

Minutes of the CPG Meeting on Construction

Date: Tuesday, 19th June 2018

Time: 08:15am – 10am

Venue: Conference Room B (Ground Floor), Tŷ Hywel, Cardiff Bay

Attendees

- Joyce Watson AM (JW)
- David Rees AM (DR)
- Mike Hedges AM (MH)
- Mark Bodger – CITB (MB)
- Yvonne Murphy, Senior Civil Engineer, ICE (YM)
- Gareth W Evans (GE) – Construction Wales Innovation Centre Coordinator (GE)
- Guest 1 (TBC by NP)
- Nitesh Patel – Office of Joyce Watson AM (NP)

Minutes of meeting

MB delivered a presentation on digitisation and the impact it will have across a number of sectors, including ICT, Oil & Gas, Utilities and Construction.

DR asked MB if the presentation related to digitisation or automation.

MB confirmed that it related primarily to digitisation, but some aspects of automation are picked up in the presentation.

MB said it is not all doom and gloom. He said the threat of digitisation in the Construction industry is only there if the industry does not adapt to the changes by investing in the right skills for the future. If we invest in skills that are right for that occupation then we'll have the opportunity to influence the labour market and opportunities for Construction. What we've got to do is to build on Construction's great talent and to invest in upskilling the workforce. This could include recruiting people with different skills sets. The construction sector of tomorrow sees a lot of digital technical skills as a requirement. A lot of process improvement required and information management.

MB said the pace of change is unclear but recent studies have identified potential scenarios for technology adoption and the impact on jobs. One of the fastest changes is based on the loss of railway signalling jobs. If that impact was to happen in the Construction industry then the pace of change would follow the same arc. In manufacturing there has been a lot of automation and

digitisation and this change has been moderate. There is a potential threat but also an opportunity within the Construction industry.

The most widespread technology is design for manufacture and assembly. 3D printing in the next 5-10 years is also anticipated to come onto sites. In addition to virtual and augmented reality.

MH asked if 3D printing was on-site or off-site.

MB confirmed it was on-site. There is potential for sites to have their own planets and facilities areas. Research into off-site manufacturer or construction. The research shows that new roles are created with growth for multi-skilled assembly technicians or digital designers working in a more structured comfortable environment than working on site. This presents an opportunity to appeal to a different group of people that tend not to consider working in the industry.

Beyond individual technology there are other general skills that are needed now that will prepare businesses for the future that include leadership, digital literacy, data analytics and the softer skills of accuracy, adaptability and effective communication, team working and leadership.

Digital tools can be used in training. This includes virtual reality and augmented reality.

[Video Shown of Dudley College using digital technology for training]

After the video finished playing, GE confirmed that some of the technology in the video would be available at Swansea College.

GE said the UK Government funded both the building of the college and equipment in it.

MH said that the image of the construction industry needs to change. People still perceive the industry to be laying bricks. It's a high skilled and high tech industry and it will take time to change perceptions. Attitudes need to change within education and at school.

DR said that there will always be opportunities available in the industry for low skilled and high skilled labour. DR said he believes that apprenticeships are not appealing to young people. Small businesses also don't run apprenticeships.

JW said that attitudes towards going to university or choosing different avenues to pursue a career may be changing in light of the high costs of £9000 a year to go to university, plus other expenses.

YM said that she had recently done 4 events to meet members of the public that they would not normally speak to. YM said she had visited a Parkinson's support group recently talking to the grandparents of potential engineers recently and the feedback from them has been that the industry is not the image that they want their children to go into. After the presentation and showing them the technology that is used, they acknowledged that they perceived the industry just to be filled with people in 'hard-hats'. There is also an issue of chartered engineers being a protected title but general engineers is not. There is an issue with support for apprentices. Changing people's mind sets is a challenge.

GE said that changing perception of the industry is an issue. The industry is changing and digitalised and becoming more of a manufacturer based industry. The cultural change of the industry will take time, including the off-site work done in the industry.

