

Management of Technologies

Che-Ming Chiang and Izumi Kuroishi

Great strides have been made in scientific technology and economic development in the twentieth century that changed the manufacturing, lifestyle and economy of human beings. In the past, the environmental ethics of "man's determination in conquering nature", anthropocentrism substituted for naturalism, turned into the main force of human civilization development. As the dominant species, humans depleted the natural resources inexhaustibly. After a couple of decades, the earth started to incur the exhausting of natural resources as well as the ruining of the environment. Consequently, the existence of humans has taken a heavy load on the environment as natural resources were gradually draining away. On the other hand, those with foresight began to make a self-examination on that which was overly economic developed and disregarded the environmental protection in the Industrial Age. Therefore, the technologies and beliefs, which deal with change of ecological environment, are in urgent demand now.

Sustainable building development is a world trend to solve actual issues of human's existence space. Under the global market economy, almost every country greatly imports and uses products and technologies which are from industrialized advanced countries. But it is easy to incorrectly place products and technologies in unsuitable climates, geographies and ecology areas or unfitting conditions. As a result, not only does this add to the load placed on the environment, but it also affects residential quality as well. Therefore, above all, a ways and means of solving problems needs to stride across self-constraint, and consider dissimilar opportunities and restraints; accepting others' advantages and experiences; looking for the technologies or skills of building to fit local conditions. Finally, consideration must be given to pioneering management and orientation of integrated sustainable building technologies by the "action for sustainability".

The contributions generated from this conference will be used to draw up standards and schemes for workable technologies that will improve and promote the environmental quality satisfied comfortable, safe and healthy surroundings of human beings. The conference, via the related researcher and experts, expects to advance debates and knowledge in the following directions:

1. Strategies of green technologies for Earth sustainability

In order to set up integrated strategies of green technologies to be put in the design, construction and use of the building's lifecycle, the scope of sustainable building concerns diverse factor scales which are from large to small: urban, site, structure and components (such as materials, installations, etc). Issues of the section include: investigating data bank of different climate or geography environment (e.g. the equator, the tropical zone, the subtropical zone, the temperature zone, the frigid zone, etc); the environmental control technologies; upgrading and improving measurement and management of energy efficiency; reducing energy consumption; extending the accumulation of developed countries to change into proper practice for the developing countries; creation and promotion of construction materials; the interrelationship between human beings and facilities; the utilization and transformation of energy; and so on.

The aforementioned skills and operations should be examined in developments and

restrains of different countries and regions that in order to draw lessons and communication for each other.

2. Suiting the renaissance of traditional technologies and measures to locations

Selecting appropriate technologies should be based on the specific natural (e.g. climate or geography) and social environment (e.g. demographic development and income level, etc) of the area where buildings are constructed. There are various traditional technologies and know-how which have been developed through years of experiences. Therefore, the section can focus on the following points for further discussion.

The viewpoint of the specific natural conditions (e.g. the equator, the tropical zone, the subtropical zone, the temperature zone, the frigid zone, etc), through practical examples and lessons resulting to integrate optimum technologies and measures to region, issues include the interrelationship between geography and ecological village; material from local sources; the relationship between climates and traditional technologies. The historical cultural characteristics, examples of modern interpretation (such as materials, installations, etc) are a result of the renaissance of the regional traditional technologies and experiences; the relationship between cluster prototype and culture; the historical culture with corresponding digital network society, etc.

3. Technology transfers and educational cooperation of sustainable building

In the twenty-first century, buildings should conform to a viewpoint of global sustainable development. Because “skills training” and “technology transfers” are two of the greatest challenges that developing country face, this conference, as the integrated operational platform, places great importance on these two areas. Through the concept of “action for sustainability”, advanced countries can propose accumulated substantial sustainable technology experiences, and provide a chance to practice operations that would transform fittingly in developing nations.

The main issues for “capacity building” are to provide the integrated resources and experiences to train the developing country’s architects, academic, government, stakeholder...etc. The education and training efforts will improve the developing country’s capacity building in order to spur sustainable building progress and enhance the development perspective of the cooperative relationship. Let the whole resources of sustainable building be a multiplication effect. The primary goal of “technology transfers” through international cooperation projects is to share the experiences of advanced countries. We can also set up the local strategies of green technologies fittingly that are modified by the various factors of climate, geography, culture, natural resources, and etc. Via educational strategic alliance in international cooperation, to boost local academics and non-governmental organizations (NGOs) to take part in international cooperation affairs that enlarges the international cooperation and communication of technological experiences. Consequently, a harmonious win-win situation can be achieved between Earth sustainability, effectiveness of resources and quality of life.