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Evaluation of factors influencing the choice of developer strategy in urban spatial-territorial redevelopment projects

The main stage of formation of the programme of spatial redevelopment of urban real estate in the tasks of the developer is the development of its components: RCR (hereinafter, residential and commercial real estate) + HIR (hereinafter, historical industrial real estate) + OCAH (hereinafter, objects of cultural and architectural heritage).

In recent years, the construction of multi-apartment housing on the territory of the Russian Federation has been carried out at a tremendous pace. The outskirts of cities are overgrown with entire residential areas of new buildings. As a rule, when implementing the idea of "affordable housing", developers first of all think about their own benefits, without paying due attention to what problems such urban development generates. Untended wastelands between multi-storey colossi, remoteness of cultural and leisure facilities, formation of "traffic jams" on the way to the places of work of the population — all these are often features of modern cities. Megacities have exhausted the possibility of expanding residential development by using historical areas for new construction projects, former large production sites have already passed the period of renovation and development in the conditions of post-industrialization.

The paper considers the main tasks of the process of determining the market for an urban spatial and territorial redevelopment project. An algorithm for the formation of factors including the selection of the territory and the determination of the attractiveness of the territory for investment of investment assets is presented. The paper reflects the potential capabilities of the developer, assesses the dangers and opportunities with the cross-influence of the strengths and weaknesses of the developer.

Keywords: housing construction, integrated development of the territory, redevelopment, developer, models, projects, algorithm, factors

PART I. FORMATION OF FACTOR SPACE OF REDEVELOPMENT PROJECTS IMPLEMENTATION

One of the most common ways of organizing housing construction is the integrated development of territories. Integrated development of territories has become one of the most important directions of socio-economic development of Russia, since balanced development of territories is the most important factor in improving the level and quality of life of the population, the basis for the development of productive forces [1].

The main prerequisites for the emergence and development of the mechanism of integrated territorial development (ITD) [2, 3]:

- 1) problem of resettlement of dilapidated and emergency housing in the regions of Russia;
- 2) large number of industrial areas whose economic potential is not being used;
- 3) transport, social, and commercial infrastructure of Russian cities needs to be updated;
- 4) in case of spot construction, there is a problem of shortage of places in preschool institutions and schools;
- 5) providing a new level of urban environment.

The main reason for the growing demand for such projects is to reduce the cost of construction due to scale. The great advantage of integrated development of territories is the opportunity to create an entire district within a single project, which has a positive effect on the infrastructure of the city as a whole. At the same time, there are

a number of factors influencing the choice of a developer's strategy when implementing projects in the historical part of the city, namely [4–6]:

- constraining aspects of the investment attractiveness of historically developed buildings (high costs with the demolition of the HIR and the reconstruction of OCAH);
- investment risks taking into account the possibilities of the urban environment (outdated transport and complex infrastructure);
- the requirements of the municipality for the implementation of the concept of sustainable development of the historical settlement (provision of housing for the resettlement of residents from dilapidated stock);
- internal resources and project payback;
- organizational and economic sustainability of the real estate revitalization life cycle of the programme (the requirement for urban normalization of pace and profitability);
- political and psychological factors affecting the cost of RCR;
- the state of political stability and, as a result, positive or negative expectations of market participants;
- the degree of public confidence in the banking system, the real estate market, and the prospects for the development of the city and the country.

