Features of designing small architecture objects in the design of environmental space

E V Vasilenko¹, P G Vasilenko¹, O S Goltseva¹, T E Belyakova¹

¹ K.G. Razumovsky Moscow State University of technologies and management (the First Cossack University), Russian Federation, Moscow, Zemlyanoy Val, 71

E-mails: e.vasilenko@mgutm.ru, p.vasilenko@mgutm.ru, o.goltseva@mgutm.ru, t.belyakova@mgutm.ru

Abstract. The article deals with research on the organization of modern design of small architectural objects in the city environment. Analysis of the architecture of the environment of modern cities has shown that design and architecture are not given due attention. The artistic and constructive design solution of small architecture objects in the urban environment should be appropriate in the specific conditions of the districts, functionally justified, convenient to use-ergonomically, economically, practically, and should also meet modern aesthetic requirements.

Although elements of the external equipment of the environment are not the main means of composing urban architecture, they significantly enrich planning and architectural and spatial solutions, and contribute to the formation of an integral architectural appearance of a modern city.

1. Introduction

The modern city, consisting of large and small architectural structures—simple and complex forms, open spaces, highways-wide avenues and narrow streets, is characterized by the absence in these large volumes and spaces of elements that are commensurate with the human scale, adversely affects the mental and emotional state of a person. In such an environment, a person feels uncomfortable, depressed. However, the purposeful use of various types of green spaces and small architecture objects in the territories adjacent to residential buildings allows these huge spaces to be divided into a number of smaller spaces, enrich them, and make them attractive. Since the size and proportions in the design of small architecture objects are always linked to the human scale, regardless of the distance from which we perceive them, they allow us to feel the size of the surrounding buildings and structures and make the environment understandable, cozy, human.

2. Materials and methods

As an object of research, the modern organization of design of small architectural objects in the city environment is considered. The analysis of methodological and special literature on the problem is carried out. General theoretical research methods are used. The design methodology is based on a systematic approach and the development of new methods for solving problems, based on various theories and recommendations for organizing the creative process. The analysis of all stages of design in design is structured and studied by many authors in this field: S. M. Mikhailov, A. S. Mikhailova, V. S. Kulikov, A. G. Naumov, V. N. Tkachev, A.V. Efimov, G. B. Minervin, V. T. Shimko, B. G. Barkhin.
et al.) Methodological findings, interesting and thoughtful methodological techniques that reveal certain provisions in the design of small architectural objects of the urban environment (art objects) includes the formation of the structure of industrial and residential objects, squares, highways, etc.

3. Results

Objects of small architecture (art objects) can perform a utilitarian, practical function and also a very important aesthetic function that contributes to the formation of the aesthetic appearance of modern urban space and the education of aesthetic taste in the city's residents. Analysis of the architecture of the environment of modern cities has shown that design and architecture are not given due attention. The main reason for many unsuccessful decisions is that the organization of the modern urban environment is not sufficiently studied. The basic rules and guidelines for the design of design in this area do not contain calculation standards and recommendations for the nomenclature and quantitative application of small architectural forms there are no instructions on the content and volume of the relevant design documentation in some cases, standard designs of small architecture objects are incorrectly developed and applied.

Table 1. Style-forming factors

| Compositional unity and interaction with the surrounding architecture | Unity of design solutions and materials used | Combination of proportions and volumes, consistency of shapes and textures | Modularity of elements, Assembly with unification of nodes and parts, dimensions | The optimal range of objects that correspond to the ergonomics and aesthetics of the environment is set and quantity | Unity of the color solution, the relationship with the overall color solution of the architectural environment |
|---|---|---|---|---|---|

The intensive growth of cities, the increase in areas and territories requires that landscaping and design of territories, as well as small architecture, are designed today on a scientific basis. It is necessary to work on the design of small architecture design in two directions [4]:

Determine an acceptable approximate nomenclature of small architecture objects. Develop the basic principles of architectural and artistic design design and on this basis prepare manuals for designers.

Develop scientifically based standards for quantifying the need for small architecture objects in certain environmental territories, taking into account population density, territory size, sanitary and hygienic conditions, local natural and climatic features, which would complement the SP (Construction Rules) and instructions for the composition of project documentation. Analyzing the shortcomings in the design of small architectural objects, we see that in most cases the design does not contribute to the creation of a perfect architectural and artistic urban environment. Often, each object is designed separately, without compositional and constructive linking it with other architectural objects. Therefore, as a rule, objects installed side by side do not harmonize with each other, destroy the compositional
unity, and create an unpleasant impression for the aesthetic perception of space. When designing small architecture objects in an urban environment, the designer must cover them in a complex – this is the only way to create a full-fledged environment that is in good harmony with large architectural structures and the entire infrastructure of the city [3]. After analyzing designer-the designer should identify: tectonic (symbol color of the constructive elements) features of interaction of color and form (mismatched patches of color with form elements); the nature of the color composition (single color, using related hues, contrast); the color character of the area as a whole, whether the colors of objects in the population or there are surfaces that stand out; all colors, gathering them in a single table and divided into main groups: basic, additional, accent. You should also choose the finishing materials taking into account the color and texture, physical characteristics, cost, and specify the specific places where they are used.

4. Discussion
Objects of small architecture, depending on their functional purpose, can be divided into several complexes: small architectural structures, engineering and economic equipment, equipment for sports and recreation, visual information and decorative forms. The artistic and constructive design solution of small architecture objects in the urban environment should be appropriate in the specific conditions of the districts, functionally justified, convenient to use-ergonomically, economically, practically, and should also meet modern aesthetic requirements.

