

VALIDATION REPORT

1.	Title of Programme(s): (incl. Award Type and Specify Embedded Exit Awards)	MSc in Circular Economy Leadership for a Sustainable Built Environment Postgraduate Diploma in Circular Economy Leadership for a Sustainable Built Environment Certificate in Circular Economy Leadership for a Sustainable Built Environment The Postgraduate Diploma and the Certificate will also act as exit awards for the Master's programme.
2.	NFQ Level(s)/ No. ECTS:	9 MSc: 90 ECTS Postgraduate Diploma: 60 ECTS Certificate: 30 ECTS
3.	Duration:	MSc: 2 years Postgraduate Diploma: 1 year Certificate: 1 year
4.	ISCED Code:	0730
5.	School / Centre:	School of Engineering
6.	Department:	Department of Building & Civil Engineering
7.	Type of Review:	New Programme
8.	Date of Review:	11 th June 2021
9.	Delivery Mode:	Full-time, Part-time, Online, Blended
10.	Panel Members:	<ul style="list-style-type: none"> • Mr Billy Bennett, VP for Academic Affairs & Registrar (Chair) • Professor Leon Black, Professor of Infrastructure Materials, School of Civil Engineering, University of Leeds • Dr Joe Harrington, Head of the School of Building & Civil Engineering, Munster Technological University • Ms Janet Lynch, Senior Environmental Consultant, ARUP • Ms Carmel Brennan, Head of Academic Quality GMIT (Secretary)
11.	Proposing Staff:	<ul style="list-style-type: none"> • Ms Mary Rogers • Dr Mark Kelly

		<ul style="list-style-type: none"> • Mr Shane Newell • Mr John Hanahoe • Dr Jan Gottsche • Ms Michelle Fahy • Ms Irene Hayden • Mr John Scahill • Mr Gerard Nicholson
12.	<p>Programme Rationale:</p>	<p>The built environment plays a key role in how we, as a society live, work, and interact with our environment. It can potentially shape and frame the extent of our impact on the planet’s climate and ecosystems. Buildings are responsible for almost 40% of all energy-related global carbon emissions, 50% of global material use (nearly 2 billion tonnes per annum in the EU) with 42 billion tonnes of materials consumed annually (World Green Building Council (WGBC), 2020). These excessive patterns of consumption have been facilitated by the traditional linear extract-produce-consume-dispose resource flow model of the modern economic system (Korhonen et al., 2018). In addition, construction and demolition waste (CDW) continues to be the most significant waste stream in the EU, accounting for over 800 million tonnes (Mt) per year (including soil).</p> <p>This programme will explore the capacity of the built environment sector to move beyond traditional linear processes and lead the transition towards more innovative preventative and more restorative circular processes of reuse, recycling and disassembly that will also stimulate growth and improve competitiveness. To this end, the circular economy advocates a reconceptualization of waste as a resource where products, components and buildings are intentionally designed to fit within biological or technical material cycles to retain their value and utility for as long as possible.</p> <p>The M.Sc. in Circular Economy Leadership for a Sustainable Built Environment is a two-year postgraduate programme that directly responds to a significant gap in national and international educational provision related to embedding circular economy principles across the built environment value chain. The programme is targeting existing industry stakeholders across the whole built environment value chain, graduates from built environment-related, engineering, and other cognate undergraduate programmes. The M.Sc. was developed in close collaboration with built environment professionals and informed by over 20 years applied industry</p>

