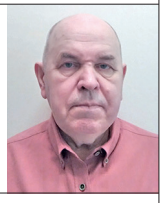
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# Classification of programs for renewal of the urban housing stock

The paper considers the problem of classification of programs and projects for the development of housing stock. The classification of projects for the improvement of residential development and comprehensive renovation of entire urban areas is given. The study considers the concepts of "renovation of residential development", "redevelopment of industrial zones of the city", "revitalization of urban areas" in accordance with Western and Russian methodologies. The main reasons for the renovation and growth of the housing stock in Russia and abroad are indicated, the relationship between the format of the residential development improvement program and the form of housing stock renewal is analyzed. The research of the conditions of providing new housing under the Moscow renovation program is carried out, discussion issues on compliance with the provisions of the Civil Code of the Russian Federation on the process of formation of the main points of the contract of exchange (exchange) of an old apartment for a new one are noted. The author notes that the most important problem in the implementation of programs for the renewal of residential development is the search for sources of financing of capital investments. Depending on the sources of financing of the program (project) it is proposed to classify them into social, partially social or commercial. The paper formulates a conclusion about the development of a national program of renovation or redevelopment of urban residential development (areas built up with panel houses and other dilapidated and emergency houses built before 1975) in all regions of the country for the period 2026–2040 at the expense of federal and regional budgets. Each region will decide on the terms of resettlement of the population and provision of housing under the exchange agreement independently. It is also up to the discretion of the region to provide benefits to certain categories of citizens to be resettled, to determine the density of new residential buildings, comfort class and energy efficiency of new residential buildings.
***Keywords:*** *forms of housing stock renewal, major repairs, renovation, redevelopment, revitalization of residential buildings*



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Many economically developed countries of the world implement state or municipal programmes for the renewal of urban housing stock due to their significant physical and moral deterioration, as well as to address social problems[1] [1, 2]. The authorities are forced to demolish residential buildings in areas of compact residence of practically unemployed population (migrants and poor citizens who do not want to work and live on the allowances of the state and public organizations), who themselves have brought house buildings into disrepair because they did not pay for housing and communal services [3, 4]. Residents of dilapidated housing and ghetto houses are relocated to new comfortable houses, as a rule, free of charge, and the compact living of migrants and the poor in new buildings and their non-payment of housing and utility bills are not allowed, so that the very revival of ghetto districts does not repeat itself. In developed countries, urban housing stock is renovated for two main reasons:

- due to significant physical and moral deterioration of residential buildings;
- for the elimination of ghetto slums for the purpose of social integration.

In Russia, the renewal of the urban housing stock is carried out only for the first main reason — because of the obsolescence of apartment buildings built before 1975, mainly panel two-five-story buildings, for which the normative terms of their operation of 50–75 years have expired or are expiring. The housing stock of the Russian Federation is being renovated through new construction of apartment buildings and individual residential construction; new construction of apartment buildings to replace the demolition of emergency and dilapidated housing; reconstruction, modernization and major repairs of the existing urban stock.

## MATERIALS AND METHODS

The most developed countries carry out the renewal of urban housing stock in the format of implementation of specialized national, regional or municipal programs for urban renewal of the living environment of their citizens[2]. Western theory and practice of real estate management distinguish four types of programs for renewal of physically and morally obsolete urban housing stock:

- carrying out major repairs of residential buildings without changing their functional purpose and parameters. As a result, the physical deterioration of houses is reduced. Capital repair programs are implemented at the expense of the owners of premises in apartment buildings and have the form of simple renewal of the housing stock;
- renovation of residential buildings as a set of projects for renovation and modernization of existing residential buildings and infrastructure without changing their functional purpose

[1] *Renovation Waves for Europe. A Renovation Ware for Europe. European Commision*. URL: https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficient-buildings/renovation-wave_en

[2] Samoilov E.K., Rumyantseva A.V. *European and Russian approaches to the renovation of residential areas*. Ekaterinburg, UrFU, 2021; 249-254. URI: https://elar.urfu.ru/handle/10995/97901 (rus.).

and architectural appearance (insulation of facades, walls and roofs of residential buildings, full or partial replacement of communications and engineering equipment, improvement of adjacent territories, etc.). Urban renovation programs can represent simple or narrowed forms of housing renewal, carried out through major repairs and modernization (reduction of moral deterioration of residential buildings) and infrastructure facilities with improvement of energy efficiency of buildings (primarily apartment buildings);

