Innovative system of organization of capital repairs of common property of apartment buildings: problems and solutions

E Dediukhina

1Irkutsk National Research Technical University, 664074, Irkutsk, Lermontov st. 83, Russia

E-mail: ded_es@mail.ru

Abstract. The analysis and evaluation of the effectiveness of the results of the first stage of the regional capital repair program of the Irkutsk region was carried out. The problems of the innovative system of organization of capital repairs of common property in apartment buildings of the Irkutsk region are considered and ways of their solution are proposed.

The question of carrying out major repairs of the housing stock is very relevant, since it concerns every person who has their own housing. The issue of capital repairs is particularly acute for residents of apartment buildings (hereinafter - AB), due to the presence of common property in such houses and the common responsibility of owners for the safety of this property. It is worth noting that Russia is characterized by a high proportion of multi-apartment housing in the existing housing stock, much more than in Europe and the United States [1].

In accordance with article 178 of the housing code of the RF, the subjects of the country have created regional operators, called the capital repair fund for apartment buildings (hereinafter - the fund), to implement the mechanism for accumulating funds and organizing capital repairs of the common property of the AB. The functions of the funds include the accumulation of
contributions for major repairs, which are paid monthly by owners in apartment buildings, as well as ensuring the organization of repairs [2].

The minimum contribution that owners of premises in the AB are required to make for major repairs is set by the subject of the RF. It depends on the climatic conditions and geographical location, the type and number of floors of a residential building, the availability of engineering systems, elevator equipment and garbage disposal in the AB [3].

The dynamics of collection of contributions in the Irkutsk region for the period from 2016 to 2019 has a growing trend and is 85% for 2019, 79.53 % for 2018, 73.76% for 2017, and 71.78% for 2016 [4]. However, this indicator is lower than in the whole of the RF, which is about 95% [5].

Owners of premises in an apartment building have the right to choose to transfer contributions for major repairs to a special account or to the account of a regional operator. A special account is intended for accumulating funds for the repair of a particular AB, the owners of which have chosen this method of accumulation. It should be noted that in this case, the entire burden of organizing major repairs, acceptance of completed works falls on the shoulders of the owners [6].

The regional operator finances capital repairs at the expense of the owners, provides capital repairs of common property in the AB, and is responsible for the quality of work. It should be noted that the regional operator's account is shared by all AB's [1].

In 2019, in the Irkutsk region, 95.8% of owners of premises in the AB to accumulate funds for major repairs chose the regional operator's account, 0.7% a special account of the regional operator, 1.1% a special account of the management company, 2.4% a special account of the HOA, HC, HCC [7].

The program of capital repairs of common property in the AB on the territory of the Irkutsk region for 2014-2043 (hereinafter- the program) was approved by The resolution of the government of the Irkutsk region of March 20, 2014 № 138-pp, the purpose of which is to plan and organize capital repairs [8].

Within the framework of the program, a list of the Irkutsk region's AB is formed, where major repairs are planned for each object. The program is planned to be implemented in six stages, each lasting five years. The distribution of houses by stages is approximately the same.

At the moment, the first stage of the program implementation, which took place from 2014 to 2018, has been completed. As a result of the analysis of the results of this stage, the effectiveness of the program is estimated as low. For the specified period, the percentage of plan completion is 36. The effectiveness of the program is recognized as high, if the degree of implementation of the program's activities is more than or equal to 80% [8].
At the same time, there is a tendency to reduce the level of implementation of short-term plans. The dynamics of implementation of the plan for the period of the first stage of the program by year is shown in Figure 1 [4].

![Figure 1. “Dynamics of implementation of the regional program plan of the Irkutsk region”](image)

The reasons for unsatisfactory results in the implementation

In addition, there are problems in planning capital repairs, one of the reasons for which is the lack of a methodology for determining the cost of capital repairs at this stage. Determining the estimated cost using the element-by-element calculation method requires a large amount of input data and is very time-consuming for the investment planning stage, so it is necessary to use methods for calculating the aggregated estimated cost.

In foreign practice, consolidated indicators of the cost of structural elements and types of work per unit of physical volume of buildings and structures are used [9]. There are no consolidated indicators of the cost of repairs in the regulatory framework of pricing in the RF. At the same time, it is necessary to use such standards at the stage of investment planning [10].

When planning the volume of investments for major repairs of the AB, the same accuracy is given by the costs calculated per m2 of the total area or per m3 of the building volume. At the same time, special attention should be paid to determining the actual, rather than the estimated amount of wear and tear of the building, and also the time of operation of the object before major repairs [11]. The accuracy of determining the cost plays an important role, as this determines the effectiveness of investments for major repairs [12]. Minimization of calculation errors when evaluating the cost of repair and
construction works will allow for more reliable planning of funds for major repairs of apartment buildings and reduce investment risks [13].

The reasons for unsatisfactory results in the implementation of the first stage of the program and suggestions for their elimination are given in table 1.