A. The main groups of indicators affecting the positive performance of the developer (Fig. 1) [7–10]:

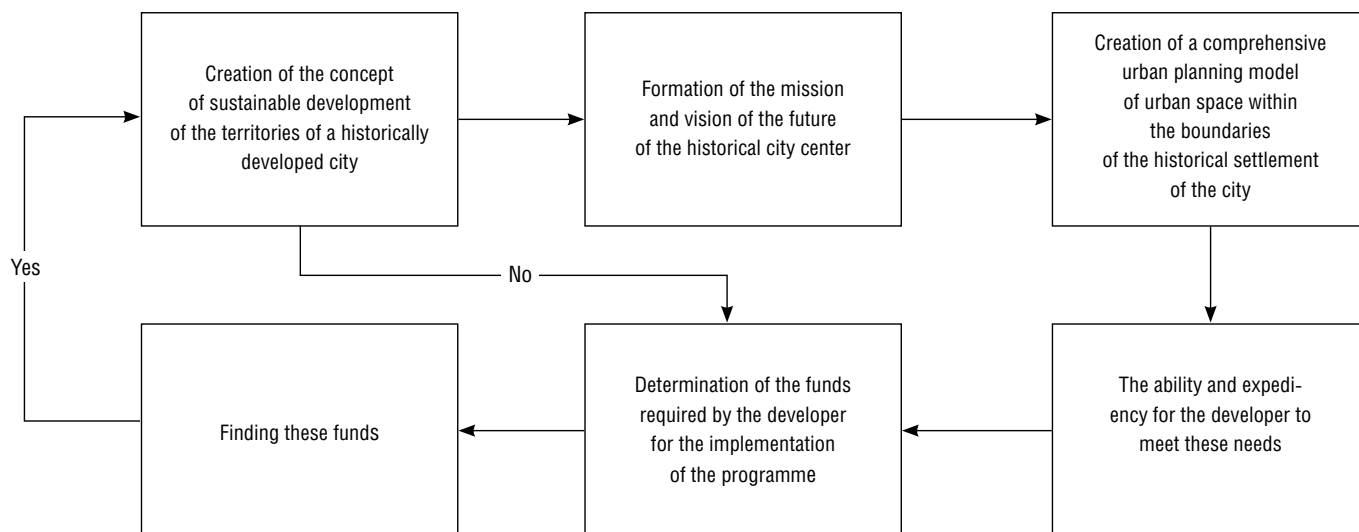


Fig. 1. The main tasks of the process of determining the market for an urban spatial-territorial development project

- 1) market characteristics of the new architecture and the creation of a new ecological civilization;
- 2) involvement of the population in socio-economic processes;
- 3) competition indicators related to the economic processes of housing and communal services, transport and social relations;
- 4) characteristics of the environment, preservation of the historical environment and clarification of the subject of protection of the historical settlement of the city providing cyclical dynamics of the ascending type of the expanded reproductive city as a system of "nature – society – man".

PART II. THE SCHEME OF SELECTION OF TERRITORIES FOR THE REDEVELOPMENT OF URBAN REAL ESTATE

Redevelopment of historical buildings or territories with such buildings can be divided into full and partial^{1, 2} [11]:

1. Complete redevelopment.

This type carries with it a complete renovation of the territory and the real estate objects standing on it. The main criterion of this type is the change in the category of the intended purpose of the land plot, through the approval of the urban planning zoning document (Rules of land use and development), the approval of the redesign and restoration project in the Department of Cultural Heritage for compliance with security requirements. This type involves combining marketing analyses, creating a concept for the project. A land plot is used here [12].

2. Partial redevelopment.

This type carries with it the change of urban facilities with modernization. There is no change in the category of the intended purpose of the land plot. The project is being created in view of the already existing target purpose. In this form, the existing land plot and the facilities operating on it are used [13].

Thus, in order to preserve the proposed historical building, it needs to be given the status of an ancient, cultural heritage or historical monument by going through the following stages.

Stage 1. Submit an application for an object to the authorities that are engaged in the preservation of cultural heritage in a certain area. Consideration of the application takes place within one month, and then an examination is appointed and, based on the results, an examination will be appointed to assess the historical and cultural value of the object.

Stage 2. State historical and cultural expertise. The main criteria for determining the value of cultural heritage are a comprehensive examination of the object to establish physical and moral deterioration, as well as a formalized determination of the value of the object in the context of the table of Order No. 478 "Approval of Criteria for historical and cultural value of objects with signs of a cultural heritage object located on the territory of the city of Moscow". This is a system of logical actions of an expert from those assessments that correspond to the qualities of the object.

Stage 3. According to the results of the examination, a conclusion is drawn up, which indicates the place of the examination, information about the studies carried out, indicating the methods used, facts and information that were established due to the analysis, substantiation of the conclusion of the examination, etc.

Stage 4. The decision of the department on the assignment of the protected status of the OCAH. With a positive conclusion of the state historical and cultural expertise, the building receives a protected status, is included in the unified register, the owner receives a passport of the cultural heritage object and an information sign is installed on the building. The owner is responsible for the preservation of the object (mainly expressed in the requirement to pay and carry out restoration work), the definition of a protected area (capital construction and some activities that may harm the cultural heritage object cannot be undertaken on this territory).

There is a large amount of research and development on project portfolio management systems and models from both Russian and foreign scientists. Basically, these models can be divided into two categories: single-criteria and multi-criteria.