- redevelopment of residential and industrial zones of urban development. These programs are carried out through demolition of physically and morally obsolete residential buildings, non-functioning industrial buildings and infrastructure facilities with subsequent construction of new more energy-efficient apartment buildings, buildings and structures in their place or adjacent territories, as well as reconstruction of some real estate. When reconstructing buildings, it is possible to preserve or replace their functional purpose. Redevelopment is an extended form of renewal of the housing stock;
- revitalization of the urban environment is a comprehensive revitalization and renewal of entire urban areas. Implementation of housing stock revitalization programs radically improves the condition of urban areas (significantly reduces not only the physical and moral deterioration of buildings, but also their economic deterioration) and the entire urban planning complex, and increases the level of comfort of living conditions for the population. Basically, it is an extended form of renewal of the housing stock.

In the Russian legislation there are no clear definitions of the above terms, which has caused some confusion in the names of domestic programs for the renewal of the housing stock. For example, a number of Russian scientists understand renovation as the process of demolition of physically and morally obsolete real estate objects and construction of new objects in their place or nearby based on modern technologies and consumer standards [5]. In the Program of renovation of residential development of Moscow. Moscow under renovation is understood as "a set of measures aimed at renewing the living environment and creating favorable living conditions for citizens, public space in order to prevent the growth of emergency housing stock in Moscow, to ensure the development of residential areas and their improvement"[3]. According to the Western methodology, the Moscow renovation program is mainly a program of residential redevelopment or revitalization of the urban environment. It is the implementation of projects of integrated development of territories, redevelopment of urban development (former industrial zones and residential neighborhoods built up in 1957–1968), as well as projects for reconstruction, modernization, restoration of individual buildings — objects of cultural heritage with their possible re-profiling. The regional programs of capital repair of the general property of apartment buildings operating throughout the country are, according to the Western methodology and in essence, programs of renovation of the housing stock, as in addition to traditional works (overhaul of building elements and engineering communications and equipment, elevator facilities), it is mandatory to carry out works to improve the energy efficiency of apartment buildings. The most important problem in the implementation of regional programs on housing stock renovation is the attraction of budgetary and non-budgetary funds for financing projects on resettlement of residents, demolition of outdated apartment buildings and construction of new housing in their place. Abroad, in developed countries, such programs are implemented in a centralized manner in accordance with national programs by specialized government agencies at the expense of budget (municipal) funds. In Russia, similar programs can be implemented only in a few economically developed regions that have budget surpluses, and the majority of the Russian Federation subjects are unable to implement renovation projects (redevelopment according to Western methodology) of their housing stock due to the lack of financial resources. Therefore, it is possible to relocate citizens living in the housing stock built before 1975 in these regions only with the allocation of federal funds, and for this purpose it is necessary to adopt appropriate laws and a federal target program for the next 15 years (2026–2040) on the demolition of dilapidated housing with a total area of about 273 million $m^2$ [4] and the construction of new energy-efficient and comfortable housing with a total area of about 360 million $m^2$ in their place. The exception is the programs of urban environment revitalization (in domestic practice they are designated as housing stock renovation programs), which are implemented in the format of highly profitable projects for the integrated development of territories, usually in the central districts of cities. Such projects for the integrated development of territories attract investors and are implemented at the expense of private investment[5].

## RESULTS

Renovation programs (according to Western methodology — redevelopment) of housing in the constituent entities of the Russian Federation are social projects to obtain new housing on preferential terms, mainly for low-income citizens, through their free resettlement under exchange agreements from pre-demolition (dilapidated) and emergency houses to new houses, with the area of new apartments larger than the old ones. Resettled citizens will not pay the difference between the market value of new and old apartments, and also have the right to purchase an additional area (another dwelling) at a discount[6]. Part of the apartments, parking spaces and non-residential premises on the first floors in the apartment buildings built under the renovation are to be sold on the market and, accordingly, there will be income to the budget under the renovation program. Therefore, it is possible to plan the amounts of revenues ($R$) and expenses ($E$) from the implementation of the program for the regional budget, as well as the level of negative profitability ($NR$) of the social program by the following formula:

$$NR = (R - E)/P \cdot 100\ \%, \quad (1)$$

where the numerator reflects the planned budget expenditures and revenues from the sale of non-residential premises, car spaces and part of the apartments (as additional housing for citizens being resettled) in the built houses, and the denominator reflects the planned budget expenditures on the implementation of the program.

[3] The Status of the Capital of the Russian Federation : Law of the Russian Federation from 15.04.1993 No. 4802-1.

