



CASE STUDY:

Adding Steel Detailing Services Helps Structural Engineers Streamline Projects



Overview

COMPANY	Ruby + Associates
INDUSTRY	Structural engineering
WORKFLOW	A reduction of the time it took to get projects started and built
SOLUTIONS	Tekla Structures Trimble Connect

Challenge

While the engineering team at Ruby + Associates is skilled at handling the typical deliverables required for a project, they wanted to create a process that reduced—or even eliminated—the budget issues and scheduling delays they were dealing with on a regular basis. Even though they were already taking care of most of the steel connection design and the shop fabrication details, they knew they had the ability—and the technology—to take on more.

Typically, the set of design documents that go along with the bid on a project will include varying costs for fabricators with different detailing prices, making it difficult to show a true final cost for a

project. Additionally, the general contractor often doesn't have a choice of who the detailer will be on the project.

Based on a desire to eliminate the bottlenecks they were seeing throughout a typical project workflow, reduce the number of RFIs they were receiving, introduce more seamless collaboration into the process and better meet the needs of their customers, Ruby + Associates looked for a way to meet these needs.

Solution

By implementing a process they call LeanSteel®, the engineers at Ruby + Associates put themselves in charge of the steel from the initial design phase to installation, effectively streamlining communications, reducing the risk of RFIs and ultimately completing the project ahead of time.

With LeanSteel®, Ruby's professionals serve as the Structural Engineer of Record, beginning the design of the model during the schematic design and continuing to develop it throughout the construction document phase. Additionally, because their 3D modeling software allows them to create a model with an LOD of 400, it's easy for them to produce design drawings from the model and shop fabrication details.



We figured out that we could bring in additional revenue if we had the ability to design a project, eliminate RFIs and streamline the process.

—Todd Lackey, Ruby + Associates



This also speeds up the internal review process. During a regular review process, there tends to be a paper trail going back and forth between the client and project partners whenever a change needs to be made—sometimes it can even take a week or more for a simple change. However, with this process the engineers could go straight into their 3D constructible model and make changes as soon as they were requested.

Moreover, their LeanSteel® process reduces the time spent during the approval process. For many companies, the detailer needs to finalize their part of the design, then send it to the fabricator who will add their own notes to the design and then send it to the general contractor. Finally, the GC sends it to the architectural engineer for review and approval. After this lengthy approval process, it then needs to hit every single one of those steps to get back to the fabricator and then to the detailer. If there's even one day in between those steps, it could take about eight days by the time the building's model touches everybody's hands and gets off everybody's desks.

By taking on the design and detailing process, the engineers at Ruby + Associates are able to put effort towards eliminating this bottleneck and spending hours, instead of days, on the approval process.



With the ability of Tekla Structures and Trimble Connect [...] our clients get a better picture of [where] we are. And Trimble Connect helps us out with our clients, being able to review our model and understand our workflow.

—Todd Lackey, Ruby + Associates



Results

Implementing these changes allows them to knock 8 to 16 weeks off of the time spent from the time the design process begins to actual construction. This enables them to hit the field faster at a time when schedules are accelerating, giving them a decided advantage in the industry.

Now, with their LeanSteel® process in effect, Ruby + Associates is able to eliminate wasted time throughout the entire steel design process. In fact, they've worked on projects where their steel detailing and fabrication teams are so far ahead of the MEPs team that they're already starting the construction of the building while everyone else is still figuring out their own process. This allows them more control over the project timetable, giving them the ability to accomplish their piece of the project sooner and putting them months ahead of where they'd be if this was done conventionally.

Ruby + Associates uses their LeanSteel® process to eliminate the wasted time and lost knowledge inherent in the traditional steel design and fabrication delivery method by controlling the entire process in-house. With LeanSteel®, the engineers at Ruby are able to use advanced 3D modeling software to not only deliver a set of drawings, but also a fully coordinated and detailed model with a level of detail exceeding the traditional structural design model.

Their LeanSteel® process facilitates advanced coordination and clash detection with other design disciplines – resulting in compressed schedules and increasing your chances for project success. For engineering firms ready to eliminate conventional bottlenecks and take on fast-paced projects, the right technology can help teams not only handle design connections, but also tackle steel detailing and shop fabrication details.

Request a demo today to find out more.



More Efficient Use of Resources



Projects Finished 8 to 16 Weeks



Increased Revenue

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Tekla software, part of Trimble Inc., empowers the construction industry by providing technology that drives efficiencies, mitigates the risk of costly errors, promotes greater collaboration and ultimately delivers a measurable, competitive advantage to our users.