Architectural Bionics in the Creation of New Uzbekistan

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ABSTRACT

Independent Uzbekistan made a big leap in the development of architecture and urban planning in a short period of time. Today, the foundation of the great state architecture of the future is being laid, and the republic has great economic, scientific, technical and creative power.

The new Uzbekistan has the power to build architecturally biconical buildings that will give a new image to Uzbekistan.

Keywords: the foundations of the architecture of the future are laid by the creativity of the current generation , the responsibility of architects is growing exponentially , and the architectural and bionic practice has given rise to new, unusual architectural forms

Architecture in a short historical period of the independent Republic of Uzbekistan radically changed the foundations, placed emphasis on historical heritage, national ideology successfully implemented socio-economic reforms aimed at a sharp improvement in the well-being and living conditions of people. This large-scale change gave a powerful impetus to the development of architecture based on new spiritual heights, new opportunities and new social orders. Attitudes towards architecture have changed radically.

The foundation of the architecture of the great future of Uzbekistan is being laid today, the foundations of the architecture of the future are being laid by the creativity of the current generation. For the same reason, there is also a historically new period in the development of Uzbek architecture. It is important to set the right creative direction, because the goal of choosing the right and reasonable way and method to achieve the goal is a thousand times harder than the goal itself.

The further direction of the development of Uzbek architecture is economics, technology and art, the content and form of architectural works in the unity of modern and folk traditional architecture.

Taking into account the local climatic, demographic features of the future region, the traditions of creating a wide architectural form.

The future is in the hands of modern new architecture. We are on the way to creating a historical urban culture of Uzbekistan. The image and content of our cities, by virtue of their universal values, absorbs elements that can enrich it.

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republic has great economic, scientific, technical and creative power.

The responsibility of architects is growing exponentially.

The modern architecture of Uzbekistan is rapidly developing, is on the verge of a qualitative artistic and methodological revival.

Beautiful, majestic and durable buildings and structures for the real prosperity of the architecture of Uzbekistan at the beginning of the third millennium.

I would like to add architectural bionics to the image of New Uzbekistan, with which our Uzbekistan would look even more powerful and amazing.

I would like to note that in the world architectural practice over the past 40 years, the use of the patterns of shaping wildlife has acquired a new quality and is called the architectural-bionic process and has become one of the areas of high-tech architecture.

The architectural and bionic practice has given rise to new, unusual architectural forms, expedient in functional and utilitarian terms and original in their aesthetic qualities. This could not but arouse interest in them from the side of architects and engineers in Uzbekistan.

Bionics comes from a Greek word meaning "element of life". It served as the basis for the name of a direction in science that studies the possibility of using certain biological systems and processes in technology.

The most advanced research in bionics is the development of biological means of detection, navigation and orientation; a complex of studies related to modeling the functions and structures of the brain of higher animals and humans; creation of bioelectric control systems and research on the problem of "man-machine". These areas are closely related to each other. Analysis and synthesis of devices that provide a solution to the main problems of information processing is the common goal of all four of these areas. It is the problems associated with the creation of a variety of information technology that attract the main attention of bionics.

The task of bionics is not only to find these mechanisms, but also to understand their action and recreate it in electronic circuits, devices, structures.

Architectural and building bionics studies the laws of formation and structure formation of living tissues, analyzes the structural systems of living organisms on the principle of saving material, energy and ensuring reliability. Neurobionics studies the functioning of the brain, explores the mechanisms of memory. The sense organs of animals and the internal mechanisms of reaction to the environment in both animals and plants are being intensively studied. (Figure 1)

Figure 1.

A vivid example of architectural and construction bionics is a complete analogy of the structure of cereal stems and modern high-rise buildings. The stems of cereal plants are able to withstand heavy loads and at the same time not break under the weight of the inflorescence. If the wind bends them to the ground, they quickly restore their vertical position. What is the secret? It turns out that their structure is similar to the design of modern high-rise factory pipes - one of the latest achievements of engineering. Both designs are hollow. Sclerenchyma strands of the plant stem play the role of longitudinal reinforcement. The internodes of the stems are stiffening rings. Along the walls of the stem there are oval vertical voids. The pipe walls have the same design solution. The role of the spiral armature located at the outer side of the pipe in the stem of cereal plants is played by a

thin skin. However, the engineers came to their constructive solution on their own, without "looking" into nature.

In architectural and construction bionics , much attention is paid to
new building technologies. For example, in the field of development

efficient and non-waste construction _ _ technologies promising direction is the creation of layered structures . Use in the design of laws and forms of living nature is quite right. Based on the evolution of living organisms and graphic images are based on the same principles, determined by the interaction of forms and functions.