		<p>research focusing on construction and demolition waste management, resource efficiency and the circular economy. It will provide a flexible, multi-disciplinary and industry-focused programme that will empower graduates to lead the transition towards a decarbonized and circular built environment.</p>
13.	Proposed Student Intake Number:	20
14.	Stakeholder Engagement:	<p>The design and development of the programme and its intended learning outcomes were directly informed by over 20 years of evolving and directly relevant applied research working in close collaboration with industry.</p> <p>An industry advisory group was established to inform the programme development. In addition, two facilitated workshops were conducted, and an industry survey administered. The findings from same influenced the structure, design and proposed delivery of the programme.</p>
15.	Graduate Demand:	<p>The recent publication of ‘Building Future Skills: The Demand for Skills in Ireland’ Built Environment Sector to 2030’ (National Skills Council/Expert Group on Future Skills Needs, 2020) states that a ‘reskilling and upskilling of the existing workforce will also be necessary to ensure a more digitalised, efficient and climate neutral built environment sector’. The two most significant themes that emerged from this report is the industry perspective that the impact of changing technology (particularly BIM) and climate change and incorporating sustainability means that firms are moving into new areas, particularly requiring a melding of engineering and technology skills within the sector. This adaption to climate change and the increasing focus on mainstreaming sustainability into the sector is placing an increasing emphasis of holistic decarbonisation, lifecycle assessment and circularity. In broader terms, the ‘Building Futures Skills’ report highlighted a continuation of the trend of diversifying away from hard engineering skills, with potential workers expected to be more ‘well-rounded’ with a broad array of skills. Key to this will be a particular focus on general transversal skills i.e., leadership, communication, critical thinking, problem-solving, decision-making, teamwork, creativity, active listening, planning and coordination, negotiation and conflict management, and a willingness to continuously learn, as well as more specific and technical competences i.e., circular planning, design, construction, operation, supply chains etc. These transversal skills will be</p>

		<p>embedded as a pedagogical methodology to create a dynamic and innovative learning environment within a collaborative working environment, which will be an exemplar of higher education international best practice. This will inform the response to the climate emergency and the future world of work more generally by strengthening relationships with industry and addressing identified future skills needs.</p> <p>Within this context, there are significant employment opportunities (including promotion or redeployment within existing positions) for graduates to become specialist within their broader discipline areas across the whole built environment value chain. The programme will also facilitate employment opportunities more broadly in sustainability and climate action both in the private and public sector, and in self-employment.</p>
16.	<p>Entry Requirements, Access, Transfer & Progression:</p>	<p>Candidates must hold a cognate level 8 Bachelor (Hons) degree with a minimum grade classification of H2.2 or equivalent e.g. Civil Engineering, Construction Management, Architectural Technology, Architecture, Construction Economics and Surveying etc. Candidates who do not meet the H2.2 performance standard in a Level 8 award will be required to pass a qualifying assignment at an H2.2 performance standard as established by the Programme Board for the programme in question and as approved by the Registrar.</p> <p>In accordance with GMIT policy recognition of prior learning can be used to gain access to or exemption from this programme.</p> <p>English Language Requirements will be as determined by GMIT and as published in the Access, Transfer and Progression code.</p>
17.	<p>Programme Structure:</p>	<p>The programme consists of two 15-credit modules, 'Circular Economy Principle for a Sustainable Built Environment' and 'Circular Economy Leadership and Organisational Transitions' that will provide a comprehensive foundation for subsequent applied work-based research modules and constitute the Certificate minor award. Both modules will also be available as single-subject certificates.</p> <p>The Postgraduate Diploma requires the addition of a mandatory 30-credit module, 'Applied Circular Built</p>

		<p>Environment Work-Based Research’ module, which will apply and build on the knowledge and competences developed in the first two modules to carry out a detailed study on the opportunities and challenges of embedding circular economy principles within a real-world project or organisational context. This module will be supported by a suite of applied work-based research learning units to ensure that the module develops a research-informed evidence base. The Postgraduate Diploma will be facilitated over three semesters in one year.</p> <p>The M.Sc. requires the addition of a mandatory 30-credit module, ‘Circular Built Environment Minor Thesis’ that will again, build on the previous three modules with a direct link to the ‘Applied Circular Built Environment Work-Based Research’ module. This capstone element provides an opportunity for learners to undertake a significant research study, which will contribute to the continuously evolving pragmatic evidence-base guiding the transition towards a climate resilient, decarbonised, and circular built environment.</p> <p>The proposed delivery mode is fully online with students required to attend and participate in weekly online workshops and complete directed learning each week. Approval is also being sought for alternative modes of delivery to facilitate the evolution of the programme over time to ensure flexibility for students.</p>
18.	<p>Learning, Teaching & Assessment Strategies:</p>	<p>The teaching and learning strategy for the M.Sc. in Circular Economy for a Sustainable Built Environment will provide a creative and participatory learning environment to empower students to become leaders in the transition towards a circular and decarbonised built environment. The programme will employ a consistent pedagogical approach that will ensure a balance between participatory workshops online resources, mentoring, peer learning, contextualised work-based learning, and self-directed independent study.</p> <p>The proposed delivery module is an online format where students will have to attend weekly online workshops and complete directed online learning. The student is encouraged to take responsibility for their own academic and personal development. Group work and participatory peer learning will be a guiding pedagogical principle of the programme to encourage and nurture dialogue and discussion between the students who may have different</p>

