Justification of the Principles of Revitalization of the Built-up Territories for Sustainable Development of the Urban Environment

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Abstract. The analysis and justification of the basic principles of revitalization of the urban inhabited environment from position of sustainable development of territories. Are analyzed experience of gentrification in the USA and also the European countries; the program of renovation of housing in Moscow developed by the Government of Moscow and directed to resettlement and demolition of old low housing stock. The main shortcomings of such planning approaches are revealed. The step-by-step scheme of renovation of the residential quarter on the example of Voronezh is developed. Recommendations about change of planning structure of the reconstructed quarter taking into account the principles of sustainable development of the urban environment are formulated.

1. Introduction
Now our country still strongly lags behind the developed countries on security of the population with housing. On average we on the person have 23.7 m of apartment while in the European countries - on average 30 - 40 sq.m.

Now, in our country active updating of housing stock begins. Under the decree of the president "About the National Purposes and Strategic Problems of Development of the Russian Federation until 2024" it is necessary to come to 120 million square meters a year [1-3].

At the same time development of free territories and building of urban fringes becomes less attractive both for the city, and for builders. It is connected with big costs of creation of necessary infrastructure. Even expensive utilities, network of motor-roads with public transport, schools and kindergartens, policlincs and subjects to consumer services of the population are necessary for satisfaction of basic needs of the population [4]. Besides, public spaces are also necessary for creation of more attractive urban environment the vacation spot and entertainments. For the city similar approach is in addition fraught with increase in number of the citizens participating in pendular migration that also negatively affects life of all city. Similar suburban (peripheral) territories in the majority even do not become full-fledged territories with city theater and the comfortable environment eventually. Generally they stop in development and, perhaps, in the future will become big problem for the cities having similar residential districts which will be much more difficult to be solved, than to utilize today's shabby housing.
2. Analytical part
For these reasons, for the city it is not always simpler (but nevertheless, it is better) to be engaged in development and reconstruction of already developed territories. Such approach allows not only to increase housing stock, but at the same time to solve two problems: elimination of depressive urban areas and resettlement of old housing stock. In similar case engineering, road and social infrastructure is not under construction from scratch, and already existing is reconstructed. Renovation of engineering networks is carried out, streets extend, schools and kindergartens are under construction and updated. Such approach allows, including, to improve also social situation, to attract new inhabitants (as a rule more, financially secure).

Similar approach actively practices in the USA and the European countries, there it is called — gentrification. Gentrification (English gentrification) — reconstruction (revitalization) the urban quarters which have fallen into decay by improvement and the subsequent involvement of more wealthy inhabitants [20-21]. Gentrification is resulted by increase in the average level of income of the population of the area due to replacement of inhabitants with low income on more well-founded. The term has been entered in 1964 by Ruth Glass in work "London: Aspects of change" ("London: Aspects of Change") for the description of replacement of working class from the certain districts of London the middle class. Similar process happened in the different cities of the USA in the second half of the 20th century, in particular, in certain districts of the cities: San Francisco, Boston, Chicago, Seattle, Portland, Atlanta, Washington, Denver. At first gentrification in the USA often changed racial appearance of the cities as poorer Black, and sometimes and the Latin American population was replaced mainly white with higher income (white Americans of the non Spanish origin, Europeans and Asians) [13-19].

One of the most striking and large-scale examples of development and reconstruction of the built-up territories is the Program of renovation of housing in Moscow developed by the Government of Moscow and directed to resettlement and demolition of the old low housing stock built in 1957-1968 and new construction in the freed territory. The program is expected 15 years, by results of vote of residents of these areas it had included more than 5 thousand houses.

The basic reason of so radical reformating of these territories lies in the residential district the planning principle of building of quarter. The territory of such residential districts was created under the influence of absolutely other factors (rigid necessary apartment mix, the limited nomenclature of sections, etc.). The main shortcomings of this planning approach are:

1. Inefficient forming and use of green areas.
2. Low permeability of the built-up territories, lack of street road system in huge quarter.
3. The territories of the mixed use reducing quality of the urban environment (rest zone / technical zone / parking / playground).

The similar structure of the inhabited residential district substantially complicates its fragmentary or partial reconstruction with high-quality change of the urban environment. In other words complicates sustainable development of this territory. It is the fundamental reason of full demolition and new construction of similar areas [5, 6].

Because of the scale and the number of the participating inhabitants the special laws, normative documents and standards regulating the principles of resettlement, construction of housing, quality of a created urban environment and social infrastructure [7] have been drafted for this program. For creation of architectural concepts the international competition in which many world-class architectural bureaus among which there is Zaha Hadit's bureau, Norman Foster, etc. have taken part has been announced.

However the main basic principle — creation of the steady urban area in the form of the certain quarters allowing to change in the future, if necessary, locally the urban environment without change of the created structure of the territory in the form of certain quarters is the cornerstone of all projects of renovation. Therefore in most cases implementations of this program quarter is reconstructed completely in borders of the existing lines even if buildings of later years of construction and the best technical condition (figure 1) get to this territory.
The new created planning structure means consolidation street-road system with forming of the certain small quarters which are built up with group of the residential buildings (called - Urban the block), or other objects of social infrastructure (figure 2) [8].

Figure 1. Scheme of the planning principles of renovation.

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Figure 2. Block diagram of quarter building development.

Similar approach to division of the territory has the following merits:
1. To increase efficiency of use of land resources, including - the having key value for the programs connected with resettlement, increase in housing density at improvement of quality of the urban environment.
2. Differentiation of public and private territories. The perimeter type of building allows to create the domestic space free from cars and also the street with full "city theater", with the developed service functions of the first floors and public spaces in the form of pedestrian part of the street.
3. Increase in permeability of territories due to consolidation of street road system. It increases the connectivity of urban areas, increasing comfort of movement of citizens [9-12].

However not all cities have opportunity to repeat the Moscow way of renovation of the built-up territories. Financial opportunities of city budgets do not allow to move residents the whole quarters, for radical change of its planning structure. Approach forming of programs of resettlement more
selectively, allocating only part of the parcels within the existing quarter which are in great need in housing improvement (figure 3).

Figure 3. The scheme of development of the built-up territories of residential district No. 33 in Voronezh.

On the scheme of residential district No. 33 in Voronezh buildings and the general border of the parcels getting under development of the built-up territories are allocated. It is visible that the part of residential and office buildings is not included in this program. These buildings will play essential role, to act as some kind of restrictions for forming of new planning structure of this area.
3. Conclusions
According to earlier voiced principles, for creation of the steady urban environment it is necessary to create quarter planning structure in this territory. But it is necessary to do it taking into account the remained existing buildings.

Therefore the most optimum way will be consideration of re-planning of this territory in two separate stages: on the first the new planning structure of the area taking into account the existing program of resettlement, and on the second, later forms, the remained territories (figure 4) are connected to forming.

This approach allows at limited financial opportunities of urban municipalities at implementation of programs for development of the built-up territories to make high-quality transformation of the urban environment - to increase efficiency of use of land resources, to differentiate public and private territories, to create the domestic space free from cars, the street with full "city theater", with the developed service functions of the first floors and public spaces in the form of pedestrian part of the street, to increase the connectivity of urban areas, increasing comfort of movement of citizens.

At the same time two-stage approach, will allow to increase, in addition, planning variety and to keep historical identity of the urban environment.

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