Steel Companies Driven by Customer Demands

By Larry Kahaner

Bruce Bates, Founder and President of RISA Technologies, LLC. (**www.risatech.com**) in Foothill Ranch, California, sums up what fabricators, suppliers and those involved with steel-related software are saying: "I think the general consensus is that we've hit bottom. We've started recovering, but nobody's really where they want to be. Things seems to be generally improving at a slow pace."

Amid this slow and steady climb, steel-related companies continue to roll out new products and services and improve current offerings. "Our newest product is one we released last year as part of our *RISAConnection* program, says Bates. "What's new about it are our releases of the core products, namely *RISA-3D* and *RISAFloor*. We'll include full integration with *RISAConnection*. In other words, you'll be able to specify connections inside of *RISA-3D* and *RISAFloor*. *RISAConnection* will do the detailing and design code compliance calculations, etc., and pass that information back into either *RISA-3D* or *RISAFloor*. It's coming out this month [March]." He says that the new products are the result of customer demand. "I like to say that I haven't had an original idea in ten years. I just do what my clients tell me to do and that seems to work out. Everything we do is driven by our customers." *(See ad on page 75; visit Booth #721 at the NASCC.)*

Henry Gallart, President of SidePlate Systems, Inc. (**www.sideplate.com**) located in Laguna Hills, California, offers specialized steel connection designs for moment frames that are constructed of standard steel plates and fillet welds. "Because SidePlate is much stiffer than conventional moment connections, lighter beams and columns–and often fewer lateral connections–can be used to achieve the required structural performance," says Gallart. "We are structural engineers, and our services include design assistance to the engineers of record, calculations and drawings for the SidePlate connections on the project, and construction phase services to verify conformance with our drawings."

On current improvements, Gallart says: "The connection plates and fillet welds sizes are lighter and smaller than before, and we changed the construction method from shop-welded beam stubs and a field-welded CJP link beam construction method to a full-length beam with four horizontal position fillet welds. These changes resulted in up to a 50 percent reduction in shop labor than before, eliminated all CJP welding and all UT inspections, and opened up markets beyond just seismic and progressive collapse. Another big change is that our license fee is now typically paid by the steel fabricator, so engineers get all of our design assistance, drawings, and calculations for free." The company is excited about the growth in wind power, he says. "Like most companies, we are constantly trying to increase efficiency and improve our services. Refining the SidePlate geometry, making it easier and cheaper to fabricate and erect, and making it easier to specify have always been a priority. These recent changes were essential in order for SidePlate to be able to save money in the 'wind world.' We're very excited about what SidePlate offers today, and the feedback from engineers and fabricators, not to mention the company's growth, tells us we're doing something right." *(Visit Booth #408 at the NASCC.)*

At Toronto-based Cast Connex Corporation (**www.castconnex.com**), CEO Carlos de Oliveira says his company offers both 'off-the-shelf' connection solutions and custom cast components for a large range of steel connection solutions. These include *Cast ConneX Universal Pin Connectors* which are aesthetic, clevis-type end fittings for round HSS and pipe members that are intended for use in Architecturally Exposed Structural Steel (AESS); *Cast ConneX High-Strength Connectors* which are brace-end connectors for use in Special and Ordinary Concentrically Braced Frames (SCBF/OCBF) situated in seismically active zones; and *Cast ConneX Scorpion Yielding Brace System*, a highly ductile yielding brace system for use in braced frames in high-demand seismic zones or for the retrofit of deficient building structures.

"Our *Universal Pin Connectors* range in sizes to fit round HSS and pipe from 4 inches in diameter up to 16 inches in diameter. Each size of connector has been designed to provide sleek, streamlined, organically-curving geometry from all viewing angles and are suitable for all thicknesses of HSS or pipe in their respective diameters," says de Oliveira. "No longer does it require a fabricator with extensive experience in AESS to produce elegant connections. Using *Cast ConneX Universal Pin Connectors*, all that is required between the UPC and the tube is a simple

groove weld to provide an ultra-smooth finished appearance sufficient to please the most demanding architect or owner. Each *Universal Pin Connector* is supplied with the appropriately sized carbon-steel pin and stainless steel, electro-polished washers, cap plates and set screws to dramatically set off the connection."

