COMPANY
Steel Detailing Online, Inc.

LOCATION
Colorado, United States

SOFTWARE
Autodesk® Advance Steel
Autodesk® AutoCAD®

Delivering a new perspective

Advance Steel helps a steel detailer deliver more value to his clients

> Advance Steel helps me work out the constructability of a design, and gives me that other set of eyes when I'm rechecking complex spatial geometry.
>
> —**Bart Rohal**
> Founder and President
> Steel Detailing Online, Inc.

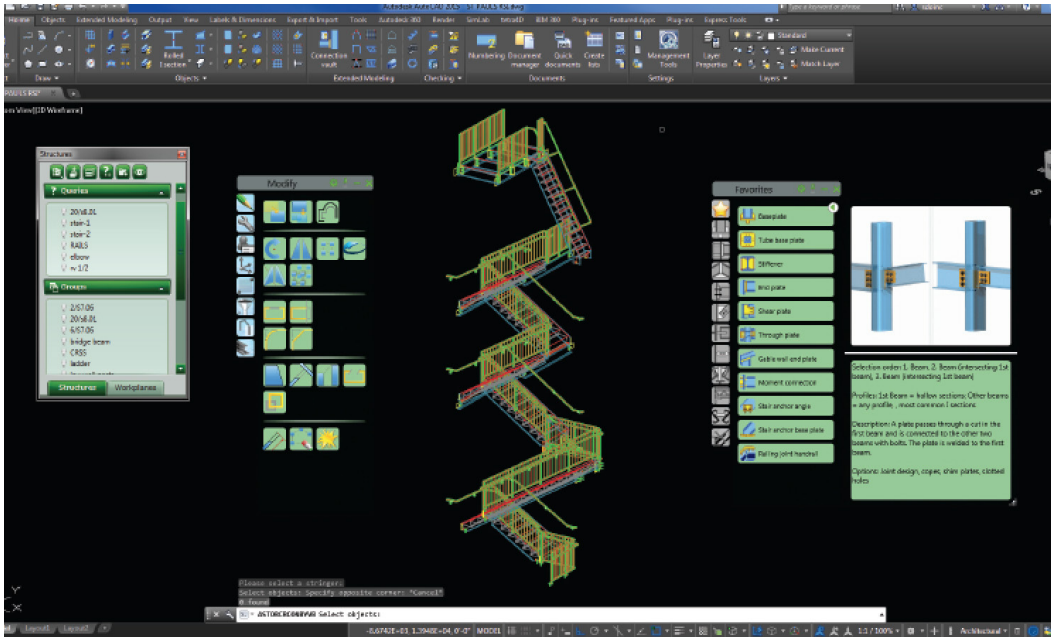

Image courtesy of SDO INC.

The firm

Founded in 2002, the Colorado-based company Steel Detailing Online provides structural steel detailing to steel fabricators, steel erectors, contractors, engineers, and architects. All work is performed in-house by the company's founder and president, Bart Rohal, whose steel detailing career started in 1980. After progressing from Smoley's Tables and drafting arms to 2D AutoCAD® software in the late '80s, Rohal made another big transition in 2010—adopting Autodesk® Advance Steel software and 3D modeling for his steel detailing and checking.

The challenges

"A lot of my projects are commercial buildings, which tend to be more complex due to the tight constraints caused by all the building disciplines and inherent codes," says Rohal. "This can create challenges when trying to resolve issues with the project's design team, especially when we're using traditional 2D drawings as the basis for our communication and collaboration." And as a sole director of the company, Rohal is both the detailer and the checker, but sometimes it is useful for a checker to confer with a colleague to get a different point of view.

In addition, as the popularity of Building Information Modeling (BIM) grows, more of Rohal's clients are asking him to support BIM workflows, thereby enabling the client to bid on those projects. Although BIM projects are currently a small percentage of his work, it is obvious to Rohal that BIM capabilities will become a more common requirement, as will requests for the delivery of CNC files for fabrication.

The solution

In 2011, Rohal began using 3D modeling in the form of Advance Steel software for detailing and checking. The software enables him to automatically generate traditional project deliverables such as shop drawings and erection plans, as well as CNC files and material lists as needed, directly from the Advance Steel model. The software's 3D modeling environment also supports streamlined collaboration with the extended project team, helping him resolve issues more quickly. "Advance Steel helps me work out the constructability of a design, and gives me another set of eyes when I'm rechecking complex spatial geometry," says Rohal. In addition, the model-based steel detailing capabilities of Advance Steel helps Rohal (and his clients) to compete for and win projects that require BIM.

