

## **GREEN BUILDING CONCEPTS**

### **Module I**

Environmental implications of buildings energy, carbon emissions, water use, waste disposal; Building materials: sources, methods of production and environmental Implications. Embodied Energy in Building Materials: Transportation Energy for Building Materials; Maintenance Energy for Buildings.

### **Module II**

Implications of Building Technologies Embodied Energy of Buildings: Framed Construction, Masonry Construction. Resources for Building Materials, Alternative concepts. Recycling of Industrial and Buildings Wastes. Biomass Resources for buildings.

### **Module III**

Comforts in Building: Thermal Comfort in Buildings- Issues; Heat Transfer Characteristic of Building Materials and Building Techniques. Incidence of Solar Heat on Buildings-Implications of Geographical Locations.

### **Module IV**

Utility of Solar energy in buildings concepts of Solar Passive Cooling and Heating of Buildings. Low Energy Cooling. Case studies of Solar Passive Cooled and Heated Buildings. Unit V Green Composites for buildings: Concepts of Green Composites. Water Utilization in Buildings, Low Energy Approaches to Water Management. Management of Solid Wastes. Management of Sullage Water and Sewage. Urban Environment and Green Buildings. Green Cover and Built Environment.

### **TEXT BOOKS**

- [1] K.S.Jagadish, B. U. Venkataramareddy and K. S. Nanjundarao. Alternative Building Materials and Technologies. New Age International, 2007.
- [2] Low Energy Cooling For Sustainable Buildings. John Wiley and Sons Ltd, 2009.
- [3] Green My Home!: 10 Steps to Lowering Energy Costs and Reducing Your Carbon Footprint, by Dennis C. Brewer, ISBN:9781427798411, Publisher: Kaplan Publishing, Publication Date: October 2008.
- [4] B. Givoni, Man, Climate and Architecture Elsevier, 1969.
- [5] T. A. Markus and E. N. Morris Buildings Climate and Energy. Pitman, London, 1980. Arvind Kishan et al (Ed)
- [6] Climate Responsive Architecture. TataMcGraw Hill, 2001.
- [7] Sustainable Building Design Manual. Vol 1 and 2, Teri, New Delhi, 2004.
- [8] O. H. Koenigs Berger, T. G. Ingersoll, Alan Mayhew and S. V. Szokolay. Manual of Tropical Housing and Building. Orient Long man, 1975.

### **REFERENCE BOOKS**

- [1] Osman Attmann Green Architecture Advanced Technologies and Materials. McGraw Hill, 2010.
- [2] Michael F. Ashby Materials and the Environment, Elsevier, 2009.
- [3] Jerry Yudelson Green building Through Integrated Design. McGraw Hill, 2009.
- [4] Mili M. Ajumdar (Ed) Energy Efficient Building in India. Teri and Mnes, 2001/2002.
- [5] T. N. Seshadri et al Climatological and Solar Data for India. CBRI and SaritaPrakashan, 1968. 34
- [6] Fundamentals of Integrated Design for Sustainable Building By Marian Keeler, Bill Burke