**Table 1. Recommendations on elimination**

| Reason                                                                 | Recommendations on elimination                                                                 |
|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| insufficient awareness and involvement of owners in the process of organizing capital repairs | providing owners with documents for approval that indicate the state of the AB and the cost of its repair |
| lack of available credit programs to finance capital repairs of the AB  | development of state measures to attract credit organizations, including the use of preferential lending rates |
| disadvantages in ways of accumulating funds for major repairs           | implementation of a payment system that recalculates the amount of contributions after major repairs, in accordance with its actual cost |
| the method of calculating the amount of contributions is too generalized | the calculation of the cost contribution based on the actual wear of the AB, time elapsed since last overhaul, regulatory overhaul of the timing equipment, systems and building structures AB, list of necessary works on capital repair of concrete AB |
| accumulated funds of citizens are not protected from depreciation due to inflation | provide a state guarantee of annual indexation of accumulated funds, not lower than the percentage of inflation |
| citizens funds they accumulate on the accounts of regional operators and, as a result, are devalued | optimization of the process of drawing up short-term plans and introduction of mandatory requirements for regional operators regarding the need to use the collected funds |
| there are no requirements for a thorough examination of the AB before including it in the program | amendments to the housing code of the RF |
| poor quality of repairs performed                                      | optimization of the system of distribution of contract works for major repairs, |
selection of the contractor not only on the principle of minimizing costs, but also on reliability; inclusion in the list of works performed, those works that affect the safety of further operation of the object [14]

the presence of “extra links” when concluding contracts and performing repairs

when organizing auctions, exclude the possibility of placing lots with a high cost, so that small organizations can participate in the auction, and not work on a subcontract

the use of false information in the formation of regional programs of capital repairs of updating and adjusting regional programs based on real data obtained from the survey of buildings on the deterioration of houses, and as a result, the cost of repairs

As a result of the unsatisfactory performance of the capital repair fund, the losses are borne by residents who make contributions for capital repairs. A persistent trend of non-fulfillment of short-term plans leads to an increase in the fund's account balances, as a result of the depreciation of funds and a decrease in the efficiency of their use. At the moment, the fund's accounts in the Irkutsk region have accumulated about 4.5 billion rubles. At the same time, in 2019, repairs were planned at a cost of 3.320 billion rubles, and work was performed at 1.43 billion rubles, which is 43% of the planned [15].

Despite the active implementation, the innovative system of organization of capital repairs of the AB common property cannot be called effective. For the successful implementation of the program, it is necessary to increase the involvement of both the owners of the premises and the state as a guarantor of the interests of the country's citizens in the organization of capital repairs of the housing stock. It is necessary to immediately make an inventory of the AB included in the capital repair program in order to identify their actual technical condition and determine the physical deterioration of buildings.

It is very important to optimize the process of accumulating funds for major repairs, by recalculating the contributions of citizens, depending on the actual cost of repairing the AB in which they are the owners of the premises. An equally important point is the problem of the quality of work performed, which will not be solved without mechanisms for regulating the process of distribution of contract works for major repairs.
From all the above, we can conclude that it is necessary to adjust the existing mechanisms for capital repairs of apartment buildings, as well as to develop innovative solutions to this problem.

References

[1] Ovsiannikova T Y, Rabtsevich O V, Karpova E A 2015 Tomsk State University of Architecture and Building 5 pp 235
[2] ConsultantPlus, Housing Code of the Russian Federation: Federal Law of the Russian Federation No. 188-FZ of December 29, 2004 (http://www.consultant.ru/document/cons_doc_LAW_51057/).
[3] Government of the Irkutsk region, On the establishment of a minimum contribution for capital repairs of common property in apartment buildings located on the territory of the Irkutsk region for 2020: Decree of the Government of the Irkutsk region dated 27.11.2019 N 1007-pp (Irkutsk, 2019).
[4] Report on the activities of the capital repair Fund of apartment buildings in the Irkutsk region for 2018 [Electronic resource] // (http://www.fkr38.ru/images/pdf/Godovoy_otchet_2018.pdf) pp.7, 33 (Irkutsk, 2019)
[5] https://www.reformagkh.ru/overhaul [Electronic resource].
[6] Fund for Assistance to Housing and Utilities Reform, Capital repairs in apartment buildings: questions and answers. Comments and explanations of experts of the state corporation (CJSC Bibliotechka RG, Moscow, 2013)
[7] https://www.reformagkh.ru/analytics#overhaul [Electronic resource].
[8] Government of the Irkutsk region, Regional program of capital repairs of common property in apartment buildings on the territory of the Irkutsk region for 2014-2043 (Irkutsk, 2014)
[9] Technical Services Division, 2017 cost schedule (http://sfdbi.org/sites/default/files/Cost%20Schedule_0.pdf, SanFrancisco, 2017)
[10] Sayfutdinova R V, Modern Fundamental and Applied Researchers, 1(20), pp 167-173 (2016)
[11] Dedukhina E, Torgashina I 2018 MATEC Web of Conferences 212
[12] Dobysheva T V 2015 Izvestiya Vuzov. Investments. Building. Real Estate 1(12) pp 33-38
[13] Yamshchikova I V, Sayfutdinova R V 2015 Proceedings of the Irkutsk State Technical University 3(98) pp 307-312
[14] Konnov N S 2013 Construction and industrial safety 4 pp 80-85
[15]  http://www.ogirk.ru/2020/02/07/neudovletvoritelnoj-priznana-rabota-fonda-kapremonta-mkd-irkutskoj-oblasti/ [Electronic resource]

[16]  Peshkov A V 2019 Digitalization of the economy, implementation of national projects and development of the construction industry Investments. Construction. Real Estate: New Technologies and Targeted Development Priorities IOP Conference Series: Materials Science and Engineering 667 012074

[17]  Gertsekovich D, Gorbachevskaya L, Grigorova L and Peshkov V 2019 Return on investment in REIT real estate funds Investments. Construction. Real Estate: New Technologies and Targeted Development Priorities IOP Conference Series: Materials Science and Engineering 667 012063

[18]  Yaskova N Yu and Sarchenko V I 2018 Development of strategic approaches to the creation of aqua-territorial industrial complexes in the Arctic zone Proceedings of Universities. Investment. Construction. Real estate 8 pp. 84-93 DOI: 10.21285/2227-2917-2018-2-84-93