

This Version is No Longer Current
The latest version of this module is available [here](#)

MODULE DESCRIPTOR

Module Title

Environment and Services

Reference	SU2003	Version	16
Created	June 2022	SCQF Level	SCQF 8
Approved	July 2005	SCQF Points	15
Amended	September 2022	ECTS Points	7.5

Aims of Module

To equip the student with general principles which guide the introduction of environmental strategies and services in buildings, and with the ability to apply these to the design and evaluation of particular building types.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

- 1 Recognise and justify the human and environmental factors that buildings must meet in order to ensure the comfort and sustainability of human life on Earth, with particular emphasis on low energy and carbon.
- 2 Recognise the requirement for, and critically describe the nature of environmental and services strategies to deliver comfort and low energy/carbon systems in buildings of low to medium complexity.
- 3 Through design and the use of various evaluative methods, be able to apply and evaluate a coherent environmental and services strategy to a building of low to medium complexity.

Indicative Module Content

This module provides an understanding of the human requirements for comfort and the various factors that affect it, including temperature, humidity, light levels, sound, etc., and the conditions that must be met by buildings, as well as the services and systems that can be deployed to achieve them (such as heating, cooling, natural and mechanical ventilation, air conditioning, MVHR, water supply hot and cold, drainage, daylight and electric light, electrical installation, sound-proofing and noise reduction, and reverberation time). Principles for integration of services are given in relation to design of buildings of low to medium complexity. These are studied in the context of the global environmental requirement to reduce carbon emissions and therefore to produce strategies that lower energy requirements and reduce carbon, including embodied carbon in materials, manufacture, transportations and assembly. Fabric Energy Efficiency (FEE) is stressed as a strategy to achieve thermal comfort and low carbon, as are renewables. Methods of evaluating performance are studied, including software-based methods.

Module Requirements

Prerequisites for Module	None.
Corequisites for module	None.
Precluded Modules	None.

ADDITIONAL NOTES

Where appropriate mixed discipline team working will be encouraged. Reports may be assessed as coursework or by interview panel.

INDICATIVE BIBLIOGRAPHY

- 1 Chadderton, D. K., Building Services Engineering (2012).
- 2 McMullan, R., Environmental Science in Building, 7th Edition. (2012)
- 3 Zunde, J. M. & Bougdah, J (2006), Integrated Strategies in Architecture.
- 4 Hall F. & Greeno R., Building Services Handbook, Routledge 2017.