resolving at least three major problems that hinder the implementation of comprehensive reconstruction projects for obsolete housing:

- **Ensuring the possibility of resettlement** based on the consent of the majority of residents. The current version of the *Law of Ukraine "On Comprehensive Reconstruction of Quarters (Microdistricts) of Obsolete Housing Stock" (Law of Ukraine "On Comprehensive*

Reconstruction of Quarters (Microdistricts) of Outdated Housing Stock” No. 525-V, 2023) stipulates resettlement only upon unanimous consent of all owners (or tenants), which practically makes the implementation of investment projects impossible.

– **Legislative consolidation of the rule** that free housing should be provided only to those family members of the owner (or tenant) who were registered and officially listed for housing allocation as of a specific date. (Following the adoption of decisions on comprehensive reconstruction, the number of “registered” family members tends to increase sharply, complicating the compensation process.)

– **Adjustment of the coefficient** by which the area of free replacement housing can be increased for owners (or tenants) not on the housing register (currently set at 1.5). It is advisable to delegate this issue to the local level, allowing municipal authorities to establish differentiated coefficients depending on the specific characteristics of the locality and the investment project.

The problem reached an impasse after the adoption of the Law of Ukraine “On the Peculiarities of the Exercise of Ownership Rights in Multi-Apartment Buildings” (*Law of Ukraine “On the Peculiarities of Exercising Ownership Rights in an Apartment Building” No. 417-VIII, 2023*). On one hand, this law assigns full responsibility for maintenance, repair, and reconstruction of apartment buildings to the owners of residential and non-residential premises. On the other hand, it declares that the land plot and the adjacent territory constitute the joint property of these co-owners. This creates a legal paradox: can an investment project for comprehensive reconstruction of a quarter be implemented if, even after the demolition (or destruction) of a multi-apartment building, the property rights to the land plot and the related facilities remain with its former co-owners? How does this correlate with the mechanisms of comprehensive reconstruction defined by the corresponding law? At present, no clear legal solutions exist to these issues.

According to the latest version of the General Plan of Kyiv (as of 2020), obsolete five-story residential buildings accounted for 3,055 structures, including 757 panel buildings with a total area of 2.6 million square meters (*General Plan of Kyiv, 2020, kyiv-landuse.com*). In addition, as of August 1, 2025, another 2,134 multi-apartment buildings suffered damage as a result of military operations since the beginning of the war (*www.rbc.ua, 2025*).

The Draft General Plan of Kyiv until 2025 envisaged the reconstruction of residential quarters and microdistricts built with panel five-story houses of the first mass series, as well as three- to four-story buildings constructed in the late 1950s and 1960s. According to the calculations of the authors of the General Plan, the implementation of the reconstruction program would remove approximately 2.8 million square meters of obsolete housing from operation (not including war-damaged buildings). To replace these, it would be necessary to construct at least 7.8 million square meters of new housing (*General Plan of Kyiv, 2020, kyiv-landuse.com*).

Unfortunately, military actions on the territory of Ukraine, uncertainty regarding the total number of buildings subject to reconstruction, and the lack of financing have led to a situation where, as of the end of 2025, a new General Plan of Kyiv until 2040 had been drafted but not yet approved. This new plan envisions the transformation of the urban environment as a key component of the sustainable development of the largest city in the country.

6. Conclusions

All of the above indicates the necessity for further improvement of the legal and regulatory framework in the field of urban environment transformation.

This will facilitate mutual understanding and coordination among executive authorities, investors, developers, and experts during the implementation of projects.

Urban environment transformation management is a process aimed at optimizing the development of a complex socio-demographic, economic, spatial, environmental, and cultural system. A city, as an object of management, is continuously influenced by diverse and multidirectional forces. Therefore, decision-makers face the challenging task of defining the structure of management objectives and boundary conditions under increasing resource constraints.

The strategy of urban environment transformation must be differentiated depending on the time period and the type of urban development object.

The transformation approach should be based not on individual buildings, but on their integrated complexes – blocks or microdistricts. This will enable a comprehensive assessment of urban planning problems and the adoption of rational decisions that correspond to contemporary requirements and ensure the continuity between different architectural periods.

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