		<p>disciplinary backgrounds and levels of experience. This will be facilitated in the online learning environment through breakout sessions, polls, interactive quizzes etc. The facilitated workshops will provide an opportunity to cultivate the sharing of experiential learning, which will be supported with weekly discussion forum topics and peer learning groups. Each week, students will be appointed as breakout session leaders, where they will distil and present a summary of the group discussions to the wider class. In addition, the assessment strategies employed across the modules explicitly encourage students to take a leadership view of initiating change across the value chain by exploring circular economy opportunities at different scales.</p> <p>The programme assessment strategy is contextualised to the purpose of the programme, the discipline, the student cohort, and the learning environment. It constructively aligns with the programme and individual module learning outcomes and aims to demonstrate that the learners have achieved these. The purpose of the assessment strategy is to immerse the student in the practical application of circular economy principles across the whole built environment value chain. Each assessment element scaffolds the subsequent elements within each module within a 100% continuous assessment framework. This directly aligns with the teaching and learning strategy and will ensure a robust iterative feedback cycle between staff and students.</p>
19.	Resource Implications:	<p>Up to 12 hours per week are required to deliver the programme each year. The total of supervision hours will be dependent on student numbers.</p> <p>Funding has been sourced to cover the initial delivery of this programme through the HEA's Human Capital Initiative Fund.</p> <p>This programme will be delivered on a self-financing basis.</p>
20.	Synergies with Existing Programmes:	None.
21.	Findings and Recommendations:	<p>Commendations (if any):</p> <p>The panel commended the proposers on:</p> <ol style="list-style-type: none"> 1. Developing a new master's programme in the Department of Building and Civil Engineering and the successful securing of external funding which will make the programme attractive to potential applicants. 2. Thorough, proactive and positive engagement with the panel during the validation meeting.

		<p>The programme was approved subject to the following condition(s) (2) and recommendation(s) (10).</p>
		<p>Special conditions attaching to approval (if any):</p>
		<ol style="list-style-type: none"> 1. If leadership is to be included in the programme title, this needs to be more explicitly reflected in the programme learning outcomes and in the module content. 2. If the programme is to be validated as a full-time programme, as well as part-time and online modes, this should be reflected in a differentiation in the APS, the proposed delivery schedule and in separate teaching, learning and assessment strategies. In any event there should be separate teaching, learning and assessment strategies for the part-time and online programmes.
		<p>Recommendations of the panel in relation to award sought:</p>
		<ol style="list-style-type: none"> 1. Document the different target markets and demand for the programme in the programme submission. 2. Consider the opportunities presented for attracting candidates who do not meet the honours degree requirement but who do have significant relevant experience. The Institute's Recognition of Prior Learning (RPL) processes should be explicitly referenced in the programme entry requirements. 3. Consider the opportunities for professional body accreditation in order to maximise the longer-term attractiveness of the programme. 4. Review the programme title with a view to having a more succinct title (e.g. remove reference to sustainability). 5. Consider the opportunities for offering elective choice within the programme. This could be more easily facilitated by proposing one 5 ECTS and one 10 ECTS module. 6. Review the protocols and processes in place to ensure that issues of academic integrity are addressed in the online programme. 7. Consider opportunities for dissemination of the outcomes from the research projects through relevant conferences and publications, while respecting issues of confidentiality.
		<p>Module specific recommendations:</p> <ol style="list-style-type: none"> 8. CIVE09015 Circular Economy Leadership and Organizational Transitions: Ensure issues related to

		<p>behavioural/strategic change are included in the module.</p> <p>9. CIVE09017 Applied Circular Built Environment Work-Based Research Project and CIVE09018 Circular Built Environment Minor Thesis: Ensure that the research project/dissertation projects focus on infrastructure, not solely on buildings. Business case (value) and social value should be included.</p> <p>10. Programme team should ensure there is a strong international input, drawing on international expertise.</p>	
22.	FAO: Academic Council:	Approved:	
		Approved subject to recommended changes:	X
		Not approved at this time:	
	Signed:		
		Chair	Secretary