



# BIMcert News #05 June 2019

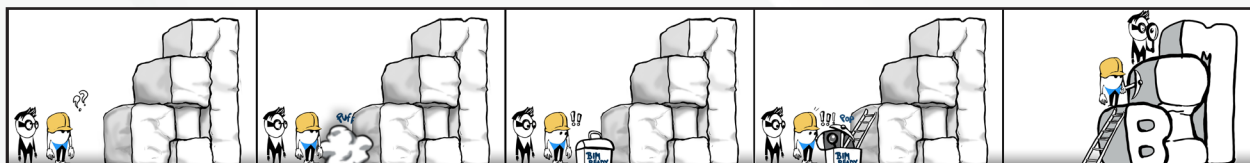
**BIMcert - Developing BIM training and promoting energy efficiency for the European construction supply chain.**

## Development of BIMcert qualifications pathway

BIMcert aims to develop a series of training interventions using digital technology and improved blended techniques to support, enhance and maximise the impact of energy efficient skills at all operational levels within the construction industry. Central to this is the creation of an accredited curriculum and framework of qualifications developed through the work and output from each work package, within the context of a National and European wide framework. Establishing an accredited curriculum framework, with associated qualifications will provide the learners and stakeholders with an assurance of the qualification and standards of training.

However, for the curriculum to have an impact it must be informed by industry requirements and responsive to this need. From the outset of BIMcert this relationship with industry has been core to the work, as identified via the innovative BIMcert Strategy Compass, with CITB NI a core partner and local businesses such as O'Hare & McGovern and Creagh Concrete Products part of the Industry Advisory Panel. Guidance from these partners along with

feedback from our industry workshops, across the partner regions, has identified a gap in the market in terms of the offering for upskilling with BIM qualifications, with most currently offered at Masters level. This is daunting for those businesses and workers who want to learn about BIM with the promise of some accreditation but do not wish, or have time to study at this level. One workshop participant recommended 'Democratising' BIM, so that it's not a top down skill but accessible to all involved in the project, from clients to designers, contractors to supply chain. As such there is a responsibility to teach others about BIM, ensuring the project is not only BIM compliant but work environments from architect's offices to construction sites are BIM inclusive. It was also proposed that a lack of understanding and knowledge of BIM could also be leading to a mistrust of BIM and the resulting slow uptake across certain sectors of the industry. This resistance in adopting BIM processes and tools is impeding the transition to more energy efficient construction and reduction in CO emissions within the built environment.



*Together we must work to demystify and democratise BIM - breaking down the barriers faced by an industry wishing to upskill and avail of the benefits.*

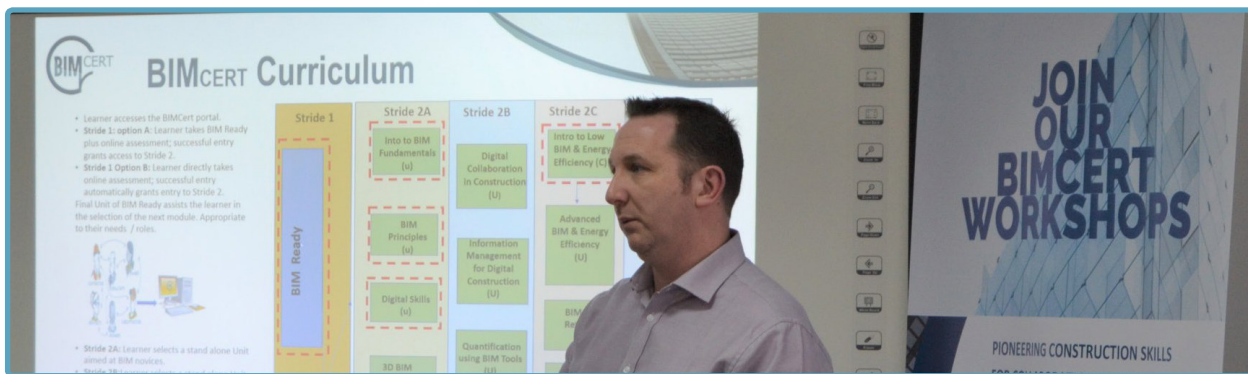
Following a review of existing qualifications, BIMcert proceeded with the development and creation of a UK Regulated Qualifications Framework (RQF) Level 3 qualification (European Qualification Framework Level 4). The rationale for a Level 3 (4) qualification was to provide an entry point that is accessible to all construction industry workers. BIMcert working in conjunction with Open College Network Northern Ireland (OCN NI) has developed a range of Digital Construction with Building Information Modelling (BIM) qualifications.

