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Visual comfort in the organic architecture of an individual residential building

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Abstract. Organic architecture is based on unity with the natural context. Moreover, the natural environment in all its diversity has a positive effect on humans. Visual comfort is one of the necessary components of the sustainable architecture of an individual home. And visual auspiciousness as one of the aspects of environmental friendliness is gradually beginning to be included in the number of components of "green design". The article discusses and analyzes the relationship of the principles of organic architecture with techniques for ensuring visual comfort of the architectural space of an individual residential building.

1. Introduction

The modern design of an individual residential building is distinguished by the breadth and diversity of architectural creativity. However, when developing design solutions with a high level of comfortable functioning of the space of a residential building, often not given due attention to visual comfort. Nevertheless, the visual organization of space is constantly in interaction with a person, exerting a certain influence on him.

Visual comfort is one of the necessary components of the sustainable architecture of an individual home. And visual auspiciousness as one of the aspects of environmental friendliness is gradually beginning to be included in the number of components of "green design" [1].

Based on the analytical comprehension of modern "green" trends, focusing on the favorable visual interaction of architecture and the surrounding space, a significant role should be given to organic architecture. This direction arose at the end of the 19th century, and finally established itself in the 30s - 50s of the 20th century. Currently, the principles of organic architecture continue to be embodied in modern methods and techniques for the formation of environmentally friendly buildings, combining high technological effectiveness and close interconnection with the visual natural aspect.

2. Materials and methods

The main research method in this work is a comparative analysis of the principles of organic architecture and methods for creating a favorable visual context in the architecture of a residential building.

A comfortable visual environment is an environment with a wide variety of elements in the surrounding space. The main requirement for visual comfort is the lack of homogeneous and aggressive fields. The visual environment of an architectural object should not have large smooth planes devoid of any visible elements, or an excessive number of similar details. The environment with nature-like elements is considered the most comfortable for perception. Consequently, the characteristic features of a visually positive environment should be diversity in silhouettes and colors, diversity in remoteness

and sparseness of visible objects. Also, in the architectural solution, it is necessary to provide a direct relationship with the surrounding natural space [2-4].

The demand for organic architecture by the beginning of the 21st century is associated with the development of technology and, at the same time, a craving for individual housing, in which architectural forms can be a continuation of nature. According to the plan of the architect F.L.Wright, the founder of the organic trend, the dwelling was supposed to combine modern achievements and tradition, be an integral part of the environment, organically fit into the natural environment and be intended for the landscape in which it was created [5-7].

Modern organic architecture also has at its core the interaction of a residential building with a natural context. The conceptual model of such a house provides for alternative energy supply systems, the use of ecological materials and the provision of a comfortable architectural environment in conjunction with nature. An example of an individual residential building in the style of new organic architecture can be the Villa Shell in Karuizawa by ARTechnic architects. Interesting examples of organic architecture in Russia can be an individual house in the village of Vartemyagi, a house in the village of Aleksandrovskaya, Wright Style House in Moscow (IK-architects), a house in the village of Zhukovka (Fig. 1).

Fig. 1. Individual residential buildings in the style of organic architecture.

3. Research results

From the point of view of visual comfort and the relationship with the natural environment in organic architecture, the following principles should be distinguished:

- **Interaction with the landscape** is one of the most important techniques, which provides for a strict fit of the building into the natural environment, which allows you to create a single composition of the architectural object and the surrounding space.
- **The use of natural materials** - materials should be used with a minimum of finishes, preserving the natural look as much as possible. This technique provides interconnection and integration into the natural environment.
- **The unity of architecture with nature** - architectural compositions with the placement of terraces, open interior spaces, a large glazing area allows you to visually connect the interior and exterior.
- **A variety of decorative solutions** – is aimed at enriching the architecture of the house with various decorative elements.
- **The individuality of the appearance of the house.** This technique is manifested in the uniqueness of each building, reflecting the visual image of the area, traditions, inner world and preferences of the inhabitants of the house.

The table illustrates the role of organic architecture principles in providing visual comfort to the individual home environment (Fig. 2).

