Only Connect

Bentley's 2009 Be Connected was a virtual event. Is this a look into the future of industry conferences? David Chadwick gives an outline of the shape of things to come

I am in two minds whether the future of Bentley User conferences lies with conventions or with online conferences such as Be Connected, which was held over the last couple of days of June, and which in fact is still running online. With the traditional conventions you have the pleasure of meeting like-minded folk over a couple of hectic, seminar filled days, punctuated by informal dinners, meetings and keynote speeches. They're ideal for making new acquaintances and catching up with old ones. But the credit crunch and economic downturn have put paid to that for a lot of people, who can't justify the cost of the conference or the time spent away from the office needed to attend.

Hence Bentley's decision to launch BE Connected: a series of 150 or so online presentations covering exactly the same subjects that users would expect from a traditional convention but available - once you have registered - to digest at your leisure.

As many of you will know, Bentley's traditional conferences are usually oriented around the various disciplines that Bentley covers - geophysical, process plant, building, structural. Now this is fine if you are particularly focused on just one of these - but pity the poor journalist who has to cover every angle, and has to make some very sad decisions about which he or she should attend! Now, we are able to pick and choose sessions at our leisure, over a period of months, and watch whatever we want, whenever we want in comfort - and repeatedly if we so wish. I think we have until November to peruse them all, with about 100 already posted and more being added every week.

Consider also the numbers who have registered free online for Be Connected. They far outweigh the number of people who were able to take the time out to attend the conferences - 9,000, as opposed to 2,000 or so. According to Chris Barron, Bentley's vice president of Corporate Marketing, 2009 was "Not a good year for travel budgets," but they have risen to the challenge with something that might prove even more powerful. In fact I suspect that, when things return to normal economy-wise, the temptation will be to repeat the online Be Connected experience!

But hold on a moment! What about the BE Awards, one of the highlights of the Bentley BE Conferences? In another innovation for the events, a smaller get-together will now take place in Charlotte, North Carolina on October 12th to 14th. Called BE Inspired, it will be hosted by Keith and Greg Bentley, who will be delivering the keynotes and hosting the sessions, where the winners will be given the opportunity to 'tell their stories' rather than just assemble on stage for the 'photo op'! A couple of special awards will be given to companies that exhibit superlative sustainability achievements and noteworthy contributions to society.

SUSTAINABILITY

For the second, or possibly even third year running, sustainability is one of the key factors in construction, and this is reflected in the main building sections of Be Connected, and as a sub-theme in many of the other areas. The industry is going through great transpositions and significant upheaval in all areas, leaving many within it asking if there are not better, smarter, ways of doing things.

Besides learning how to build more energy efficient buildings using new materials, smarter technology, and a better understanding of the synthesis between man and his environment, we are exploring new and cleaner ways of generating, storing and using energy - and distributing it round the countryside (hence the article on the Smart Grid elsewhere in this issue).

Water is a critical issue - particularly its preservation, treatment for domestic and industrial supply, and its disposal as an effluent or management in flood plains. Fuel is another hot topic, with one of the potential BE Award winners involved in developing bio-diesel plant - and installing it in the very same field that the source crop is being grown! Increasingly, waste material that we used to stick in the ground is being used to power localised small power plants.

ONLINE SESSIONS

One of the first Sessions that Chris Barron led me to during our telephone conversation was given by Steve Jones of McGraw Hill, who gave a keynote on the current state of the construction industry. As part of their well-known publishing empire McGraw Hill gets involved in research in the Construction Industry. They look at what is happening within the industry and predict trends (is that an oxymoron?), the current economic, environmental and technological developments being perhaps best exemplified by that well-known Chinese curse, "May you live in interesting times!"

McGraw Hill looked at four major factors - Economy, Green Design, Technology and Strategy. Their view on construction and the economy is obviously based on a US perspective but has significant insights for those of us on this side of the pond too (and I suspect elsewhere). Their findings were headlined by the significant decline in construction, with housing taking the biggest hit (down 70% since 2006, although the 2009 figure was a mere 30%, and we are only half way through the year). The only area that showed growth was the Public Works sector, by a mere 10%, but there and in Institutional Buildings - schools and hospitals - they accounted for as much as 55% of current construction.

Much of this is put down to the Stimulus programme, and a lot is renovation rather than construction, and work associated with energy efficiency upgrades. Steve Jones was a bit ambivalent about the downturn, pointing out earlier construction cycles which, although smaller in size and duration, showed similarities to the current situation, with declines following surges in construction. This one may be bigger, he pointed out, but the re-adjustment will nevertheless reoccur, but perhaps later rather than sooner.

The second factor, the growth of the Green agenda, followed the increase in standards throughout the industry, led by the rapid growth of LEED, who specified sustainable building standards. Being stats based, his presentation provided various statistics that proved that project owners, as well as architects, were increasingly buying into sustainability in design and construction.