Single-criteria models are divided into several types, including linear, nonlinear, dynamic and graphical. Within the framework of

1 The official portal "RS63.ru". URL: <http://rs63.ru/rs-invest/661566/> (accessed: 02.20.2024).

2 The official portal "Business Quarter". URL: <http://ekb.dk.ru/news/promyshlennomu-severu-goroda-dobavyat-zhilya-236974733> (accessed: 02.20.2024).

► such models, the selection process for projects in the portfolio usually includes the following stages:

1. Definition of the basic criterion.
2. Evaluation of projects based on this criterion.
3. Analysis of the results.
4. Choosing the project with the best indicator for inclusion in the portfolio.

Among single-criteria models, the most common:

1. Discounted Cash Flow (DCF) method. This method is based on the calculation of the net present value (NPV) of projects. NPV takes into account the cash flows of the project and reduces them to the current value using discounting. Projects with a positive NPV are considered potentially profitable and can be included in the portfolio using the DCF method.

2. Internal rate of return (IRR) method. This method determines the internal rate of return of the project, that is, the discount rate at which the NPV of the project is zero. Projects with an IRR exceeding the discount rate are considered profitable and can be included in the portfolio.

3. Payback Period Method. This method determines the number of years or the period of time required to return the initial investment in the project. Projects with a shorter payback period are considered preferable and can be included in the portfolio.

4. Priority Ranking Method. In this method, projects are ranked according to certain criteria or importance. For example, projects can be evaluated by strategic importance, market potential, or other factors, and projects with a higher priority rating can be included in the portfolio.

Single-criteria models are easy to use and can be applied for initial analysis or for simple economic systems. However, they do not take into account the synergistic effect arising from the implementation of projects in the portfolio, and do not take into account all the risks associated with the simultaneous implementation of projects in the portfolio.

Multi-criteria asset portfolio management models provide a more complete and comprehensive view of portfolio solutions. They take into account not only profitability and risk, but also other relevant criteria such as liquidity, the degree of synergy between projects, compliance with strategic goals and resource constraints.

The advantages of multi-criteria models include:

1. Consideration of multiple criteria. Multi-criteria models allow you to take into account and evaluate the importance of several criteria at the same time, which allows you to make more informed and balanced decisions.
2. Consideration of the synergetic effect. Multi-criteria models take into account the interaction and synergy between projects in the portfolio, which allows you to evaluate and optimize their combined effect and results.
3. Taking into account a wide range of risks. Multi-criteria models take into account various types of risks associated with projects, including financial, operational, market and strategic risks. This allows for a more comprehensive analysis and decision-making that takes into account risks at different levels.
4. Flexibility and adaptability. Multi-criteria models allow you to change the weights and priorities of criteria depending on changing conditions and preferences of the receiving party. This provides flexibility and adaptability in asset portfolio management.
5. More accurate and informed decisions. Multi-criteria models provide more accurate and informed results, allowing

decisions to be made that better reflect the goals and interests of stakeholders.

The "PortfolioSelection" model proposed by H. Markowitz has become one of the most popular multi-criteria models. Within the framework of this model, assets are considered as random variables, and it is based on the use of quantitative criteria that are based on probability theory and statistics. At the same time, the mathematical expectation in the model is a measure of expected profitability, and the variance acts as an indicator of the level of risk. To achieve this, historical information about market performance is used, taking into account its cyclical nature.

There are several other models in managing a portfolio of development projects, which can also be useful depending on the characteristics and needs of a particular company. Some of these models include:

1. BCG Matrix Portfolio Model (Boston Consulting Group). This model is used to classify projects in a portfolio based on their potential growth and market share. It allows the company to determine the strategic prioritization of projects, identify "stars" (high growth potential and market share), "question marks" (high growth potential, low market share), "milking cows" (low growth potential, high market share) and "dogs" (low growth potential, low market share). This helps the company balance its portfolio and allocate resources for the most promising projects.

2. Gartner Portfolio Model. Developed by Gartner Analytics, this model helps companies analyze and classify projects in a portfolio based on their strategic importance and potential value. Projects are evaluated according to criteria such as strategic importance, growth potential, innovation and technological complexity. The Gartner model helps companies make decisions about project priorities and resource allocation in accordance with their strategic goals.

3. McKinsey/GE Portfolio Model. This model was developed by McKinsey & Company and General Electric and is used to evaluate and classify projects in a portfolio based on their growth potential and risk. Projects are evaluated according to criteria such as market potential, technical complexity, competitive advantage and expected revenue. The McKinsey/GE model allows companies to make decisions about portfolio composition and project priorities based on more extensive analysis.

