



Module Specification

Passive Design Studio

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Part 1: Information

Module title: Passive Design Studio

Module code: UBLL78-15-2

Level: Level 5

For implementation from: 2026-27

UWE credit rating: 15

ECTS credit rating: 7.5

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: Studio 1.1 - Form and Context 2025-26, Studio 1.2 - People and Environment 2025-26

Excluded combinations: None

Co-requisites: Studio 2.1 - Living 2026-27

Continuing professional development: Yes

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: This module explores passive design principles to reduce energy consumption and enhance the comfort and sustainability of buildings. Students will learn to incorporate climate-responsive strategies into architectural design, focusing on building orientation, natural ventilation, thermal mass, daylighting, and material selection. Real-world projects and simulations will facilitate hands-on learning.

Features: Not applicable

Educational aims: The aim of this module is to provide students with a foundational understanding of passive design principles, equipping them to create sustainable architectural solutions that optimise energy performance and occupant comfort. Through exploration of climatic analysis, building physics, natural ventilation, daylighting, and sustainable materials, students will learn to design buildings that respond effectively to environmental contexts. By integrating tools and simulation techniques, the module fosters the development of skills in energy modelling and environmental performance assessment, preparing students for innovative and sustainable architectural practice.

Outline syllabus: At this level, we study theory and applications of the following subjects.

Passive environmental design of buildings.

Analysis of climates and microclimates.

Environmental impact of building orientation and form.

Thermal comfort and building physics.

Natural ventilation and stack effect.

Light and daylighting design.

Tools and simulation software for modelling environmental performance.

The module will begin with a primer introducing the engineering principles of thermodynamics and the heat balance equation, which forms the bases of most energy modelling of buildings.

Part 3: Teaching and learning methods

Teaching and learning methods: The strategy adopts a studio-based, problem-centered learning approach, emphasising "learning by doing" to foster a deeper understanding of architectural and engineering design, construction practices, and cultural contexts. This teaching strategy supports the development of students' design, analysis, and critical thinking skills through a blend of structured and independent learning activities.

Structured Learning

The studio experience is enriched by a variety of scheduled activities designed to provide theoretical knowledge, practical skills, and individualised guidance:

Lectures and Seminars: Delivering foundational knowledge and exploring cultural and technical aspects of architectural design.

Small-Group Design Seminars: Offering targeted tutorial support, promoting collaborative discussions on design and research projects.

Workshops and Technical Skills Sessions: Led by tutors and technical staff, these sessions focus on practical problem-solving and hands-on exploration of design challenges.

Supervised Studio Time: Dedicated sessions for guided project development and iterative feedback, offering an element of individual tutoring support to students.

Independent Learning

Independent study emphasises active engagement with design projects and self-directed inquiry. Students are encouraged to use timetabled studio spaces for the following:

Developing and refining design projects.

Conducting essential research and technical exploration.

Responding to feedback from tutors and peers.

Preparing staged submissions and presentations throughout the year, culminating in the final portfolio, which will be presented.

The design process is structured with iterative stages to encourage continuous improvement. Students engage in constructive discussions with peers and tutors,

fostering a collaborative and reflective learning environment. Most of the module's work is directed toward the development of a comprehensive final portfolio, which serves as a critical resolution and demonstration of their learning, design abilities, and research skills.

This strategy ensures a balanced approach, integrating structured support with independent exploration to develop well-rounded, critically engaged architecture professionals.

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

MO1 Debate the driving forces behind the development of passive building design standards and identify the roles, responsibilities, and contributions of stakeholders in the complete delivery process.

MO2 Design a development to meet passive standards for a given location, incorporating material selection, structural orientation, and servicing strategies, and present the design outcome to an audience of peers.

MO3 Develop a comprehensive risk register for a passive design, identifying and evaluating potential risks in design, procurement, construction, and operation that may affect the building's ultimate passive performance, suggesting mitigating actions.

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 96 hours

Face-to-face learning = 54 hours

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://rl.talis.com/3/uwe/lists/E6FBD098-9E4E-E30D-0D6B-FA728F0F9FAF.html?lang=en-GB&login=1) via the following link <https://rl.talis.com/3/uwe/lists/E6FBD098-9E4E-E30D-0D6B-FA728F0F9FAF.html?lang=en-GB&login=1>

Part 4: Assessment

Assessment strategy: Assessment Strategy

The assessment strategy for this module is designed to evaluate students' understanding of passive design principles, risk management, and their ability to develop comprehensive design solutions.

First Attempt Assessment**Task 1 – Presentation (20 minutes)**

Students will present their design to a critical audience comprising:

A passive design portfolio, including material selection, structural orientation, and servicing strategies.

A risk register identifying and evaluating potential risks across design, procurement, construction, and operation stages that may impact the building's passive performance.

This task assesses the students' ability to integrate passive design principles, conduct comprehensive risk analysis, and present their findings with clarity and precision.

Preparation for this assessment will include enhanced study skills support as part of the scaffolding for inclusive assessment, helping students to gain confidence with presenting work to an audience, which will also feature in future modules. Alternative assessment types for students with approved reasonable adjustments may be considered, but shall retain an element in-person presentation.

Second Attempt Assessment**Task 1 – Presentation**

Students will submit their portfolio to the same brief as the first attempt.

Assessment tasks:**Presentation (First Sit)**

Description: Design Presentation (20 Minutes)

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3

Presentation (Resit)

Description: Design Presentation (20 Minutes)

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Architecture and Environmental Engineering [Frenchay] BEng (Hons) 2025-26