What's the biggest complaint de Oliveira hears from customers during these challenging economic times? "They wish they had known about our products earlier." *(Visit Booth #511 at the NASCC.)*

For customers of CSC, Inc. (**www.cscworld.com**), trying times are being dealt with by investment in the right tools. "The general feeling is that while the business climate is improving, it is still important to invest in productivity tools to be competitive enough to win the work that is available," says Vice President Stuart Broome. The company has over 35 years experience in developing its structural calculation software *Tedds*, and its steel building design software, *Fastrak*. "We recently launched a brand new BIM integration tool, CSC Integrator, which provides seamless integration between *Fastrak* models and *Autodesk Revit Structure*," Broome says. "Ultimately we specialize in developing code-based structural design solutions. This means that rather than adding design post processors on to a frame analysis program, we build our software from the ground up around the requirements of a design code, such as AISC360 in the case of *Fastrak*."

CSC has recently formed a new strategic business relationship with Autodesk's Architecture, Engineering and Construction (AEC) Division. As part of this new relationship, CSC and Autodesk will

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Cast ConneX® Universal Pin Connectors™ employed at both ends of the architecturally exposed, inclined steel columns supporting a roof overhang at the New Jersey Air National Guard Operations and Training Facility, Egg Harbor, NJ. Courtesy of Carlos de Oliveira, Cast Connex Corporation.

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provide customers with integrated solutions that support more efficient structural engineering workflow for BIM, says Broome. *(Visit Booth #209 at the NASCC.)*

Customers of IES, Inc. (**www.iesweb.com**) in Bozeman, Montana are also investing in tools that keep them competitive, says Engineer and Developer Terry Kubat. "The economic hardships from the last few years have hit our clients very hard. We have seen many firms go out of business or split up. But the good news is that engineering firms are investing in technology in anticipation of the turn-around, and former customers are contacting IES from their new offices and others are upgrading for the first time in three or four years. The bottom line is that the money is flowing significantly more than it was in 2009 or 2010."

VisualAnalysis 9.0 is the company's newest release of its flagship product. "This general-purpose design tool is faster, easier, more stable and more accurate than any prior version. Our long-term customers are praising the continued improvements that help them save time and solve tougher problems," says Kubat. "*VisualAnalysis 9.0* is now undergoing a strict validation process that automatically checks the accuracy of analysis, and design checks against nearly 1000 'test cases' prior to every single update. This is just one way IES is improving quality in our tools."

Kubat echoes others who rely on customer feedback to improve their products. "Computer hardware, software, and customer expectations never stand still. Our products must be nimble enough to meet the demands of the latest BIM and mobile revolutions that are taking place. IES is simply listening to customer requests in our efforts to add features or products."

Another person listening to customer desires is Marinos Stylianou, CEO of S-Frame Software (**www.s-frame.com**) in Guilford, Connecticut. "Our customers demand incremental improvements to our current products in terms of new features that allow them to tackle new classes of problems and improved connectivity with BIM and automation that increases their productivity," he says. "To this end, the latest enhancements of *S-FRAME R10* focus particularly on supporting the trend of building codes and engineering practice towards more advanced forms of dynamic analysis, especially for seismic loading. A parallel trend is towards larger and more complex models, due to more prevalent use of 'shell' finite elements (FEs) and the influence of BIM. Such models present challenges both in terms of organization and processing. To assist our users, *S-FRAME R10* includes enhanced automatic meshing algorithms and processing power by leveraging the potential of the new 64-bit operating systems and multi-core processors."

Stylianou adds: "In 2011, we also released a new product, *S-PAD*, specifically for the small consulting engineering. *S-PAD* is a stand-alone steel design program which has the same design code coverage and optimization capabilities as *S-STEEL* but with a low entry level pricing." *(Visit Booth #620 at the NASCC.)*

As a nationwide supplier of *Flexible to the Finish* steel joists and metal decking, serving non-residential steel construction, New Millennium Building Systems in Butler, Indiana (**www.newmill.com**) considers manufacturing flexibility as their competitive advantage, according to General Manager Art Ullom. "Based on this advantage, our value proposition to the structural steel marketplace is that we are together building a better steel experience. We're helping our customers recognize the joist and metal decking discipline for what it is – vital to the development of the structural steel package, which in turn impacts the cost performance of the total project."

Ullom notes that the cost side is getting the most attention in today's economy. "This is good for us, because while the price of our joists still matters to construction decision makers, their expectations for value delivery have increased. Construction leaders are more interested now in the impact a joist and metal deck partner can bring to a project by way of better-engineered and better-planned cost avoidance – collaboration that will greatly benefit a project owner."

