

Users write about their favorite features and a few things they're still waiting to see.

How Much Do You Love Your Detailing Software?

STEEL DETAILING IS JUST ONE APPLICATION in which software has contributed to increased productivity in recent years. In this demanding activity, the software's effective application depends on the skill and experience of the user, just as it does for any tool. And also as with other tools, users find value in different aspects of the variety of detailing software packages available.

This month *MSC* invited several people in the detailing industry to share their favorite features of the software they use, as well as enhancements that are on the "wish list." Here are their responses.

Connections, 3D and Drawings

Eleven years ago, my company decided to invest in SDS/2 because of its connection design capability, its 3D capability and its drawing presentation. Today, these are still the primary reasons we use SDS/2.

The automatic connection design feature allows my company to provide the most economical connections, customized to the fabricators' needs, by inputting the actual beam loads and not necessarily pre-designing the connections on a job. SDS/2's 3D capability is second to none. The software recognizes framing clashes automatically, helps us to visualize difficult situations, and provides intelligent models for coordination and information that allow us to stay at the forefront of the BIM movement. And even though BIM is the magic word these days, 2D drawings are still required. SDS/2 provides the greatest ability to customize shop drawings to our fabricators' standards and presentation needs.

As my company has grown, SDS/2 has given us the freedom to customize the program to meet our needs via parametric modeling and custom members. It also allows us to work in a multi-user environment, working multiple detailers in the same area real-time from the same live model.

Like any other software, there is always room for improvement within SDS/2. One item that I would love to see improved in SDS/2 is the connection output reporting, improved to "show the work" behind the calculations.

—*Brian Cobb, P.E., Operations Manager, Structural Detailing LLC, Brentwood, Tenn.*

Versatility and Ease of Use

Whenever we are introducing ourselves to a new client or are starting a new project and starting to work with the BIM team, one of the first questions asked is what modeling software we use. We use Advance Steel by Graitec. It is not the most recognized steel modeling and detailing software available, but we feel it is one of the best.

The following are a few of the reasons why we chose Advance Steel and why we are happy with our choice:

- ▶ **Miscellaneous steel detailing:** It defeats the purpose of modeling a project if you can't model the miscellaneous steel with the structural steel. With Advance Steel we can model the entire project and tie it all together, including stairs, rails, ladders, all in one model.
- ▶ **AutoCAD format:** Based in AutoCAD, Advance Steel was immediately familiar to all of our new users. The learning curve is short and having .dwg files to send to our customers is an added benefit.
- ▶ **Ease of modeling:** Modeling in Advance Steel is quick and complete. We have been hired by fabricators to produce models to help with their material takeoffs when they are estimating projects. This preliminary model gives them an accurate material list to which they can add labor costs. This approach helps the fabricator to lower material estimates and shorten the time it takes to prepare the estimate.
- ▶ **Reduction of detailing errors:** Detailing errors have been greatly reduced or eliminated with the use of Advance Steel. The ability to see the framing in the model has helped our detailers to not only become more efficient but to catch mistakes before they get to the checker.

One item we would like to have added is the ability to give steel members an Advance Material List number in the preliminary model, then have that number traceable throughout and placed on the detail drawing and .kss file.

—*Michael K. Mitchell, Owner/Partner, Advance Steel Design, Inc., Sandy, Utah*



Connection and Customization

We started using Xsteel, which is now part of Tekla Structures, in 1997. At the time there were two software packages with North American distribution that offered the features and support M & D was looking for. Tekla seemed like the right fit, and the main distributor and support team were located close by in Vancouver.

One of the biggest reasons for moving to a 3D modeling software was for its impact in the shop and field. 3D software effectively resolves fit-up issues. If the steel is modeled correctly and the drawings are not manually adjusted, then fit-up issues should be eliminated as the CNC data created will exactly replicate the conditions in the model. This translates to a more accurately constructed piece of steel and consequently a close to perfect fit-up.

We also like being able to customize the software, including reports, templates, connection macros and customization of Tekla Structures through the use of their API (advanced programming interface) allowing improvements of its interoperability with our specific needs.

As a forerunner in the expanding BIM project model, Tekla has actively encouraged the construction industry to use its software through developing its construction management capabilities, integration with engineering software, incorporating concrete, joist and other construction elements. The company's free BIMsight tool introduced this year reinforces their position in the BIM marketplace.

As a large user, one of Tekla's biggest advantages also has been one of our biggest complaints. Although Tekla has developed a very good detailing program, it has spent less on developing the detailing portion of the business and considerably more time and effort in developing the add-ons to the software.

—Richard Stern, Director of Business Development, M & D Drafting Ltd., Edmonton, British Columbia



Making Erection and Shop Drawings Quickly and Accurately



At DECCON we prefer to use Bentley ProSteel 3D. It is an AutoCAD-based steel detailing package with many favorable attributes. The ability to detail quickly and accurately is extremely important, but the quality of our product is very important, especially when almost every detailer has 3D technology at their disposal and is willing to do the job for very low prices. Any shop knows that a good set of detail drawings will save big money and frustration in the long

run. ProSteel 3D produces outstanding erection drawings directly from our model and in the hands of experience there really is no better tool to use. The same goes for the 2D shop drawings—give a person with experience the right tool and the sum of all the parts simply pays big dividends.

