

APPROVED**ENVI8005: Environment Services Retrofit****Module Details**

Module Code:	ENVI8005
Title:	Environment Services Retrofit APPROVED
Long Title:	Environmental Design & Services Retrofit
NFQ Level:	Advanced
Valid From:	Semester 1 - 2022/23 (September 2022)
Duration:	1 Semester
Credits:	5
Field of Study:	5810 - Architecture & Urban Environment
Module Delivered in:	1 programme(s)
Module Description:	This module introduces the student to the knowledge and skills required to develop an integrated approach (based on best practice) to delivering sustainable solutions on energy, water and material selection for a multi-storey retrofit building ensuring occupant comfort.

Learning Outcomes

On successful completion of this module the learner will be able to:

#	Learning Outcome Description
LO1	Identify the building performance issues associated with an existing building.
LO2	Propose passive and active servicing (heating, cooling, ventilation, lighting & water use) strategies for optimal performance to ensure comfort and satisfy and/or exceed the buildings regulations.
LO3	Develop a strategy and select materials for reduced environmental impact cross-referencing industry recognised certification/assessment methods.
LO4	Draw conclusions, based on analysis of data, for energy generation, energy use, water use and occupant comfort in a commercial building.

Dependencies**Module Recommendations****Incompatible Modules**

No incompatible modules listed

Co-requisite Modules

No Co-requisite modules listed

Requirements

No requirements listed

Indicative Content**Contextual Analysis**

Site: Study of climatic context and site conditions. Building Analysis: Orientation, Compactness, Solar Overheating, Airflow, Energy, Water and Daylight analysis.

Building Performance & Appraisal

Future proofing & best practice for sustainable buildings: EPBD, CIBSE Guides A & F, Introduction to Passivhaus, BREEAM and LEED approaches.

System Design

Energy generation on building envelope and passive and active servicing systems for heating, cooling, ventilation, lighting and water use that meet Building Regulations and assist in delivery of sustainable buildings.

Materials

Material selection based on industry recognised criteria for low environmental impact.

Module Content & Assessment

Assessment Breakdown	%
Coursework	100.00%

Assessments

Coursework			
Assessment Type	Presentation	% of Total Mark	40
Timing	Week 9	Learning Outcomes	1,2
Assessment Description Assess building performance and comfort related issues and present proposals for passive and active servicing systems based on the building envelope as the primary climatic modifier and the services as the secondary climatic modifier.			
Assessment Type	Presentation	% of Total Mark	60
Timing	Week 13	Learning Outcomes	2,3,4
Assessment Description Final illustrated and annotated presentation with all proposed energy, servicing systems and material proposals to meet best practice guidelines/standards.			
No End of Module Formal Examination			
Reassessment Requirement			
Coursework Only This module is reassessed solely on the basis of re-submitted coursework. There is no repeat written examination.			

Module Workload

Workload: Full Time					
Workload Type	Contact Type	Workload Description	Frequency	Average Weekly Learner Workload	Hours
Lecture	Contact	Course content	Every Week	4.00	4
Independent Learning	Non Contact	Self Study	Every Week	3.00	3

Total Hours					7.00
Total Weekly Learner Workload					7.00
Total Weekly Contact Hours					4.00
Workload: Part Time					
<i>Workload Type</i>	<i>Contact Type</i>	<i>Workload Description</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>	<i>Hours</i>
Lecture	Contact	Course content	Every Week	4.00	4
Independent Learning	Non Contact	Self study	Every Week	3.00	3
Total Hours					7.00
Total Weekly Learner Workload					7.00
Total Weekly Contact Hours					4.00

Module Resources

Recommended Book Resources

McLean W, Silver P. (2021), Environmental Design Sourcebook: Innovative Ideas for a Sustainable Environment, 1st. RIBA Publishing, [ISBN: 978185949604].

Pelsmakers, Sophie. (2015), The Environmental Design Pocketbook, 2nd. RIBA Publishing, London, [ISBN: 9781859463741].

Hausladen G, Liedl P, Saldanha M. (2012), Building to Suit the Climate, A Handbook, Birkhauser, [ISBN: 9783034607285].

Sauer, Christiane. (2010), Made of... New Materials Sourcebook for Architecture & Design, Gestalten, [ISBN: 9783899552898].

Lechner, Norbert. (2009), Heating, Cooling, Lighting: Sustainable Design Methods for Architects, 3rd. John Wiley & Sons, Hoboken, N.J., [ISBN: 9780470048092].

CIBSE. (2012), Energy efficiency in buildings. Guide F, 3rd. The Lavenham Press Ltd., London, [ISBN: 0900953861].

Recommended Article/Paper Resources

Royal Institute of Chartered Surveyors. (2017), Whole life carbon assessment for the built environment, [ISSN: 17832088].

Other Resources

Manual, SEAI. Passive house manuals.

Magazine, Jeff Colley Editor. passive house+, Dublin, Temple Media Ltd..

Module Delivered in

Programme Code	Programme	Semester	Delivery
CR_CARCT_8	Bachelor of Science (Honours) in Architectural Technology	-1	Mandatory