Analysis of Approaches to the Implementation of Programs for the Urban Complexes Reconstruction in Russia

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Abstract. The article analyzes the methodological approaches to the development of comprehensive programs for housing construction and reconstruction of residential buildings at the level of a large city in the current socio-economic conditions of Russia. Particular attention is paid to the recommendations on the formation of implementation models using the tools offered by socio-economic programming and investment design. The study may add a new look at the formation of urban planning formations (complexes), which act as objects of management in the reconstructive construction sector. Such entities in the context of this study are identified as complex objects of reconstruction, built on the basis of economic feasibility and the provisions of a single urban policy.

1. Introduction

To date, the development of the sphere of housing construction and reconstruction of residential buildings is determined by the possibility of attracting investments and their effective use. One of the most important areas of housing reform in Russia is the development of a mechanism for the implementation of the housing program using both budgetary and extra-budgetary financial resources, based on the rationalization of the structure of the housing stock and housing construction [1-3]. It is obvious that the necessary changes existing adverse trends the development of the housing sector are so great that they exceed the adaptive capabilities of the existing system for managing the functioning and development of the city. In such situations, there is a need to “embed” a special program mechanism into the control system of the city, one of the principles, the construction of which is the principle of comprehensiveness of reconstructive and construction transformations [4, 5]. It provides:

- rational choice of the object of transformation;
- combining reconstructive measures for residential social and cultural facilities that are part of a single urban development array;
- simultaneous reconstruction of residential and non-residential premises located in a single object (building).

The principle of comprehensiveness of the reconstructive construction activity can be implemented on the basis of the structuring of residential buildings that need to be repaired, reconstructed and
modernized, with separate elements representing relatively independent entities [6]. Object structuring of the reconstructed building is carried out within the framework of complicated multifactor analysis and always needs creative and informal understanding.

The purpose of the research conducted in this article is to substantiate the author's approach to the formation and implementation of programs for the reconstruction of urban planning complexes, based on the unity of the objects of programming and design.

2. Materials and methods
When forming management decisions in the Russian reproduction housing market, it is recommended to use a modeling method in which several types of model constructions are carried out - development of concepts, programs, plans, projects involving the future development of simulated objects.

When developing integrated programs for the reconstruction of residential buildings, it is necessary to rely on a fundamentally correct methodological basis. As such a basis, the approaches proposed by the modern methodology of real estate management may be used. These are the following approaches: systemic; recovery; functional; integrated city-planning; dynamic; marketing.

The system approach involves the interconnected consideration of all components of the real estate market, characterizing it as a holistic, system-organized space. A feature of the systems approach feature is to focus on the internal relationships and interdependencies of this market [7, 8].

Recovery approach involves the creation of objects that can meet the requirements of consumers at the time of the end of the reconstruction work. For its implementation it is necessary:

- use of advanced technologies and innovative architectural and planning solutions;
- predictive orientation of reconstruction programs;
- use of progressive building codes;
- compliance with environmental requirements;
- use of effective marketing tools to solve the problem of demand reproduction [9-11].

The functional approach considers the complex object of reconstruction as the support of the main and secondary functions. Each of the functions reflects a specific need that is satisfied during the facility operations [12, 13]. The task of the researcher in this case is to determine the optimal state of functional qualities in accordance with the predicted conditions of consumer demand.

A complex city-planning approach implies the obligatory consideration of city-planning, economic, ecological, social, organizational and other aspects [14, 15].

In market conditions, the importance of this approach is due to many factors, in particular: the variability of the consumer environment and market conditions; high business risk; the functioning of the system of state regulation of the development of the real estate market and the reconstructive-construction market; social orientation of the considered sphere, which may be characterized as one of the forming elements of the external environment; development of public organizations and movements of social and cultural-historical orientation etc.

The dynamic approach considers complex objects of reconstruction in dialectical development. Within the framework of a dynamic approach based on a retrospective analysis of an object development, which may cover a long period of time (more than a century, in some cases), the parameters of the object and market conditions are forecasted for the foreseeable future [16, 17].

The marketing approach is based on the desire to achieve compliance with the activities of subjects of the housing reproduction market, the characteristics of consumer demand. In order to implement this approach, it is necessary to create a system of marketing support for the development of integrated programs for the residential buildings reconstruction. Marketing support provides for the possibility of studying all aspects of the development of the housing reproduction market [18–20]. It should be a basic element in the formation of activities that are part of the program of reconstruction of residential buildings, and building a system for managing their implementation. The results of marketing studies make it possible to determine the most important strategic priorities based on the forecast of long-term market trends and to solve numerous tactical tasks in the field of organizing and managing the process of transforming residential development in a large city.
In analyzing modern approaches to the implementation of integrated programs for the reconstruction of residential buildings, it should be noted that each of them is an effective management mechanism that allows the management functions in relation to the processes and phenomena that are formed within the housing sector. At the same time, the theoretical, methodological and methodical principles proposed by domestic and foreign science may not be considered completely exhaustive and unequivocally recommended for widespread use in the practice of economic justification.

3. Results and discussion
Considering in detail the complex objects of reconstruction identified in this work as the main ones, it should be noted that the most expedient form of modeling their development is the development of complex programs of reconstruction, built in accordance with the general logic of model constructions. In such programs, a single goal of transforming a town-planning massif is formed, which performs not only residential, but also social, cultural and everyday functions [21]. The decomposition of goals, programs should be carried out in various directions, including the objects components.

