Territorial transformations of urbanized systems

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Abstract. Efficiency of development of the city is defined by economic, ecological and social parameters. In the course of urbanization the city develops in all specified parameters. In the course of urbanization there is a development of the environment in noted indicators that causes the necessity of territorial transformation of the environment. One of stages of urbanization is formation of urban agglomerations, and respectively transformation of the urbanized space. Forming district settlements by the principles of the ecovillage of similar settlements within urban agglomerations will promote formation of the new "smart" town-planning environment, development of agricultural activity, formation of the new housing stock meeting the modern requirements. At the same time there will be no need for carrying out global reconstructive and modernization works within the existing urbanized environment. Design of settlements within urban agglomeration taking into account distinctive features of the ecovillages created now will allow making the effective urbanized environment both from the point of view of economy, and in the town-planning relation.

1. Influence of urbanization on town-planning system

The city is a system. Any system has to develop. At the same time efficiency of development of system assumes its sustainable development, that is uniform, taking into account development of all elements of this system [1-3]. According to the theory, sustainable development of system assumes development without damage to the system, or taking into account possible influence, but as a result which the system can independently be recovered. In the course of urbanization, there is saturation of town-planning system different elements of the environment, which create conditions for conducting favorable and safe life activity in the conditions of the urbanized system. [4]. Process of urbanization assumes development of the city as a town-planning system and its transition to the urbanized system. Than more modern this town-planning system is also effective, it is more urbanized by that [5]. The main positive moments of urbanization is development of industrial base as bases of economic basis of the urbanized system. The development of infrastructure, formation and development of the additional spheres promoting development of the urbanized system and improvement of quality of life, based on economical and social indicators [6,7]. Development of infrastructure causes increase in loading on available infrastructure of the urbanized system. Formation and development of the additional spheres promoting development of the urbanized system assumes development of the social sphere servicing needs of the population. Therefore, creation of additional elements of the urbanized system, that is buildings, constructions, necessary infrastructure is required.

As a result of these positive sides of process of urbanization there is increase in population density of the urbanized system, increase in environmental pressure at the environment, it is the main negative
sides of process of urbanization. In the course of growth of the city and development of technical and technological way there is transformation of structure of the city and saturation by its different improvements according to development of scientific and technical progress. In addition to standard tasks: construction, eyeliner of engineering communications at new building it is necessary to solve the problems connected with the existing building. It is fight against density, lack of gardening, the space organization of the city.

Minimization of negative impact of process of urbanization within the urbanized system requires carrying out the planning works directed to optimization of conditions of life activity within the urbanized system. Carrying out these works is caused by need of achievement of steady, so effective development of the urbanized system in the course of its functioning as systems. Otherwise functioning of the urbanized system will be inefficient as independently the system will not be able to be recovered as a result of influence of noted factors.

2. Need of territorial transformation of the urbanized environment
Taking into account noted factors of influence of urbanization need of work on territorial transformation of the urbanized environment, to be exact increase in the sizes of the city, addition and development of infrastructure of the city, change of the functional purpose of the territory put earlier in the development plan is most obvious. [8]. Need of territorial increase in the square of the city is connected with increase in number of inhabitants, need of increase in living space and formation of new fund of real estate in connection with reorientation of function of the central part of the city. As a result, the available planning structure of the city not always conforms to requirements of possible increase in the territorial area. The available infrastructure, both utility, and transport, is not capable to perceive the increasing loadings, from there is need for modernization of the available funds or construction of new. In addition, the available housing stock in the developed cities does not conform to modern requirements for energy efficiency and resource-saving. Its modernization on compliance to these parameters is not always economically justified [9,10]. As carrying out reconstructive works is limited to the available town-planning environment and restrictions connected with its operation. In addition, in the course of urbanization of the town-planning environment, the centers of gravity of the main city flows change (transport and people) that increases load of the transport infrastructure of the urbanized system existing, as a rule. As a result of cumulative addition of factors of urbanization increases load of ecology of the urbanized system and as a result is reflected in indicators of health of inhabitants of the urbanized environment [11,12].

Thus, territorial transformations are defined by the available planning structure of the city and need of addition with its different elements of the urbanized environment. As it has been noted earlier, such elements in the course of urbanization are transport infrastructure, engineering and utility infrastructure, modernization and construction of new housing stock.