Castellated and cellular beams are a relatively new offering for the company, and they recently opened a plant in Ohio that is dedicated to the engineering and production of those products. "This is a

"The construction sector is still pretty soft, but we're seeing some movement. . . The recovery is definitely going on, but it's slow and steady. We're not going to see a boom any time soon, but there's activity out there, and it's good activity. We're not seeing a lot of projects that aren't real, like in the past where we saw a lot of speculative work."

product that offers architects and engineers an alternative structural approach that supports an open and esthetic design with long-span applications, and often with cost advantages," Ullom says. *(Visit Booth #809 at the NASCC.)*

At JMC Steel Group (**www.jmcsteelgroup.com**) in Chicago (its two divisions are Atlas Tube and Wheatland Tube), structural engineer Brad Fletcher says that the company's goal is to advance the marketplace and further the growth of hollow structural sections. "We can now offer what we refer to as 'jumbo hollow structural sections.' These are larger than what is currently made here in North America. These are made offshore in Japan, and we are the exclusive distributor. We currently have the largest size range in the industry and this expands our range even further." The Jumbo HSS sizes range from 18-inch square to 22-inch square and up to .875-inch wall thickness. "Obviously, in long span situations it's going be much more efficient with higher strength-to-weight ratios. There's less surface area, so if you're looking at coatings, fireproofing, there's less to apply to the member." He adds: "The connections for hollow structural sections have become simpler, and there's definitely more information available about them in the marketplace. In the past, the connections were a little bit of a mystery. Now, people are very comfortable with them."

As for business, Fletcher notes: "The construction sector is still pretty soft, but we're seeing some movement. We've got a pretty good order book. The recovery is definitely going on, but it's slow and steady. We're not going to see a boom any time soon, but there's activity out there and it's good activity. We're not seeing a lot of projects that aren't real, like in the past where we saw a lot of speculative work." *(See ad on page 50. Visit Booth #330 at the NASCC.)*

Last October, Computers & Structures, Inc. (**www.csiberkeley.com**) rolled out a product called *CSI Bridge* which was part of *SAP 2000*, according to Rob Tovani, Director of Verification, Validation and Training. "We pulled out the bridge module and made it a stand-alone program called *CSI Bridge*. It's actually been very popular, especially in this economy, because infrastructure and transportation has been a pretty hot sector. We have been pretty busy with that product."

He says that SEs like the standalone module. "The criteria has changed for designing bridges, and it has forced engineers to use full three-dimensional analysis tools. In the past, they could get away with something a little less rigorous."

Tovani says that the bridge program and the global economy have helped the company get through the current tough financial environment. "Business has been pretty good actually. I think a big part of it is the *CSI Bridge* program and the fact that we sell throughout the world. We're finding increased sales in India, for instance, and that helps the bottom line." The other helpful factor is a substantial overhaul of their ETABS program. "It's going to be released soon and we're very excited about it." He adds that CSI has recently became ISO compliant. "Everything we do, from design to support, has been improved by going through the ISO process." *(See ad on page 76.)*

V&S Galvanizing (**www.hotdipgalvanizing.com**), headquartered in Columbus, Ohio, has been in business for over 100 years in Europe and 30 years in the United States, says Terry Wolfe, National VP Marketing & Sales. "We are a hot dip galvanizing company and our main job is to protect steel from corrosion. We offer value-added services that you will not find at all galvanizing companies. For example, we can do small items like bolts and fasteners, and we also have some of the largest galvanizing kettles in the country and can do structural steel beams up to 88 feet. We offer our exclusive *COLORZINQ* system of wet paint or powder coat over galvanizing. We have our own trucks and tractor trailers, and offer just-in-time delivery with no surcharges or fees. We are ISO certified and have a NACE Level 3 inspector working with us and for the customer."

Wolfe says they are offering a new galvanizing system from their parent company Hill & Smith Holding . "*ZONEGUARD* is a steel barrier system that is all hot dip galvanized and can be purchased or leased. In many cases, customers can have up to 750 feet to a job site, per truck, in 24 hours. This compares to days of waiting for only 100 feet per truck with a standard concrete barrier. This product complements the many highway and bridge projects with which we are involved." As for the overall view of the economy, Wolfe says, "Some areas are slower coming out of the slump, but we are hearing positive responses in an industry that has seen saw so many lows in the past three years." *(See ad on page 52. Visit Booth #915 at the NASCC.)*

Rob Madsen, President of Devco, Software, Inc. (**www.devcosoftware.com**) in Corvallis, Oregon, sees improvement, too. "Generally our customers are optimistic.

