



Paul McCormack,
BIMcert Programme
Manager,
Belfast Met

**12th BUILD UP
Skills European exchange
meeting**

***leveraging digital skills for
energy efficient buildings***

Agenda

1. **Leverage**
 - Digital
 - Environmental
 - Skills
2. **Digital Skills Toolbox**
 - Micro module approach
 - Bite sized learning non linear pathways
 - Learner driven
2. **BIM Energy Performance Alliance BIM-EPA**
 - Collaboration driven
 - Digital repository of BIM modules
 - Individual Learning Account (ILA)
4. ***digiCONEX***
 - EU digital centre of Excellence in the Construction Sector
 - *cert*COIN the skills crypto currency
 - monetizing the skills and learning exchange
 - system based on skills recognition rather than accreditation

Digital leverage

Nearly 90% of global business leaders recognize the critical importance of adopting intelligent automation.

70% of construction companies believe that those who do not adopt digital tools will go out of business.

The challenge is to mobilise the workforce to address digital transition and empower the sector.

1. To transition to this 'digital workforce.'
2. To optimize the opportunities presenting themselves
3. To deploying the digital workforce *at scale*.
4. To overcome 'digital dissonance'

This situation has been further exacerbated by the COVID-19 pandemic

Environmental leverage

Buildings account for 17.7% of the global Green House Gas emissions globally

- Residential 10.9%
- Commercial 6.6%

8.74 billion tonnes of CO₂ equivalents (CO₂e).

Source: Climate Watch and the World Resources Institute 2016
when total emissions reached **49.4 billion tonnes** of CO₂ equivalents (CO₂e).

Skills leverage

Most of the issues related to low demand for skilled workforce are due to:

1. lack of a widely recognized and accepted international scheme of certified qualifications for sustainable construction and sustainable energy skills;
2. lack of awareness and uptake by the industry of new methods and digitalisation;
3. lack of mandate or incentive by public authorities for the use of such skills.
4. Technical and training phobias from the target user group

The formerly called “brick and mortar” industry has entered the digital age.

Use the twin ecological and digital transitions opportunities as the catalyst for sector growth

Construction - Energy Challenges

- Governments, particularly in the EU, are increasing their CO₂ and energy efficiency regulations and raising their targets,
- EU strategies and policies for decarbonization of the construction sector and approaching NZEBs are being established
- Digitalisation goes hand in hand with energy skills
 - provides a great opportunity to reduce the environmental impact of construction projects.
 - Makes energy skills of construction workforce more effective, easier to improve and provides confirmable effects in rational and smart use of materials and energy.

Digitalisation – skills toolbox

The fact that digital transformation is taking place at a slow pace in the European construction industry means a huge gap between theoretical digital opportunities and the realities of on-site construction.

This gap can be addressed by *mobilising the construction sector by inspiring demand for sustainable energy skills through*

- Digital skills
- Digital workflows
- Digital delivery



BIMcert

BIMcert prepares the architecture, engineering and construction (AEC) sector for the double challenge of energy efficiency and digitalization.

Its e-learning platform puts the spotlight on building information modelling (BIM) as an enabling tool to support the decarbonisation of buildings across their whole life-cycle.

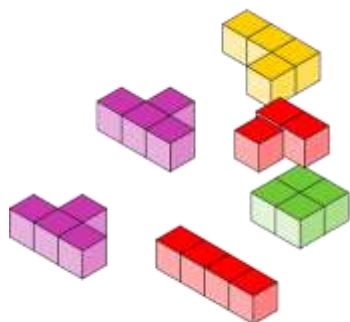


Unique Learner Pathways

Modules are adaptable to each learners needs
and career pathways
Learners can pick the micro accreditations that
suit them