At saturation of the available planning structure of the urbanized environment overconsolidation of the environment therefore there is need on modernization and reconstruction of the available elements of this Wednesday happens additional elements of development. For the last usually overestimated financial investments, in comparison with creation new concerning the isolated additional elements of the urbanized environment are required. Most reasonably in this case creation of additional regional settlements at the expense of which development and transformation of the available urbanized environment is possible seems. Change of planning structure of the city and allocation of certain areas of development, will allow to create separate zones of the inhabited and production territory which will not load the existing urbanized environment. The most reasonable formation of urban agglomerations [13-16] which are one of stages of process of urbanization seems. Under city agglomerations the central city on which periphery the settlements representing regional divisions of the urbanized system are created is understood.
3. Formation of new, "smart", ecological areas - settlements on peripheral part of the existing urbanized environment

Formation of new regional settlements on the basis of the existing city, will allow to create smart town-planning environment which is implemented due to five key principles: orientation to the person, technological effectiveness of city infrastructure, improvement of quality of management of city resources, comfortable and safe environment, economic efficiency of the urban environment [17,18]. Implementation of these principles within the urbanized system will allow to create comfortable, safe and favorable conditions for life activity within this system. On the basis of formation of these conditions within the urbanized system it is possible to judge efficiency of its development. Development and implementation on the urbanized Wednesday of IT technologies, promotes increase to the number of workers remotely, and as a result decrease in transport load of the urbanized environment.

The agricultural industry is one of the priority directions of development for the majority of regions of our state. Taking into account the available free territories, this field of activity has high potential. Development of agricultural activity on the basis of the created regional settlements, will promote development of these areas and in general the urbanized system on the basis of which they are created.

Also it is necessary to consider the fact that many inhabitants of the urbanized environment tired of negative impact of this Wednesday and adverse ecological situation, are ready to move to ecologically favorable territorial settlement for conducting agricultural activity or work remotely, but in ecologically favorable place.

Considering noted factors, namely need of territorial increase in borders of the city, need of development of agricultural activity, potential desire of people to conduct work remotely or to be engaged in agricultural activity, it is necessary to speak about possibility of formation of settlements in peripheral regions of the urbanized environment, for the purpose of further sustainable development of this urbanized system. Thus, it is possible to speak about need of formation of urban agglomeration as one of stages of urbanization of town-planning system.

In the West rather actively the network of ecovillages develops. In Russia ecovillages have begun to form since 2005. As a rule, within similar settlements the people combined by the uniform vital principles live. In the author's opinion, it is necessary to take ecovillages which will represent in this case the regional settlement placed on the periphery of borders of the urbanized system as basis of formation of urban agglomeration [19-21]. The main distinctive features, which characters for ecovillages and which need to be taken as basis of design of regional settlements as a part of urban agglomeration it: conducting agricultural activity is preferential; use not of istoshchitelny technologies of processing of the earth (permakultur), without use of toxic chemicals and pesticides in the territory of the ecovillage that increases competitiveness of the made product, further on sales market; possibility of development of production activity on the basis of agricultural field of activity; construction of energy efficient housing, use of alternative energy sources, minimization of consumption of power; careful attitude to natural resources.

When carrying out the theoretical analysis it has been established that most of people leave ecovillages, or is not ready to moving on the permanent residence there as the available ecovillages form far from city borders. Potential ecosettlers are frightened by lack of necessary health system, education. One more of problems of this view of settlements is need of financial resources for formation of infrastructure of settlements and building of different constructions, inhabited and public in the territory of the ecovillage. As it is noted in this work, formation of settlements is necessary on the periphery of borders of the city that on the one hand keeps availability to elements of the urbanized environment (health care, education), on the other hand there is relative remoteness that reduces factors of negative impact of urbanization on ecology of the urban environment that allows to create uniform urban agglomeration. In addition, formation of network of settlements will allow to create housing of the new level meeting the modern requirements of energy efficiency and environmental friendliness.
4. Efficiency of the created settlements

Noted features characteristic of ecovillages which should be accepted for design of regional settlements of urban agglomeration will allow to create rather competitive urbanized systems that in general will allow to judge effective and sustainable development of this system [22]. Formation of rather independent areas of development of the urbanized system on the periphery of the city in the form of settlements will allow to avoid need of carrying out planning transformations for structure of the city [23]. Orientation of this sort of settlements to development of the agricultural industry, will promote involvement of people for work in this field of activity taking into account providing accommodation to opportunity in ecologically favorable place. It is also necessary to note importance of development of the agricultural industry for the state as one of the strategic industries of production in domestic market. This factor, will allow to create optimum conditions for construction and development of the territory of potential residents of settlements and the state as additional source of financing. Considering the principles of formation of ecovillages, on the basis of agricultural activity development of production on processing of agricultural products is possible further. Taking into account environmental friendliness of this type of production and product of processing this type of production can be rather perspective. The settlements recommended for construction have to be designed taking into account the available projects of formation of "the smart environment" that will allow to achieve their compliance to the modern requirements of housing meeting the international standards, and the distinctive principles of the existing ecovillages. Taking into account noted parameters characteristic of the settlements recommended for formation within urban agglomeration, it should be noted strategic importance of this view of settlements, and respectively interest of the authorities in development of this sort of settlements and to formation of investment and attractive projects on development of production and agricultural spheres of business. It will allow to create possible source of financing for construction and development of this sort of settlements. Considering territorial favor of this view of settlements in ecologically favorable place, in transport availability to the necessary centers of social service these settlements will be attractive to the people wishing to live in ecologically favorable place.

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