



BUSI2030

NATIONAL UPSKILLING ROADMAP 2030

FOR THE BUILT ENVIRONMENT

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1.0 WHAT IS BUSI2030?



Build Up Skills Ireland (BUSI2030) is a national project funded by the European Commission (CINEA) through the LIFE programme funding.

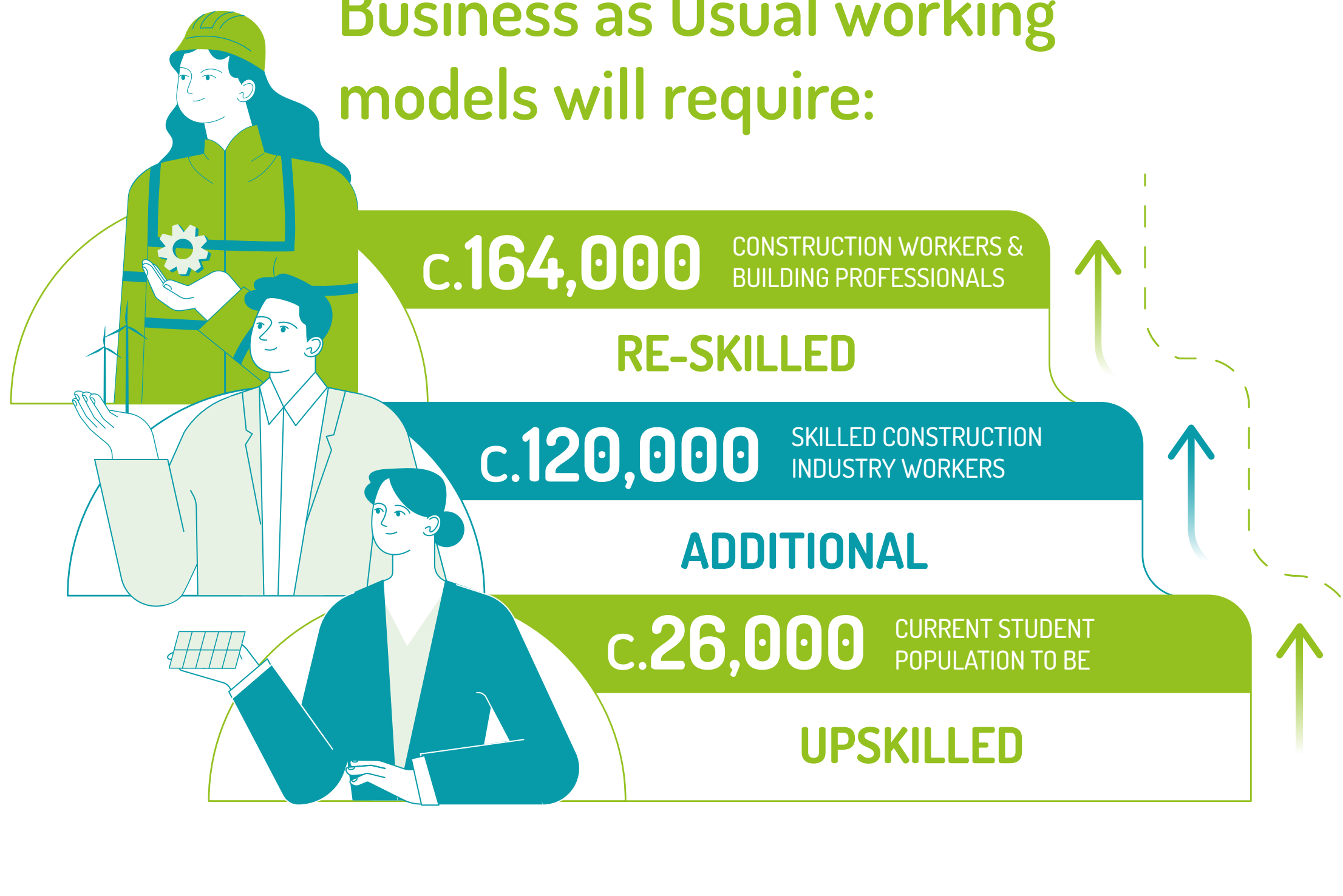
The project's scope is to analyse the current and future skills gaps in sustainable construction for 2030. It aims to create a National Upskilling Roadmap for Ireland to achieve its climate targets for housing, retrofitting, renewables and the decarbonisation of Ireland's built environment.