These offer a range of competencies and skills, starting with an introduction to BIM Principles and associated digital skills. Authoring skills, including models and

families, are also addressed along with information management. Recognising the three pillars of BIM and the need to understand the built aspect of both the model and project, a specific energy related qualification is under development.

As part of the next phase of trials BIMcert intend to offer the Digital Construction with Building Information Modelling (BIM) Award via the BIMcert platform and website. For more details and to sign up please visit [www.energybimcert.eu](http://www.energybimcert.eu).

**Andrew Hamilton,**  
lecturer in Architectural Technology and Construction,  
Belfast Met



## BIMcert Partners Paper Highlights Energy Savings:

The BIMcert partners have produced a new paper called, 'Delivering Energy savings for the supply chain through Building Information Modelling as a result of the Horizon 2020 Energy BIMcert project'.

The exploitation and utilisation of energy resources have caused severe ecological and environmental problems, including the production of emissions that contribute to global warming (Enshassi et al., 2018). The construction industry consumes up to 50% of mineral resources excavated from nature, generates about 33% of CO2 present in the atmosphere and is responsible for 40% of total global energy through both construction and operational emissions (Ajayi et al., 2016 and Zhou and Azar, 2018). This has resulted in the AEC Sector (Architecture, Engineering and Construction) out of necessity being forced to investigate new methods of practice and how best to apply resource-efficient techniques from the extraction of the raw materials to the demolition and disposal of its components.

The realisation that practices now face globalization, sustainability, and environmental concern, as well as ever-changing legislation requirements and new skills needed for the information age has resulted in technologies such as Building Information Modelling (BIM) becoming a key enabler in navigating these concerns (Jaradet, 2014). BIM can be defined as a modelling technology and associated set of processes to produce, communicate, and analyze building models (Sacks et al., 2018). BIM provides an opportunity for the Architectural, Engineering, Construction, and Operation (AECO) industry stakeholders

to evaluate possible solutions and identify potential problems of the final product before the start of actual construction (Badrinath et al., 2016). However, changing from traditional practices to BIM requires a shift not only in the technology used but also in the way design and construction teams work together (Shelbourn et al., 2017). To achieve the associated benefits that are accustomed to BIM a number of existing challenges to ICT (Information, Communication, Technology) utilisation in construction site management must be overcome which include a lack of knowledge, skills and competence, depth of understanding of decision makers and low ICT literacy (Ozumba and Shakantu, 2017). This BIM movement has also resulted in a clear, direct, and automatic impact upon engineering education systems (Jäväjä and Salin, 2014).

To assist in overcoming these barriers, so as to reach EU energy-related targets a number of funding initiatives have been put in place through Horizon 2020 with a focus on BIM, as a result of it having the potential to rapidly produce energy outputs that enable design teams to analyse and compare the most cost-effective, energy-efficient options. Such an initiative is the Energy BIMcert project, which aims to educate all areas of the supply chain in the use of BIM, to achieve better energy efficiency during the design, construction and ongoing maintenance of an asset.



**Barry Mc Auley,**  
Assistant Lecturer in Digital Construction and Engineering,  
Technological University Dublin



# An Insight into the McAvoy Group , BIM Contractor of the Year at UK BIM Awards.

In this article I look at the latest techniques for digitising construction and how new technology is taking offsite construction to the next level, the application of which, has led to McAvoy's 4th award; BIM Contractor of the Year at the BIM Awards 2019, in recognition of our pioneering work in applying digital technology to offsite construction.

The McAvoy Group is one of the UK's leading offsite construction specialists. An independent, family-owned business and established principal contractor, McAvoy has been providing bespoke offsite solutions and interim modular buildings for nearly 50 years, spanning several sectors including education, healthcare, commercial and residential.

Innovation and technology are key drivers behind all of McAvoy's operations and BIM is an increasingly critical element in its design and programme planning. McAvoy's were the first offsite contractor to achieve BIM Level 2 certification through the BRE Group and harnessing BIM enables McAvoy to achieve optimum energy efficiency, through intelligent virtual design team collaboration, enhanced manufacturing and site installation methodologies, earlier engagement with stakeholders and better management of resources.