The chief benefit of technology was, as he put it, the ability to enhance communication and collaboration between different members of a project - across all disciplines. This was the most interesting result from a small survey that examined the skills that Bentley customers most valued.

Strategy? How do you position your company to deal with the above? The answer was to focus on what you do best, protect your customer and embrace change. Steve provides a suitable quotation for those who are fearful of change from Genreral Erci Shinseki; "If you don't like change, you will like irrelevance even less!"

THE US DROUGHT

I have selected Mary Ann Dickinson, Executive Director of Alliance for Water Efficiency, as representative of the sustainable issues that are covered in (or should that be on?) Be Connected. Water is of course a major concern to everyone, not just those charged with maintaining our infrastructure.

There's nothing like a few statistics to focus the mind, and Mary Ann Dickinson points out that one third of the World already lives in water stressed countries, and that number rise to two thirds by 2025! Ten percent of the world will suffer extreme drought by 2050, with 200 million climate refugees seeking new homes. I think she is underestimating the last figure, although it might be leavened by acute political unrest before we reach that stage.

It is imperative, therefore, that we have a strategy to ameliorate the problem. Solving it may be a step too far. Six steps to achieve this were put forward.

First and foremost is higher product efficiencies, championed by Mary Ann's organisation, which promotes standards for simple domestic products. Domestic water consuming units - taps, showers and loos (the worst offender) - have been set maximum flow rates, gradually becoming the regulated standard, and which are expected to show a 5.8% reduction in water consumption when completely implemented.

Connect water and energy, build green, price water appropriately, reduce water loss and educate and motivate the consumer. No-one can argue with any one of these, and anyone who follows the tribulations of the water industry in the UK would know that water loss is one of their biggest problems, particularly the seepage of water out of decaying water distribution systems between the reservoir, pumping stations and the consumer.

RAIL AND TRANSIT OVERVIEW

Many of the Be Connected presentations deal with the software tools that are being used in individual industry segments. The remarkable thing about all of them is that they are no longer used in isolation, and are part of integrated solutions that involve many other disciplines. A prime example of this is Rail and Transit, a presentation given by Ted Stephens, a Rail and Transit Solutions Executive.

Mott McDonald visualisation of railway design

Ted pointed out that designing and constructing a railway is not just about laying down track, but involves the terrain itself; bridges, buildings, factories, roads and other construction specialities. This can only be achieved effectively if there is an overriding and integrated portfolio, based on a common platform, available for the whole lifecycle of the project, and easy for people to share information. As an aside to this he pointed to the Rail and Transit Professional Networking Website, where users worldwide can meet virtually and share information and ideas.

With an emphasis on safety, reliability, budgets and needs, Ted laid out a typical scenario for rail track construction, showing just what is involved in the process. The primary focus, of course, is geophysical - the acquisition of the GIS data and creation of the maps that will form the basis of all of the planning, collected form numerous sources including Google Earth and legacy data.

This is used to plan the railway, where information is required from Land Registry data - if you need to buy the land, demographic surveys, environmental data - with the use of copious visualisation to expound on ideas and scenarios.

This is followed by the analysis and design of the railway itself, hardcore engineering that includes the tracks, signalling systems and traction power systems (if electrical or overhead power). You then have to add in communications systems, stations and depots, plant and machinery, bridges, tunnels, embankments and cuttings. Just a small bit of ancillary work then...

The Construction phase includes visualisation, constructability (structural analysis and design), sequencing, monitoring and as-built models - all new techniques that are only capable of being integrated because of Bentley's open standard solution and interoperability capabilities.

Significant savings can be made in individual areas by sharing data between disciplines - the track geometry, for instance, being immediately available for the signal design engineers so that they can trace signal paths on networks, and bridge parameters reliant on clearance data from the rail track designers.

The Roll-out phase involves the accumulation of maintenance data and the instruction of operators, who will require track charts, track asset management records and other maintenance and renewal decision support material. The beauty of interoperability is that all of this information is being compiled and kept up to date as the project evolves.

And, finally, the 10% of project members actually involved in the design and analysis of the rail system need to share it with the 90% who need to be kept informed and, possibly, comment on it. Hence the ability to produce design and other documents in a format for mark-up and red-lining to fed back into the project management system, either direct or through web portals, or, if maps are involved, made available on Web Publishing.

BE CONNECTED

The Rail and Track presentation is symbolic of many of the other presentations, and shows how project management has now evolved to incorporate whole design teams into any project and facilitate the way they work together. That, perhaps, is the inspiration for the virtual conference's moniker.

Mary Ann's piece symbolises the acute problems facing us with regard to the environment and our handling of it - good or bad. Steve Jones casts a ray of light, whilst pointing out the rapid decline of an industry - that we've actually seen it all before, only this time it's just a bit deeper and longer!

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