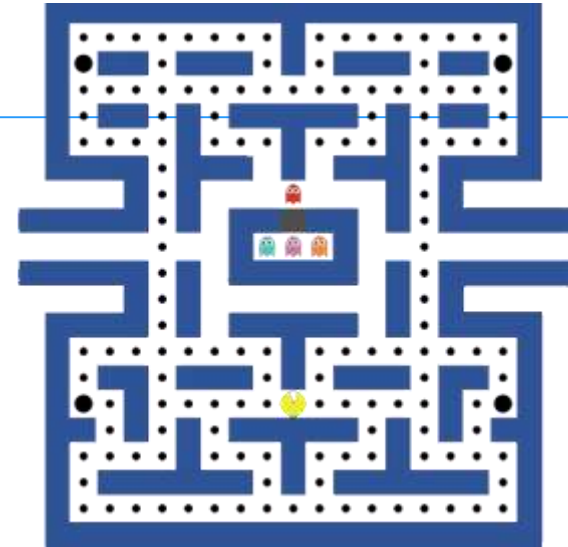
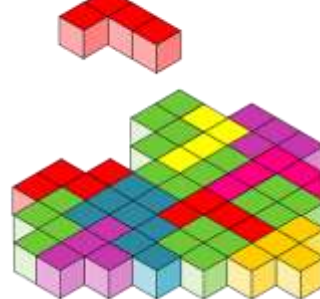
Task based modules

Allow learner to gain skills required for their own
professional needs , combine them to obtain
either pre-established qualification or an unique
“BIM Passport” skillset recognised via BIMcert



Several micro accreditations
(covering specific knowledge and
skills)

Flexibility to build
your own
personalised skillset



Not a linear progression

Bite sized micro accreditation



SMALL STEPS *MICRO MODULES*



BIMcert Bite Size Modules

TASK BASED

Specifically designed for different profiles and real time 'skill needs' –



What is BIM
& digital
construction?



BIM Terms &
Definitions



What are BIM
(Maturity) Levels?



