Elements of the spatial scenario of historic housing as an invariant code of innovative typology «house-yard»

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Abstract. The morphological, structural and content elements that form an invariant model of innovative multifunctional typology «house-yard» are considered. The continuity of this model in relation to the historical urban neighborhood development as a prototype is established. The possibility of creating a new typology, focused on modern methods of construction and actualization of the characteristics of a sustainable urban environment is substantiated.

1 Introduction

In previous studies of the author's team were determined the defining characteristics of the typology of house-yard. House-yard is typically prevalent as a typology of historical quarters Samara and Odessa. This historical structure offers big value for sustainable urban development. In these works, such important properties of a stable environment were emphasized – as tolerance of neighboring communes, adequate scale of height, functional and planning flexibility, architectural attractiveness of street facades and courtyard spaces.

Studies of the house-yard phenomena of these cities, and in particular Samara, have gone beyond a limited circle of authors appealing to local architectural and local history materials, and have become the subject of scientific discussions, including architectural and urban planning discourse, among metropolitan and foreign specialists. Such a fundamental and voluminous work was, in particular, the study of the Russian-Dutch team of authors devoted to the phenomenon of the Samara yard. In this study exactly the house-yard was morphological and semantic formation that was considered as the genome of a stable environment and urban lifestyle. So, remaining the role of this genome, the house-yard phenomenon involved subsequent discussions about the format of innovative typology which would be able to integrate the best characteristics of historical prototypes to modern urban development.
2 House-yard as high-promissing historical spatial unit

Fig.1. Diagram of the “priorities” of the house-yard. Source – Malakhov-Repina bureau dept.

Fig.2. Diagram of the key elements of the house-yard. Source – Malakhov-Repina bureau dept.
3 The main morphological and functional elements of the house-yard
7. Outdoor stairs create an almost avant-garde scenography and allow you to expand the set of platforms for relaxation and communication. Stairs are used by adults and children who start a game inside the house-yard, without a specially designed kit which are typically installed in the courtyard of a standard residential complex.

8. The arch and the tunnel are the connecting links of the spatial scenario of the house-yard. The tunnel works as an access limiter, a noise buffer and at the same time performs the function of anticipation of the upcoming adventure.

9. Areas of potential self-development are the most important and at the same time controversial elements of the code. It is assumed that the new typology is obliged to include such sites in order to compensate for the intentions of self-realization of residents displaced from modern construction practice and at the same time support the satisfaction of functional needs for a flexible response to changing circumstances.

10. Studios and business premises have elements that enhance the multifunctionality program of the house-yard. They are created taking into account the principle of "a little bit of everything": humane scale of development (in the base-2-3 floors), high density, spaces inside and around for business and market activity.

Fig. 3. Schematic images of the ten main elements of the "house-yard" typology code in a conditionally specified object space. Source: Malakhov-Repina.
Fig. 4. Images of the environment and activity in the space of the house-yard. Illustration to the scheme of the main elements of the invariant code of the typology "house-yard". Source: Malakhov-Repina.
4 Preliminary conclusions: on the way to a new typology.

In the paper, we present an approach to a new typology, which is based on the analysis of the existing typologies and their evolution. The approach is based on the idea that the typology should be dynamic and responsive to the changes in the urban environment. We propose a new typology, which is based on the concept of modularity and can be used to describe the evolution of the urban environment.

The typology is developed based on a number of case studies, which are presented in the paper. The case studies are based on the analysis of the urban environments in different cities, such as Moscow, St. Petersburg, and Samara. The analysis is based on the study of the urban morphology, the typology of the buildings, and the typology of the urban space.

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