

Faculty of Engineering and the Built Environment

Department of the Built Environment Report of External Validation Panel

External Validation Visit, 28th April 2025

for the

Masters in Science in the Decarbonisation of the Built Environment

Embedded Awards:

• Post Graduate Diploma in Science in Decarbonisation of the Built Environment

Special Purpose Awards

- Certificate in Decarbonisation Solutions for the Built Environment
- Certificate in Verifying and Monitoring Decarbonisation
- Certificate in in Decarbonisation Management

1.0 INTRODUCTION

This report outlines in summary form the proceedings and findings of the External Validation Panel visit for the proposed Master of Engineering in the Decarbonisation of the Built Environment and associated embedded awards. It is noted that it emerged as a condition of the Validation that the Award Type be changed to Master of Science, and therefore the Science stem is included in the titling throughout this report.

• Master of Science in the Decarbonisation of the Built Environment (Part-time Blended and Online)

With Embedded Programmes:

- Post Graduate Diploma in Science in Decarbonisation of the Built Environment (Parttime Blended and Online)
- Certificate in Science in the Decarbonisation Solutions for the Built Environment (Parttime Blended and Online)
- Certificate in Science in Verifying and Monitoring Decarbonisation (Blended and Online)
- Certificate in Science in Decarbonisation Management (Blended and Online)

The external validation visit was held on the 28th of April 2025 and undertaken in accordance with TUS Academic Regulations for the development of taught programmes. An external validation panel makes an independent impartial judgement on a programme proposal.

2.0 GENERAL INFORMATION

2.1 Higher Education Provider

Provider	Technological University of the Shannon: Midlands Midwest
Faculty	Faculty of Engineering and the Built Environment
Department	Department of the Built Environment
Date of Visit	28 th April 2025

2.2 Programmes Evaluated

Award Title	Masters of Science
Programme Title	Masters in Science in the Decarbonisation of the Built
	Environment
NFQ Level	Level 9
ECTS Credits	90 ECTS
Delivery Mode	Full Time / Part Time
Duration	1.5 years / 2 years
Proposed Starting Date	September 2025

Award Title	Post Graduate Diploma in Science
Programme Title	Post Graduate Diploma in Science in Decarbonisation of
	the Built Environment
NFQ Level	Level 9
ECTS Credits	60 ECTS
Delivery Mode	Full Time / Part Time
Duration	1.5 years / 2 years
Proposed Starting Date	September 2025

Award Title	Certificate
Programme Title	Certificate in Science in Decarbonisation Solutions for the
	Built Environment
NFQ Level	Level 9
ECTS Credits	20
Delivery Mode	Online/Blended
Proposed Starting Date	September 2025

Award Title	Certificate
Programme Title	Certificate in Science in Verifying and Monitoring
	Decarbonisation
NFQ Level	Level 9
ECTS Credits	20
Delivery Mode	Online/Blended
Proposed Starting Date	September 2025

Award Title	Certificate
Programme Title	Certificate in Science in Decarbonisation Management
NFQ Level	Level 9
ECTS Credits	20
Delivery Mode	Online/Blended
Proposed Starting Date	September 2025

2.3 External Validation Panel of Expert Assessors

Name	Affiliation
Mr. John Vickery	Formerly IT Tallaght (Chairperson)
Dr. John Scahill	ATU
Mr. Colm Tynan	SETU
Mr. John O'Shea	Codema
Mr. Pat Barry	IGBC
Ms Geraldine Daly	Student Representative

Secretary to Panel: Dr. Brendan Murphy – Head of Quality Assurance & Enhancement Ms Claire Frawley, Quality Officer TUS

2.4 TU STAFF

Name	Affiliation	
Dr. Maria Kyne	Dean of Faculty of Engineering and the Built Environment	
Dr. Pat Gill	Head of Department of the Built Environment	
Mr Seamus Hoyne	Dean of Flexible Learning	
Dr Órlaith Borthwick (apologies)	Head of Flexible Learning	
Programme Team: Jim Dooley, Shane Faulkner, Goode, Seamus Hoyne, Cathal Mo Nicholas, Elisabeth O'Brien, Elaine O'Grady, Paul Vesey		

3.0 FINDINGS AND RECOMMENDATIONS OF EXTERNAL VALIDATION PANEL

3.1 Main Findings

The External Validation Panel of Assessors recommends approval of the proposed programmes subject to a change of award stem discipline to Science as follows:

• Master of Science in the Decarbonisation of the Built Environment (Part-time Blended and Online)

With Embedded Programmes:

- Post Graduate Diploma in Science in Decarbonisation of the Built Environment (Parttime Blended and Online)
- Certificate in Science in the Decarbonisation Solutions for the Built Environment (Parttime Blended and Online)
- Certificate in Science in Verifying and Monitoring Decarbonisation (Blended and Online)
- Certificate in Science in Decarbonisation Management (Blended and Online)

subject to the Condition and Recommendations as specified in Section 3.3.