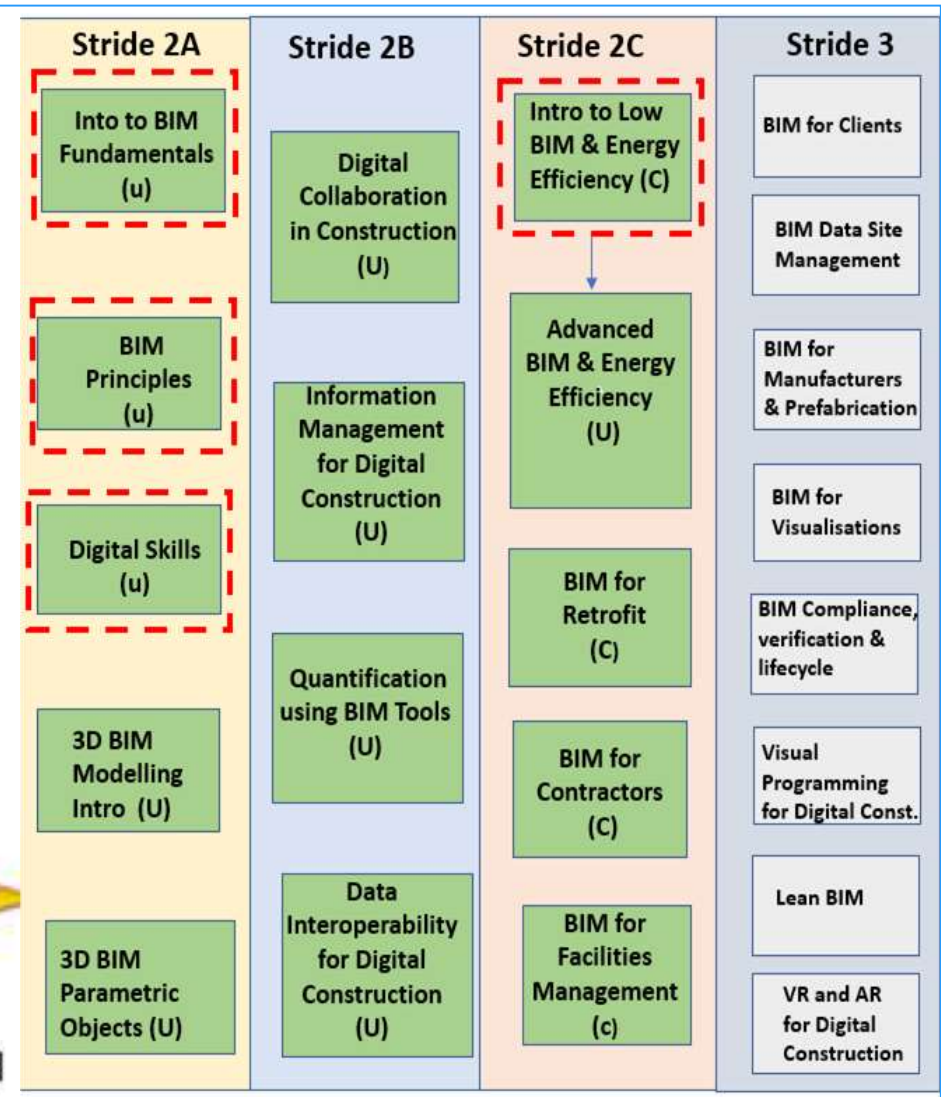
BIM Dimensions

Non prescriptive access

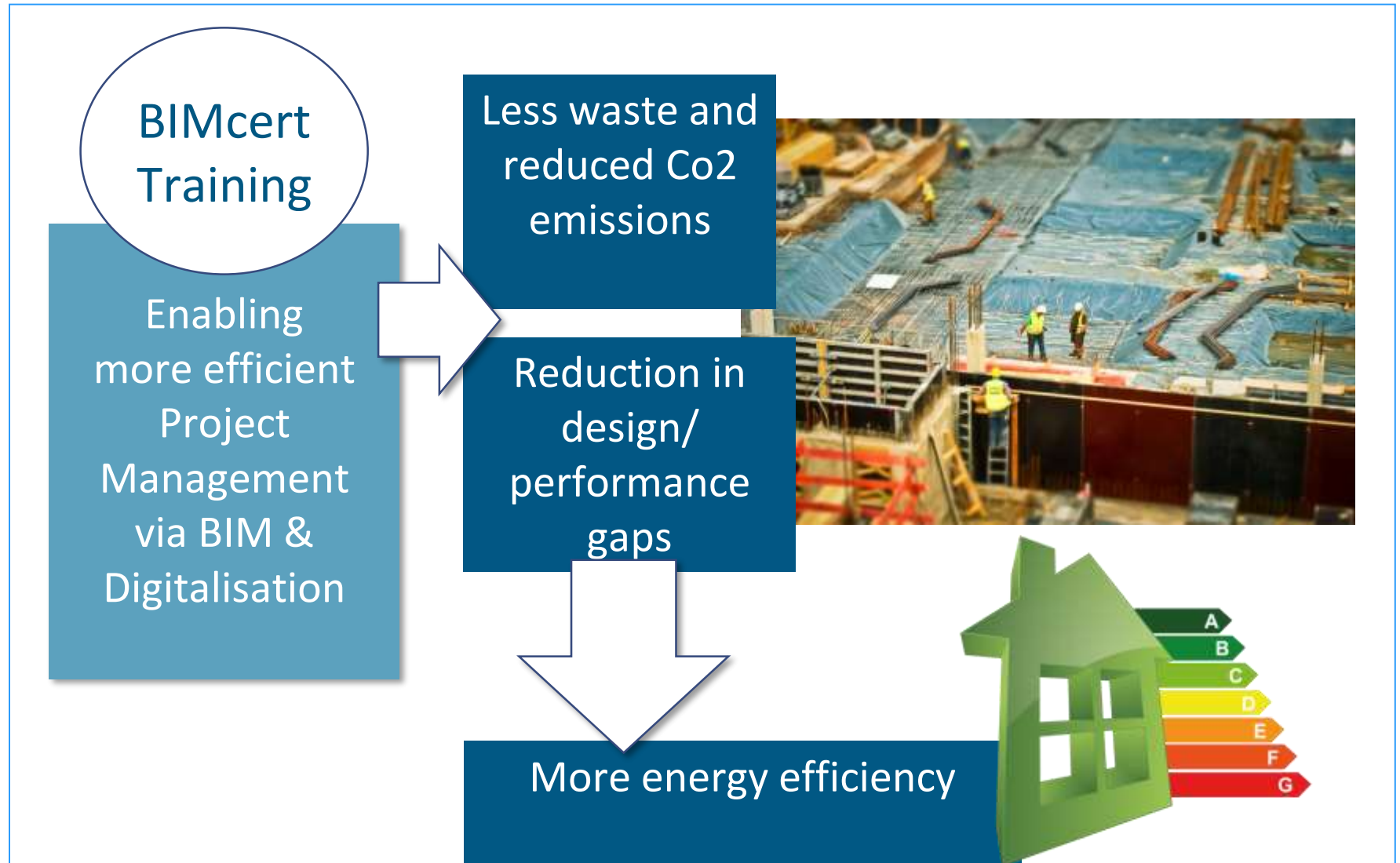
- **Stride 2A:** Learner selects a stand alone Unit aimed at BIM novices.
- **Stride 2B:** Learner selects a stand alone Unit aimed at those professionals with a deeper BIM knowledge.
- **Stride 2C:** Learner selects a course (c) which contains a number of units. Successful completion of relevant units will enable learners access to advanced modules.



