EU-AISA LINK PROJECT ON SUSTAINABLE BUILT ENVIRONMENT

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Bharati Vidyapeeth's College of Engineering, established a school of Research & Development recognized by Bharati Vidyapeeth Deemed University in 2004. The focus has been on multidisciplinary approach to problem solving in the filed of IT related activities. This school submitted to European Commission a research proposal, "Multidisciplinary approach to curriculum development in sustainable built environment" in partnership with Hunan University, China; Aalborg University, Denmark; Brunel University, U. K. and Bharati Vidyapeeth Deemed University, India. The project was approved in October 2004 and has started finally in January 2005. The project deals with sustainable built environment education in China, India and other developing countries (Zhang et al. 2004)

The dwelling and habitat are the most proximate and visible symbols of present day lifestyles. The common aspirations are invariably linked to making the habitat as comfortable and convenient as possible. 30 % to 40 % of the total global basic resources are invested in building. It is in this pursuit that the technology has reached levels that are not in harmony with the nature but defy her. Furthermore, the resources are depleting at an alarming rate. In this way the activities for the present generations are adversely affecting the resources for future generations. Cost is in terms of the pollution, environmental and ecological imbalances often technologically referred to as the entropy rise. We have perhaps reached the limits of possible and now is the time to turn again to adaptation of nature, which in turn is a formidable challenge to the engineers and architects. The approach may be referred to as the sustainable development, which as defined in 1987, by G. H. Brundtland (Former Prime Minister of Norway) is the development that meets the needs of present without compromising the ability of future generations to meet their needs.

In building context it means as follows:

1) The building interior provides comfort and health.
2) The Manufacture of building materials, process of construction and the use of the buildings do not generate pollution and destroy the world ecological balance.

In technological sense, the development that is environmentally, technologically and economically sustainable may be considered as sustainable development. (Kaushika and kaushik 2004) The compound of sustainable development, therefore, involves monitoring and engineering of energy, environment and ecology and economy factors. In building context, the conversion of resources takes many directions and it is accomplished over a broad time frame. It begins when a building is conceived and does not end until the building has been retired and its material and sites have been returned to the original. Thus the sustainability of built environment requires multitudes of strategies of design, construction management, resource planning and removal of wastes. The proposal is intended to review the current education status on sustainability in buildings and bring into focus the trends such as environment friendly materials, devices, renewable energy integrated habitats, construction management, energy efficiency, intelligent buildings and smart users.

The building in its own right is a modifier of environment. The renewable resources of energy offer promise of pollution free and cost effectiveness. Solar is the most dominant resource of renewable energy. In particular the concept that the sun's energy may be utilized for natural heating and cooling of buildings holds promise. (Kaushika 1988)

The necessity of low cost alternatives has focused scientific attentions on this aspect of buildings. Which is often referred as solar passive buildings. The systematic study of passive solar heating and cooling of building falls in the scope of work of Indian partners in this project. The total financial layout for India (BVDU) is Euro 66,962/- with European Union contribution as Euro 44,000/-.

References:

Kaushika, N. D. 1988 Solar Energy Principles and Applications. IBT Publications New-Delhi.

Kaushika, N. D. and Kaushik, K. 2004 Energy Ecology and Environment, Capital Publishing Company, New Delhi.

Zhang, G, Heiselberg, P., Kolokotroni, M and Kaushika, N. (2004), Sustainable Built Environment Education in China and Developing Countries. Proc. Built Environment and Public Health. P.484. China Environmental Science Press.