The project is led by the **Technological University of the Shannon** in partnership with the **Irish Green Building Council**, the **Construction Industry Federation** and the **Laois Offaly Education and Training Board** under grant agreement Project 101075961.



2.0 CHALLENGES

Business as Usual working models will require:



A detailed Status Quo report regarding existing education provisions and future delivery targets and challenges was issued in June 2023.

THIS BUSI2030 STATUS QUO REPORT IS AVAILABLE HERE

The methodology for the BUSI Status Quo Analysis included:

- ➔ **Stakeholder Engagement**
c.350 individuals (Public Sector, Educators and Industry) - workshops, focus groups, formal & informal interviews, surveys;
- ➔ **Review of Qualification Frameworks** regarding new/ updated requirements;
- ➔ **Assessment of existing and proposed initiatives**, targets, statutory recommendations, ambitions at European and National Level;
- ➔ **Core skills** required to address energy efficiency, renewable energy, decarbonisation, digitisation and digitalisation, circular economy principles and life cycle analysis of Ireland's built environment.
- ➔ **Analysis of Education system 'Status Quo' + national skills strategies;**

FIG 1 BUSI2030 STATUS QUO SUMMARY OUTCOMES

3.0 SOLUTIONS: 4 KEY THEMES

Arising from extensive stakeholder engagement, four key themes have emerged outlined below.

Addressing these themes is key to delivering the training and upskilling required to enable Ireland to meet its climate targets.

CONNECT THE SILOS:

A significant variety of parties are involved in the education, training and upskilling areas, relevant to construction. There are multiple existing activities and initiatives which, in many cases, are operating in silos. Stronger governance and collaboration is required to develop a more effective and efficient construction skills eco-system to optimise multiple stakeholder collaboration.

CONSTRUCTION IS EXCITING?

The construction and built environment sector is evolving rapidly. A national campaign which promotes Green Careers (Construction, Consultancy and Education) and promotes diversity, should be developed to target those within education (primary, secondary and tertiary) and those in the workforce (all sectors).

ADDRESS THE CARBON CHALLENGES:

EU and National policies demand that reducing Global Warming Potential (GWP) becomes a central focus of the construction and built environment sector. At a minimum it is recommended that Government mandate Zero Emission Building (ZEB* as defined by EU) Fundamentals Training to be provided at scale, across the sector (including to trainers). This must then be supported by all educators, promoting issues such as life cycle analysis, low carbon products and processes, and circular economy principles applied to design, construction and operations

ENCOURAGE CLIMATE LITERACY & TRAINING:

An innovative and exciting public awareness campaign should be developed to maximise awareness of the positive actions that society can take to address climate change.



FIG 2 BUSI2030 SKILLS & LABOUR SHORTAGES POSSIBLE SOLUTIONS

4.0 RECOMMENDATIONS

Following on from the findings of the Build Up Skills Ireland Status Quo Analysis (June 2023) and the projected requirements of upskilling of the current student population (c.26,000) and of the current workforce (c.164,000), along with reskilling new entrants (projected at 120,000 if 'business as usual' construction methods prevail), a considerable challenge is presented to all entities within the public sector, education providers and construction delivery sectors. The following recommendations and a collaborative approach across all these sectors is required to meeting built environment Climate Action Plan targets and Housing for All targets to 2030. The proposed timelines set out for short and medium term actions will need

to be reviewed in due course to continue to address the 2050 targets.

Complimenting the 4 key themes, are 12 sector specific recommendations designed to support the training and upskilling required to achieve climate action and housing targets. Some recommendations are labelled 'core' meaning critical, and others are labelled 'enabler' meaning supporting the realisation of the 'core' recommendations.

The Roadmap is presented as a table of recommendations under the headings '**PUBLIC**', '**EDUCATORS**' and '**INDUSTRY**', regarding governance, awareness, systems and supports.