The only real disadvantage has been the perception that the “big” software packages are better because they are more expensive. ProSteel 3D, although less expensive than the larger software packages, is still not cheap. The right tool is more important than

price. If Prosteel 3D were more expensive than the other software we would still use it. Our reputation depends on it.

—Doug Caplan, President, DECCON Steel Detailing Services Ltd., Surrey, British Columbia

Easy to Learn, Quick and Accurate

Our BIM coordinator, Jeremy Franklin, and lead Tekla operator, Donnie Butler, both say they appreciate the accuracy that Tekla Structures provides in the hands of a good operator. Franklin especially likes the fact that it enables you to visualize the building as it would be built, allowing you to see areas where there may be some sort of interference that can't be seen on a 2D drawing. He and Butler agree that the learning curve for Tekla is not as steep as for some other products they have used.



Tekla Structures is a solid detailing package for “future proofing” our detailing department due to its built-in ability to interface with many different fabrication equipment manufacturers and also for the ability to provide a model for BIM coordination. Both of these aspects make it a valuable addition to a detailing firm, allowing the ability to offer services that competitors might not be able to.

As a manager and owner, I very much appreciate the accuracy that is ensured, so that there are no fit-up problems in the field. The ability to create a viewer file that anyone can look at with a web browser is a big asset and selling tool. It is very impressive to clients who are not familiar with 3D modeling and allows them to be able to manipulate the model themselves. The RFI process is much easier when you can show someone a problem as opposed to trying to describe it to them. The added feature of providing many kinds of reports, such as advance bills of materials, field bolts, weights, data files for shop equipment, etc., is an advantage and a time saver.

We would like to more easily make revisions after the detail drawings have been created. Currently if changes are made after drawings have been created, it sometimes generates unexpected results, with the potential for missing or incorrect information on the drawing. A good connection design interface would also be helpful.

—Joel Hicks, President, Structural Technics, Inc., Trussville, Ala.

Adaptability and Model Integrity

I've been using Tekla Structures, previously known as Xsteel, for more than 15 years. During that period its 3D solid modeling core, relatively compact model file, user-friendly interface and continuous and innovative development have been the major benefits of using Tekla Structures.

The Tekla Structures product range is made up of several different configurations rather than a “one size fits all” approach. This enables customers to purchase cost-effective solutions based on their market segment and daily workflow requirements. Product configurations include a basic Viewer, Construction Management, Design, Steel Detailing and Full. Tekla recently added a free BIMsight viewer and collaboration tool, which has made a significant contribution to the entire steel construction industry by giving it an effective way to coordinate with general contractors, designers and sub-trades.

I've also always been impressed that the drawings are created directly from the model and can't be changed without changing the



model. This ensures drawings and other output always match the model. We are seeing more and more west coast general contractors and designers specifying that their projects be modeled and detailed using Tekla Structures.

On the flip side, the lack of weld pathing information and basic weld visualization, particularly when using the extensive connection macro library, is fast becoming a problem for those customers who are moving to 3D

model-only approval, as well as those who use robotic technology in the fabrication process.

I'd like to see Tekla add a viewer that works effectively on the emerging tablet technology.

—Wayne Morrison, Pre-Construction Manager,
The Herrick Corporation, Stockton, Calif.

Visualization and Macros

We use AceCad's StruCad for a lot of our work and I'm very comfortable with it. I started with StruCad in 2000 when I was only a year and a half into detailing. A big part of the job is interpreting the contract drawings and the 3D software helps you do that. Instead of trying to picture it all in your mind and getting overwhelmed, you're laying it out to the contract drawings. You can actually see what you have to do instead of just trying to draw it in 2D and then picture it in your mind. Using the software really helped me understand the steel detailing process.

The macros for connections are a very useful part of StruCad. You take just a little time to set it up and then you're set. Apply that to the steel where you have to connect and even if you have to tweak it a little bit you're not just starting from scratch. Also, I like that if there's something you need to draw, the 2D is comparable to AutoCAD. If there's something you can't get StruCad to produce, you can draw it manually.

This program could use a faster way to edit the drawings. But one good thing is that if it produces a dimension that you don't need or want, it's consistent. So you can just kind of get in a groove and open the drawing and erase. It's not going to be sporadic.

Last year I got a couple of emails about a big project we had detailed that said "It fit like a glove." I know it has to do with somebody laying it out, but also has to do with the software.

—Sean Holt, Project Manager/CAD Detailer,
Bender's Technical Detailing, Tonawanda, N.Y. **MSC**



More information on the products referred to in this article is available on the various company websites.

www.acecadsoftware.com
www.bentley.com/prosteel
www.graitec.com
www.tekla.com
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