Software Makers Bullish on Business

By Larry Kahaner

The consensus among structural software companies and their customers is clear: the construction industry is on its way back from the downturn of the past several years. Until now, companies have been hopeful, even guardedly optimistic about growth. Now, however, rising optimism is being confirmed by an increase in software sales. To meet growing customer needs, software makers are keeping up on codes, adding improvements and allowing users to access software through different media, including smartphones and tablets.

At Devco, Software, Inc. (**www.devcosoftware.com**) in Corvallis, Oregon, President Rob Madsen sees definite business improvement. "We have seen a definite uptick in sales and a more optimistic customer base in the last six to nine months," he says. To meet customer demand, the company has rolled out LGBEAMER v8 Pro which Madsen describes as "the latest release of our powerful and user friendly design software for cold-formed steel studs, joists, channels and zee's. In addition to the standard component design modules, LGBEAMER has many useful design modules for framed openings, shearwalls, x-braces, floor joists and rafters. The latest release also includes the 2007 NASPEC (AISI S100-07) which has recently been adopted by most building jurisdictions." He says that the primary improvement is in the ability to calculate distortional buckling capacity as well as warping torsion as required by current building codes. (See ad on page 46.)

Dan Monaghan, Managing Director, North America, Nemetschek Scia (**www.scia-online.com**) in Columbia, Maryland is also witnessing improved conditions. "Overall, the business outlook from the firms we are talking with are more positive than last year," he says. "The trend towards Building Information Modeling continues to be a driving force for the adoption of software. Most firms who jumped into BIM early are now recognizing that it's a process not a technology. They are looking for flexible software that can help them plug analysis and design into as many workflows, and not be forced into using one vendor's software."

Adds Monaghan: "As a result, we're seeing more demand for the support of Open BIM standards like IFC (Industrial Foundation Class), a neutral file exchange format, and ISO standards that all BIM software supported. With support for Open BIM, our users can exchange BIM models with any BIM compliant software which gives engineering offices a competitive advantage."

The company recently released Scia Engineer 2012. "While Scia Engineer may be a new brand to some, it has a long development history-over 35 years," says Monaghan. "This new release represents a milestone in our development history and in the industry. Scia Engineer is now the only integrated structural design software program that links structural modeling, analysis, and multi-material design with support for several international codes, and offers bi-directional drawings and calculation reports in one program. With support for open standards like IFC 2.x3, SDNF, and bi-directional links with Revit Structure and Tekla Structures, Scia Engineer makes it easy for engineers to participate in today's BIM process. This new release offers some great improvements for day-to-day work including expanded code support for IBC and Eurocodes, and new support for Brazilian codes. It is also the only structural analysis software that offers advanced parametric optimization, which allows engineer's to set up engineering problems and have the computer run through hundreds, or even thousands, of calculations to help derive an optimal solution that can be checked against codes."

Amber Freund, Director of Marketing for RISA Technologies (**www.risa.com**) in Foothill Ranch, California echoes the upbeat responses of others. "We are hearing more about new projects and older projects that are being revisited. It's a slow growth, but I think construction is definitely coming back. Hopefully this time it will be at a more sustainable rate." To accommodate customers needs, RISA Technologies recently partnered with Tekla to link Tekla Structures

and RISAConnection. This gives engineers the ability to design their connections from within their steel detailing model. RISA will be at the Tekla User's Group in August demonstrating this new link, according to Freund. "RISA has had the ability to design the connections in the past, but not provide the detail drawings," she says. "This new link with Tekla will allow engineers to both design and detail the connections without having to do any manual data entry or drawing. Engineers were asking RISA how to get detailed fabrication drawings and were asking Tekla how to get connection design. The collaboration of the two companies to create this link means engineers can have both the design and fabrication drawings in one model." (See ad on page 67.)

"Sales are up dramatically," says Engineer and Developer Terry Kubat at IES, Inc. (**www.iesweb.com**) in Bozeman, Montana. "The message we are getting from this is that our customers are not waiting for work; they either have it or believe it will be coming very soon. Many companies put off investments in their productivity tools during the construction crisis, but that crisis is obviously over with IES customers."