4.1 PUBLIC SECTOR RECOMMENDATIONS

1.0	SKILLS ECO-SYSTEM (GOVERNANCE):	
1.1	Develop a whole of government approach to addressing skills gaps and shortages within a connected and efficient skills ecosystem. Strengthen the DFHERIS-hosted Construction Sector Skills Forum (CSSF) to facilitate on-going opportunity for co-operation, sharing and networking between Education, Industry, The National Skills Council and cross departmental supports regarding current and potential workforce. Include agenda item for on-going review of BUSI2030 recommendations within CSSF.	CORE
2.0	GREEN CAREERS (GOVERNANCE):	
2.1	GREEN CAREERS (PUBLIC, EXISTING WORKFORCE, SCHOOLS): Actively promote and deliver a public campaign on career opportunities within the built environment and construction sectors, focusing on opportunities, climate action, sustainability, emerging technologies, circular economy, digitalisation, retrofit, renewables, net zero carbon strategies and nature-led solutions.	CORE
2.2	DIVERSITY & INCLUSION Actively promote diversity and inclusion (e.g. gender, age, ability, cultural, socio-economic) in all aspects of the built environment to address current imbalances within construction (e.g., through recruitment strategies, mentoring programmes, buddy systems in education and workplaces, promoting positive role models etc).	CORE
2.3	APPRENTICESHIPS: Review statutory processes for apprenticeships (craft and consortium led) on a regular basis incorporating the need for fast-paced course adaptation, climate action targets combined with working conditions, payments, accessibility, awareness etc.	CORE
2.4	DIASPORA: Promote and encourage skilled Irish workers abroad to return home to take up employment in the construction sector specifically. Refer also to 2.1.	ENABLER
2.5	MOBILITY AND RECOGNITION: Examine options and initiatives for further attracting workers from abroad. This may include streamlining visas and mutual recognition of qualifications, reviewing the 'Critical Skills List' regarding mobility in relation to skills to achieve Climate Action Plan targets.	ENABLER

4.1 PUBLIC SECTOR RECOMMENDATIONS

3.0	QUALITY ASSURANCE FOR SUSTAINABILTY:	
3.1	QUALITY ASSURANCE FOR SUSTAINABILTY - CLIMATE LITERACY (PUBLIC):	
3.1.1	CLIMATE LITERACY: Deliver a public awareness campaign for all citizens to understand the importance of climate action in the built environment sector.	CORE
3.2	QUALITY ASSURANCE FOR SUSTAINABILTY - ZEB FOR ALL:	
3.2.1	ZERO EMISSION BUILDINGS FUNDAMENTALS (ZEB) TRAINING FOR ALL: (Existing Workforce and New Entrants): Expedite provision of the key principles through ZEB Fundamentals Training (at a minimum) and provide targeted leadership development training for all involved in construction sector. ZEB suite of training content to be regularly updated in line with Climate Action Plan targets and EU Legislation ambitions.	CORE
3.2.2	PUBLIC SECTOR ZEB TRAINING: Expedite provision of key principles through ZEB Fundamentals Training for management and procurement teams, public representatives in Local Authorities, relevant State Agencies and Government Departments to increase understanding of the key issues.	CORE
3.2.3	CONSTRUCTION WORKFORCE ZEB TRAINING INCENTIVES: Initially incentivise, then it is recommended that Government mandate, ZEB Fundamentals Training through mechanisms such as green public procurement and relevant public grant criteria, in order to deliver critical upskilling through CPD at scale (c. 160,000+). Consider the need to provide additional (benefits / paid time off) incentives for construction micro, small and medium businesses to upskill their workforce through funded accessible, flexible and blended, micro-credentials pathways.	CORE
3.2.4	IMMEDIATE / SHORT TERM AWARENESS TRAINING: Actively promote and assess the need to incentivise attendance at existing 1 day online NZEB Training for all micro and small contractors. (Similar to RECI / RGII systems). Encourage homeowners / financial providers to request proof of attendance at this City & Guilds approved course as short term measure in advance of mandated ZEB Fundamentals training.	CORE
3.3	QUALITY ASSURANCE FOR SUSTAINABILTY - FASTTRACK PROCESSES:	
3.3.1	BIM MANDATE: Review viability of fast-tracking BIM Mandate to focus on micro, small and medium businesses.	ENABLER

