

Meet us there - GEO Business 2014



The Business Design Centre at Islington in North London is a large space with an arched roof giving it the feel of a Victorian railway terminus. It was the venue for this year's geo event – GeoBusiness 2014, which was, for the first time, actively supported by the RICS, CICES and TSA via the Survey Liaison Group and by the AGI. The conference lived up to its promise as well as being an opportunity to chalk up some hours of CPD. There had been an enthusiastic response to the call for papers, resulting in a set of quality presentations which was well worth the attendance fee.

BIM Focus

BIM was the word on everyone's lips but was by no means the only word, as topics ranged across the geospatial spectrum. The range of application areas was reflected in the exhibition, which included many organisations not seen at previous geo events and was steadily busy throughout the two-day show.

BIM is starting to look like a success story for surveyors. We have not let the technology pass us by or allowed the other engineering disciplines steal our place. But this is largely down to the efforts of a few 'first adopters' and champions of the cause and there is still plenty of influencing to be done. The BIM conversation has moved on from the modest ambitions of Level 2 and is now more about applying Level 3 BIM throughout the lifecycle of buildings. The focus is still on buildings although the BIM concept applies over the range of engineering and construction activities.

Peter Hansford is chief construction advisor for HM Government. His keynote put BIM in the context of the government's strategy. Yes, it has one and BIM is its keystone. The overall aim of BIM is to reduce the lifecycle costs of infrastructure, develop a lean, efficient engineering and construction industry and then export this expertise across the globe. A demonstration BIM project – Cookham Wood prison, has been completed and savings are reported to be in the region of £800,000, which is roughly 20% of the overall construction cost.

Looking ahead, the government has set up a partnership with industry to look at how engineering and construction should be by 2025. With 'Construction 2025' the promoters see a radical transformation of the industry. Building times should be shorter: a 55% reduction in time from inception to completion. Cost of construction should be 33% less. Emissions will be halved it is claimed and there will be a 50% improvement in the trade balance for construction materials, which is currently heavily biased towards imports. All this is to be delivered by progressing five key themes: People, Smart, Sustainable, Growth and Leadership and will result in 'Digital Built Britain'. Overall, the aim to take advantage of projected growth of engineering and construction of 4% per year. We shall see.

Geospatial at the Hub

Plowman Craven has been at the forefront of the BIM revolution. Peter Folwell spoke about the new scenario in which the surveyor has a place at multi-disciplinary project meetings, not least because he can and should be there from project inception right through to operation and maintenance. He stressed the importance of refurbishments and refits – every bit as important as the high profile new builds and an area where competent surveying is essential.

Matthew McCarter from London Underground and Casey Rutland from Arup met on Twitter and discussed as-built BIM from a social media point of view. They described how Twitter acts as a melting pot for diverse ideas from a global community and disseminates them to anyone instantly. There is no room for protective behaviour in this world. They see scanning as a useful tool for monitoring the as-built condition of buildings during construction but to do this effectively it will be necessary to segment the point cloud according to the discipline so that, for example, the mechanical and electrical engineers are not distracted by architectural finishes. This is quite a challenge and if not done carefully could remove the contextual information that is a vital aspect of the BIM concept. The speakers noted that currently, as-built models are not being delivered following the construction phase and therefore not being used in the operations and maintenance phase, which accounts for 64% of the lifecycle cost of a building.

Unfortunately, most of the talks ran over into time that could have been used for questions. One question could have been around the standard for BIM models. Is REVIT going to be the de facto standard?

In the specifications and standards session, James Kavanagh called on oriental philosophy to help with his talk: "The Tao of Measurement". He spoke of the International Property Measurement Standard (IPMS) as a global standard for measuring buildings; the basis for all valuation. Not only does it standardise the many different methods and definitions in use around the world, but it also ties in with the International Valuation Standard and the International Financial Reporting Standards. The surveying of underground utilities is a largely unregulated business, but PAS128 is set to change all that. John Robinson from SubScan Technologies talked about the development of this publicly available (but not free) standard which is due for launch on 30th June. The standard will define survey quality

and give more control to the client, but in the longer term Robinson hopes that it will form the basis for training, assessment of competency and accreditation of surveyors.

Kavanagh also spoke about the long-awaited RICS Measured Survey Specification. After ten years of deliberation and debate it is nearly complete and will be aligned with PAS128.

Feeding the Geographer

Humans need to classify to understand but there are often overlaps between different areas. The smart city is up there with BIM, but are they so very different? Andrew Hudson-Smith from University College London gave a fascinating talk on smart cities at the macro scale and the opportunities arising from geo-analysis of data feeds of public information. For example, travellers around London can use a cash card known as Oyster to buy tickets by swiping in and out at the start and end of each journey. The data from these cards clearly has an application for travel planning in London, but you can also use the data to show traffic at tube stations: Bank station shows two sharp peaks but traffic at Camden Town centres around nightlife. In another example, Hudson-Smith demonstrated the uses of Twitter data, including the actual text sent in an intimate tweet to a girl (or boy) friend sent from behind the tweeter's garden shed! When you tick the terms and conditions box you are indeed giving away your privacy.