[4] Natalia Gustova. The volume of outdated housing in Russia will increase sharply. What does this mean. *RBC-Real Estate*. 2023. URL: https://realty.rbc.ru/news/650d30fb9a7947a57708783d?from=copy (rus.).

[5] Amending the Town Planning Code of the Russian Federation and Certain Legislative Acts of the Russian Federation in order to Ensure the Integrated Development of Territories : Federal Law No. 494-FZ dated 30.12.2020.

[6] The Program of Housing Fund Renovation in Moscow : Resolution of the Moscow City Government dated 01.08.2017 No. 497-PP.

It is proposed to classify Russian programs on renewal of the urban housing stock by the format of their organization and implementation into:

- regional address programs on resettlement of citizens from the emergency housing stock[7];
- regional programs of capital repair of the housing stock with modernization of houses[8];
- regional programs and/or municipal projects of redevelopment of industrial territories[9];
- regional or municipal programs of renovation (redevelopment) of residential buildings;
- regional, municipal or private projects of integrated territorial development (revitalization of city districts).

Implementation of overhaul programs with modernization of apartment buildings allows qualitative renewal of the city's housing stock, increasing the remaining physical and economic (the length of time of profitable use of real estate) life of these buildings. These programs represent simple or narrowed forms of residential real estate renewal.

Redevelopment projects of industrial territories of urban space consist in demolition of unused buildings and structures in industrial zones and construction of residential neighborhoods in their place. Thus, the expanded renewal of the housing stock is realized.

## DISCUSSION

The essence of regional residential renovation programs is the demolition of dilapidated housing (standard class) and the construction of new modern apartment buildings (comfort class) in their place with the resettlement of residents in new buildings under exchange agreements. Such activity of developers at the expense of budget funds is redevelopment of residential areas of the residential zone of cities. Moreover, the total area of apartments in new buildings of the capital is about 1.32 more than in outdated houses. Residents who are relocated do not pay for the increase in the area of new apartments, as well as the difference in the market value of a new apartment in a comfort-class house and an old standard-class one, which is a violation of the terms of the exchange agreement. According to the terms of the exchange contract, when exchanging real estate objects, one of the parties to the transaction (resettled citizens) must compensate for the difference in prices[10]. As a result, the construction of the house and, accordingly, the apartments in the new apartment building, is financed at 50–70 % of their market value, at the expense of budget funds. According to the terms of the Moscow renovation program, new apartments for relocated citizens are considered to be their private property. In fact, the new apartment buildings will be built or have already been built at the expense of budget funds and funds of the resettled citizens and, in essence, are common property of the resettled citizens and the region, i.e. private-public property or shared ownership in the total cost of the apartment (if it is possible to determine the share of each owner-co-investor). In the total cost of a new apartment, the citizen's share will be on average 40 %, and the share of the subject of the federation will be 60 %. According to the country's legislation, honored people, orphans and some categories of disabled people have the right to free housing. The vast majority of citizens being relocated do not have any merits and therefore they should not enjoy benefits when receiving a new apartment under renovation. The share of state or municipal property ($S_m$) in the total cost of a new apartment can be determined using the formula:

$$S_m = (V_n - V_d) \cdot 100\,\%/V_n, \quad (2)$$

where $V_{n(d)}$ — the market value of the new (demolished) apartment under the exchange agreement as of the date of the agreement.

The introduction of the term of public-private ownership and the size of shares of a citizen and the state (municipality) in the total cost of an apartment received under renovation will contribute to compliance with the basics of the market pricing mechanism by all participants in housing relations. Otherwise, all homeowners who bought residential premises on the primary or secondary market (in houses with little wear and tear) for 100 % of their market value, including mortgages for payment terms of up to 30 years, will consider themselves cheated by developers and banks. They did not have to work hard, save on all expenses of the family budget for 10–30 years, but simply exchange to move to live in an obsolete apartment building and wait for state benefits at a low-paid job. Implementation of such programs will stimulate low labor activity of the working population. Housing stock renovation programs refer to the extended form of housing renewal. In Russia, projects for the revitalization of the urban environment should include projects of integrated territorial development (ITD), mainly in the central districts of major and large cities. In accordance with ITD projects, residential neighborhoods, public, commercial and business centers, landscape and recreational areas and the entire infrastructure of the central districts of cities will be qualitatively renewed by means of new construction of real estate objects to replace obsolete ones; major repairs of buildings with their modernization; restoration and reconstruction of cultural heritage objects and landscaping objects. The result of ITD projects, usually financed by private investment, will be a reduction in the physical, moral and economic deterioration of residential buildings and an increase in their comfort and energy efficiency. All forms of housing stock renewal are possible in the implementation of ITD projects.