4.1 PUBLIC SECTOR RECOMMENDATIONS

3.3.2	CIRCULAR ECONOMY (CE) ROADMAP: Expedite delivery and implementation of proposed National Circular Economy Roadmap. (Ref: The Circular Economy Plan 2021-2027)	ENABLER
3.3.3	MODERN METHODS OF CONSTRUCTION (MMC) ROADMAP: Expedite delivery and implementation of the MMC Roadmap .	ENABLER
3.3.4	DIGITAL: Fast-track implementation of digital skills with specific focus on supporting micro, small and medium businesses through ETB Centers of Excellence.	ENABLER
3.3.5	SEAI PATHFINDER PROJECTS: Fast-track sharing findings and delivery of projects.	ENABLER
3.3.6	INNOVATIVE APPROACHES: Support the uptake of low carbon innovative technologies and processes through green public procurement and grants. This would contribute to building capacity in the industry, improving resource efficiencies and to stimulating demand.	ENABLER
3.3.7	CERTIFICATION OF MATERIALS & PRODUCTS: Support fast-tracking certification processes to encourage innovation, knowledge sharing and quality assurance. Ref: Environmental Product Declarations (EPDs); Declarations of Performance and Conformance (DoPCs) as required for all materials.	ENABLER
3.4	QUALITY ASSURANCE FOR SUSTAINABILITY - REGISTERS:	
3.4.1	REGISTERS: Facilitate approved competency Registers for contractors and consultants and specialist installers/advisers linked to quality and competency criteria. Link participation to grant provisions and finance conditions.	CORE
3.4.2	CIRI REGISTER: Expedite implementation of the Contractor Register CIRI prioritising micro, small and medium sized businesses mandating annual CPD, with annual review of competencies. A strategy is required for contractors completing works not subject to statutory consents e.g. Building Control Act exemptions, Planning Permission exemptions etc. Interim solution refer item 3.2.4 in short term to participate in training or skills development programmes.	CORE

4.1 PUBLIC SECTOR RECOMMENDATIONS

3.4.3	CONSTRUCTION SAFETY LICENSING BILL: Review the scope of the Bill (within statutory parameters) for potential use as a mechanism for licensing construction skills. The Bill's objective is to put in place a license requirement for certain operations in the construction sector to improve competency in these areas. The Bill, as currently drafted, is limited to the operations / skills as listed in the Safety, Health and Welfare at Work (Construction) Regulations 2013. This legislation could be the vehicle to extend the competency requirements, and so quality of delivery, for other construction related skill areas, such as retrofit.	CORE
3.5	QUALITY ASSURANCE FOR SUSTAINABILITY - SUPPLY CHAIN:	
3.5.1	FURTHER SUPPORT CONSTRUCTION INDUSTRY MICRO, SMALL AND MEDIUM BUSINESSES: Actively promote training and incentivise upskilling of construction enterprises E.g. through tailored support. Strengthen lean, green and digital supports and advice at local / regional level through local enterprise offices network.	CORE
3.5.2	CERTIFICATION SCHEMES: Promote use of and skills development for Life Cycle Assessments and building certification schemes e.g. BREEAM, LEED, Home Performance Index, WELL etc.	ENABLER
4.0	STRENGTHEN PUBLIC SECTOR TO LEAD BY EXAMPLE:	
4.1	CLIMATE ACTION LEADERSHIP TRAINING: Regular review and update of content for mandatory Climate Leadership training for all Public Principal Officers/Equivalents.	CORE
4.2	HOLISTIC APPROACH: Support combined public sector ambitions to achieving Climate Action targets, promoting 'Design for Performance' approaches. Examples include measuring against environmental indicators while considering long-term energy, carbon reduction and cost efficiencies.	ENABLER
4.3	RESOURCE EFFICIENCIES: Prioritise and incentivise economies of scale to deliver Ireland's targets with limited resources (e.g. in energy renovation projects: terraces, housing estates, sustainable energy communities, district heating projects).	ENABLER
4.4	SUSTAINABILITY CHECKLISTS / BEST PRACTICE CASE STUDIES: Establish sustainability checklists for all public sector retrofit, new and maintenance projects, enforcing use of Display Energy Certificates (D.E.C) for all public buildings for optimum operational efficiencies and awareness raising.	ENABLER
4.5	QUALITY ASSURANCE: Provide additional resources and ZEB training for Local Authority Building Control and Enforcement Offices.	ENABLER