An artist-designer must necessarily have three qualities-his own vision, a high professional level of performance of analogs, as well as knowledge of the basic principles of composition. An artistic image is an artist's view of the world through their own consciousness, that is, the expression of themselves through other objects or phenomena. Form is one of the main means by which an artistic image can be expressed. According to Paul Klee, a German-Swiss artist, form is born from a point that forms a line when moving [2, 10].

The form is created by several means: rhythm, contrast, scale, nuance, and proportions. Form in combination with color enriches the created works, however, it is worth noting that there is no form without color, light and texture. You also need to take into account that the color must be selected in accordance with the intended meaning to correctly embody the meaning of the artistic image. Another means of expressing an artistic image is texture. Texture is the external properties of an object that are determined by the material of the composition. The characteristics of the texture include roughness, slipperiness, softness, etc. Texture and color can be expressed differently depending on the lighting, another means of expressing an artistic image.

The composition has many rules, following which the artist risks losing his own originality – this is the paradox. The correct composition can beautify the work, but make it boring, so Golubeva in a sense refutes all the material presented and encourages you to follow your own feelings. However, without knowledge of the laws of composition, it is impossible to "not follow them correctly". The laws of composition must be observed in any work, but every artist, designer, architect has the right to depart from them, if such is the intention. Modern art has a tendency to violate General canons and rules. This was always the case on the threshold of the birth of a new style [9, 6]. The three main laws of composition: unity(integrity), separation of the main and secondary, balance. The composition can be called complete when you look at the image, it does not break up into separate parts, but is a single one. Balance can be called both symmetry and asymmetry. Balance is the basis of harmony in the work.

5. Conclusion
The concept of "small architecture" includes: pavilions, fountains, swimming pools, bicycle parking, yard furniture, sports and gaming facilities(playgrounds), household equipment of the territory, structural visual information, fencing, lighting, decorative sculpture, vases, flowerbeds. Thus, small architecture should be called objects of equipment and landscaping that are proportional to the human scale and meet the utilitarian and aesthetic needs of modern man [11]. When designing or standard small
architecture objects, you should create small architecture complexes that are characterized by unity of style [5].

The number of objects included in the complex is determined by their functional purpose and artistic intent. For example, a set of environmental design objects on a recreation area may consist of a pavilion, benches, and trash cans. However, in some cases, depending on the specifics and artistic intent, it is advisable to include other objects: a swimming pool, information stands, decorative sculpture (art object), which can become a compositional center and affect the artistic decision of all parts of the complex. In all cases, when creating objects of small architecture, you must simultaneously follow the laws of expediency and aesthetics [8,12].

Beauty cannot be accidental in relation to the functional features of small architecture. The task of an architect and designer is to correctly combine functional and aesthetic characteristics in small architecture objects that correspond to a wide range of utilitarian and artistic needs of a person. To create an artistically complete system of small architecture objects throughout the territory of the designed environment, it is necessary to adhere to a single style [13]. The main style-forming factors of small architecture can be considered optimal nomenclature, modularity and Assembly of elements, compatibility of objects, unity of design, composition and color solutions.

Small architecture objects get special expression in those territories where the architecture of buildings, landscaping and landscaping are solved taking into account modern aesthetic requirements [1]. Although elements of the external equipment of the environment are not the main means of composing urban architecture, they significantly enrich planning and architectural and spatial solutions, and contribute to the formation of an integral architectural appearance of a modern city [7].

References
[1] Andreeva E V and Voronov M Yu 1970 Equipment for city streets. Review (Moscow: VNIITE, Art construction abroad)
[2] Vasilenko P G, Vasilenko E V and Pruzhina E S 2019 Features of light design in modern urban planning Modern trends in fine and decorative applied arts and design
[3] Vavilova I and Pirker V 1972 Social functions of small forms of architecture Scientific notes of V. I. Mukhina lvhp
[4] Dedyukhin V F 1970 On small forms in the architecture of cities "Izvestiya vuzov". Construction and architecture (Novosibirsk)
[5] Efimov A V 1990 Coloristics of the city (Moscow: stroizdat)
[6] Lopasova E V 2014 Formation of an aesthetic image of the urban environment by means of modern monumental art In the collection: Modernization of humanitarian and art education: innovative development strategies Materials of the International scientific and practical conference: in 2 parts. Edited by: Gritsenko V. P., Alekseeva I. V., Zengina S. S., Enikeeva A A pp 354–361.
[7] Cerver F A  2000 The World of Architecture (Cologne: Konemann)
[8] Isozaki A 1988/89 The international design yearbook (Milan: Thames and Hudson)
[9] Pallotta V I, Dudnikova A A 2018 Art object as a modern form of artistic integration in design In the collection: Education. The science. Culture. materials of the international scientific forum pp 135–137.
[10] Lancaster M 1996 Colourscape (London, Academy Editions)
[11] Lenclos J-Ph, Lenclos D 1999 Couleurs du monde (Paris, Le Moniteur)
[12] Smirnova M A 2017 Shaping in fine art and design in the collection: Pedagogical education at the intersection of epochs: innovations and traditions in the field of educational technologies Collection of scientific papers of the International scientific and practical conference. Institute of social and humanitarian technologies pp 252–253.