

Professional scientific sessions for art, architecture and urban planning Thursday evenings

Held in: Conference hall of Herampey Consulting Engineers

Date: 14.04.2016

Title: The new technological facilities in the green buildings with zero energy consumption

Speakers and panel members: Mr. A. Zolfaghari, Mr. R. Ghorbani, Mr. P. Assadollahzadeh

The 56th session of Herampey research group series was dedicated to the new technological facilities in the green buildings with zero energy consumption. There were present experts and professors on the matter, who discussed about different realized projects and their characteristics.

The first speaker was Mr. A. Zolfaghari who talked about the energy consumption in Iran, in different fields like transport and building industry, which is considered disastrous. The energy consumption in the Iranian buildings is about five times higher than the international average. He presented the Mabna Eng. Company and the zero energy consumption that the company has worked on.

The second speaker was Mr. R. Ghorbani who explained which are the characteristics of green buildings. Buildings are considered green if during the design, construction and exploitation process, present ideal conditions for the consumption of energy and water and environmental compatibility. In most of these buildings' design process we can assist to a sustainable development vision. He mentioned the advantages of these buildings that are presented as follows:

-Lower energy consumption up to 30-50 %.

-Reduction of polluting gases diffusion up to 35 %.

-Reduction of water consumption compared with the traditional buildings, up to 40 %.

-Reduction of building debris.

-Accuracy on the selection of building materials (recyclable in the future and environmentally compatible).

After talking about the existing standards, Mr. Ghorbani presented the software used in this kind of design process.

He ended his speech presenting the project that their company worked on as the first zero energy consumption building in Iran, respecting and applying all the architectural elements. As final result the building actually consumes 85 % less energy than the similar existing buildings.

The third speaker was Mr. P. Assadollahzadeh who presented the electrical and mechanical installations that are used in zero energy consumption buildings.

In the green buildings architectural conditions and patterns must be considered in order to ensure the lower energy consumption in mechanical and electrical consumption. For example the use of IES software, permits the control of the solar energy and its possible uses. The patterns regard the air conditioning, the maximum use of solar light and energy for lighting reducing the electrical installation activities, or the solar heat for the mechanical installation activities reduction.

He ended his speech presenting the professional design systems throw special and related software.