4.1 PUBLIC SECTOR RECOMMENDATIONS

5.0	COLLABORATION & KNOWLEDGE SHARING:	
5.1	SKILLS ECO-SYSTEM: Provide a central source with information and access to public and private training and CPD offerings to strengthen the collection, exchange and provision of skills information (CPD in one place) e.g. building on experience of the Build Up Skills (BUS) advisor app and DASBE .	CORE
5.2	BUILT ENVIRONMENT NETWORKS: Support and resource the Construction Industry Council to strengthen collaboration between construction industry stakeholders focusing on Climate Action targets.	CORE
5.3	EXEMPLAR CASE STUDIES: Establish and support a public platform for sharing best practice (public & private) projects & delivery models which can act as a central knowledge hub for education/training providers. Incentivise contributions of best practice as well as lessons learned.	ENABLER
5.4	LEARNINGS FROM PILOT PROJECTS: Consolidate outputs and share resources and findings of numerous national, European and internationally publicly funded research projects e.g. Construction Blueprint and BIMzeED .	ENABLER

4.2 EDUCATION RECOMMENDATIONS

6.0	ECO_SYSTEM: FURTHER EDUCATION AND TRAINING (FET) & HIGHER EDUCATION (HE) ECO-SYSTEM (PUBLIC + PRIVATE):	
6.1	SKILLS MAPPING: Establish a system allowing for clearer and consistent data acquisition on content of all existing publicly funded further and higher education training courses along with an accurate national skills mapping programme for existing, new and emerging construction roles and tasks. Required data would include specific course content, learning outcomes, entrant numbers and graduate numbers, and places available comparable across all education providers.	CORE
6.2	CENTRAL PLATFORM FOR UPSKILLING IN CONSTRUCTION: Centralise data and information on all construction training programmes in a user friendly, easily accessible public platform, similar to CAO platform e.g. Build Up Skills advisor APP . Develop a centralised online platform (similar to CAO) showcasing specific upskilling, reskilling, and new skill training programmes across the construction industry. This platform should include clear information on programme content, delivery methods, eligibility requirements, and contact details for providers.	CORE
6.3	TRAIN THE TRAINER (TTT): Establish, monitor and regularly update a coherent system of TtT programmes and pathways for supporting upskilling of trainers in the Further Education and Training and Higher Education systems (targeting current and emerging issues regularly updated e.g. zero emission construction, MMC, circular economy, indoor air quality, digitisation and digitalisation in the built environment).	CORE
6.4	FLEXIBILITY IN DELIVERY: Explore options for greater flexibility in delivery methods and in accreditation systems across the education sector in order to deliver the training required at scale including the utilisation of micro credentials and onsite, online, self-directed delivery. Support will need to be provided to trainers as well as to trainees in this regard.	CORE
6.5	TRAINING CENTERS: Re-focus existing NZEB (Nearly Zero Energy Building) Education and Training Board Centres of Excellence (CoE) to ZEB (Zero Emission Building) Centres of Excellence regarding course offerings and processes. Consider the need to provide additional mobile training rigs to facilitate on-site workforce development.	CORE
7.0	PRIORITISE GREEN CAREERS (COURSE PROVISION):	
7.1	INNOVATIVE TRAINING AND UPSKILLING OPPORTUNITIES ACROSS EQF LEVELS: Develop and promote new training modules and new course content tailored across European Qualifications Framework (EQF) levels to complement the Climate Action Plan targets and Housing for All developments, such as the MMC Demonstration Park at the National Construction Training Campus.	CORE
7.2	CONTINUING PROFESSIONAL DEVELOPMENT (CPD): Develop further Continuing Professional Development (CPD) training programmes for construction professionals eg engineers/architects/energy advisers/planners/ ecologists to address identified skills gaps such as circular economy, lifecycle analysis, digitisation, digitalisation for built environment.	CORE

