Professional scientific sessions for art, architecture and urban planning Thursday evenings
Held in: Conference hall of Herampey Consulting Engineers
Date: 16.05.2019
Title: Environment and its consequences in architecture.
Speakers and panel members: Mrs. Somaieh Shirazi and Mrs. Shima Karimifard.

The first speaker was Mrs. S. Shirazi. She presented the content of her speech, saying that she would talk about sustainable development, different urban environment pollutants, the concept of sustainability in theory, light, wind and sunlight limitations in high rises construction process, irresponsible approach to ecologic architecture challenges, sustainability in a common approach in architecture and environmental affairs, the role of human and artificial factors, aesthetic flatting of the cities, because of ignoring the environment and climate, sustainable architecture and a critical approach, for the pollution caused by buildings chilling and heating systems exploitation, challenges of green architecture in middle east and its different classifications.

Mrs. Shiraz continued her speech talking about sustainable development and its to main components that are the principal necessities, that in case they reach an acceptable level, life can be pleasant and comfortable; another component is the organization and coordination of social components with environmental capabilities, in order to satisfy present and future needs.

She explained that the concept of sustainability appeared for the first time in 1970, because of human knowledge regarding environmental, social-cultural and economic problems. Mrs. Shiraz asserted that one of the main goals of sustainable development is the protection of natural and man-made environments.Other negative impacts that can be mentioned are the damage to the ozone layer, acid rains, destruction of ecosystems because of men interventions, especially by the building industry and particularly in housing field.

Speaking about the challenges in the ecological architecture and the lack of a technical approach, she believes that the an unbalanced development is caused by demographic uncontrolled growth and the unbalanced distribution of natural resources, imposing big pressures to the natural environment. The final result of such culture is the transformation of consumption patterns and the approach that man has adopted toward the natural environment.

Actually thank to the increase of global knowledge regarding the concept of sustainable development and the problems that human society is facing in his relationship with the environment. In order to don't lose the hope for a better future, Mrs. Shirazi expressed the idea that a comprehensive approach regarding social, economic, poverty and inequity are matters that must be considered. The sustainable development gathers environmental, social and economic matters and sustainable architecture follows already similar rules and is difficult to separate components that have different nature in their composition, as mentioned above.

talking about the common sustainability of architecture and environment, Mrs. Shirazi asserted that buildings have a longer life compared with other products, so in their long process that begins from the conceptual phase to the demolition and reuse phase, they will have a great impact on the sustainable development. A building is the composition of various materials and consequently they a have a considerable impact on our health and surrounding environment.

Mrs. Shirazi continued her speech talking about sustainable architecture in the sphere of environmental affairs, she said that the principal aspects that must be considered seriously, are the economic use of resources through the reduction of use, recycling and reuse of materials. Another aspect is the design based on the life cycle, that considers the construction process and its impact on the environment, and the last component is man-made design, that shows the interrelationship that exists between man and nature.

The challenges in green architecture in middle east. In countries like the UAE international classification systems (LEED) and local systems are adopted in order to respect rules regarding green buildings that permit to have appropriate systems of exploitation and introduction of innovative solutions, considering local social-cultural characteristics and diversities.

The classification of green architecture is divided in four categories that are: renewable energies and recyclable materials, presentation of energy efficiency, quality and quantity matters regarding green buildings, reduction of Co2 spread, priority on the increase of environmental efficiency.

Comparing the characteristics of technological and architectural evolution in 19th, 20th and 21st century, Mrs. Shirazi talked about each period, saying that in the 19th century, the main goal in this field was the high rate of profit and efficiency. In The 20th century the main preoccupation was the high cost of the maintenance of the buildings, that were subject to fast transformations and incompatibility, based on the continuous changes in the demands. The worries of building industry in the 21st century regard the architectural end or death of the buildings.What is important in this context is the return of the material in the natural environment or their reuse. The problem is that during the initial phase of design the designers don't consider the steps that should be taken, when the building "dies", in order to cause the minimum harm to the environment.

The five most important elements for the design of green buildings are: design of a sustainable base, protection and quality of water source, energy and environment and the interior quality. Meanwhile the traditional architecture acted for centuries in harmony and respect of environment and human needs, the discovery and introduction of steel as a building material, based on science and knowledge broke the boundaries of construction and building, pushing out the traditional building role, that was the result of centuries of knowledge accumulation.

Mrs. Shirazi concluded her speech talking about the pollution that in various stages the human life causes to the nature and stressed on the fact that it is the designers duty to find the solutions

in advance for buildings that are more compatible with the needs and problems that human society has caused to the nature and environment.

The second speaker was Mrs. Karimifard that talked about green facades that move along the surface of the main façade.In this case there is a supporting structure for the green one. Regarding the history of green facades she explained that in the beginning the joining of the green coverage became without additional structures, but now the solutions are various and variable, depending on the needs of the exploiter.

Presenting different solutions, she talked about modular light systems and they are mounted, where green barriers cover the main facade. Mrs. karimifard presented also polymer based system where green plants are planted on a vertical surface. In this system the air conditioning system of the building receives the fresh air from the air produced by the plants.

Because of water crisis, in many buildings various systems that aim to recycle rain or waste waters and reuse it in building water consuming systems. This type of water is used in greenhouses, where thank the use of recycled water, the obtained results are considerably higher than traditional systems.

Mrs. Karimifard presented also urban shared gardens system, where citizens use green areas for their daily needs, at the same time helping to improve their social-psychological conditions, helping also to improve urban green areas status. She talked about programs that have been realized for example in the USA where, thank to such programs' realization, quarters changed the social status that they experienced before. Such policies can also increase the cost of maintenance of the buildings and properties, but in all cases are the citizens to benefit from such changes. This is the reason that architects, urban planners and urban managers should dedicate more attention and resources for new green solutions and policies.