Comprehensive programs for the reconstruction of residential buildings should be provided with full-scale resource studies. Their composition should include the following analytical procedures:

- determination of the amount of resources (of all types) that are necessary for the practical implementation of program activities;
- determining the amount of resources that can be attracted for the implementation of the reconstruction program.

The comparability of the results for the first and second stages of the analysis indicates the fundamental possibility of implementing this program.

As part of complex programs for the reconstruction of residential buildings, the main city-, architectural-, design-planning and technological solutions are being developed, as well as measures in the field of construction production. The main feature of the programs is to ensure full coordination of the modeled measures with the directions of city-planning regulation and territorial development priorities [22]. Such approvals are characterized by high labor intensity, due to the complexity of the objects under consideration and the multiplicity of regulatory and regulatory documents prevailing in Russian practice. With a certain degree of conditionality, it can be argued that the purpose of comprehensive reconstruction programs is not only the detailed elaboration of the simulated measures, but the coordination of the proposed principles, methods and approaches to the transformation of residential buildings.

It is important to emphasize that in the process of developing programs, large-scale historical studies should be conducted, the results of which should serve as the basis for architectural and town-planning developments [23]. This task is highly relevant for Russia, in which there are more than 800 cities with cultural and historical value. Whereas in major cities of the country (Moscow, St. Petersburg, Novgorod, Vladimir, etc.), extensive cultural and historical studies are traditionally conducted, giving rich material for the formation of urban development directions, in small and medium-sized cities such studies are very limited.

In the field of implementation of complex construction and reconstruction programs, it is recommended to use one of the two approaches that are reflected in the corresponding implementation models [24, 25]. The formation of implementation models is based on a single methodology that aggregates the principles and methods of investment designing. Using these principles allows to build and effectively use in practice a two-stage activity sequence, including programming and design [26].

At the first stage, the development of a comprehensive program for the reconstruction one or another of a large residential area is performed; on the basis of strategically sound benchmarks, integrated decisions on various aspects of the production-market, town-planning, architectural, construction, production and technological activities, are formed, supported by the necessary economic justifications.
At the second stage, the elaboration and specification of the program activities is carried out, in ensuring the creation of conditions for their successful implementation, corresponding to the aims, objectives and tools inherent in investment design. In such a sequence, an investment project considered as means of implementing a comprehensive reconstruction program and represents a relatively independent organizational and economic model, which involves the implementation of a system of measures that ensure the implementation of software installations in practice [27].

This relationship is most clear in the case if the investment design object is an integral city-planning complex, the development paths of which are determined by reconstruction programs (the first approach to the construction of implementation models).

The feasibility of such a design is determined by the following factors:

- scale of the reconstruction object;
- logic of its structuring from the architectural and town planning point of view;
- positions of the reconstruction and construction program (as an investment proposal) in the investment market;
- duration of the proposed period of capital repairs, modernization and reconstruction;
- state of the market macro environment;
- engineering, economic and production and technological characteristics of the reconstruction process and others.

The integrity of the programming and designing objects allows to achieve greater consistency of the simulated activities, resource supply schemes, and methods of organization in apply [28]. Investment justifications become integral and structurally complete, form a single cycle, starting with a preliminary search for sources of investment and diagnostics of the investment market, and ending with the development of detailed investment incoming schemes with an indication of sources and terms. Under these conditions, it is possible to significantly reduce investment risks.

Another approach to the implementation of the city-planning complexes reconstruction program is to structure them and consistently develop a set of investment projects that are consistent with structural logic. This approach is suitable, in particular, if the program to be implemented includes full-scale transformations of a large object, that are designed for a long time period and involving multiple stages [29]. In such a program, we can select several blocks that differ from each other temporally and spatially. These blocks can rightly be considered as independent objects for investment design, which provides the possibility of using the following advantages:

- use resources more efficiently;
- gradually approach the achievement of the objectives of the objectives of comprehensive urban planning programs;
- form a system of priorities in the aggregate of proposed investment projects;
- to structure measures of state support of investment projects and business entities involved in their implementation in accordance with the priorities set;
- reduce the level of entrepreneurial risk, possible by a sudden change in market conditions;
- create conditions for the use of innovative reserves;
- create prerequisites for the effective implementation of reconstructed facilities, etc.

4. Conclusion

The approaches presented do not contradict each other. On the contrary, these approaches, based on the same methodological principle - the consistent development of construction and reconstruction programs covering large city-planning objects, and investment projects aimed at their implementation, embody the idea of integrity and targeted unity of residential housing transformation models. At the same time, the program approach is used both at the conceptualization stage and in the process of formation of investment program systems capable of modernizing the housing sector of a large city in a relatively short time (for example, to eliminate existing gaps in the level of satisfaction of housing needs).
It is important to emphasize that this goal is achieved by modeling investment processes and software methods not directly, but indirectly, by creating the conditions for its implementation. In other words, the means towards this end is to transfer the housing sector of the city to a state in which it is able to successfully meet the needs for new housing and for normal living conditions, as well as maintaining the efficiency of the housing sector.

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