
THE American Surveyor
A Foot In The Past... An Eye To The Future
September 2007
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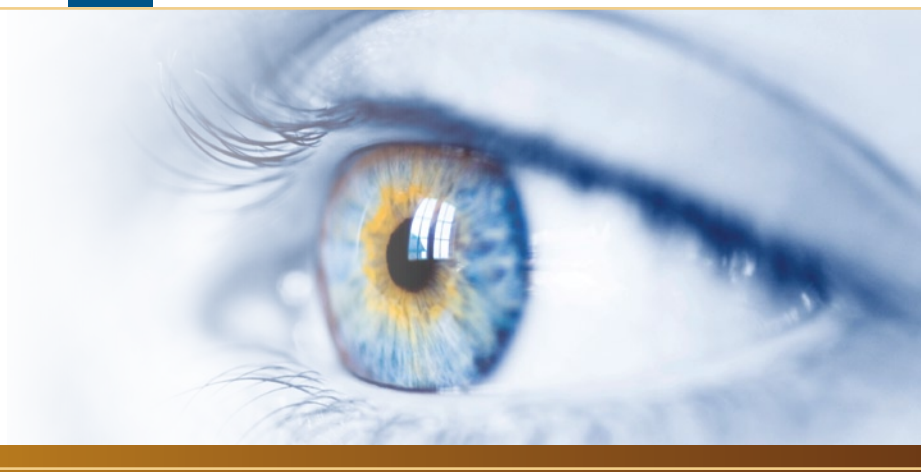
Keith Bentley

BE 2007



an Eye Opening Experience

I walked into this year's Bentley Empowered (BE) conference feeling a little like a spy behind enemy lines, as if Bentley security personnel might leap upon me at any moment and frog march me out. For it might as well be said that for more than 20 years I have been an Autodesk man through and through: I've drawn well over a thousand maps in various flavors of AutoCAD, actually sold Autodesk software for a couple of years, have written, for this magazine, two gushing reviews of Autodesk conferences and, most especially, spent about eight years as an Autodesk partisan, fighting in the trenches of bitter AutoCAD/MicroStation battle s at my former firm, an ENR 400 consulting company based in the Midwest. Even my luggage, I guiltily realized as I touched down in Los Angeles, was emblazoned with the Autodesk logo, schwag from the 2005 Autodesk University in Orlando. I hustled said luggage into my room and hid it well for the duration of BE 2007, but I wondered if the damage was done.

> "If I came in feeling like **a spy,** I left feeling a bit like… **a convert.**"

So I felt a bit like an impostor, and a bit like a hypocrite at BE 2007, and wondered if my carefully cultivated prejudices would prevent me from writing well about Bentley's offerings. And maybe I even hoped, just a little, that the conference would provide ammunition for a negative review, that my prejudices would be confirmed and enable me to really sink my teeth into MicroStation, a product I almost reflexively considered inferior to AutoCAD, at least for land surveyors.

But BE 2007 was a significant eye opener for me. I realized rather quickly that I really didn't know much about Bentley's

>> By Angus W. Stocking, LS

Greg Bentley

product line, that the company brings enormous sophistication to design software, and that the differences between Bentley Systems, Inc., and Autodesk, Inc., were significant and interesting, and that Bentley is hardly an also-ran in infrastructure design, as I had naively thought, but rather is doing its own thing and doing it well.

If I came in feeling like a spy, I left feeling a bit like… a convert.