4.2 EDUCATION RECOMMENDATIONS

7.3	<p>NEW TRAINING PROVISION IN EMERGING TECHNOLOGIES E.G. MMC :</p> <p>Similar approach required for other emerging technologies eg circular economy principles. Create broader MMC manufacturing technician apprenticeship/trade courses focused on MMC / Modular Construction; create modules with a focus on innovation, modern materials and manufacturing which can be integrated into the curriculum for all third level and CPD courses in civil, built environment, mechanical and electrical engineering and construction studies.</p>	CORE
7.4	<p>EFFECTIVE DISSEMINATION OF NEW RESEARCH TO EDUCATION SECTOR:</p> <p>Utilise research outcomes to provide evidence and data to inform new programme development and education and training pathways. Disseminate the work of relevant Government supported initiatives such as DASBE (HEA), Construct Innovate (Enterprise Ireland) and Build Digital (Project 2040 and the Construction Sector Group Innovation and Digital Adaption).</p>	ENABLER
8.0	AWARENESS IN SCHOOLS:	
8.1	<p>CAREER GUIDANCE:</p> <p>Increase engagement with career guidance counsellors (and other relevant teachers) to ensure promotion of construction as a green and sustainable career. Create content for career guidance, transition year, construction technology teachers to promote innovative green and digital construction career pathway options. Promotion of Generation Apprenticeship within schools in conjunction with (PLC, FET, HE) CAO offerings. Develop and disseminate targeted resources (e.g, career guidance modules, interactive tools) for career guidance counsellors and teachers, emphasising the green and sustainable nature of construction careers. Partner with industry bodies to facilitate school visits from construction professionals and showcase real-world career paths in the sector.</p>	CORE
8.2	<p>PROMOTION OF CONSTRUCTION AS AN EXCITING CAREER:</p> <p>Continue to host events together such 'Higher Options' and 'Worldskills' to ensure equal status and visibility to both.</p> <p>*Higher Options provides a unique opportunity for up to 30,000 students from across Ireland to speak to representatives from third-level institutions from Ireland, the UK, Europe and further afield. Students can gather information about their third-level options and attend career talks on a wide range of topics.</p> <p>** Worldskills Ireland is a partnership between enterprise, industry, education, training and government that raises the profile and recognition of skills and apprenticeships and prepares the talent of today for the careers of the future.</p>	CORE
8.3	<p>UPSKILLING OF TEACHERS:</p> <p>Provision of ZEB fundamentals training for career guidance and all teachers focusing on construction and related skills.</p>	CORE
8.4	<p>MAKE INNOVATIVE TECHNOLOGIES AVAILABLE TO SCHOOLS:</p> <p>Utilise mobile training rigs, VR/AR and make mobile technologies available to all primary and secondary schools to facilitate active learning and encourage entry into construction careers.</p>	ENABLER

4.2 EDUCATION RECOMMENDATIONS

9.0	LIFELONG LEARNING:	
9.1	PATHWAYS TO LIFE LONG LEARNING OPPORTUNITIES: Promote pathways from work to FET to HE for career progression opportunities; further options for construction related pathways should be explored. In order to meet the construction industry's labour needs needs, pathways from non-construction related roles should be given equal prominence e.g. IT to digitisation in construction, procurement to green procurement, accountant to carbon accounting. Digital security will be considered essential to avoid disruption and raise resilience.	CORE
9.2	RECOGNITION OF PRIOR LEARNING (RPL) AND EXPERIENCE: Ensure greater flexibility in RPL to allow for greater entry into construction courses.	CORE
	SCHOOLS	
9.3	STRONGER LINKS BETWEEN SECONDARY AND TERTIARY: Higher education institutes to continue to work in collaboration with education providers at second level to ensure promotion of new skills in construction as career opportunities.	CORE
	FET & HEA	
9.4	NEW APPRENTICESHIPS AND TRAINEESHIPS: Contribute to the development of new apprenticeships, traineeships and micro credentials to ensure that skills gaps are addressed.	CORE
9.5	CAREER PATHWAYS: Provide support and guidance to FET and HE learners through individual mentoring and career guidance, while also developing innovative tools e.g. using AI to support career/upskilling choices and pathway identification.	CORE
9.6	ZEB FUNDAMENTALS TRAINING: It is recommended that Government mandate ZEB (Zero Emission Buildings) Fundamentals training for all construction workers with annual updates of course content as clearer definitions and parameters are agreed at European and National level. Refer also 3.2.3.	CORE
9.7	UPSKILLING OF EXISTING STUDENT POPULATION: Encourage education and training providers to update curricula of programmes to ensure modules reflect most current content relevant to ZEB, circular economy, digitisation, and energy efficiency.	CORE