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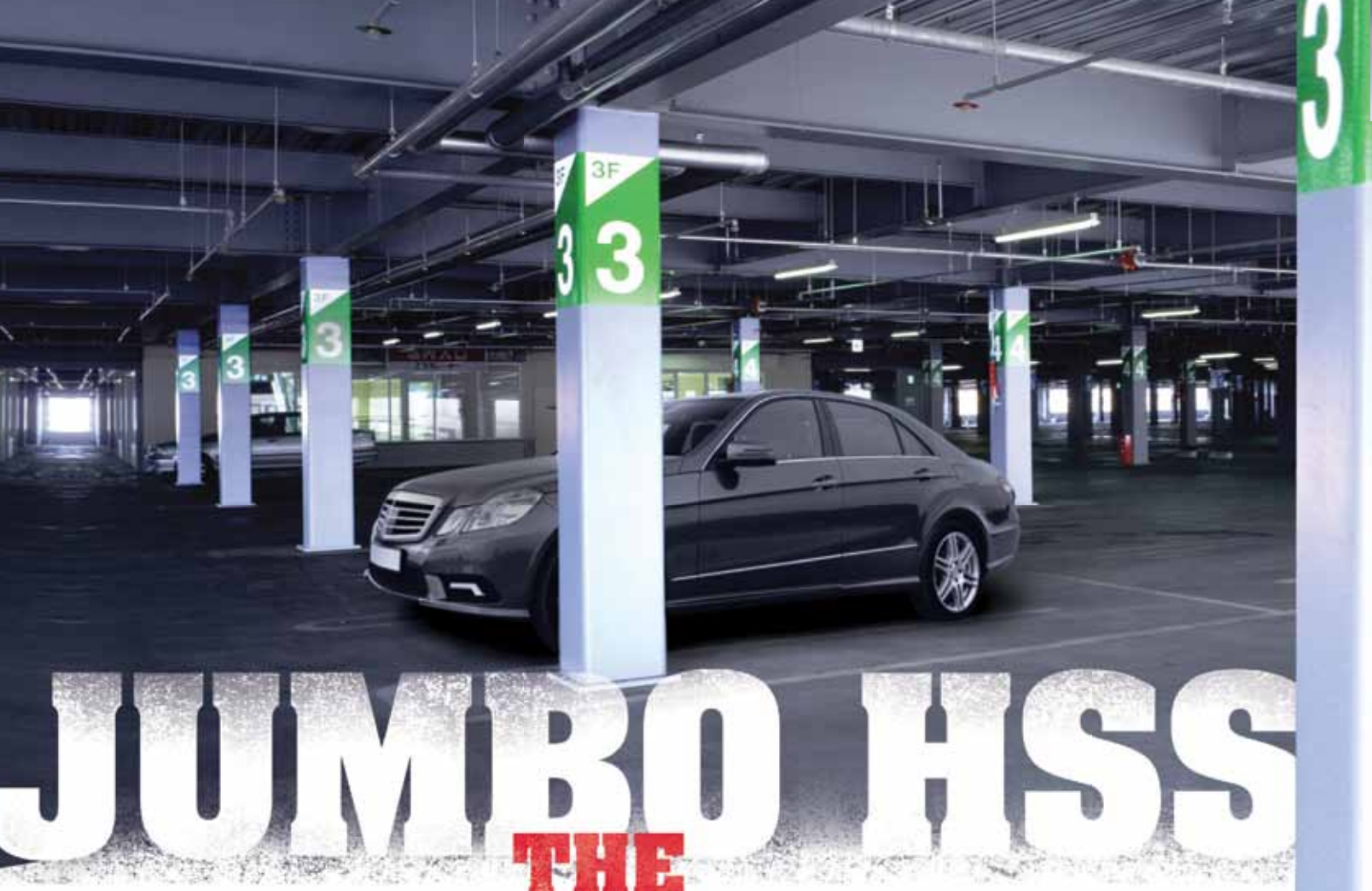

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Business has been improving steadily and we've seen that reflected in the sales of our programs."

