

Powering the Future with Data and BIM - Digital Construction Week 2018



Digital Construction Week 2018 returned to Excel in October as an exhibition, with a main stage for paid conference sessions and several 'theatres' within the exhibition space. This article gives a taste of what was on offer over the two days.

Real-time Asset Management

The first day started with a 15-minute presentation from the Enable My team entitled 'The Art of Raw Data'. This was all about using camera feeds from the front of trains to build up and maintain a real-time asset record. Apparently, cameras have been deployed for some time, but the data has not been used for this purpose. Enable's software can detect and

identify lineside infrastructure in real-time. They had even built a model railway on their stand to demonstrate how it works. But they don't just use the cab cameras, they mash it with other imagery, wind sensors and weather forecasts to detect vegetation when it is about to lose its leaves, inform vegetation needing attention and evaluate the risk from those pesky 'leaves on the line'. Future developments are to include the use of machine learning and to apply the technology for other purposes, such as monitoring of flooding and deforestation.

Common Data Environments

Headphones were provided for most theatres to enable audiences to hear the speakers, but demand exceeded supply at the BIM Village. A situation which was mitigated later in the morning by setting up a loudspeaker. Lack of headphones drove me to the BIM Workshop area where the topic was Common Data Environments (CDEs), in a presentation from BIM4Rail. One would have thought that almost by definition there could only be one CDE for any project, but not so – most projects have multiple CDEs. As Barrie Gleeson pointed out, this means that there is greater risk of different versions being used as well as greater cost. Different parts of the rail sector have different approaches. Crossrail uses one CDE, but Network Rail uses several. The audience were quizzed about CDE software. ProjectWise came out on top, with others using Asite, Aconex and Sharepoint.

Data People

Then over to the 'Skills Hub', where Rebecca Evans from 'Revealing Reality' discussed the results gleaned from a survey of 35 to 40 interviews and site visits. The objective was to find out where 'tech' is taking us and how to make sure that training fits the needs of industry. On the subject of technology itself, there was no consensus from interviewees on which technologies would reach 'tipping point', although there is acknowledgement that tablets onsite, drones and AR/VR are becoming widely used. There was also no consensus on the interpretation of 'digital construction'.

Introducing new technology is always a challenge. The obvious approach for the cautious (or prudent) is to carry out pilots, but Evans reckoned that then there is a problem in scaling up the technology after the pilot has been completed. Also, she said that a lot of technology being used was not at the leading edge. Data management is not well understood and when asked what skills are required of employees, the answer was that they should be able to "do data". Worryingly vague.

Evans's conclusion is that focusing on skills for particular technology is not the answer. Soft skills are needed and the ability to creatively solve problems in the context of understanding the tools and data. Interestingly, HR managers stress the importance of soft skills, but innovators say they want hard skills. She set out a pyramid of competencies from 'default user' at the base to 'skilled innovator' at the top.

Standards

Back to the BIM Village and David Glennon was talking about Standards. He put up a couple of official definitions but settled on 'shared language' as the most appropriate – illustrated entertainingly by a slide showing all the regional names for 'bacon butty' – which itself is probably regional! He set out the core activities of the UK BIM Alliance (with BuildingSmart UK and Ireland Chapter) and called for the industry to engage by signing up for the UK BIM Alliance newsletter - www.ukbimalliance.org/news-and-events/newsletter/ and monthly teleconferences.

Hard on the heels of this talk was a presentation on ISO 19650, which will supersede the BS and PAS documents. This was illustrated by a 'bake-off' featuring two members of the audience. They were both 'star bakers'! In summary, ISO 19650 will be BS119 "but not as we

know it". This arises because much of the BS and PAS documents were rehashed for the ISO document. The bits that didn't make the ISO will appear in a UK national annex, an eight-page document that attracted 60 pages of comment when put out for review.

Digital Built Britain

Day two of DCW started with a talk on the main stage about the Centre for Digital Built Britain (CDBB). Mark Enzer, CTO of Mott MacDonald, said that it is not about producing a single massive model, but models that will fit together. He made the point that 99.5% of buildings and infrastructure already exist, so this will constitute the vast bulk of the work. He referred to the Infrastructure Client Group, which he believes has the clout to make DBB happen. CDBB has formed two task groups and is due to publish a roadmap in November.

In the Skills Hub, there was a talk about the skills needed for DBB, but one felt that there is vagueness around this topic with questions about the uses of DBB, its level of detail, the interface (or boundary) between public and private data and responsibilities not yet defined. DBB is clearly being pushed hard and surveyors need to keep informed and have a say. Visit www.cdbb.cam.ac.uk/.

Data is Not the New Oil

Enzer referenced the well-known comparison between the dramatic increase in productivity in the manufacturing sector compared with flatlining in construction. In a later talk, Tom Mossop of ARUP challenged the validity of this because manufacturing and construction are significantly different activities. Indeed, the most striking successes of BIM have arisen from moving as much of construction as possible from site to factory prefabrication.

The same speaker also took issue with the often-repeated notion that 'data is the new oil'. Mossop's thought-provoking and eloquent presentation started by describing the differences, which are of course profound. Data, he said (somewhat simplistically) has virtually no value, but unrefined oil has significant value. Data gains value by being combined with other data and by being analysed. Then it becomes information and provides insight to solve problems. Although data has virtually no value, data owners treat it as a major asset and protect it by labelling it intellectual property. This, he suggested, is holding back innovation and that (IP), when used in this way, is a cultural problem underpinned by misunderstanding.

Mossop's theme was to free data from its silos to make it available to all and that different people will view the data from different standpoints, which is likely to bring greater insight and overcome siloed thinking. We were invited to imagine a 'built environment free data institute' for which the only fee is to provide your own data.

BIM and GIS

Finally, there was a talk entitled 'BIM through the eyes of GIS' from Tom Wicks and Kirstian Morin from Atkins who suggested that BIM could learn from its older sibling, GIS. The two technologies both depend upon attribution to be intelligent but GIS, unlike BIM uses unique IDs. There was also criticism of BIM for its misuse of metadata and it was suggested metadata must be at the feature level, which must surely be the case if a dataset is composed of data from various sources. The inability of CAD to handle attribute data effectively was also seen as a problem and the speakers called for CAD people to be 'upskilled', which seemed a little unfair!

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<https://www.gim-international.com/content/article/powering-the-future-with-data-and-bim-digital-construction-week-2018>