Each of these models has its own characteristics and advantages, and the choice of a specific model depends on the specific situation and needs of the company. It is important to analyze and choose the model that best suits the strategic goals and the level of complexity of the company's projects.

As a result of the previous stages, the city's territories were assessed for the presence of legal restrictions for housing construction, classified by type (vacant and built-up) and spatial potential (high, medium and low-attractive), evaluated according to the criteria of feasibility of construction.

The first stage in the selection of territories is the compilation of a summary table (Table 1) of the collected information with the assignment of points to each parameter. When summing up, it is necessary to sum up all the points and divide them by the number of parameters.

Based on Table 2 it is possible to determine the attractiveness of the territory for investment assets.

Table 1. The algorithm for the formation of factors that include the selection of the territory

1. Type of territories	
✓ Built-up (1 score)	✓ Free (4 scores)
2. Spatial potential	
For built-up ✓ Highly attractive (4 scores) ✓ Medium attractive (2 scores)	For free <input type="checkbox"/> Highly attractive (4 scores) <input type="checkbox"/> Medium attractive (2 scores) <input type="checkbox"/> Low attractive (1 score)
Criteria for the feasibility of construction	
A. Infrastructural provision	
3. Social infrastructure	
4. Preschool institutions <input type="checkbox"/> Provided (4 scores) <input type="checkbox"/> Not provided (1 scores)	5. School facilities <input type="checkbox"/> Provided (4 scores) <input type="checkbox"/> Not provided (1 score)
6. Polyclinics <input type="checkbox"/> Provided (4 scores) <input type="checkbox"/> Not provided (1 score)	
Engineering infrastructure	
7. Water supply <input type="checkbox"/> High degree of provision (4 scores) <input type="checkbox"/> Medium degree of provision (3 scores) <input type="checkbox"/> Low degree of provision (2 scores) <input type="checkbox"/> Not provided (1 score)	8. Water disposal <input type="checkbox"/> High degree of provision (4 scores) <input type="checkbox"/> Medium degree of provision (3 scores) <input type="checkbox"/> Low degree of provision (2 scores) <input type="checkbox"/> Not provided (1 score)
9. Power supply <input type="checkbox"/> High degree of provision (4 scores) <input type="checkbox"/> Medium degree of provision (3 scores) <input type="checkbox"/> Low degree of provision (2 scores) <input type="checkbox"/> Not provided (1 score)	10. Gas supply <input type="checkbox"/> High degree of provision (4 scores) <input type="checkbox"/> Medium degree of provision (3 scores) <input type="checkbox"/> Low degree of provision (2 scores) <input type="checkbox"/> Not provided (1 score)
11. Heat supply <input type="checkbox"/> High degree of provision (4 scores) <input type="checkbox"/> Medium degree of provision (3 scores) <input type="checkbox"/> Low degree of provision (2 scores) <input type="checkbox"/> Not provided (1 score)	
12. Recreational infrastructure <input type="checkbox"/> Provided (4 scores) <input type="checkbox"/> Not provided (1 score)	13. Availability of public transport <input type="checkbox"/> High degree of provision (4 scores) <input type="checkbox"/> Medium degree of provision (2 scores) <input type="checkbox"/> Low degree of provision (2 scores)
B. Legal status	
14. Form of ownership of land plots <input type="checkbox"/> Federal (4 scores) <input type="checkbox"/> Regional (3 scores) <input type="checkbox"/> Municipal (2 scores) <input type="checkbox"/> Private (1 score)	15. Territorial zones <input type="checkbox"/> Permitting housing construction (4 scores) <input type="checkbox"/> Changes required for housing construction (1 score)
C. The readiness of the territory for construction work	
16. Engineering and geological conditions <input type="checkbox"/> Favourable (4 scores) <input type="checkbox"/> Relatively favourable (2 scores) <input type="checkbox"/> Unfavourable (1 score)	17. Negative anthropogenic impact <input type="checkbox"/> Weak (4 scores) <input type="checkbox"/> Medium (2 scores) <input type="checkbox"/> Strong (1 score)
18. The need for reclamation <input type="checkbox"/> Yes (1 score) <input type="checkbox"/> No (4 scores)	19. The presence of dilapidated and emergency housing <input type="checkbox"/> Yes (1 score) <input type="checkbox"/> No (4 scores)
20. Availability of objects to be withdrawn <input type="checkbox"/> Yes (1 score) <input type="checkbox"/> No (4 scores)	
D. Public utility	
21. Density of functions <input type="checkbox"/> High (4 scores) <input type="checkbox"/> Medium (2 scores) <input type="checkbox"/> Low (1 score)	22. Users' perception of the territory <input type="checkbox"/> Positive (4 scores) <input type="checkbox"/> Neutral (2 scores) <input type="checkbox"/> Negative (1 score)