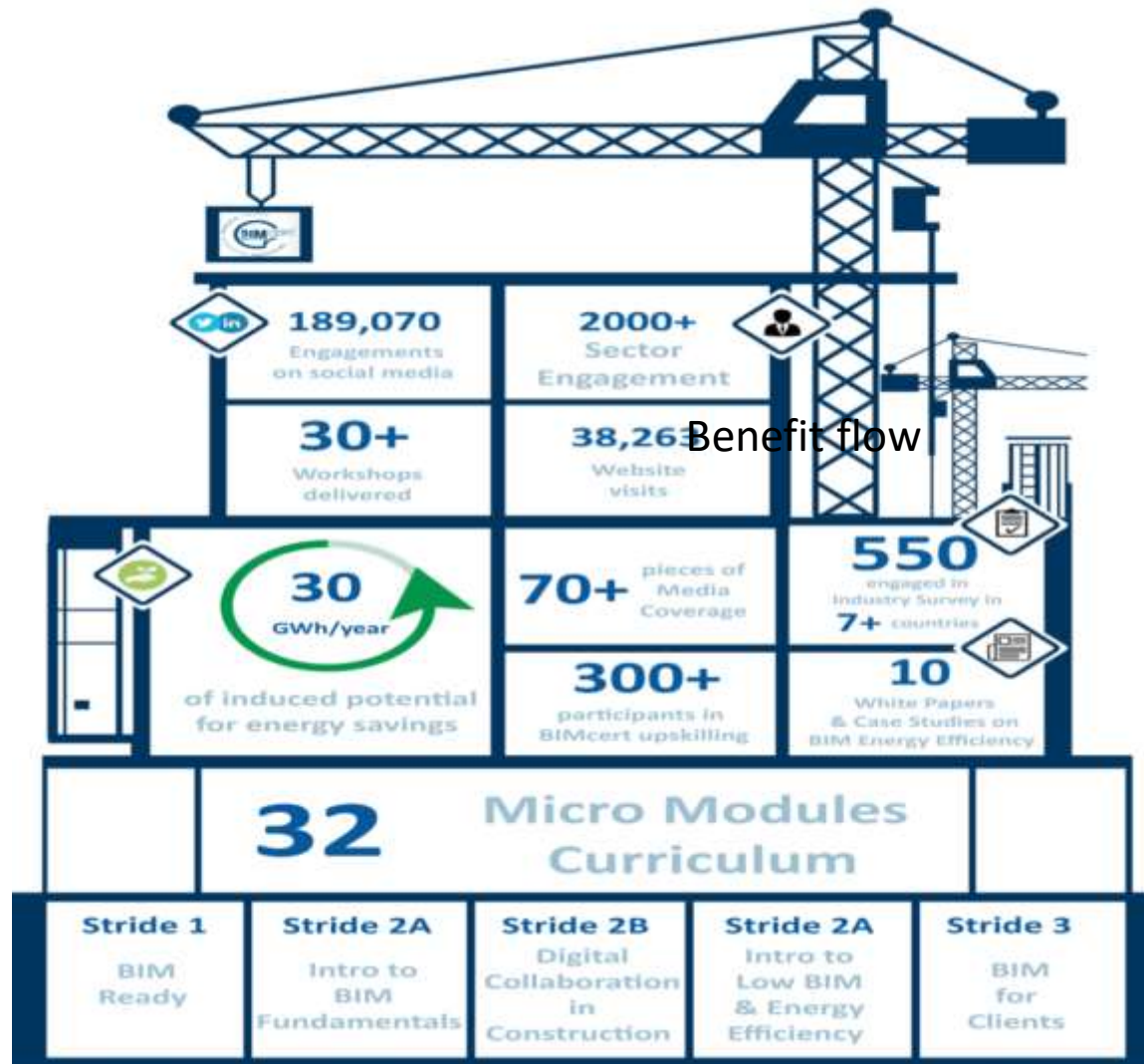
- **Stride 3:** Specialist modules to be developed