## CONCLUSIONS

It is recommended to classify urban housing stock development programs according to the following indicators, reflecting:

- sources of financing investments into: budgetary (fully social programs); private (commercial programs); mixed sources of financing in the format of public-private partnership or municipal-private partnership (partially social programs);
- the structure of the program ($S_{prog}$) for the renewal of the housing stock, characterizing the size of the total areas of various forms of housing renewal and their shares in the volume of the program: construction of new apartment buildings to replace demolished dilapidated and emergency housing ($S_{ren}$, $P_{ren}$); construction of new apartment buildings on the site of former industrial zones ($S_{rd}$, $P_{rd}$); volumes of reconstruction and restoration ($S_{rr}$, $P_{rr}$); volumes of capital repair with modernization of housing ($S_{qrm}$, $P_{krm}$).

The total area of the program should be calculated as the sum of areas of houses belonging to different forms of renewal of the housing stock:

$$S_{prog} = S_{ren} + S_{rd} + S_{rr} + S_{qrm}. \quad (3)$$

[7] The Housing and Utility Sector Reform Assistance Fund : Federal Law No. 185-FZ dated 21.07.2007.

[8] The Regional Program of Capital Repair of the Common Property in MFB on the Territory of the City of Moscow : Resolution of the Moscow City Government dated 29.12.2014.

[9] Measures for the Implementation of Non-residential Development CRT Projects in the City of Moscow : Resolution of the Moscow City Government No. 331-PP dated 23.03.2021.

[10] Civil Code of the Russian Federation. Chapter 31: “Mena”.

Program structure is the Proportion of shares of different forms of housing renewal, calculated as a percentage:

$$P_{ren} + P_{rd} + P_{rr} + P_{qrm} = 100\ \%; \quad (4)$$

- density of construction in new city neighborhoods before the demolition of obsolete buildings and after the implementation of the program;
- the number of residents to be relocated from demolished standard-class houses to new comfort-class or standard-class houses;
- the value of the coefficient of expanded renewal of housing stock for resettled residents ($C_{er}$). It is calculated as the ratio of the total areas of apartments in built houses ($S_n$) and demolished houses ($S_c$) according to the formula:

$$C_{er} = S_n/S_c; \quad (5)$$

- method of payment for the difference in the market value of apartments — free of charge; free of charge, but with payment for the extra area of the new apartment compared to the old one; paid — the entire amount of the increase in the value of the new apartment is paid.

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## Классификация программ по воспроизводству городского жилищного фонда

В статье рассмотрена проблема классификации программ и проектов по развитию жилищного фонда. Приведена классификация проектов по улучшению жилой застройки и комплексному обновлению целых городских районов. В исследовании рассмотрены понятия «реновация жилой застройки», «редевелопмент производственных зон города», «ревитализация городских районов» в соответствии с западной и российской методологиями. Указаны главные причины обновления и роста жилищного фонда в России и за рубежом, проанализирована взаимосвязь между форматом программы улучшения жилой застройки и формой воспроизводства жилищного фонда. Проведено исследование условий предоставления нового жилья по московской программе реновации, отмечены дискуссионные вопросы по соблюдению положений ГК РФ по процессу формирования главных пунктов договора мены (обмена) старой квартиры на новую. Автор отмечает, что важнейшей проблемой в деле реализации программ воспроизводства жилой застройки является поиск источников финансирования капитальных вложений. В зависимости от источников финансирования программы (проекта) предлагается их классифицировать на социальные, частично социальные или коммерческие. В работе сформулирован вывод о разработке национальной программы реновации или редевелопменте городской жилой застройки (районов, застроенных панельными домами и другими ветхими и аварийными домами, построенными до 1975 г.) во всех регионах страны на период 2026–2040 гг. за счет средств федерального и региональных бюджетов. Условия расселения населения и предоставления жилого помещения по договору мены каждый регион будет решать самостоятельно. Также на усмотрение региона выносятся вопросы предоставления льгот отдельным категориям расселяемых граждан, определения плотности новой жилой застройки, класса комфортности и энергоэффективности новых многоквартирных жилых домов.

***Ключевые слова:*** *формы воспроизводства жилищного фонда, капитальный ремонт, реновация, редевелопмент, ревитализация жилой застройки*

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