The company relies on the day-to-day feedback from thousands of customers to fine tune its products, according to Kubat. "IES customers are clever engineers who are fed up with software bureaucracy, those products with too much power that force you to relearn your job. IES customers much prefer software that is friendly and flexible enough for daily tasks. Engineers in all industries and sectors appreciate tools that are simple enough to use without a manual." He adds: "IES offers nine products to meet a wide range of needs. We continue to improve on these tools, and in 2012 we are focusing on reliability and stability of our products to help insure a smooth work-flow for our customers." One product is VisualAnalysis 9, "a far more accurate design-platform compared to any previous release," says Kubat. "We performed automated validation to insure the highest quality of analysis and check results. In addition, we have built-in crash reporting that has allowed us to reduce instability issues by over 1000 percent with no effort on the customer's part." (See ad on page 48.)

Offering new software is Design Data (**www.sds2.com**) of Lincoln, Nebraska. "In addition to the rebranding of our entire SDS/2 product line – which now includes SDS/2 Engineering, SDS/2 Erector and SDS/2 BIM – Design Data has launched SDS/2 Connect," says Doug Evans, Vice President of Sales. "SDS/2 Connect is a new add-in for Autodesk Revit Structure that automatically designs connections within the Revit environment. SDS/2 Connect helps make it possible for structural engineers and fabricators to design, conduct code check analysis, and extend steelwork designs to fabrication within a BIM workflow. SDS/2 Connect is the only product that enables structural engineers to design and communicate steel connections based on their Revit Structure design model as an active part of the fabrication process," he says.

Previously, Evans notes, their product was developed for the manufacturer and used in the manufacturer's office. "The recent release of SDS/2 Connect now allows the engineer to use the product in the engineer's environment. This, along with the other modifications to the SDS/2 core product line, encourages the model to be used through the lifecycle of the project." Evans agrees that the business environment has improved and adds, "In all sectors, people are optimistic about the continued future growth."

The recent economic downturn has changed the landscape, according to Heather Johnson, Marketing Manager for StructurePoint, LLC (**www.structurepoint.org**) in Chicago, Illinois. "Mergers and acquisitions have continued this year to close some doors yet open opportunities in other areas. This results in strong support for software assets and heavy licensing activity globally geared towards ensuring engineering access to the latest technology across all operating platforms," says Johnson, who adds, "We feel very optimistic about the

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steady recovery in North American markets and continuing improvements in the Middle and Far East."

As the Engineering Software Department of the Portland Cement Association since 1960s, StructurePoint specializes and focuses entirely on reinforced concrete buildings and structures. It also serves its end users as the gateway to cement and concrete industry resources, according to Johnson. The group has updated its software to reflect relevant provisions of the ACI 318 code and commentary issued in 2011, and these updates have been incorporated in the software suite and released to the public at the end of 2011. "Taking advantage of the latest provisions in the code allows our end-users to optimize their design and arrive at the maximum level of reliability and economy for their structures," says Johnson.

Also updating their products to meet code requirements is Chicago-based CSC, Inc. (**www.cscworld.com**). "We specialize in developing code-based structural design solutions," says Vice President Stuart Broome. "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 as in the case of Fastrak." Fastrak is the company's steel building design software that works with CSC's Integrator, a new and free tool for synchronizing Fastrak and Revit Structure models back and forth. Another product is Tedds, a calculation production suite which automates the design and documentation of structural components. "It offers the best of both worlds: a completely library of calculations, along with powerful functionality for engineers to create their own calculations," Broome notes. "The primary benefit of Tedds is increased productivity, but many of our clients value the detailed and transparent output which Tedds produces. Tedds works within a Microsoft Word environment ,meaning that most engineers know how to use it before they even open up the software for the first time. Microsoft Word makes it easy to compile full calculation documents including sketches, photos, Autocad and Revit Drawings, contents pages and Excel spread sheets," he says. (See ad on page 3.)