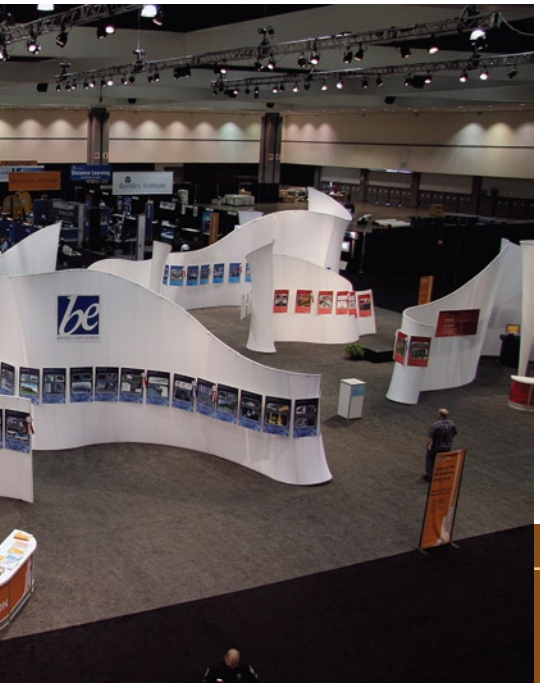
Single Platform a Key Difference

With 2,000 attendees from 600 organizations, including 36 DOTs, this year's BE Conference in Los Angeles was the biggest ever. More than 30,000 'learning units' were available at seminars and training sessions. Bentley also used the event to announce growth strategies, and to celebrate outstanding users of Bentley products in the architecture, engineering and construction (AEC) industry.

A lean and intense Keith Bentley, co-founder of Bentley Systems Inc., spent much of his impressively technical keynote address defending and reaffirming Bentley's single platform approach to infrastructure software development. "The single platform is very important to Bentley," he said, "and therefore the platform [MicroStation] must evolve." He went on to discuss imminent advances such as a true 64-bit MicroStation that will take full advantage of parallel processors. Bentley also took time to laud Microsoft Vista, which he described as an outstanding operating system for Bentley products.

Bentley, incidentally, impressed me mightily with his obviously thorough grasp of technical details. He whizzed the audience through a tour of existing and forthcoming technology trends, occasionally demonstrating a "Gatesian" ability to drill down into the arcana of, for example, graphics cards. He was obviously in touch with the details of Bentley software development, and it was equally obvious that, under his watch, Bentley is committed to developing for a single platform, MicroStation.

This note was sounded throughout the conference, in implicit contrast to Autodesk, which now offers important products like Revit, Inventor, and Civil 3D that aren't directly related to each other. Various speakers cited tight integration, scalability, backwards compatibility and compatible interfaces as advantages of a single platform approach. In an interview, Carey Mann, vice-president of Geospatial Marketing, told me that "interoperability is the poor cousin of integration" and that Bentley's focus on integration makes interoperation with, for example, new acquisitions a relatively easy first step on the way to tight integration. He also stated that Bentley is "committed to an open environment" in which data flows freely, but is *not* a proponent of open source



Styli Camateros

software – again in contrast to Autodesk – -noting that releasing source code "doesn't necessarily serve the customer."

Single platform development, that is, integrating all design software into a common code base, is an important, high-level decision with significant advantages and disadvantages. On the one hand, Bentley has to carefully evaluate new products and acquisitions not just for usefulness, but also for their ability to tightly integrate with the MicroStation platform. So they would probably pass on a product like Revit, not because it's not a great product (it has obviously been enormously important to Autodesk) but because it won't adapt easily to the MicroStation platform. Here's how Global Marketing Director Huw Roberts explained it to me in an interview: "If we were focusing on smaller tasks, we could probably develop faster and make stand-alone software that was elegant from the beginning. But the product would be less useful over time. It's much harder to integrate later in the process, if integration isn't considered from the beginning. So maybe it takes us longer to solve a problem, *but when it's solved it's solved*."

To bring this home to surveying, consider site work. Since Civil 3D and Revit are based on completely different code bases, site design in Civil 3D and building models built in Revit don't easily coexist and don't update each other as design progresses. Bentley doesn't have this problem.

Athens

'Athens' is the codename of Bentley's 2008 coordinated software release that promises to take full advantage of single platform benefits by integrating conceptual design, dynamic views, distributed project work, and geo-coordination into all Bentley products. An ebullient Styli Camateros, vice-president of Geospatial, described a future where users are "shielded from the complexity" of thousands of possible map projections and coordinate systems and routinely place their projects correctly in the context of a planet, enabling GIS features early in a project lifestyle, and allowing use of external sources of information like Google Earth and GPS data. By 2008, a geospatial interface will be standard in ProjectWise, Bentley's server-based project collaboration system. "In the long run, GIS *should be* integrated with AEC," stated Mann, signaling a long-term commitment to integrated geo-coordination.

Describing a future release is not the same as demoing current software, but speakers were convincing and all were equipped with screen animations of coming features. More detail was provided at subsequent media briefings, and overall Athens appeared to be an extension and consolidation of existing Bentley trends and, in some cases, a smooth integration of recent acquisitions.

