

SUSTAINABLE ARCHITECTURE

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Nowadays all of us hear about a problem of a modern city that influences on the quality of people's lifestyle. Architecture design bureaus know that unreasoned spatial decisions, inhumane designing of constructions and buildings, unbalanced landscape-natural strategy and the sealing policy of customers became the reason of social and psychological problems of the population. Using poor quality and harmful technologies of building, ecologically unsafe materials, unprofessional engineering decisions make a harmful impact on people's health.

The topicality of the given problem is connected, first of all, with ecological crisis which has sharply become aggravated recently, and necessity of changing people's lifestyle on the Earth for the purpose of its preservation.

Such problems are based on a blend of usual scientific and design disciplines. They can be resolved only by teamwork of experts of different areas - architects, physicists, biologists, farmers and ecologists. To integrate ecology and design successfully, it is necessary to introduce deep natural interconnections in the knowledge and designing theory. Hence, architects and designers can make considerable impact on restoration of ecological equilibrium and maintenance of high quality of a life of mankind, creating the architectural environment satisfies needs of the person, and at the same time keeps or even improves an environment. Such architectural environment, and also process of its creation in the foreign literature has received the name «sustainable architecture». Despite the absence of accurate scientific definition of sustainable architecture, there is a general understanding of its leading principles and recognition.

In the world architecture practices the following priorities were developed:

- Energy-efficient buildings;
- Independent and autonomous centralized networks and utilities;
- Ecological compatibility and general efficiency of all architectural environment.

The large quantity of projects is created on the basis of concepts of energetically effective and ecologically pure technologies, and also other decisions on harmonization of the architectural environment. Recently the quantity of these technologies has rather extended. We suggest to learn the most popular of technologies available:

1. *Energy Efficient building* with low consumption of energy or with zero consumption of energy from standard sources (Energy Efficient Building or Zero Energy Efficient Building). This building in which the effective use of power resources is reached at the expense of application of innovative decisions. These decisions are realizable technically, proved economically, comprehensible from the ecological and social points of view and do not change a habitual way of life. Buildings can be carried to energy-efficient buildings with low consumption of energy and a building with zero consumption of energy from standard sources.
2. *A passive building* (Passive Building). A building in which energy-efficient building materials, super isolation and renewed energy sources are used. Wind-driven generators, solar panels or thermal pumps essentially reduce energy consumption in difference from traditional sources of energy. Today the passive

building is the house where there aren't the heating systems working from traditional centralized energy sources.

3. *Bioclimatic architecture*. This is one of architecture directions in hi-tech style with strongly pronounced use of the glazed spaces. A major principle of bioclimatic architecture is harmony with the nature, desire to approach human dwelling to the nature. Basically, numerous bioclimatic skyscrapers are known. In bioclimatic architecture on a level with protecting systems multilayered glazing (double skin technology) is applied actively, providing a noise isolation and microclimate support, together with ventilation.
4. *Intellectual or clever building*. A building in which light and heat streams in accommodations and protecting constructions are optimized. This is done from the point of view of a heat supply and air-conditioning, on the basis of application of computer technologies. Mainly it is reached by correct orientation of a building in relation to the Sun and directions of light and technologies insulation.
5. *A building of high technologies (High-Tech Building)*. It, first of all, the most ultramodern decisions in architecture from the point of view of designs and materials, but it also a building in which economy of energy, quality of a microclimate and ecological safety are reached by using of the technical decisions based on strong know-how, on rules of strong thinking.
6. *A healthy building (Healthy Building)*. A building in which ecologically pure natural building materials (mixes from the earth and clay, a tree, a stone, sand, etc.) together with energy-efficient technologies are used. Besides, technologies of the healthy house consider achievements in the field of clearing air of harmful evaporations, do not present separation from some harmful gases, radioactive substances (gas Radon), a small-disperse dust (causing allergic illnesses), a dirt, formaldehydes (emissions from smoking) and bacteria, suppression of pathogenic wave radiations from computers, cellular communication and WI-FI.

Nowadays in the world practice all mentioned technologies are united together, offering complex engineering decisions, both used in construction of buildings, and in integral town-planning projects.

Such approach to design reduces to a minimum destructive influences on human ability to live on the nature by integration with live processes.

Thus, as a conclusion it is necessary to underline, that Sustainable architecture is architecture that seeks to minimize the negative environmental impact on buildings by efficiency and moderation in the use of materials, energy, and development space. Sustainable architecture uses a conscious approach to energy and ecological conservation in the design of the built environment.

Introduction of above stated principles of designing, concepts and technologies becomes priority, that in the near future, probably will be used as a new era of Sustainable architecture.