Principles organic architecture	The value of principle in providing visual comfort
Interaction with the landscape	interaction with the natural environment
The use of natural materials	Variety, interaction with the natural environment
The unity of architecture with nature	Visual expansion of spatial boundaries
Variety of decorative solutions	Positive visual perception of the architectural space
Individuality	Interconnection of worldview and aesthetic aspects in architecture

Fig.2. The principles of organic architecture in providing visual comfort

4. Conclusion

At the present time, when environmental problems are aggravated and a person is often cut off from nature, it is especially important to form a favorable natural environment in architecture. The relationship with nature provides visual comfort and a positive visual perception of the architectural space, which is absolutely necessary for a modern person and should be an integral part of modern design (Fig. 3).

The organic direction in architecture successfully solves the problem of ensuring a favorable perception of the space of an architectural object. This architectural style is quite modern and interconnected with environmental design. Thus, this study of the relationship between the principles of

organic architecture and methods of ensuring visual comfort in design can help to increase the level of environmental comfort in an individual residential building.

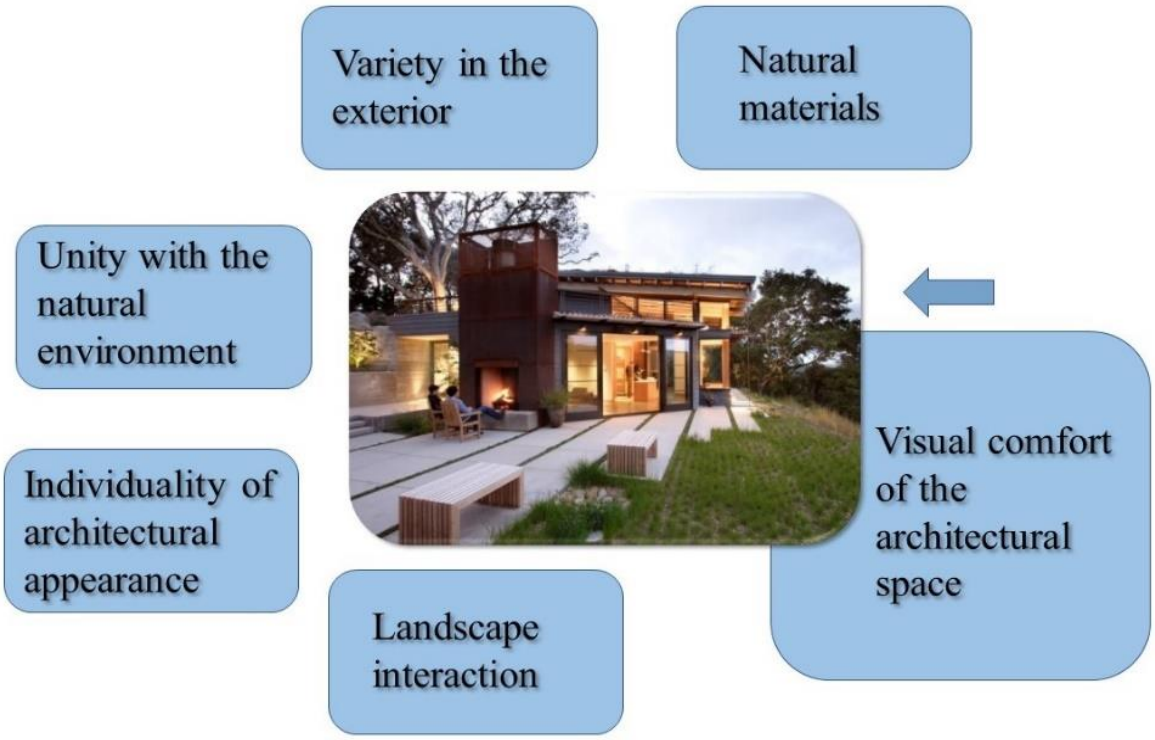

Fig.3. The scheme of methods for providing visual comfort in the architecture of an individual residential building

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