Everything in the world is interdependent. There are laws that unite the whole world into a single whole and give rise to an objective possibility of using patterns and principles for constructing wildlife and its forms in artificially created systems. (Figure 2)

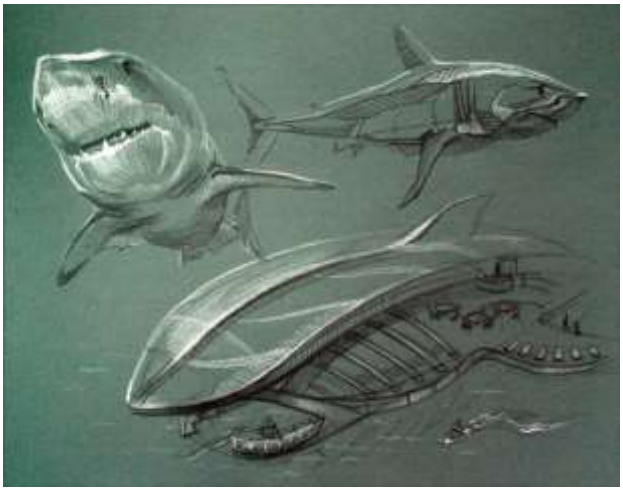

Figure 2.

In his creative activity, a person constantly, consciously or intuitively, turns to wildlife for help. The entire history of biodesign is characterized by the use of purely external outlines of natural forms.

The reasons for the special attention of designers to the laws of shaping wildlife are that graphic design, as a special kind of art, has a direct connection with material production, for which a pictorial image is created - a trademark.

Living nature has a tendency in the process of its development to strive for every possible saving of energy, building material and time. The law of the minimum in living nature is due to the organic expediency of existence. All this led to the idea of the possibility of using the patterns of shaping of living structures in a constructive way, and not just for the purpose of some formal searches.

In natural forms, the main thing is the constructive-compositional grouping of elements, their rhythm. We are talking about compositionally emphasized concentrations - separate groups within an integral organism, there are enough examples of various accents of the compositional structure in the overall orderliness, from which one can start when designing.

Each natural form has its own unique features. If the form of a natural analogue consists of many complexly organized elements, then the associative signal obtained during its perception may not immediately have such a clear character. But in the course of careful analysis, selection, comparisons, the sign manifests itself and reaches its full sound. Bionics in graphic design is both science and art, it is analysis and synthesis, the search for the original, the new. The study of the forms of wildlife nourishes the imagination of designers, provides material and helps to solve the problem of harmony between the functional and aesthetic principles, enriching the formal means of harmonization in search of the most expressive proportions, rhythm, symmetry, asymmetry, etc.

The need to study biological forms for an architect or designer is also emphasized by the fact that they are sustained on a large scale and proportionately irreproachable, constructively and functionally conditioned.

The harmony of beauty and expediency in nature is a truly inexhaustible source of means of harmonizing form, which the creators of masterpieces of architecture and art constantly turned to. Vitruvius, Leon Alberti, Palladio, Le Corbusier, I. V. Zholtovsky, A. V. Shchusev tirelessly searched for the laws of the structure of a beautiful form arising from the laws of nature.

Most often, the natural form used in a graphic image changes under the influence of

stylization, but not so much as not to be recognized.

But without knowledge of the principles and general laws of the formation of nature, it is impossible to understand this or that form.

At the first glance at the objective world around us, it may seem that bionics does not seem to manifest itself in the creations of human hands so directly, but in reality its influence on the objective world in general and on graphic design in particular is deep and stable.

The meaning of existence of all kinds of arts, including architecture, is the embodiment of feelings. Architecture is not a free art form. Its purpose is to create a spatial environment for life.

We have always strived for comfortable housing. It has always been important for us that the place where we live, work, and relax corresponds to our inner worldview. But, unfortunately, due to certain circumstances, Soviet construction could not give us what we wanted. Only recently, namely 10-15 years ago, our society was able to see for itself that "Khrushchev", "ships" and "candles" are still not the ultimate dream. Today clearly shows how much our country then lagged behind world construction. Now we can easily make our dreams of an ideal home come true.

From time immemorial, the great minds of architecture have been searching for new architectural styles. Starting from the Tower of Babel and ending with the architectural masterpieces of New Paris, humanity has searched, found, embodied. Again searched, again found and again embodied. And so on in a circle to infinity.

Today, the world knows many architectural styles: Romanesque, Gothic, Renaissance, Baroque, Romanticism, Art Nouveau, Classicism, Neoclassicism, Bionics. Undoubtedly, each of these styles is interesting and worthy of attention in its own way.

Our New Uzbekistan is full of new technologies and with the help of these technologies he can build a building with a bionic style.

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