

## **Study of the post-effects of the implementation of public space projects: from the analysis of digital traces to the assessment of the sustainability of design results**

The current stage of the development of public spaces in Russian cities is characterized by a gradual increase in the level of civic involvement in this process against the background of the development of a culture of complicity. The latter acts as a necessary element of the development and implementation of public space projects within the framework of municipal, regional and federal initiatives, the main of which is the federal project "Formation of a comfortable urban environment". The development of a culture of participation is considered by the initiators of this project to be a significant factor in ensuring the relevance and functional compliance of new public spaces with the planned parameters. Currently, the evaluation of the post-effects of the implementation of public space projects is focused on the study of their relevance and nature of use. For this purpose, methods of observation, description of behavior scenarios and individual types of activity within the boundaries of objects are used. Due to their labor intensity and high cost, these methods are used only to a limited extent. Therefore, at present, methods of digital anthropology are widely used in foreign and domestic practice to assess the effects of landscaping, in particular, the analysis of digital traces of users of public spaces, that is, geolocated photographs of an object. At the same time, the use of these methods is possible both at the pre-project and post-project stages, which allows us to identify the dynamics of changes in scenarios for the use of public spaces. Nevertheless, often such a significant parameter of newly created public spaces as the sustainability of their use and functioning remains outside the scope of analysis, primarily due to the significant influence of the novelty effect: in the first months of their operation, a significant number of one-time visitors are observed in new public spaces compared to regular users. In other words, there is a need to develop an analytical tool that allows, on the one hand, to assess the long-term post-effects of the functioning of new public spaces, and, on the other, to determine the factors affecting their sustainability.

The key research question formulated by the authors in the process of analyzing the practices of participatory design in Russian cities is to determine the significance of the nature and level of involvement of citizens in the process of designing public spaces for their further successful functioning for a long time. As an analytical tool, the Sustainability Index of Public Spaces developed and tested by the authors was used, which allows, based on an analysis of eight parameters (multifunctionality, quality of execution and materials, safety and openness, the potential for vandalization of objects, convenience and accessibility for different categories of residents, uniformity of activity distribution by seasons, environmental friendliness and ease of disposal, flexibility and transformability)..

Based on the results of a generalized assessment of public space projects using the methodology of participatory design and projects that do not involve stakeholders and groups of future users in this process, a significant difference in the Index values in favor of projects involving participation and active involvement of citizens was

revealed. The most significant effect observed in public spaces created on the basis of complicity is the steady identification of the object as "one's own" by regular visitors, which largely determines its demand, a variety of use scenarios and a reduction in the potential for damage or vandalization.

For further testing of this analytical tool, the authors initiated a project involving the assessment of public spaces involving mandatory public participation and involvement of citizens. Thus, 102 public spaces were evaluated in four subjects of the North-Western Federal District, which allowed a significant relationship between the value of the Index of Sustainability of Public Spaces and the degree of involvement of residents in the design process. In addition, a gradation of levels of involvement and complicity in the process of implementing public space projects was formed by analogy with the Sherry Arnstein ladder of civic participation based on an assessment of the post-effects of their functioning and use.

The novelty of the proposed approach and the research based on it consists in the possibility of determining the degree of complicity in the implemented projects of public spaces by the nature and direction of the observed and identified post-effects, up to the determination of the facts of imitation of public participation or the use of a formal approach to the use of the results of public discussion. In other words, it becomes possible not only to determine the degree of involvement of residents in the process of creating public spaces within a specific project, but also to propose a mechanism for correcting negative post-effects, taking into account additional factors of location, the nature of financing, the nature of the implementation of procurement procedures and the presence of local business.