Shaun Sewall, Vice President, Platform Products and Technology Development

One prejudice that I brought with me to BE, and decided to retain, was the belief that Bentley is a little fuzzy on purely cadastral issues. Put simply, they're engineers. But the emphasis on geo-coordination was interesting, well implemented, and may well open up new opportunities for licensed surveyors.

Engineering Productivity Flat

CEO Greg Bentley struck a different note in his keynote address, beginning with a bleak analysis of flat engineering productivity compared to relatively large gains in manufacturing and architecture. He went on to describe the "infrastructure backlog" caused by growing populations, aging facilities, and global warming as an enormous challenge to infrastructure providers, especially given the "shortage of talent" in today's market. Together with a "sustainability backlog" caused by demand for greener, more efficient buildings, infrastructure providers must radically restructure their business models and workflows to multiply productivity. Bentley will be addressing these "outside the PC" needs by helping AEC firms to prioritize and institutionalize learning, to extend collaboration, and to innovate. Learning (pointedly contrasted with "instruction") will be facilitated by the Bentley Learn Server, which provides self-paced online instruction and automatically updated user profiles. Greg Bentley suggested that companies take advantage of this and provide incentive for completing learning units. Extended collaboration is facilitated by Bentley's ProjectWise, ProjectWise Navigator and other products, and increases firm productivity by reducing the need to duplicate skill providers at multiple offices. And by building conceptual design tools into their products, Bentley will aid the "organic" capture of engineering innovations by "stars of design".

Improving Economic Productivity

Greg Bentley went on to describe strategies for economic productivity, and how Bentley products fit into this vision. Their five strategies are interoperation, acceleration, improve deliverables, deliver improvements, and business model innovation.

Federal studies have shown that as much as 30% of work time is wasted due to non-communication between staff, offices, and consultants. Bentley continues to tout ProjectWise as the best available server-based system for project management, data handling, and multi-consultant collaboration, and announced (as often as possible, it seemed) that nine of the top ten *Engineering News Record* 500 firms were using ProjectWise. One notable use of ProjectWise is, Bechtel Corporation's Jamnagar Export Refinery Project, which was described at length. The new refinery has a plot plan bigger than London, will deploy more than 4,000 pieces of major equipment, and is to be completed in less than 36 months. ProjectWise is being used to coordinate the activities of 2,500 professionals in 19 offices dispersed through eight countries.

Acceleration of schedules is also enabled by ProjectWise, as it allows multiple teams on different timetables (in different countries) to smoothly work together, with comprehensive file coordination and version control. Likewise, improved deliverables were made possible by sharing and peer review, and by tools that reconcile concurrent work and manage plotting down to the level of automatically updating title blocks. "Delivering improvement" takes advantage of rapidly improving visualization methods to allow visual collaboration between offices with models and visualizations. ProjectWise Navigator is Bentley's main tool for this kind of collaboration.

Finally, Greg Bentley and other speakers urged attendees to examine their business models and look for ways to leverage strengths. One specific technique, reuse of design, was examined in case studies.

Award Winners

As in previous conferences, BE Award Winners were feted extravagantly, this time with an "Oscar style" ceremony complete with red carpet, (hired) paparazzi, a big band, a 40-foot boom camera to capture swooping shots of winners taking the stage, and babes in spaghetti strap gowns bringing out the trophies and escorting winners offstage. Peter Sagal, of NPR's *Wait, Wait… Don't Tell Me!* hosted, and started the evening off with a rather moving tribute to engineers and other infrastructure professionals who make professions like his possible by providing the necessary infrastructure underpinnings. As the evening progressed, he combined self-deprecating humor with deft jabs at engineering sensibilities, and kept the ceremony moving. Several dozen awards in many project categories were announced.

The BE Awards were fun and genuine, a tremendous way to acknowledge and celebrate the usually anonymous design talents who, after all, make the world work. If it seemed just a little over the top – c'mon, trophy babes? – I certainly didn't see or hear anyone complaining.

Overall, BE 2007 was a world class event that served attendees well, and signaled Bentley Systems' continued commitment to innovation, *and* to tried and true strategies like single platform design software.

Angus Stocking worked for 17 years as a land surveyor in several different states. Nowadays he writes professionally (see www.ColoradoWriting.com) and specializes in surveying and related topics. And also, of course, he is occasionally called to settle survey-related happy hour disputes.