The company offers software for the design of cold-formed steel framing members, specifically cee's, zee's and channel shapes. "All of our software is designed by engineers for engineers, so the input and output is intuitive with an appropriate level of input and output for the type of problem being solved. The newest version of our software includes the latest code requirements. There have been significant changes in the cold-formed steel codes recently, so it is important for engineers to be up to date," says Madsen. He explains that previous versions of the cold-formed steel codes did not require calculation of distortional buckling strength of cee and zee shapes. Current codes do. "If engineers are unaware of these new requirements, then their designs could be non code-compliant," says Madsen, who adds: "The best thing about our software is that we probably use it ourselves more than anybody else. We are design engineers first and we develop software to meet certain needs in our work."

Dan Spackman, Product Develop Manager for Cored Wires U.S. at The ESAB Group, Inc. in Hanover, Pennsylvania (**www.esabna.com**), says that with the continuing shortage of skilled welders the company keeps rolling out new products to help mitigate this problem. "Our *Atom Arc Acclaim* line is a low-hydrogen stick welder designed to help less experienced welders pass their test, weld easier, get up to speed quicker and help owners become more profitable," he says. Another area of growth is in seismic certified products. "We have a line of products that are seismic certified with the D1.8 seismic supplement welding code. These are primarily flux-cored wires, but also include submerged arc wires and flux combinations."

These seismic products have been under continuous development since 2010, and the company will soon introduce a catalog for 'demand critical seismic certified products' which will include an introduction to seismic codes, certified products, data sheets and test results. "We've noticed that customers are asking for seismic products even though they are not in a seismically active area," says Spackman. "Some areas are putting in seismic requirements regardless of their geographic area." *(See ad on page 54. Visit Booth #615 at the NASCC.)*

At Bentley Systems, Incorporated (**www.bentley.com**), Huw Roberts, Global Marketing Director – Building and Structural, says that their *Structural Passport* offering continues to be well received by customers who can buy the software they need and not be forced to buy what they don't need. "One of the things that we've recognized at Bentley is that about 70 percent of our users are in a continuous subscription relationship with us. That's great for us and them because you're always getting support and updates and latest and greatest and everything else–and the Passport is an example of that. We also have another program called the *Enterprise License Subscription*, which basically takes that Passport model and extends it to absolutely everything that Bentley makes."

Roberts says that both of these programs are unique in the industry. "Users really appreciate that approach to accessing particular software technology so that they don't have to worry about 'If I buy it now to use it on this project, and I don't need it for another six months, is it worth paying for?' That's not even a question anymore because it's in the Passport."

In October, Bentley released *Structural Synchronizer View*, that allows engineers to explore 3D structural models created with *Structural Synchronizer V8* from anywhere using an iPad, iPhone or iPod Touch. Says Roberts: "You can navigate as you would on an iPad, interrogate the data, answer questions. It's a free app." *(See ad on page 3; visit Booth #321 at the NASCC.)*

Leroy Emkin, Founder and Co-Director of the CASE Center in Atlanta (**www.gtstrudl.gatech.edu**), says that GT STRUDL – its Structural Design & Analysis software programs for Architectural, Engineering-Construction (AEC), CAE/CAD, utilities, offshore, industrial, nuclear and civil works – continues to be the product of choice for the nuclear industry with civil engineering structures. "We can handle, for example, models on the order of 40,000 joints, which is not that great, but 40,000 joints *and* you have to complete 7,000 modes to do earthquake analysis is mindboggling." He says that the mega-computing power offered by GTSTRUDL

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is being spurred by increasing rigorous standards. "The profession is moving in a direction now which requires engineers to perform not only the geometric analysis. Engineers are making a horrible mistake if they think that they can get an acceptable solution in any way other than a rigorous nominee of second-order analysis. All the approximate methods are just totally unreliable, except in the most academic of problems – and I don't know many engineers who are solving academic problems."

The company plans to soon introduce its new GT STRUDL version 32, which Emkin says will offer significant improvements in the base plate analysis and design feature of GT STRUDL. "In heavy industries, especially power and nuclear, there could be tens of thousands of base plate analyses that have to be done. All of them require non-linear analysis. All of them require automatic meshing at the base plate and the steel shapes connected to the plate. There's some significant improvements being added to our base plate processor in version 32."

"We're getting a lot of action and a lot of demands in connection with companies involved in nuclear. It's looking good from our perspective. One of the things I'm seeing, especially as a result of what occurred at the Fukushima nuclear power plant, is a tightening of standards and an interest in extreme high quality engineering," says Emkin. *(Visit Booth #126 at the NASCC.)* ▪

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