# GRAEF: BUILDING THE NEXT GENERATION OF SUPER ENGINEERS

Wisconsin-based full-service engineering firm GRAEF is delivering smarter solutions, increasing project quality, and making significant savings through integrated engineering processes.

Their approach? While most firms outsource project detailing for fabrication, GRAEF sought to make the innovative move of bringing expertise in-house, using interoperable software tools in the Autodesk® AEC Collection, including Autodesk® Revit and Autodesk® Advance Steel®, to make it happen.

## RESULTS



A HAPPIER AND HIGHLY SKILLED WORKFORCE



SAVING UP TO THREE MONTHS OFF OF PROJECT SCHEDULES

REDUCED CONSTRUCTION COSTS AND LOWER COSTS TO THE BUSINESS



"The chance to reinvent such a mature industry is really exciting. We want to provide opportunities for our people that motivate them and bring out their best"

Michael Vogel, Principal, GRAEF

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#### **HOW THEY DID IT** GRAEF's methodology

## RISE OF THE 'SUPER ENGINEERS'

This experience is developing what Vogel calls 'super engineers' – and the deeper understanding of the industry they carry through into new projects is resulting in significant benefits for GRAEF.

"By having our junior engineers model connection design in 3D, they get to understand exactly how a steel building fits together. Not only are we accelerating their projects, but we're accelerating our internal training with our staff"

Michael Vogel, Principal, GRAEF

## THE RESULTS



## CONNECTED ENGINEERING WORKFLOWS

Increasing productivity across the business and schedule savings

The first of these benefits is that GRAEF are saving up to three months on project schedules. Key to their success has been to make use of the deep integration between Revit and Advance Steel.

"We're leveraging the best attributes of each piece of software and getting them to talk to each other throughout the entire project" – Michael Vogel, Principal, GRAEF

## FASTER DECISION MAKING AND HIGHER QUALITY OUTCOMES

#### Coordination tools for collaboration

GRAEF are using Autodesk<sup>®</sup> BIM 360<sup>®</sup> to bring their steel detailing together with the Revit model to aid collaboration with architects and contractors. This integrated approach using collaborative software is also allowing GRAEF's engineers to resolve quality issues quickly and efficiently, leading to less rework and significant cost savings for the business.

"We've been able to deliver large structural steel projects with minimal RFIs"

– Michael Vogel, Principal, GRAEF

During the construction phase, contractors are coordinating the latest model to optimize installation, cost, and schedule predictability with BIM 360.





Key benefits of integrated engineering for GRAEF



SAVING TIME ON SCHEDULES



#### **INCREASING PROJECT QUALITY**



MORE SATISFIED AND HIGHLY SKILLED EMPLOYEES

"Owners, builders, and architects all see the benefits of the 'one model' approach. It's a journey for us all"

Michael Vogel, Principal, GRAEF

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