Table 2. Matrix for determining the attractiveness of the territory

> 3	Attractive
2 < A < 3	Medium attractive
< 2	Low attractive

PART 3. THE MATRIX OF POTENTIAL OPPORTUNITIES OF THE DEVELOPER

After choosing the territory, it is necessary to determine the combination of factors that create dangers and opportunities for the developer (Table 3).

Table 3. Assessment of threats and opportunities

Factors	The relative importance of the factors	The degree of impact on the development strategy	Calculation	The size of the threats/opportunities
<i>Microenvironment factors</i>				
1. Internal corporate relations	5	+ 50	5* (+ 50)	+ 250
2. Relations with suppliers	5	+ 10	5* (+ 10)	+ 50
3. Relations with intermediaries	2	0	2*0	0
4. Relations with competitors	5	+ 30	5* (+ 30)	+ 150
5. Relationships with partners	5	+ 50	5* (+ 50)	+ 250
6. Relationships with contact audiences	4	- 10	4* (-10)	- 40
<i>Macroenvironment factors</i>				
1. Demographic	4	+ 10	4* (+ 10)	+ 40
2. Technological	4	+ 40	4* (+ 40)	+ 160
3. Socio-political	3	- 40	3* (- 40)	- 120
4. Economic	5	- 30	5* (- 30)	- 150
5. Cultural factors	1	+ 10	1* (+ 10)	+ 10
6. Natural	1	0	1* 0	0

Table 4. Cross-influence matrix of strengths and weaknesses of the developer, opportunities and threats

Strengths	Opportunities						Threats						Total
	1	2	3	4	5	Total	1	2	3	4	5	Total	
1. The quality of the sold construction products	+3	+3	+3	-	-	+9	+3	+3	-	-	-	+6	+15
2. Promotion of services in the market	+3	+3	+2	-	-	+8	+2	+3	-	-	-	+5	+13
3. Development of partnerships	+3	+2	+2	-	-	+7	0	+2	-	-	-	+2	+9
4. Signs for a specific organization	...	...	...	...	...	...	...	...	...	...	...	...
5. Signs for a specific organization	...	...	...	...	...	...	...	...	...	...	...	...
Weaknesses	-	-	-	-	-	-	-	-	-	-	-	-	-8
1. Innovation	-2	-2	-1	...	...	-5	0	-3	...	...	...	-3	
2. Systemic opportunities to attract investments	-3	0	-1	...	...	-4	0	-2	...	...	...	-2	
3. Signs for a specific organization	...	...	...	...	...	...	...	...	...	...	...	...
4. Signs for a specific organization	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	+4	+6	+5	...	...	+15	+5	+3	...	...	...	+8	+23

To choose the optimal strategy of the developer in the implementation of urban spatial and territorial redevelopment projects, it is necessary to create a matrix of the influence of strengths and weaknesses, opportunities and dangers (Table 4).

At the final stage, the evaluation of the effectiveness of the management strategy of the developer-developer in the cluster territory shown in Fig. 2 is carried out.

CONCLUSIONS

The developed algorithm for determining the attractiveness of the territory and evaluating the potential capabilities of the developer allows us to assess the main factors influencing the positive performance of the developer-builder in the cluster territory.