Benefit flow



Topping Off





- BIMcert
- Net UBIEP
- BIMeet
- BIMplement
- BIMzeED

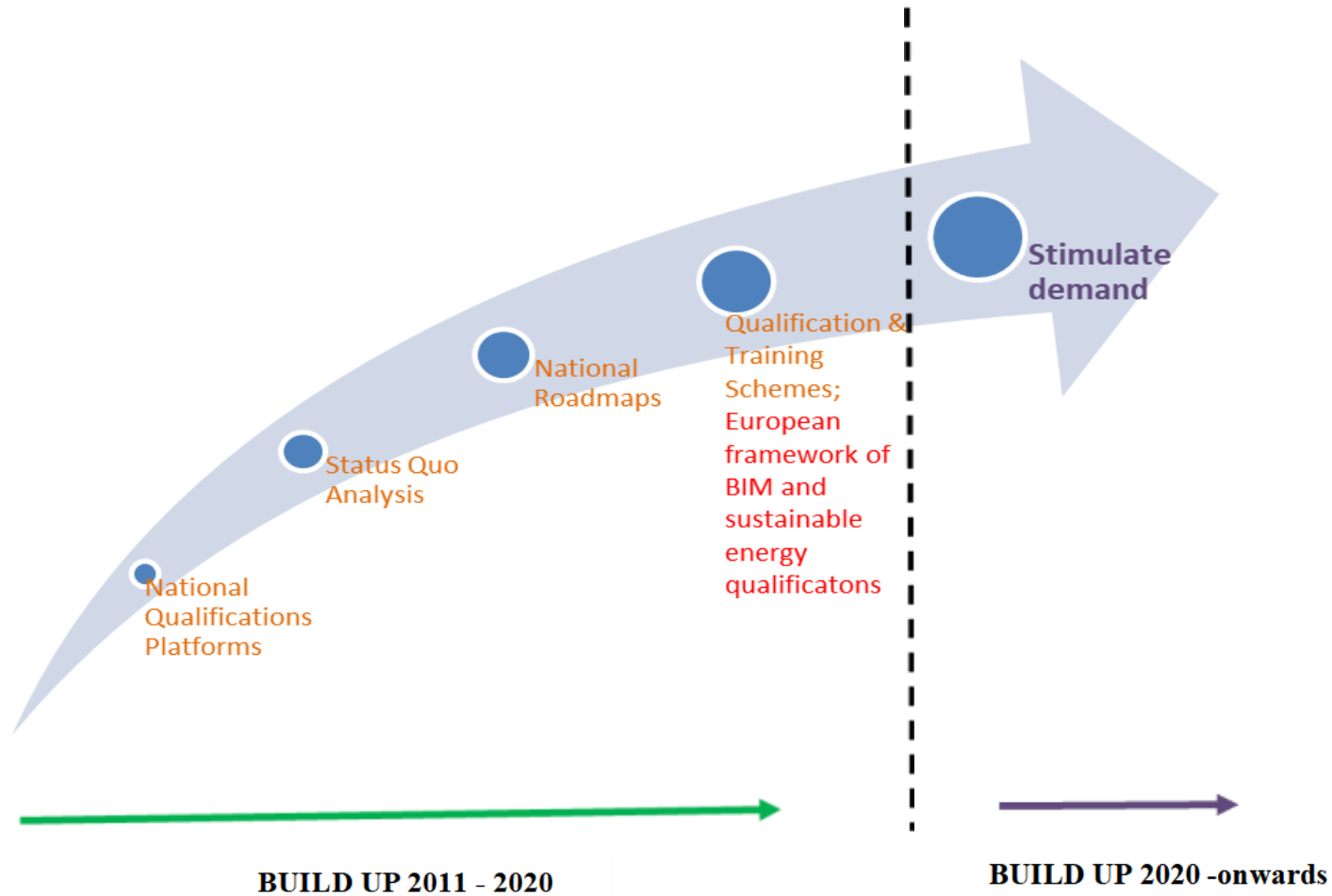
- Digitalisation – a vital enabler of Net Zero Construction
- Alliance of 100 partners across 24 EU countries
- Shared resources
- Knowledge informed task based modules that are not job based data driven
- Digital library of tools, modules and blended materials
- Supporting digital transformation in the built environment.
- Stimulating the demand for sustainable energy skills
- Providing clear upskilling transactions and recognition of upskilling performed



BIM-EPA Objectives

- To unite construction techniques, policy formulation and policy implementation into a balanced and coherent system towards sustainability of the building sector.
- A unified program for qualifications for sustainable energy construction skills needs to be developed in order to enhance wider market recognition, more intensive demand and more stimulating support provided by policy and regulatory framework, for construction sector workforce skilled and qualified to execute works connected to achievement of sustainable energy performance of buildings.

