

Liverpool John Moores University

Title: SUSTAINABLE BUILT ENVIRONMENT
Status: Definitive
Code: **5503ICBTBS** (126988)
Version Start Date: 01-08-2021

Owning School/Faculty: Civil Engineering and Built Environment
Teaching School/Faculty: ICBT, Colombo

Team	Leader
Alison Cotgrave	Y

Academic Level: FHEQ5
Credit Value: 15
Total Delivered Hours: 68
Total Learning Hours: 150
Private Study: 82

Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	45
Off Site	6
Tutorial	15

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	Assignment (1500 words)	30	
Exam	AS2	Examination	70	2

Aims

Aim(s) of the module is to develop an inter-disciplinary platform for the dissemination of knowledge and practice on the engineering and technical issues concerning all aspects of building design, technology, energy and environmental performance.

Learning Outcomes

After completing the module the student should be able to:

- 1 Recognise the key principles of sustainable built environment and of sustainability.
- 2 Explain the concepts of planning, designing and management of aspects related to sustainable built environments in line with low carbon footprint scenario.
- 3 Describe the advantages of employing sustainable built environment design concepts.
- 4 Describe the practical implications of sustainable built environment design concepts.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Assignment	1		
Examination	2	3	4

Outline Syllabus

Introduction

Role of Building Services Engineer, Concepts of integrated design in modern building construction, Importance of life cycle analysis, Principles of Green Buildings

Site Considerations

Neighbourhood design considerations, Selection of sites respect to context, Green/Brown field consideration, Soil erosion aspects, Heat island effect, Outdoor light pollution, Access to mass transit

Water efficiency

Rain water harvesting, Efficient appliances: Water treatment, Sewer & waste water treatment, Waste water recirculation, Water resources Management

Energy efficiency

Passive concepts, Building envelop, Efficient appliances - for HVAC, lighting, Power supply, Water heating, Auxiliaries, Overall energy use, Onsite energy generation

Building materials

Low emissions, Low embedded energy, Recycle and reuse, Solid waste disposal, Incineration, Compost yards, Waste material management

Indoor Environment

Thermal and visual comfort, Indoor air quality, Outdoor connectivity, Daylight use

- *Sustainable building design concepts, strategies and technologies*
- *Smart building concept*

Learning Activities

Students will be supported in their learning, to achieve the above learning outcomes, in the following ways:

By a series of lectures and practical approach based on site visits, seminars and workshops

Case studies to understand various design concepts to understand the sustainable initiations

A recommended resource list - indicating key reading, virtual and physical learning assistance, is provided to help enable students to undertake self-directed study.

Notes

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