



## MODULE SPECIFICATION

Part 1: Information			
Module Title	Low/zero Impact Buildings		
Module Code	UBLMQ4-15-M	Level	Level 7
For implementation from	2019-20		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Architecture and the Built Environment
Department	FET Dept of Architecture & Built Environ		
Module type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p><b>Educational Aims:</b> See Learning Outcomes</p> <p><b>Outline Syllabus:</b> Low/zero impact buildings</p> <p>Low/zero-carbon and renewable technologies;</p> <p>Building environmental performance</p> <p>Passive solutions</p> <p>Renewable materials</p> <p>Part L, BREEAM, LEED, EPC ratings, and code for sustainable homes</p> <p>Lighting analysis</p> <p>Thermal analysis</p> <p>Ventilation/ air tightness analysis</p>

## STUDENT AND ACADEMIC SERVICES

Carbon footprint.

**Teaching and Learning Methods:** The module will be delivered by means of a series of lectures, seminars and tutorials.

Lectures and seminars will be used to enable students to support their own independent learning by exploring deeper issues pertaining to Low/zero carbon buildings, and receiving formative feedback. Occasional speakers will be used to provide up to date material and context to the applications of the subject area.

A series of tutorials are designed to provide knowledge and practical skills in the use of BIM processes and technology in low/zero carbon buildings.

Presentations by and to the group by the students will also be used to enable students to develop the skills and capabilities to analyse problems, negotiate, make decisions and present solutions to problems. The formative work in the presentation will provide research material useful to the final report.

Directed reading examining the key principles and relevant criteria relating to a number of topics of importance to Low/zero carbon buildings.

### Hours

The module is delivered by way of five study days for face to face teaching. Recorded lectures and the use of email discussion groups of virtual learning environments (VLEs) and other technology-aided means are also employed.

### Part 3: Assessment

The assessment strategy adopted by this module involves a mix of practical skills assessment, and a report to reflect on BIM processes and technology applied at low/zero impact building.

The practical skills assessments are designed to evaluate students' practical skills in planning and applying BIM processes and technology to produce low/zero carbon buildings. State of the art technology, including hardware and software, is used to support students in their learning process. Students are expected to work on real-life case study to provide a real-life experience of using Low/zero carbon buildings.

Students are expected to prepare a report requiring a detailed knowledge of the application of Low/zero carbon buildings. It is important for the student to appreciate the depth of detail required in which BIM is applied to deliver the sustainability agenda. This report is also a reflective piece of work to examine the strengths and limitations of current and emerging BIM processes and technology to deliver low/zero carbon buildings. The Report is a 2500 word report suitable for dissemination to senior management.

First Sit Components	Final Assessment	Element weighting	Description
Report - Component B		50 %	Report (2500 words/equivalent)
Practical Skills Assessment - Component A	✓	50 %	Building environmental performance model (Practical skills assessment)
Resit Components	Final Assessment	Element weighting	Description
Report - Component B		50 %	Report (2500 words/equivalent)
Practical Skills Assessment - Component A	✓	50 %	Building environmental performance (Practical skills assessment)

STUDENT AND ACADEMIC SERVICES

<b>Part 4: Teaching and Learning Methods</b>																			
Learning Outcomes	<p>On successful completion of this module students will achieve the following learning outcomes:</p> <table border="1"> <thead> <tr> <th style="text-align: left;"><b>Module Learning Outcomes</b></th> <th style="text-align: left;"><b>Reference</b></th> </tr> </thead> <tbody> <tr> <td>Critically evaluate the role of BIM to design and operate comfortable buildings that significantly reduce/eliminate energy use</td> <td>MO1</td> </tr> <tr> <td>Assess low/zero-carbon and renewable technologies</td> <td>MO2</td> </tr> <tr> <td>Apply BIM and low/zero carbon technology to evaluate building environmental performance</td> <td>MO3</td> </tr> <tr> <td>Evaluate, compare and select best passive solutions</td> <td>MO4</td> </tr> <tr> <td>Evaluate the impact of Part L, BREEAM, LEED, EPC ratings, and code for sustainable homes on Low/zero impact buildings</td> <td>MO5</td> </tr> <tr> <td>Apply BIM and building environmental tools to perform lighting analysis</td> <td>MO6</td> </tr> <tr> <td>Apply BIM and building environmental tools to perform thermal analysis</td> <td>MO7</td> </tr> <tr> <td>Draw conclusions on the developments of low/zero impact building on energy use, CO2 emissions, occupant comfort, light levels, and ventilation</td> <td>MO8</td> </tr> </tbody> </table>	<b>Module Learning Outcomes</b>	<b>Reference</b>	Critically evaluate the role of BIM to design and operate comfortable buildings that significantly reduce/eliminate energy use	MO1	Assess low/zero-carbon and renewable technologies	MO2	Apply BIM and low/zero carbon technology to evaluate building environmental performance	MO3	Evaluate, compare and select best passive solutions	MO4	Evaluate the impact of Part L, BREEAM, LEED, EPC ratings, and code for sustainable homes on Low/zero impact buildings	MO5	Apply BIM and building environmental tools to perform lighting analysis	MO6	Apply BIM and building environmental tools to perform thermal analysis	MO7	Draw conclusions on the developments of low/zero impact building on energy use, CO2 emissions, occupant comfort, light levels, and ventilation	MO8
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Reading List	<p><i>The reading list for this module can be accessed via the following link:</i></p> <p><a href="https://uwe.rl.talis.com/index.html">https://uwe.rl.talis.com/index.html</a></p>																		

<b>Part 5: Contributes Towards</b>	
<p>This module contributes towards the following programmes of study:</p> <p>BIM in Design, Construction and Operation [Jan][PT][Frenchay][3yrs] MSc 2018-19</p> <p>BIM in Design, Construction and Operation [Sep][PT][Frenchay][3yrs] MSc 2018-19</p>	