McAvoy's were recently awarded BIM Contractor of the Year at the BIM Awards 2019. According to the judges, "The BIM Awards judging panel selected The McAvoy Group's award submission based on its thorough interpretation of its achievements in BIM delivery. There is clearly an excellent strategic-level interest in the use of BIM in its offsite operations and we saw that McAvoy is doing things differently from other contractors, which gave it the edge to winning this award. We also felt there was a future direction and forward-thinking nature to the submission. A well-deserved winner."

Eugene Lynch, CEO of The McAvoy Group, said, "We have invested significantly in our IT infrastructure. Our digital strategy and commitment to innovation are fundamental to achieving our ambitious plans for growth. The benefits to our customers and supply chain partners of the new technologies are proven – from enhanced collaboration in the design process to improving communications and co-ordination at project level.

"To receive such an important industry award is just fantastic and further well-deserved recognition of the talents and commitment of our brilliant innovation, design, production and project teams who have embraced a host of new technologies."

McAvoy is now applying the digital transformation to its manufacturing operations and is looking at how immersive technology and robotics can be used to further enhance training and production efficiency, exploring how factory operatives could receive instructions via wearable devices or tablets in 3D.

As a business, McAvoy sees tremendous opportunities for digitising offsite construction, particularly to help us address the industry challenges of meeting the ambitious targets set out in the Government's Construction 2025 Strategy.

As advances in digital technology continue to improve, we can only see even greater benefits to our customers, users and stakeholders in the facilities we design and construct offsite.

**Lorraine Mc Morrow,**  
BIM and Digital Construction Manager,  
Mc Avoy Group

[www.mcavoygroup.com](http://www.mcavoygroup.com)



# Nigerian Federation of Construction Industry (FOCI); Visit to CITB NI / BMC.

A delegation of representatives of the Nigerian Federation of Construction Industry (FOCI) visited Belfast Metropolitan College (BMC) as part of a collaboration with CITB NI. Nigeria is the most populous country in Africa and has a significant construction sector that is emerging from recession. FOCI is a body that brings together Construction Employers, Material Suppliers and Manufacturers, meaning that the entire supply side is encompassed in their federation. The issues facing the industry are similar to those in construction sectors all over the world:

- Attracting construction workers
- Creating training programmes that meet employers needs
- Developing better quality and productivity

As part of the visit to Northern Ireland the group visited BMC to hear about the work being carried out in the H2020 funded BIMCert project which is a collaboration between 5 partners from, Croatia, Ireland, Macedonia, Portugal and of course Northern Ireland. The group were interested in the drivers for movement to BIM and Digital Construction in general and the skills requirements identified within the industry research carried out as part of the project.

In particular, the group were interested in how the BIMCert project team are developing a "Beyond Blended" approach to training for the skills needed broken down into "Bite Sized" learning elements. The group were impressed by the work carried out in developing a framework of skills needs and the delivery platform being developed that will

allow upskilling in a manner that suits a variety of learning styles with consistent standards and assessment being ensured through an on-line delivery system.

BIMCert project team members Paul McCormack, Eduardo Rebello and Barry Neilson introduced the delegation to the materials developed to date and shared the vision of how this will be advanced in the future. The team from FOCI could see the potential for development of BIM in their own industry and recognised the issues being addressed by BIMCert as being common to Nigeria;

- Clients who need to be educated in the benefits and building requirements of procurement.
- Disseminating the skills needed to drive digital construction across the whole industry
- Engaging with the tools available to manage the "whole life" of the built environment from inception through delivery and use, to eventual demolition at the end of its life.

While the Nigerian industry may lag behind some areas of the world in Digital construction, its size and the involvement of major construction companies from around the world will ensure that it is not long before the skills development model being developed within the BIMCert project will be needed there as well.

The Nigerian delegates will continue to monitor the BIMCert progression through the website at: <https://energybimcert.eu>

**Barry Neilson, CITB**



*From L to R: Barry Neilson (CITB NI), Tunde Adekimi (FOCI Director of Skills), Olunmi Adekoje (FOCI Director General), Paul McCormack (BMC) and Emeka Okoroafor (FOCI Vice President & Chair of Skills Committee)*

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