DOI https://doi.org/10.30525/978-9934-26-414-6-11

VOLUMETRIC AND SPATIAL CODING AS TOOL REBUILDING OF DESTROY URBAN TERRITORIES

ОБ'ЄМНО-ПРОСТОРОВЕ КОДУВАННЯ ЯК ІНСТРУМЕНТ ВІДНОВЛЕННЯ ЗРУЙНОВАНИХ МІСЬКИХ ТЕРИТОРІЙ

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A city is a complex, multi-level system that constantly evolving under the influence of various positive and negative factors, but it needs to take into account the principles of sustainable development of urban areas to improve the quality of the urban environment.

One of the tools that is used for the formation of balanced urban space is function zoning which principles first were formed in 1933 at the IV Congress of Modern Architecture in Athena. On the territory of Ukraine, the principles of functional zoning were begun to be introduced by the Soviet Union when no special attention was paid to the formation of a comfortable urban environment, and the essential principles were based on the model "housing-work-leisure" [1, p. 232], but in modern conditions, such a model is not ensured to formation multifunctional urban space that would incorporate public and residential functions, industrial and scientific functions as well as it is provided by a street and road frame.

To create a balanced urban environment, a new model is used, which ensures the process of well-being and life activities in the city, namely "man – function – conditions – geometry – time" [2, p. 141], therefore, it needs to find new, more "flexible" mechanisms for regulating the urban environment.

One of such mechanisms is Volumetric and Spatial Coding – regulation of city development by the existing architectural composition, which is formed on the principles of the relationship between the types, shapes, volumes of buildings and public space, street elements, and pedestrians [3, p. 119; 4, p. 62; 5, p. 3].

Volumetric and Spatial Coding is a legal document that establishes clear control elements for various parameters of buildings, forming a balanced,

comfortable, multifunctional public space, including streets, parks, residential areas, industrial facilities, transport and engineering infrastructure. Volume and Spatial Coding was first used in the United States in the early 20th century as a response to urban planning problems encountered in most American cities. Over more than 100 years of use, these standards have changed, adding different structural elements of the city and suburban area.

With the beginning of the Russian invasion, a large number of cities and towns in the eastern part of Ukraine were destroyed, cities such as Kharkiv, Chernihiv, Odesa, Kherson, and Mykolaiv received significant destruction of both residential facilities and public institutions, industrial facilities, and engineering infrastructure, so to restore destroyed and damaged cities, individual areas and objects, it is necessary to use not the old mechanisms for regulating urban space, such as functional zoning, but to develop rules that take into account the principles of accessibility, barrier-freeness, safety, energy efficiency, and multifunctionality, as indicated in the Project of Restoration of Ukraine [6].

Firstly, it is necessary to determine the typology of zones according to the previously established function and find out the influence of this territory on the formation of the city structure.

Secondly, to determine the features of the formation of architectural morphology, are determined by style, shape, size, historicity, building designs, and building density.

Thirdly, to determine the interaction of established zones with the existing road network and their influence on the formation of public spaces.

When developing the Rules for Volumetric and Spatial Coding, additional elements may appear that need to be taken into account when applying the coding of these components, since they can influence on the formation of the architectural composition of the corresponding territory, but separate elements or components can be used for each separated zone.

Therefore, a list of components and elements is created that is allowed any resident to clearly understand the requirements of spatial planning of the city territory since these elements are presented in the form of diagrams, graphs, and illustrations. The use of a volumetric and spatial method for regulating the development of restored urban areas will be allowed new public spaces in cities that meet the principles of urban design and sustainable development of urban areas.

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