

NATURAL SHAPES – A SOURCE OF INSPIRATION FOR ECO-DESIGN

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Abstract: The study of nature forms, of cycles of existence of natural products as a source of inspiration and the familiarization for specialists, designers, constructors, technicians in the designing of a new generation of industrial products is outlined. In nature one can find even more constructive structures as a source of permanent creative inspiration in conceiving shapes and material products. By using the laws of nature evolution and harmonizing the function with the shape, modern design approaches suggest that humanity will succeed to conduct the ecological production of material goods.

Key words: design, ecology, bionics, nature, construction, production.

1. INTRODUCTION

For centuries the nature has worked out and updated itself, creating forms and mechanisms of surviving, the analogies of which we may find within today's technical means: logo, planes, optical equipment, radiolocation equipment and navigation tools.

The material world surrounding us is made up of objects that have shapes and aesthetic peculiarities. This is due to the fact that any form is the result of one of the processes as described below:

- a) Uncontrolled processes, in which the shape depends only on the conditions of the environment (e.g.: formation of mountains, rocks, river gravel),
- b) Processes that depend on the laws of physics and chemistry of nature and of their formation environment (e.g.: ice crystals),
- c) Processes guided genetically and by the conditions of the environment (e.g.: living organisms),
- d) Processes guided by human demands, insects, and animals and by the

conditions of the environment (e.g.: the shape of the industrial products, beaver dams, bird nests, Figure 1).

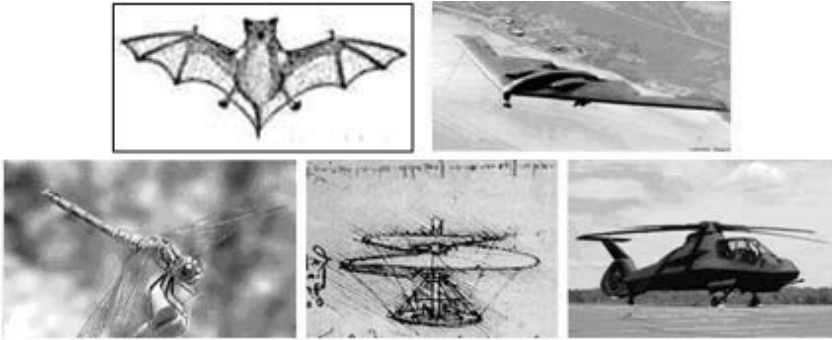


Figure 1. Inspiration from natural forms

Looking carefully, one can notice that all processes that contribute to the formation of the shapes of objects surrounding us are connected to a general factor – the environment where they take place. So what is the connection between the shapes of nature and the shapes of human created products? where does the border between nature environment and environment created for satisfying human demands by engineer, designers and architects lie? Economic problems, the tendency towards the utmost utility of products with minimal material losses, the necessity of organizing and harmonizing the material and vital environment with the biosphere, the development of advanced technologies and of technical potential have made us to pay close attention to the processes and phenomena that happen in nature (Figure 2).



Figure 2. Inspiration from natural construction

Nature has been, is and will be an endless source of creative inspiration for humanity. By studying and analyzing nature's formal and constructive processes, humanity has always solved and continues to solve many of its vital problems.