In the new world of collaboration, surveyors should be at the hub (if not as managers, certainly as facilitators) because they are natural collaborators. They can and should be involved with all disciplines throughout the project life cycle. This was demonstrated in Peter Folwell's talk, mentioned earlier, and also in a keynote presentation from Neil Ackroyd, the acting director general of Ordnance Survey. His talk was entitled "Mapping the Future "through innovation and beyond". New technology is enabling us to collect more and more data at an ever decreasing cost: a trend that is now being fuelled by rapid developments in automation. The challenge is to manage the data, identify new applications and exploit them. Change detection is central to the maintenance of MasterMap, Britain's topographical database, and has realised a 15 – 20% efficiency saving but there are also applications for analysing data, such as small building works in back gardens that would previously have been difficult and expensive to detect. The challenge for surveyors is to exploit the opportunities to satisfy current and potential markets. This concept extends to technology itself and satellite positioning is a prime example of a technology intended for navigation and subsequently developed for precise surveying.

The OS is collaborating more with other government departments as witnessed by the organisation's work during the Olympics and during last winter's severe flooding. But collaboration involves listening as well as talking and Ackroyd reminded the audience that surveyors do not have the monopoly over good ideas. He mentioned the development of an app to serve up OS data as a new 'world' for the computer game "Minecraft". Joseph Braybrook, who worked as an intern at the mapping agency last year, developed the app which has resulted in millions of downloads.

The electronic gaming industry is bigger than movies but hitherto, surveyors have not made use of game engines to generate simulations. Irish firm RealSim has been doing just this. managing director Gavin Duffy explained how his company makes use of this technology to do amazing things. This is perhaps best demonstrated by a system that RealSim has set up for the island of Jersey which has transformed the planning process.

Shared Version of the Truth

Anne Kemp is a champion of the 'geospatial for BIM' cause and is currently chair of the AGI. She opened the second day's proceedings with a keynote speech which was, as ever, inspiring and different. Her talk focused on the soft skills that get things done. Collaborators have to be aligned and motivated. She implored the audience to forget selfishness. The implication was that surveyors had suggested that they should consume the whole of the BIM cake. Perhaps we should have said that survey skills should be at the core of BIM projects and that all we ask is that people who do surveying are at least certified as competent.

This point was reinforced by Ian Bush, who followed Kemp with a talk on Survey4BIM – the committee that represents surveying in the BIM world. He said that 'geospatial' should be present throughout the life cycle of an asset. But he also referred to a study into the jobs of the future, which listed those occupations that would be needed in future and those that would fall by the wayside. This was bad news for surveying technicians, who were consigned to the wrong side of the table. Why? Perhaps the view is that surveying fieldwork will become so de-skilled that anyone will be able to do it. If this is to be the case, then Bush said we need to ensure that even the deskilled surveyor possesses the 'soft' qualities of a surveyor – accuracy, integrity, rigour, attention to detail and logical execution. Several speakers said that skills should be recognised by certification as a way to assure competence. Bush invited the audience to get involved with Survey4BIM.

Kemp's view is that 'geospatial' has to change. We have to talk less to each other and more to the people with whom we will be collaborating. Furthermore, we have to abandon our "tribes" and speak with one voice. In a sense, this was the lesson from the conference itself – the product of the whole industry putting its differences aside and co-operating, with astonishing results. But what does geospatial bring to the BIM project? Kemp used the term "shared version of the truth" but also mentioned the importance of context, also known as situational awareness in the military world, and an essential ingredient for collaboration. The aim is to promote a contextual understanding and interpretation of data – an "authentic reality".

Identity Crisis

Given that everything happens somewhere, you would expect geospatial people to be everywhere – and we are. Yet Karl Donert, presenting in the geospatial education session, pointed out that there is no 'geospatial' job category in Britain. So we do not know how many people work in geospatial occupations or how many will be needed in future. Without an identity or figures, how can you build capacity, plan university (and other) courses or encourage potential students to join them? How can you engage with politicians?

The table presented by Ian Bush displayed a gloomy picture for surveying technicians but the same chart showed the prospects for professionals as more promising. Donert pointed delegates towards a campaign to promote the geospatial industry in the Netherlands, including an inspiring four-minute video.

The conclusion is that there is a need to promote the 'geo' industries, to raise the level of awareness and improve the image with the

public. One institution acting alone cannot achieve this, but if all work together...

Ubiquitous Positioning

Moving to a highlight from the more technical presentations, Professor Terry Moore from Nottingham Geospatial Institute spoke about ubiquitous positioning. Progress is being made, and Moore described the varied technologies that are being developed and the technical challenges to make them work. There are some ingenious solutions. For example, how do you control drift in inertial sensors? Answer: put the sensor in the pedestrian's shoe, because it is stationary whilst the shoe is in contact with the ground during each step and can perform a zero velocity update. How do you improve real-time structure from motion? Answer: change the carpet from plain to patterned. Let's give a warm welcome back to the 1970s!

Alongside the conference, there was a full exhibition including all the major equipment manufacturers and suppliers, software developers and educators and an extensive programme of supplier seminars running concurrently in seven rooms and demonstrations outside. There was plenty of time for networking and catching up with people we probably meet only once a year.

GeoBusiness 2014 was undoubtedly a success for all, but perhaps its greatest success was in bringing together the disparate geo-industry. Hopefully, all parts now recognise that we can only face present and future challenges in our booming business with one voice and by working together.

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<https://www.gim-international.com/content/article/meet-us-there-geo-business-2014>