4.2 EDUCATION RECOMMENDATIONS

	PRIVATE TRAINING PROVIDERS	
9.8	<p>COORDINATED APPROACH TO CPD:</p> <p>Structured programme of thematic CPD events for all professional bodies, to support Climate Action Plan targets and BUSI2030 roadmap implementation. Establish a coordinated approach for Continuing Professional Development (CPD) across all construction professional bodies. This would involve:</p> <p>Developing a structured programme of thematic CPD events aligned with Climate Action Plan targets and BUSI2030 goals.</p> <p>Exploring potential funding models for subsidising or offering free CPD opportunities to ensure accessibility for all professionals.</p>	CORE
9.9	<p>SKILLS MAPPING AND PATHWAYS:</p> <p>A national skills mapping programme across all construction roles is required to establish baseline and required skills to meet Climate Action Plan targets. A good example is seen in circular skills mapping in a Horizon funded project BUSGoCircular.</p>	CORE
9.10	<p>MONITORING AND EVALUATION:</p> <p>Establish a clear framework to monitor and evaluate the progress and effectiveness of these recommendations in addressing the skills gap and achieving the objectives of BUSI2030. This framework should include key performance indicators (KPIs), data collection methods, and regular reporting mechanisms to ensure continuous improvement and course correction if needed.</p>	CORE

4.3 INDUSTRY RECOMMENDATIONS

10.0	INDUSTRY ECO-SYSTEMS	
10.1	REGISTERS: Establish approved registers for contractors, consultants and specialist installers linked to quality and competency criteria, approved CPD, recognition of prior learning and promoting lifelong learning. Refer also to 3.4.	CORE
10.2	NETWORKING: Support and participate in existing built environment networks to encourage sharing of best practice, case studies, innovation and training materials to promote a greater culture of collaboration e.g Construction Industry Council; Construction Sector Group. Strengthen connections and sharing insights between Industry and Education providers.	ENABLER
10.3	QUALITY ASSURANCE: Contractors and Consultants of all scales to actively participate in regular lean, green and digital training and adopt these principles into work practices. Ensure appropriate Quality Control principles are in place and actively implemented.	ENABLER
11.0	GREEN CAREERS	
11.1	AWARENESS CAMPAIGN: Promote and participate in a public campaign on career opportunities within the construction sector, with focus on emerging technologies, circular economy, digitisation, digitalisation, retrofit, zero emission strategies and nature-led solutions.	CORE
11.2	CAREER EVENTS: Participate in opportunities to promote the sector as a sustainable career option to students, teachers and parents by supporting events such as Worldskills Ireland, Higher Options and other regionally run career events.	CORE
11.3	SCHOOLS OUTREACH: All built environment organisations to actively promote, at scale, careers in the industry to students, teachers and parents to increase the uptake of built environment CAO courses, apprenticeships and traineeships.	CORE
11.4	APPRENTICESHIPS AND TRAINEESHIPS: Industry representatives to continue to work with SOLAS and the National Apprenticeship Office to promote greater uptake of apprenticeships and traineeships.	CORE
11.5	CAREER PATHWAYS: Participate in a national skills mapping programme to showcase the career progression pathways available in the industry.	CORE

4.3 INDUSTRY RECOMMENDATIONS

11.6	MIGRANT WORKERS: Support migrant workers to upskill, re-train and learn new construction skills through appropriate and relevant provisions, taking into account and seeking to overcome any barriers such as language.	CORE
11.7	DIVERSITY & INCLUSION: All built environment organisations to actively promote diversity and inclusion to address current imbalances within the industry.	ENABLER
12.0	GREEN SOLUTIONS	
12.1	ZEB FOR ALL (PARTICIPATION):	
12.1.1	Construction workers and consultants to participate in ZEB fundamentals training (as a minimum) and promote to material suppliers, builders providers, property advisers and funders etc.	CORE
12.2	GREEN PROCUREMENT:	
12.2.1	Promote and facilitate participation in green public procurement training, at scale, for procurement and tendering professionals.	CORE
12.2.2	Promote a culture of design and delivery for performance (not just for compliance) with a view to exceeding minimums and anticipating future requirements.	ENABLER
12.3	EMERGING TECHNOLOGIES:	
12.3.1	Promote innovation through the application of alternative processes and use of emerging technologies to deliver more sustainable buildings.	ENABLER
12.4	LIFELONG LEARNING & CPD:	
12.4.1	Promote a culture of lifelong learning within industry with a particular focus on support for micro, small and medium businesses to increase participation in training.	CORE
12.4.2	Industry to encourage and incentivise employee training participation with CIRI certification and re-certification requirements.	CORE
12.4.3	Support training initiatives for carbon & digital literacy to address current and forthcoming ESG requirements, as well as regulatory changes.	ENABLER
12.4.4	Support and encourage green leadership within industry to promote green cultures in organisations.	ENABLER

