



Module Specification

Making Sustainable Architecture

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Part 1: Information

Module title: Making Sustainable Architecture

Module code: UBLL6T-30-1

Level: Level 4

For implementation from: 2025-26

UWE credit rating: 30

ECTS credit rating: 15

College: College of Arts, Technology and Environment

School: CATE School of Architecture and Environment

Partner institutions: None

Field: Architecture and the Built Environment

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: This module introduces students to the foundational principles and practices of sustainable architectural design and technologies, emphasising architecture's role in addressing global environmental challenges. Students will explore basic structural and construction technologies, passive design strategies, material selection, and energy performance metrics while investigating how buildings interact with their environmental contexts. The module develops both theoretical knowledge and practical skills, enabling students to evaluate and enhance the

sustainability of their design proposals.

Key topics include thermal performance and the use of renewable and low-impact materials. Students will also be introduced to sustainable construction detailing, covering insulation strategies, water control, membranes, and air-tightness. The module culminates in a small-scale design project, allowing students to apply their learning and demonstrate ecological responsibility and foundational technical competencies.

This module addresses structure, construction, and resources and health and life safety by introducing sustainable construction detailing, thermal performance, and material selection. Students develop an understanding of architecture's role in addressing environmental challenges and design buildings that are both resilient and resource-efficient.

Features: Sustainability Focus: Introduces the principles and strategies for passive and low-carbon design.

Material Investigation: Explores renewable and low-impact materials and ethical considerations in material sourcing and design.

Construction Detailing: Provides foundational skills in detailing sustainable construction elements.

Practical Applications: Combines theory with a small-scale design project to apply learning in a tangible way.

Educational aims: The aim of this module is to equip students with foundational knowledge and skills to design sustainable architectural solutions. By the end of the module, students will:

Develop an understanding of sustainability principles and how they apply to architectural design.

Explore the relationship between material selection, energy performance, and

environmental impact.

Investigate and apply sustainable construction detailing techniques.

Communicate ideas and principles effectively through a combination of visual and written media.

Outline syllabus: The syllabus introduces students to the foundational principles of sustainable architecture and technologies, combining theoretical knowledge with practical application. A focus of the module is on building science, where students will explore the principles of heat transfer, passive design strategies, and the role of the building envelope in optimising energy use. This foundational understanding will enable students to analyse and improve the thermal efficiency of architectural proposals.

The module addresses material science and selection, introducing students to the properties, sourcing, and performance of various materials. Emphasis will be placed on sustainable and circular approaches to material use, fostering an understanding of how material choices influence architectural performance and environmental impact. By focusing on renewable and low-impact materials, students will develop an awareness of sustainable sourcing and lifecycle assessments, preparing them to make informed decisions in their design processes.

The syllabus also addresses sustainable construction detailing, where students will gain skills in insulation strategies, water control, air-tightness, and membrane applications. Students will learn how to apply these techniques to enhance the sustainability of their designs.

Another theme is the interaction between buildings and their environmental contexts. Students will explore how architectural forms respond to site-specific conditions such as climate, orientation, and topography, ensuring their designs are environmentally adaptive and contextually appropriate.

The module culminates in a small-scale design project, where students will

synthesise the concepts and practices learned throughout the semester. This project focuses on the design of a single-storey sustainable building, requiring students to integrate environmental principles, material science, and construction detailing into a cohesive architectural proposal.

This syllabus ensures that students gain a strong foundation in sustainable architectural design, equipping them with the knowledge and skills to address contemporary environmental challenges in their future work.

Part 3: Teaching and learning methods

Teaching and learning methods: The module employs a combination of lectures, workshops, and practical sessions to support student learning:

Lectures: Provide theoretical frameworks for sustainability and environmental performance.

Workshops: Focus on construction detailing, material exploration, and passive design strategies.

Technical Tutorials: Offer guidance on energy performance metrics and the application of sustainability principles.

Independent Study: Encourages students to research, refine, and apply concepts to their design project.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Analyse and apply principles of thermal performance, integration of appropriate structural systems and ethical considerations in architectural design.

MO2 Develop sustainable construction details that address insulation, air-tightness, environmental impact, and the ethical sourcing and use of materials.

MO3 Design and represent a small-scale sustainable building that integrates environmental principles, material science, construction sequencing, and user-centred design.

MO4 Demonstrate the ability to articulate sustainable architectural concepts through clear and effective visual, verbal, and technical outputs, with reference to ethical and environmental considerations.

Hours to be allocated: 300

Contact hours:

Independent study/self-guided study = 228 hours

Face-to-face learning = 72 hours

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link

<https://rl.talis.com/3/uwe/lists/299EDD9C-64CC-9FC7-7CB5-FB08F5C02D29.html>

Part 4: Assessment

Assessment strategy: Assessment 1: Technical Report (50%) Pass/Fail Assessment

This first assessment evaluates students' ability to analyse and apply principles of thermal performance and material science to architectural design. Students will produce a technical report that includes drawings, construction details, and reflections on their engagement with the module themes. The report should showcase the ability to optimise building performance by addressing thermal efficiency, material selection, and sustainability principles. Students will also critically evaluate their design decisions in relation to ethical considerations and regulatory standards, reflecting a thoughtful and informed approach to environmental challenges.

Assessment 2: Design Report (50%) Pass/Fail Assessment

The second assessment requires students to design and represent a small-scale sustainable building. This report will document the integration of environmental principles, construction detailing, and user-centred design into a cohesive architectural proposal. Students will produce detailed technical drawings, models, and reflective commentary, demonstrating their ability to synthesise sustainability concepts with practical applications. The report will also evaluate their skills in communicating architectural ideas clearly and effectively, adhering to professional standards.

Rationale: Dividing the module into two assessments ensures that students engage deeply with both theoretical and practical aspects of sustainable architecture. The technical report focuses on analysis and foundational understanding, while the design report emphasises the application of these principles in a creative context. This structure allows for staged feedback and iterative learning, fostering a well-rounded study of the subject.

Formative Opportunities: Draft submissions of technical analyses and initial concepts will be reviewed to ensure alignment with the module's learning outcomes. These opportunities encourage iterative improvement and prepare students for the final assessments.

Plagiarism Prevention: Both assessments require original, site-specific analyses and creative outputs, ensuring personal engagement with the project briefs. Regular feedback sessions and iterative submissions will verify the authenticity of students' work, fostering academic integrity and originality.

Resit Assessment: If required, the resit assessment will follow the same brief and submission format as the main assessment, allowing students to develop and submit revised submissions that meets the original assessment objectives.

Assessment tasks:

Report (First Sit)

Description: Technical Report (Pass /Fail Assessment)

Weighting: 0 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO4

Report (First Sit)

Description: Environmental Design Report (Pass/Fail Assessment)

Weighting: 0 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO2, MO3

Report (Resit)

Description: Technical Report (Pass/Fail Assessment)

Weighting: 0 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO4

Report (Resit)

Description: Environmental Design Report (Pass/Fail Assessment)

Weighting: 0 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO2, MO3

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Architecture [Frenchay] BSc (Hons) 2025-26

Architecture and Planning [Frenchay] BA (Hons) 2025-26

Architecture and Planning [Frenchay] BA (Hons) 2025-26