

WorldSkills UK Construction
Industry Roundtable Report 2019:

***Collaboration critical to
making ‘digital’ work for
the construction industry***



Introduction

The UK construction industry, like many others, is in the middle of a significant transformation, triggered by the increasing use of data, digital technology, and the greater use of off-site manufacturing in projects of all shapes and sizes. While productivity gains are there for the taking, the industry will struggle to exploit them without the right skills strategy in place. WorldSkills UK brought construction industry leaders and technical education professionals together to discuss some of the major issues that need to be addressed to make 'digital' work for the industry. This report provides a summary of the main themes discussed and signposts actions that WorldSkills UK will take forward and that leaders in the construction sector and skills sector can adopt.

The future of construction is manufacturing

WorldSkills UK first brought together a group of senior leaders from the construction industry in Summer 2018 to discuss the future of construction. They concluded that "the future of construction isn't construction, it is manufacturing". In other words, buildings are increasingly being developed using off-site production and assembly. They concluded that the industry needs to:

- **Maintain a twin-track approach to skills** – continue to attract young people to traditional construction trades, while merging new skills into those trades and upskilling the existing workforce
- **Take an innovation leap of faith** – employers and FE institutions need to work together more closely than ever to ensure the construction industry has the skills it needs to make the most of technological developments
- **Take a longer-term perspective** – FE leaders should focus on the value that technical education can bring in making the sector more productive and competitive in the long-term
- **Attract more young people by 'translating the industry'** – the industry needs to sell its careers in a way that appeals to young people who are interested in transferable, creative and digital skills, not just traditional career paths
- **Engage schools** – employers need to see school engagement as a long-term investment

A similar group of construction experts met for a second time in November 2018 to discuss how to remove the barriers to the industry becoming more innovative, answering questions such as: how can construction leaders create a culture of innovation in their workforce, and how can the industry learn from those institutions that have taken an innovation leap of faith?

Two case studies provided some inspiring answers to these questions.

Embracing a digital future, Mark Noonan, Industry Relations Director, Construction Industry Training Board

Mark described the important work that the CITB has been doing to help co-ordinate the sector's readiness in terms of skills at every level in the workforce for the opportunities that digital technologies can offer. His key points included:

- Digitisation is at the heart of the construction industry's desire to become more productive, but the industry in the UK is far from realising the full scale of the opportunities available
- CITB's report 'Unlocking Construction's Digital Future' revealed that digital technologies such as onsite tablets, augmented reality, virtual reality and drones are increasingly being used, but smarter methods of construction are equally achieved by using data more effectively
- There is a lack of consensus within the industry about what digital construction really means, and a misconception that it is solely about Building Information Modelling (BIM)
- Progress can be made by agreeing a common set of competencies and behaviours for employees to meet at all levels within the workforce. CITB is working with the Construction Leadership Council to drive this work forward, identifying both the soft skills and the technical skills needed for the industry to take advantage of digital opportunities
- CITB believes that if employees are prepared to upskill and construction leaders are willing to embrace the necessary culture shift within their workforce there will be employment opportunities for everyone. In other words, digital technology means working differently not replacing traditional roles
- Further progress can be made by breaking down cultural habits that restrict the sharing of information and best practice within supply chains

The CITB's work in this area shows that the benefits of moving towards digital construction require the right skills and mindset as well as investment in new technology

Taking an innovation leap of faith, Shaun Hunt, Assistant Principal Curriculum and Standards, Dudley College

Shaun described the ground-breaking initiative at Dudley College to build a Centre for Advance Technologies, the successes they have achieved and the lessons that they have learnt about how to deliver construction skills fit for the 21st century. His main points included:

- Dudley College's Centre for Advanced Building Technologies has 1,200 learners enrolled this year of whom 400 are in digitally-related construction courses, using a £12.5m facility that can accommodate a full-scale crane, digital engineering suites and an off-site manufacturing zone
- The College had the confidence to make the capital investment necessary for the facility up-front in the hope that it would pay back with a 'build it and they will come' philosophy. This 'leap of faith' worked: Dudley College is now generating income from its apprenticeship offering and will be offering degree apprenticeships from Autumn 2019
- Part of the success of the centre has been to offer a range of delivery models, including residential courses and working with other colleges to deliver on their campuses
- Success was also due to being responsive to industry requirements, allowing the curriculum to be driven by market demands and engaging with employers to make plans
- The biggest challenge has been finding the staff with the right level of experience to teach the digital construction courses, not least because salary rates in industry are double those in colleges. In the end the college has had to be prepared to pay industry salary rates to attract the right staff
- One solution was to use guest lecturers from industry. This gives industry experts a taste of teaching without committing to delivering a whole course and is a great way to share knowledge between industry and the college. There is a cost to employers for releasing their staff, but it also offered a placement option for retirees and keeps the learning environment aligned to industry requirements

The example of Dudley College shows that both the college and its business partners had to change their established ways of working to make the initiative a success

Collaboration is key to making a success of the digital skills challenge

Colleagues from different parts of the education and construction sectors agreed with the key learnings from the two case studies. Above all they agreed the collaboration between education and construction industry leaders would be vital to help ensure that the next generation of workers are ready to use digital technology and applications alongside traditional skills. They discussed the following points:

- The construction industry needs to agree a common language for digital skills, while acknowledging that there is a huge spectrum of employment needs in the industry, and traditional skills remain vital
- The advantage of BIM lies in the ability to bring together clients, designers, architects and engineers to solve problems quickly not just in the modelling. However, the full advantages won't be realised without a change of mindset and much better collaboration within the supply chain
- Co-delivery of teaching, where employers release staff as guest lecturers, offers huge advantages to both colleges and industry. Colleges get courses that are credible and the reassurance that they are delivering skills suited to the needs of employers. Employers get to directly influence the training that could supply their future workforce
- Delivering education in a modular way and asking contractors how they want the learning to be delivered will improve learning providers' ability to respond to market requirements and help students choose courses that are tailored to their specialism
- The involvement of industry leaders and colleges in trailblazer groups will help ensure the T levels will respond to industry needs when they come on-stream

Conclusions

- There is a strong need to balance the skills needs of the present with the 'innovation leap of faith' needed to train for the future of the sector
- Collaboration within supply chains and between industry and education bodies will be critical in making the move to digital construction
- Education and the sector need to be willing to work differently and break current approaches and ways of working
- Using data more effectively is just as important as using new technology
- Digital technology and applications will enhance traditional skills rather than replacing them so that projects can be delivered more safely, efficiently and cost-effectively

Actions

WorldSkills UK is keen to build on the two discussions by fostering greater collaboration in the sector and by helping to ensure that skills provision can meet the demands of an industry that stands to gain a lot from using digital technologies and applications.

- We will continue to help build capacity in digital construction skills through our competition infrastructure and careers platforms by testing and showcasing world-class standards in support of the development of a truly excellent technical and professional education system. This will include:
 - Creating a focus in the construction area at WorldSkills UK LIVE to showcase the integration of new technologies and traditional crafts
 - Piloting new competitions such as BIM
 - Discovering how other countries are tackling similar challenges and sharing that knowledge
- WSUK will work with construction leaders to deliver new opportunities to learn international best practice in developing digital construction and world-class current skills needs eg through WSUK's new 'Seeing is believing' programme of activities linked to the WorldSkills competition in Kazan, Russia in August 2019

WorldSkills UK is determined to use its expertise in technical skills excellence, developed over decades of experience in global skills competitions and from its unique network of international skills experts to help the UK build a world-class technical education system. Throughout 2019 WSUK will be engaging its valued partners in business, education and governments to discuss new research and to develop innovative ways that technical education in the UK can support gains in productivity for the benefit of the economy and society. If you would like to get involved, please email **eroberts@worldskillsuk.org**

About WorldSkills UK

What we do: We are an accelerator for young people in the start-up phase of their careers. This means we inspire more young people to take up apprenticeships and technical education; we champion their success; and we accelerate their personal and professional development.

Why we do it: To change the national conversation so that apprenticeships and technical education are seen as prestigious career routes for all young people.

How we do it: Through experiential and digital careers advice; skills competitions, and mindset and productivity training.

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