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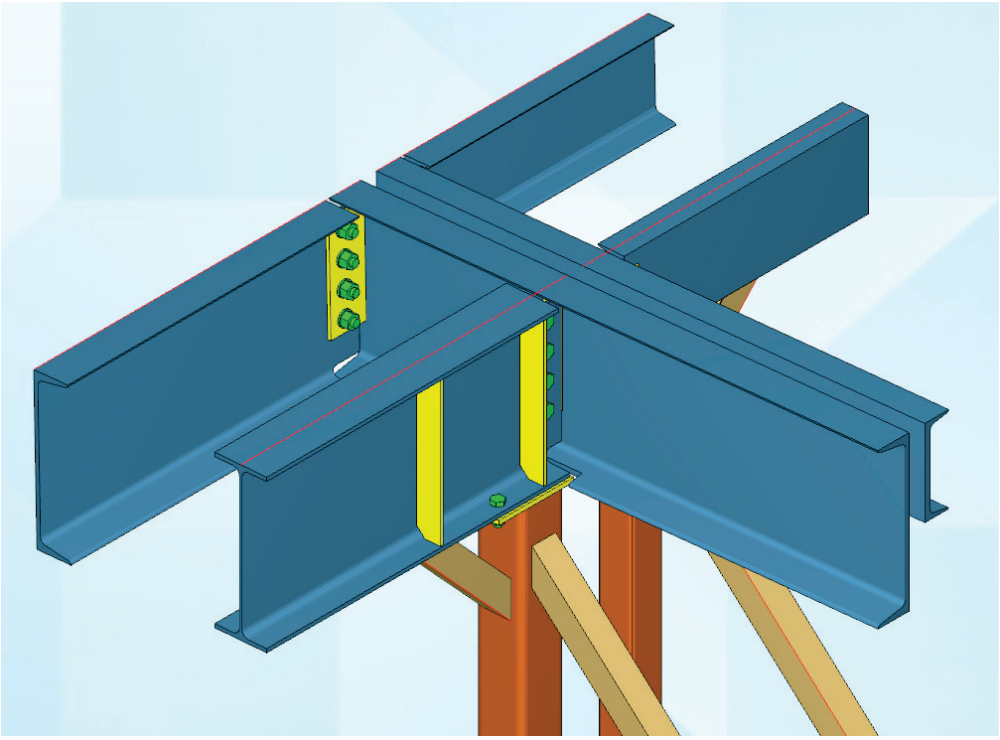

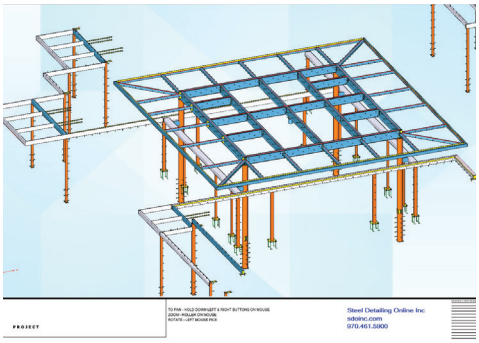

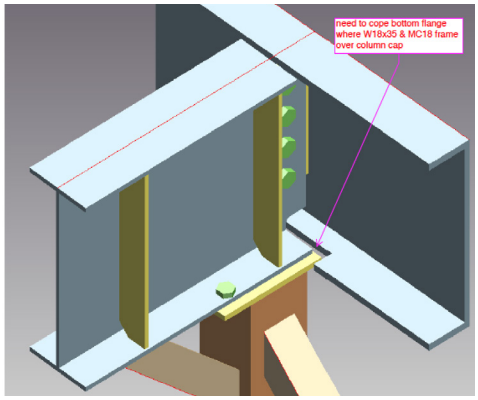

Images courtesy of SDO INC.

A new perspective

"When I'm working on a project and run into some spatial conflicts (particularly with stairs), I often try to resolve the issue first by working it through with the fabricator or client," says Rohal. "We sometimes have online meetings where I share my desktop, and then use the Advance Steel model to zoom into the area and interactively work through the issue. If a picture is worth a thousand words, imagine the value of a live 3D model."

Although RFIs (requests for information) and ROCs (records of conversation) are still the formal paper instrument to address issues, model-based collaboration helps reduce the need for lengthy email trains and phone calls, and ultimately helps decrease the time Rohal spends resolving issues. He also takes advantage of the Advance Steel model to create 3D views (such as quick views of joints, assemblies, and views from multiple perspectives) that are included in his RFIs, as well as his standard plans and drawings—resulting in clearer project communication and documentation.

Checking complex conditions

One of Rohal's projects was a custom steel staircase with bent 3/8 inch developed trapezoid plate treads that varied in length. "Because the stair was complex and the Advance Steel software was new to me for stairs, I reverted to 2D AutoCAD on this project," says Rohal.

"When I finished checking it, the numbers all *seemed* to work—but I had a feeling something was just a little off." So Rohal modeled the stair's main members and treads in Advance Steel to double-check the work points, using the software as another set of eyes.

"Suddenly I saw what was bothering me," says Rohal. "There was a small nosing calculation in the developed view of the trapezoid treads that I overlooked in my manual calculations, but was obvious in the 3D model. That one oversight would have meant all the developed treads were a little short—which would have been a big issue. Even as a checking tool, Advance Steel more than paid for itself that year."

BIM-ready

Rohal also uses Autodesk® Navisworks® Simulate software and Autodesk® Design Review software (which work well with Advance Steel) to provide his clients and design team with BIM models and comments that can be used for project coordination and clash detection. And occasionally Rohal uses the design team's Autodesk® Revit® model as a reference within Advance Steel. "Advance Steel enhances my competitive position—enabling me to offer additional BIM services to fabricators and provide general contractors, other BIM trades, architects and engineers with coordination models in AutoCAD and Navisworks," says Rohal.

The benefits

As a longtime AutoCAD user, Rohal has developed AutoCAD standard details, blocks, and custom operations that he can't afford to discard. "Since Advance Steel detailing software is built on the AutoCAD platform, I can continue to use my customized AutoCAD data and processes, and also continue to enhance my AutoCAD skills," says Rohal.

Advance Steel enables him to offer added services, such as the delivery of BIM models and CNC files. The model-based software helps him better communicate with team members on projects and gives him a different point of view during model checking, as if he had another checker looking over his shoulder.

But he feels that one of the biggest benefits of Advance Steel is its 'fun factor'. "Like many detailers in my position, I enjoy my job," concludes Rohal. "The 3D modeling aspect of Advance Steel is actually fun to use, which makes me enjoy my job even more."

For more information, visit
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