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Stages of Development and Historical Progress of the Field of Bionics

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Annotation: *This article is devoted to the stages of development of the field of bionics, its historical progress, early examples, and the issues that gave rise to its emergence.*

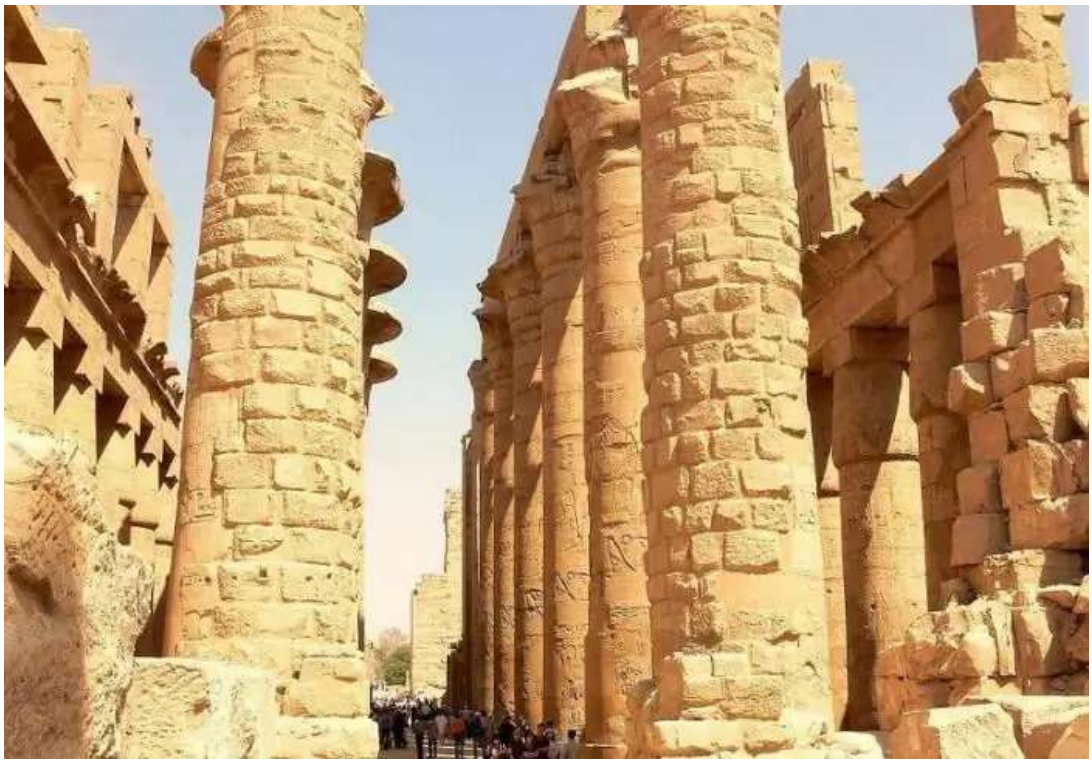
Keywords: *historical progress, Egyptian temples, interiors, historical stages, organic decor, decorative flow, Art Nouveau style*

The name "bionics" is Greek and means bios - life. Bionics is a branch of science, the efforts of which are aimed at studying biological systems and processes, wildlife and their creative use in technology. The name of the science "bionics" was proposed by the American scientist Jack Steele in 1960 at the First Symposium on Bionics in Dayton, USA. Before the development of bionics, human creative activity went through several chronological stages in the historical development of the field .

The first stage covers the period from 1,750,000 years BC to the 8th-7th centuries BC and ends with the Neolithic period. The first stage is the oldest stage. We can consider this as the stage where we created using wild nature. For example, by observing animals, birds, insects in nature, we can learn various functions from their behavior. The creation of shelters and the use of building materials in nature and their functions were studied. At this stage, the buildings created by ancient people were built only as shelters, like the nests of animals or insects. They were created only as shelters without any design or features. It is clear from this that the functional aspect prevailed at this stage.

The second stage of the ancient world art from the second half of the 7th-6th centuries. AD e. and lasted until the middle of the 19th century. This period is considered the beginning of the formation of architecture. At the same time, it is also a stage of development of the emergence of many civilizations and cultures. Despite the long duration of this period, its stages are united by one basis - the principle of imitation of nature. This is mainly the visual use of natural forms, that is, decorative purposes and copying the external forms of nature.

Examples include the columns of the Luxor Temple in Egypt , the Corinthian columns of the Greeks , Ionic temples, and the entablatures of Gothic cathedrals.



Columns of the Luxor Temple

When talking about this period, one cannot deny the interpretation of constructive tectonics based on the principles of living nature.

The third stage falls on the end of the 19th and beginning of the 20th centuries and is considered the stage of "modern style". In this, natural principles are simultaneously manifested in functional, structural and decorative solutions. At this stage, the rapid development of biology and the unprecedented acceleration of construction techniques have a great influence. For example, the invention of reinforced concrete or the intensive use of metal structures, etc. It was in modernity that spatial structures similar to natural structures began to be used. A whole generation of architects and designers formally turned to nature as a source of education. Almost on a global scale, from Europe to America, we can see a situation that reflects a common stylistic unity. This manifested itself in the interpretation of a certain object or building as a living organism. As an important component in this, we know organic ornament, wavy or flowing decorative lines.

Art Nouveau interior

I think that over time, the difference between interiors created in this style is not so noticeable. The decor shown in the picture below has become a little more modern.

Art Nouveau interior

The fourth stage falls on the 30s of the 20th century. The emergence of new technologies and materials leads to the rapid development of industrial production. The popularization of science and advertising gives impetus to the development of household appliances, machinery and equipment, and engineering.

The most convenient way to ensure the rapid sale of products is to change their design to a new, eye-catching one. This development of design led to the rapid development of the field of bionics.

Thus, the field of bionics was first recognized on September 13, 1960, at the First Symposium entitled "The Existence of Artificial Prototype Systems as the Key to New Technologies," held in Dayton, Ohio, USA.

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