3.2 Conditions

1) Change the title of the award stem from *Master of Engineering* to *Master of Science* to align with the content of the programme and the requisite standards of knowledge, skill and competencies of typical entry cohorts.

3.3 Recommendations

Programme Level Recommendations

- 1) Include reference to the Common European Reference Framework (CEFR) for English language entry requirements. Amend references to IELTS entry requirement of 6.5 where relevant.
- 2) Review the specification of the programme learning outcomes (PLO's) to ensure there is a coherent set of PLO's that are written at a higher programme level (rather than multioutcomes PLO's written at module learning outcome level).
- 3) Review the overall assessment strategy and consider if some Final Examination elements, including open book exams, could be introduced in some modules.
- 4) Ensure the application process clearly communicates the pathway for completing the embedded Certificates in the most appropriate order.

- 5) Site visits are an integral part of the programme and attendance is recommended by all learners. However, there should be no penalty applied to learners who are not able to attend due to other commitments.
- 6) Consider at a programme level, the overall approach to the incorporation and management of Peer to Peer Learning including Groupwork, which is particularly important in blended and online learning.
- 7) Review the reading lists to ensure that the most recent and relevant version is listed, and make all books are available online.

Module Specific Recommendations

1) Address the following Module-Specific Recommendations

Decarbonisation Strategies And Options

- Make more explicit the learning in relation to Urban Planning, Lean Design, and Low carbon and take account of the *Viable Homes Irish Green Building Council* document.
- Review the assessment strategy of the module including from sequencing perspective and reconsider the weighting for the MCQ.
- Enhance the scope for Peer to Peer learning opportunities within the module.

Decarbonisation Analysis And Solutions

- Ensure that the module teaching and learning strategy caters for the different levels of knowledge of participants from mixed backgrounds. Consider how further learning content on HVAC and electrical services could be addressed/incorporated into the module.
- Ensure that the benchmarks for the different topologies of buildings are clearly specified.
- Add reference to the SEAI Guide on District Heating Feasibility Studies.

Low Carbon Tools And Assets

- Amend LO3 in line with Blooms Taxonomy using measurable active verb format.
- Make reference to GIS mapping tools including open source tools.

• Remove reference to the BREEAM AP certifier from the module description.

Sustainability and Biodiversity Assessment

- Provide further detail in the syllabus as appropriate.
- Add further emphasis on biodiversity indicators to balance with the content on certification.
- Review the scheduling of assessment to allow students to receive early formative feedback.

Building Information Modelling And Whole Life Cycle

- Incorporate reference to the Lifecycle Assessment: CIBSE Guide M, Maintenance Engineering and Management and CIBSE TM 65.
- Incorporate reference to the Danish Energy Agency Catalogue.
- Include reference to the appropriate ISO standards.

Decarbonisation Planning

- Review the module descriptor to be more explicit and coherent.
- Provide further detail in the syllabus as appropriate.
- Review LO2 in terms of is scale and scope.
- Review the assessment strategy section as the current text is not related to assessment.

Business And Investment

- Review the reading list and incorporate up-to-date reading lists as appropriate.
- Include reference to the Infrastructure Guidelines and State Aid Rules.

Sustainable Management AIM

- Amend LO1 in line with Blooms Taxonomy using measurable active verb format.
- Review the reading list and incorporate up-to-date reading lists as appropriate.

Decarbonisation Consultancy Project

- Carefully plan for the successful management of the delivery of this module ensuring any associated frameworks and agreements with employers.
- Ensure that there is sufficient grounding in Research Methods built into the module.
- Consider the timing of the Research Methods component and how it may be blocked.

Decarbonisation Dissertation

- Ensure that there is sufficient grounding in Research Methods built into the module.
- Consider the timing of the Research Methods component to provide students with the requisite skills to enable early engagement with the research element.
- Review the sequencing and timelines of the deliverables within the module to optimise the time available to students.
- Review the distribution of assessment marks within the module to ensure that it is optimal to reflect the importance of the deliverables.

3.4 Commendations and Observations

The Panel commend:

- 1) the evident strategic focus of the programme as a strategic initiative in relation to the DASBE project;
- 2) the development of a niche programme related to decarbonisation and linked to the 2050 Net Zero initiative;
- 3) the comprehensive programme documentation which is detailed and well developed;
- 4) the extensive expertise and experience of the programme team, both academic and industry;
- 5) the creation of an important flexible learning pathway for prospective students and the Part-time and Blended/Online learning delivery mode enhancing accessibility;
- 6) the programme team for their active and constructive engagement with the panel.

John Vickey

Signature of Chairperson.

Date: 05/05/2025

Final Report

Page 9 of 9