BIM- *EPA* Journey



Focus of work

- A digital skills individual learning account (ILA) for workers
- Energy targets, energy savings
- Dissemination and communication
- Recognition - Accreditation and certification
- Exploitation
- Future Collaborative opportunities
- Be inclusive reach out to all especially the hidden market drivers, private owners, users and others.

Inspiring & Stimulating the Demand

- Revolutionise the learning process by monetizing the skills and learning exchange with a system based on skills recognition rather than accreditation.
- Develop a European-wide distinguishable recognition scheme of digital energy efficient BIM construction skills linked with a maturity-based digital ranking system for accounting CPD learning transactions.
- Establish an open competency based qualification scheme based on maturity levels that empower micro-learning will be the basis for making learning transactions count.
- Develop a CPD recognition pathway for the whole supply chain to access and utilise.
- CERTcoin – the innovative currency of skills and learning of the construction sector embracing today's digital transformation benefits.
- This reward based on skills and time credits will be stored in an Individual learning Account
- Complement and integrate with other existing projects, instruments and initiatives to deliver increased levels of sustainable energy skills across the entire supply chain of the construction sector.

Delivery mechanisms

- Learners are 'in control' they have more autonomy and responsibility, so the digital transformational skills including BIM must be delivered commensurate in a manner that integrates with the worker and their environment can deliver many energy efficient aims and objectives.
- Need to stimulate and optimise the workers specialist skills
- Ensure that they are connected, communicated with and informed.
- Utilising technology, digital communication, augmented blended training in digital skills via multi modal content to enhance the worker's skill set, improve efficiency and provide information continuity.
- Reaching out to the construction worker via their mobile phone or other device in a virtual manner allows knowledge workers to access training, information and data from any location and via any device ensuring they are continually being upskilled and expert in their duties.

- Education is moving beyond just the imparting of information.
- The journey itself is quite different from usual training schemes. A first innovation lies in personalisation: the system systematically taps into the experience to get them familiar with new digital technology.
- This personalised journey allows the user to accrue wisdom – the how and the when of using information in the workplace.

Accreditation → Recognition



Awarding body(OCN NI)- Qualifications approved into National Framework

Combination of mirroring LO and recognition of Bespoke accreditation- Micro accreditation



Engaged other accreditation entities for other routes. E.g. BRE partnership



Digital badging support

Consortium Partner Institutes, provide further status at initial stage of dissemination of BIMcert



Engagement with Building Smart

mapping to energy qualification via BIMcert participation within BIMAlliance



CPD Engagement

Additional route for recognition of BIMcert as a continuous professional development tool and to strength reach and status of BIMcert as a “skills Passport”