For concrete construction, Bentley Systems, Incorporated (**www.bentley.com**), based in Exton, Pennsylvania, has introduced ProConcrete, which is software for advanced 2D and 3D parametric modeling, detailing, and scheduling of cast-in-place and precast reinforced concrete structures, now available on MicroStation or AutoCAD, says Huw Roberts, Global Marketing Director–Building and Structural. "ProConcrete provides engineers, detailers, fabricators, constructors, and contractors a strong visual understanding of reinforcement interactions across multiple planes, including clash detection capabilities. By integrating tools and collaborating data across reinforced concrete projects, from design and detailing upstream to fabrication and construction downstream, ProConcrete can reduce documentation production time, construction costs, and project timelines, while eliminating errors and design flaws," Roberts says.

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He notes that Bentley has tried to simplify SE's software choices by offering interoperability among products. "Structural organizations typically use multiple software packages and tools to do their jobs. The challenge is then to get these specialized products to interoperate and avoid inefficiencies. Bentley addresses this by offering its open ISM methodology to facilitate structural interoperability, primarily in the areas of visualization, change management, and revision histories. Bentley offers ISM free of charge to the structural community. The newest version offers feature additions and subtractions, more new materials, coordination of member end and base reactions, connection tags, and coordinate system transformations."

Keeping its products current and up to code changes is also a priority at S-Frame Software (**www.s-frame.com**) in Guilford, Connecticut. "The latest enhancements of S-FRAME Structural Office R10 focuses on supporting the trend of engineering practice and building codes towards more advanced forms of dynamic analysis, especially for seismic loading, and larger, more complex models, due to more prevalent use of shell finite elements and the influence of BIM," says CEO Marinos Stylianou.

In March, the company also released S-CALC in North America, a new, full-featured sectional properties calculator for sections of any size, shape or material. "S-CALC offers all the calculations one would expect from a sectional properties calculator, and some that structural engineers have been desiring for years, including Shear Center, Shear Area, Torsional Constant, and Warping Constant. S-CALC is the first of a series of brand new BIM Components we plan to release that will add structural analysis and design depth to BIM. S-CALC features a modern look and feel, customizable user interface, powerful import/export, unparalleled report generation, a scripting environment for automation and flawless integration with BIM products," he says.

As for business conditions, Stylianou adds, "The energy sector in North America, Canada in particular, has been very good to us in 2012, and we continue to see considerable business growth in Asia. We believe that Europe will offer some unique business opportunities in 2013, and we plan to fully evaluate them." (See ad on page 4.)

At the Canadian Wood Council (**www.cwc.ca**), a national, non-profit association located in Ottawa, Ontario, representing manufacturers of Canadian wood products used in construction, their mission is to ensure that building professionals have the information in hand to specify and use wood products in a safe, secure, and code-compliant manner, says Robert Jonkman, Manager, Structural Engineering. "One way we do this is through our wood engineering software, WoodWorks. Separate Canadian and U.S. versions of WoodWorks software are available. For the U.S. version, compatible with the IBC, NDS, SDPWS, and ASCE7, we work closely with the American Wood Council (AWC) to ensure consistency in technical interpretations." The software is available for free for building officials, plans examiners, and university and college professors.

"Most engineers designing with wood have used WoodWorks Sizer already," says Jonkman. "Sizer is very popular – our most commonly used software module – enabling engineers to design beams, columns, studs, and joists using light frame construction as well as heavy construction such as timber, glulam and engineered lumber." Jonkman considers their most time saving module to be WoodWorks Shearwalls because it allows engineers to very quickly model a building either using an AutoCAD exported file as a template or drawing from scratch. "The software automatically will calculate the wind pressures and suctions as well as seismic forces, distribute the forces to each level, within each level to each shearline, and within each shearline to each shearwall segment. It does this using both the flexible and rigid diaphragm distribution methods for both seismic and wind forces. For rigid distribution, Shearwalls uses a either a "capacity" approach or a "stiffness" approach (using shearwall deflections) to distribute forces to shearlines and shearwalls. Shearwalls designs both perforated and individual full height wall segment type shearwalls," Jonkman says. (see ad on page 53.)