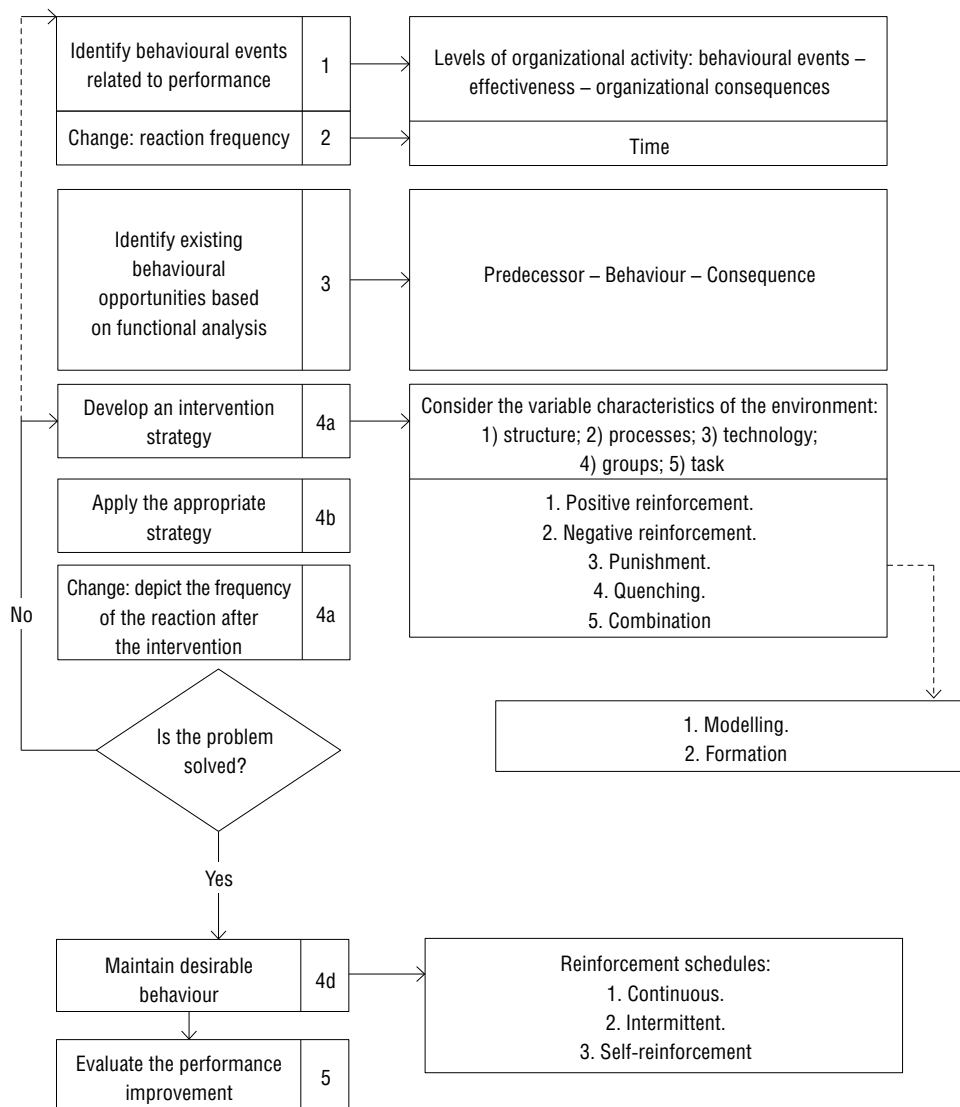


Fig. 2. Evaluation of the effectiveness of managing the developer-builder strategy in the cluster territory

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Оценка факторов, воздействующих на выбор стратегии застройщика при реализации проектов городского пространственно-территориального редевелопмента

Основным этапом формирования программы территориально-пространственного редевелопмента городской недвижимости в задачах застройщика является развитие ее составляющих: ЖКН (далее жилая и коммерческая недвижимость) + ИПН (далее историческая промышленная недвижимость) + ОКАН (далее объекты культурного и архитектурного наследия).

В последние годы строительство многоквартирного жилья на территории Российской Федерации ведется колоссальными темпами. Окраины городов зарастают целыми жилыми массивами новостроек. Как правило, реализуя идею о «доступном жилье», застройщики в первую очередь задумываются о собственной пользе, не обращая должного внимания на то, какие проблемы генерирует такое городское развитие. Неужоженные пустыри между многоэтажными колоссами, удаленность культурно-досуговых объектов, образование «пробок» по пути к местам работы населения — все это зачастую особенности современных городов.

Города-мегаполисы исчерпали возможность расширения жилой застройки путем использования исторических районов для новых строительных проектов, бывшие крупные производственные площадки уже прошли период реновации и застройки в условиях постиндустриализации.

В статье рассмотрены основные задачи процесса определения рынка проекта городского пространственно-территориального редевелопмента. Представлен алгоритм формирования факторов, включающих на отбор территории и определение привлекательности территории для вложения инвестиционных активов. В публикации отражены потенциальные возможности застройщика, произведена оценка опасностей и возможностей при перекрестном влиянии сильных и слабых сторон застройщика.

Ключевые слова: строительство жилья, комплексное развитие территории, редевелопмент, застройщик, модели, проекты, алгоритм, факторы

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