

Energy Sustainability and Architecture

Offered by University of Moratuwa, in collaboration with Sri Lanka Institute of Architects and Urban Development Authority

preambles

The Module, “*Sustainable design certification*”, contributes to the development of architects’ attributes in climatic and environmental sensitivity of architectural design and engineering systems of buildings. The subject includes an integrated multidisciplinary learning approach where areas of demand side energy efficiency of buildings, supply side energy efficiency of buildings, resource and water utilization in construction and operation, indoor environmental quality and environmental sensitivity in master planning are discussed and applied in design schemes. The module is structured to provide the required knowledge, learning skills and develop attitudes in an intellectual process which can allow developing more low-energy and sustainable design futures.

Teaching and learning mode

The subject involves a short term intensive lecture series followed by a “practice led/research based reflective journal”. Members are expected to work on a design focus assignment and write a very precise research bias design journal of their choice.

Learning Outcomes

Members of the Sri Lanka Institute of Architects will be able to assess performance of buildings using the Green Building Certification and Rating System introduced by the Urban Development Authority under the theme of Blue-Green Sri Lanka. This *Module* contributes to the recognition of architectural design in respect to **building microclimate**, **building form** (both plan form and sectional form) and **building envelope** in manipulating the behavior of “environmental and internal loads” for maintaining indoor thermal and visual comfort levels closer to acceptable comfort ranges. It further support architects to demonstrate their skills in assessing buildings in respect to indoor environmental quality, water and resource efficiency and management of operational efficiency of these specific areas.

Syllabus

UNIT 1 - Energy Utility Index and Energy sustainability of buildings

UNIT 2 - Sustainable Planning

UNIT 3 – Building Materials and Sustainable Construction

UNIT 4 - Demand Side Efficiency of Architecture

UNIT 5 - Demand side efficiency through system integration

UNIT 7 - Supply side efficiency through renewables

UNIT 6 - Indoor environmental quality (IEQ)

UNIT 7 - Daylight efficiency

UNIT 9 – Water Management

UNIT 8 - Waste management

Lecturer

Dr Upendra Rajapaksha, a practicing architect, an educator and a researcher, is currently working as a senior lecturer at the Dept of Architecture, University of Moratuwa, an Associate Editor of Architectural Science Journal of the University of Sydney Australia, a reviewer for the Journal of Asian Architecture and Building engineering from Taylor and Francis UK and an external academic for the School of Architecture of Munster University of Applied Science in Germany.

Course Fee

Rs. **150,000** will be charged from each Architect for the entire course