YM said the year of engineering is a great opportunity to help change attitudes. It should be communicated that it's not just about being messy on site but about building a better world.

GE said that promoting joint messaging between the engineering industry and construction would be welcome.

JW pointed to the Premier Inn building in Cardiff Bay to show how much engineering goes into the construction of a building.

JW said more has to be done to communicate and excite young people to go into the engineering and construction industry. JW expressed her disappointment that Careers Wales did not attend the meeting.

MB said careers has been identified as a key focus for the future and influencing parents, teachers and influencers. The armed forces adverts show how campaigns can work effectively. The industry is looking to put together a non-branded campaign to promote construction in the same way.

YM said the Atkins video is a great video showcasing engineering in an exciting way.

Guest 1 said that they (who?) had been working with CITB to work in an experiential learning offering for schools and education to try new digital technologies within construction. From primary school students to higher education students to change the perception of the industry. This is a

mobile project. This project is being led by WRW. It would be a benefit to bring in ICE on this project. The technology in Dudley College is amazing.

MH said that year 10 students will soon be going out to the work place for experience and the likelihood is that many will not go out to work in the construction industry. Often the only jobs young people know is the jobs that parents or family do. Unless there is a quantity surveyor in the family, it can be difficult to encourage young people into the industry.

MH apologised for having to leave for a committee meeting.

NP spoke about a family member that works within ARUPs speaking about his experience of the progress that's been made in his company over the past 30 years in promoting ethnic minorities and through proactive initiatives.

NP said that a focus should not only be made to encourage people to come into the construction industry from the outside, but also to promote inclusion and diversity internally within the profession to ensure those same people stay.

NP said that many years ago JW had a meeting with Women in Property (WiP) and where these views were expressed, being that the industry was not always friendly for women looking to come back to work after, for example, having children or that there weren't that many women put forward as role models within the industry overall. It's vital to also consider these internal aspect and to ensure the industry retains the skills and to not lose them to other industries.

YM spoke about her experience many years ago of going into a school to speak and where the teacher was very enthusiastic about construction and how that made her job much easier. If it's possible to sectors of teachers and teacher training to embrace VR and AR they would be able to do the job for us.

MB said a qualifications review recently found that teachers teaching the construction syllabus often do not have the right experience to teach the subject.

JW said research work could be done to see where schools send pupils for work experience and to assess how many are sending children to work within the construction industry.

MB said the Welsh Bac is a unique opportunity where teaching methods could be based around construction.

YM said a really well coordinated module by Alison Watson called A Class of Your Own - Design, Engineer, Construct - works well in England and could be a route in to Wales.

NP said that one of the issues is that even in the 2000s skills such as Excel were being taught in schools, with no consideration of more advanced and relevant skills such as web development. This means expectations are already low.

NP agreed with MB that a lack of practical approach, and an over emphasis on theory has made it difficult for pupils to relate to the subject, failing to engage pupils.

JW said that more needs to be done to convince and engage young people to emphasise the future generation's aspect of construction and that the young people can play a part in building futures.

NP said that marketing campaigns should be aggressively towards promoting the opportunities' in construction and when compared to other industries and careers.

YM said that the best approach would be to emphasise the social value of the industry and research of this has been done by the University of Berkley.

NP used the analogy of being able to look into a computer case to see how the machine is built and how it all works to bring a subject to life.

Guest 1 said this is what VR can do and to bring subjects to life.

NP said that the use of online courses to teach could be used and services like Lynda.com offer inspiration on how this can be done.

Guest 1 said that more needs to be done on this area and can be done to bring learning to pupils more quickly when they login to computer systems.

YM said these aspects of learning could be gamified and to encourage take-up.

JW said Kirsty Williams could be brought in and to involve her in the work that the CPG is doing and any industry campaign. The Minister could be brought it when the campaign has been agreed.

Guest 1 said some VR systems are available in Swansea and to use it. Guest 1 said that the hardware is there but there is an issue with creating the software.

MB said a cross party meeting could happen in the future with the CPG on STEM. JW agreed.

DRAFT