5.0 BUSI2030 TIMELINE

	2024	2025	2026	2027	2028	2029	2030
POLICY	SKILLS ECO-SYSTEM: GOVERNANCE	OVERSIGHT BUSI2030	WHOLE OF GOVERNMENT APPROACH	INDUSTRY & EDUCATION COLLABORATION			
	GREEN CAREERS: GOVERNANCE	PROMOTE DIVERSITY	PROMOTE GREEN CAREERS	DIASPORA CALL	MOBILITY SUPPORTS	APPRENTICESHIPS REVIEW RELATIVE TO CLIMATE ACTION TARGETS	
	QUALITY ASSURANCE		CLIMATE LITERACY (BUILT ENVIRONMENT)	MANDATE ZEB FUNDAMENTALS FOR ALL	INNOVATION ENABLERS & SUPPORTS	FASTRACK SYSTEMS (eg DIGITAL, BIM,CE, MMC)	FACILITATING SPECIALIST REGISTERS
	PUBLIC SECTOR LEADING	RESOURCE SUPPORTS	HOLISTIC APPROACH	BUILDING CONTROL SUPPORTS	SHARING PUBLIC SECTOR CASE STUDIES	SUPPLY CHAIN SUPPORTS	
	COLLABORATION			CENTRALISE SKILLS ECO-SYSTEM	STRENGTHEN BUILT ENVIRONMENT NETWORKS (ALL DISCIPLINES)	SHARING CASE STUDIES	LEARNING FROM PILOT PROJECTS
EDUCATION	FET & HE ECO-SYSTEM	TRAIN THE TRAINERS	SKILLS MAPPING	INCREASED FLEXIBILITY	ZEB CENTRES	CENTRALISED PLATFORM UPSKILLING COURSES	
	PRIORITISE GREEN EDUCATION		ALL TRAININGS TO SUPPORT CLIMATE ACTION TARGETS	TRAININGS IN EMERGING TECHNOLOGIES	CONSOLIDATE CPDS	DISSEMINATE RESEARCH INTO TRAININGS	
	AWARENESS IN SCHOOLS	PROMOTE GREEN CAREERS LINKED TO CLIMATE ACTION TARGETS	INDUSTRY & SCHOOLS ENGAGEMENT	TERTIARY & SCHOOLS ENGAGEMENT	SUPPORTS CONTENT FOR TEACHERS	SHOWCASE INNOVATIONS	
	PROMOTE LIFELONG LEARNING	UPSKILLING PATHWAYS	COMPETENCY FRAMEWORKS	PROVISION ZEB FUNDAMENTALS FOR ALL	CAREER PATHWAYS SUPPORTS	CO-ORDINATED PRIVATE TRAINING	NEW APPRENTICESHIPS TRAINEESHIPS MICRO-CREDENTIALS
INDUSTRY	INDUSTRY ECO-SYSTEM		COLLABORATION STRENGTHEN NETWORKS (ALL DISCIPLINES)		FACILITATING & MANAGING SPECIALIST REGISTERS		
	GREEN CAREERS	SCHOOLS OUTREACH	AWARENESS CAMPAIGNS	DIVERSITY & INCLUSION	EQUITABLE CAREER EVENTS	MIGRANT WORKERS SUPPORTS	CAREER PATHWAYS
	GREEN SOLUTIONS		MANDATORY ZEB FUNDAMENTALS FOR ALL	GREEN LEADERSHIP	CLIMATE LITERACY	GPP	INNOVATION ENABLERS & SUPPORTS

6.0 NEXT STEPS

The National Upskilling Roadmap 2030 for the Built Environment is a living document to be implemented and adapted as Ireland aims to reach carbon neutrality by 2050. This is only the beginning of the process. These recommendations will need to be updated on a regular basis to reflect policy development, as well as technological, societal and economic changes.

The BUSI2030 team recommends that monitoring and evaluation of this Roadmap should be focused within a smart, adaptive and collaborative process between Public Sector, Educators and Industry, within a national implementation platform.

A regular review of the recommendations and implementation progress could be facilitated for review within the Construction Sector Skills Forum (CSSF), hosted by DFHERIS.

The BUSI2030 Team would like to thank all participants who attended and contributed to our interviews, workshops, focus groups, and steering committee meetings (National Platform), for the development of these recommendations.



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