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At Computers & Structures, Inc., in Berkeley, California, (**www.csiberkeley.com**) Executive Vice President Syed Hasanain says that they have been busy working on new versions of their SAP and ETABS software. "The new ETABS product will, hopefully, be out in a month or so. We've been working on it for the past eight years. We have products that have served the industry for the past twenty-some years before the earlier versions were in place, and now we want to do something which will be good enough for the industry for the next twenty years."

Hasanain adds: "We have also recently come up with a new product for the bridge industry. It's called CSI Bridge and is also based on our SAP platform." As for their customers, some of the feedback is mixed. "I think in the recent past the building industry, especially new construction in the U.S., has not been doing well, but we've seen a huge increase, as far as sales are concerned, from the bridge industry. We've seen big markets created in India and China." (See ad on page 60.)

"As market conditions improve, our customers are seeing incremental improvements to their business," says Paul McEntee, Engineering R&D Manager at Pleasanton, California-based Simpson Strong-Tie (**www.strongtie.com**), which manufactures connector products for the construction industry that cover a broad range of residential, commercial, industrial and infrastructure projects. Strong-Tie's customers include contractors, builders, distributors and homeowners. They also offer technical support, training and service for engineers, architects, building officials and other design professionals.

In the software area, they are focusing on serving customers' needs with web and mobile applications to help them get their work done more efficiently "without being tied to their desk," says McEntee.

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"We are creating calculators and other online and mobile applications to help structural engineers in their daily jobs. We have PC applications for moment frames, connector and anchor design, and we continue to update these to handle new products and meet the current building code." He adds: "A dozen web-based applications are available already to help specifiers select the right fastener, calculate wood shrinkage, or simply find a drawing or code report. Some of the engineering-focused web apps coming in the second half of 2012 are the Holdown Selector, Rod Elongation Calculator, and a Coil Strap Deflection Calculator." (See ad on page 19.)

Barry Ashwell, Vice President of Sales and Marketing at USP Structural Connectors (**www.uspconnectors.com**) in Burnsville, Minnesota says that business is coming back. "We see a lot more activity in the marketplace, certainly a lot of projects in the design and/or planning stages. Multi-residential still continues to do fairly well and builders are getting back to business. There's still not a lot of specs out there, but especially in markets where it's vacation homes, the smaller regional builders seem to be showing signs of recovery more so than some of the big guys. But it's coming back, and overall people are pretty happy with what's going on."

USP is a structural-connector company, a subsidiary of MiTek Industries, which primarily manufactures structural connectors for connecting wood to wood, wood to concrete, wood to metal. "We have over 4,000 SKUs including dimensional standard construction hardware, but we also offer a complete line of plated truss and wood products." The company offers a proprietary line called Gold Coat, which is a multi-layer protection system comprised of an organic polymer top coat barrier layer and a zinc layer placed over a steel substrate. This double barrier protects the steel from its environment.

On the software side, the company's newest offering is a free downloadable tool called USP Specifier which allows engineers and others to very quickly find the right connector solution for the design that they're developing, says Ashwell. "It will also allow them, if they have our competitor's products, to perform an accurate product conversion. Our catalog can also be downloaded to the iPad and other portable devices. We've also produced QR codes for the connector category."

Ashwell concludes: "I want people to know that we're customer focused and we are going to continue to provide innovative tools. We're excited about the future, and we understand that we need to earn the specification and our customers' business daily." (See ad on page 57.)▪

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ADAPT Corporation Phone: 650-306-2400 Email: **info@adaptsoft.com** Web: **www.adaptsoft.com**	ADAPT-Builder Edge Floor Pro MAT SOG	X		X			X	X	X				
	ADAPT-ABI	X	X				X						
American Wood Council Phone: 202-463-2766 Email: **info@awc.org** Web: **www.awc.org**	Online Calculators												X
Bentley Systems Phone: 610-458-5000 Email: **structural@bentley.com** Web: **www.bentley.com**	STAAD	X	X	X		X	X	X	X	X	X	X	X
	ProConcrete	X		X		X	X	X					
	RAM	X		X		X	X	X				X	
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