UPSKILLING BARRIERS

Suitability for different profiles and “real time” skill needs

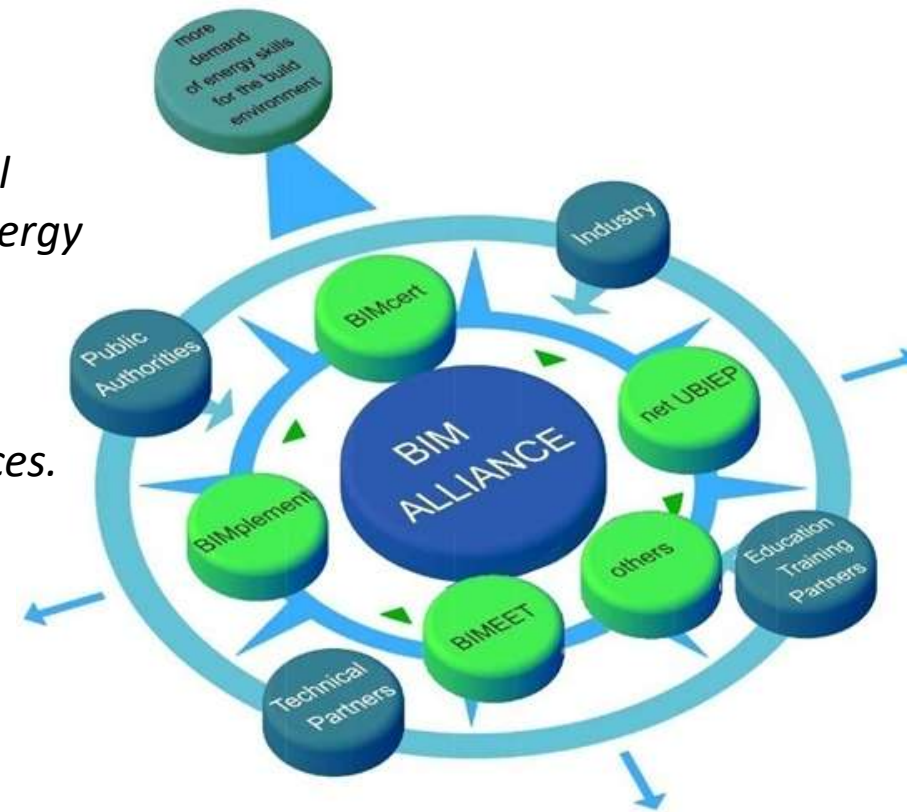


Centre of Excellence for Digital Construction

- Promote and enhance the use of digital skills in the construction sector
- Share knowledge, best practice, inspire collaboration and showcase new opportunities in digitalisation of construction.
- Support Smart Construction i.e. Offsite Manufacturing, Digital Technologies and High Performance Buildings.
- Establish a Skills Hub which will explore the future of skills in the built environment and the ways in which we can encourage new entrants into the industry.
- Deliver BIM training, accreditation, digital certification of skills and deliver our innovative EU wide Digital Transformation ILA
- Become the key to transforming and changing the face of our industry.
- Assist industry to reduce the carbon footprint of the construction sector

Connectivity

- Full technical and industry connectivity
- Move from analogue to digital way of learning
- *Connectivity is the key lever in ensuring workers are equipped, informed and skilled to deliver energy efficiency across the building sector. Connectivity will stimulate and inspire the demand for sustainable energy skills, augment access to appropriate upskilling transactions and recognition of upskilling performed, enhance smarter work practices and develop innovation and transformational competences.*



Breakdown

**46 online BIM modules
from 7 projects**

88% using assessments only
12% with assessment and
exams.

Target groups - 60% White Collar, 40% Blue Collar

These cover the following:

Professionals (60%), Technicians (20%), Specialists (30%), Site Supervisors (20%), Trades and Workers (30%)

Delivery Mode and Duration:

Blended and online - where 80% are 1-2 days contact and 20% are micro units of 1-2hrs. All in English and also other languages. Types of tools used for assessment– quizzes and gamification, BIM/digital tutorials and practicals, written work, poster presentations, group work, group discussions.

EQF vs CPD/Credits

BIMzeED - EQF 5-7 – contact 8-10hrs, online self study 24-10hrs

BIMCert – CPD/Credits – contact 1-2 hrs online

BIMEET – CPD/Credits – contact 1hr online, 2 days in class

BIMplement – CPD/Credits – contact 1hr on-site

Building Smart – CPD/Credits – contacts 6-14hrs online

NetUBIEP – CPD/Credits – contact 16-24hrs blended

- To achieve real energy efficiency across the entire construction supply chain we must leverage the true strengths of BIM for all thw workforce.
- The COVID crisis has shown how remote working has changed the workplace. We have the tools and structures to reach out, support, inform and upskill workers. We need to do the same for all construction workers
- We must deliver the training and upskilling in a modern, personalised, connected fashion where the learner is stimulated, inspired and enriched.
- Learning pathways
- In order to realise the benefits of digitalisation throughout the sector We need to move from the constraints of education which is the imparting of knowledge – a 1-way mechanism. We need to move to a position where we provide the user with wisdom – *sapida scienta* the Latin for tasted knowledge. This is the real leverage for change.

Conclusion

Currently we are at the 'liminal' stage between the old and the new

We need to upskill ourselves and our society in order to step through the doorway successfully and harvest the benefits instead of decline.

Construction sector employees are also at the liminal threshold of energy transition and digitalisation, we must address this transformation to successfully stimulate the demand for sustainable energy skills

We must develop new patterns to replace the old ways of learning and forming new patterns that demand, stimulate, encourage, unite and assist.



Access Training
Modules
BIMcert
website



<https://energybimcert.eu/>

BIMcert Animation

