

The Structural Engineer's Guide to Accelerated Project Delivery

Three advantages structural engineers gain by performing steel detailing in-house



Table of Contents

Introduction	p. 3
Advantage #1	
Boosted project creation and progress	p. 4
Advantage #2	
Turbocharging teamwork on complex projects	p. 6
Advantage #3	
Amplifying and expanding revenue streams	p. 8
Ready to shift the way you work?	p. 10



Introduction

Traditionally, the architecture, engineering and construction industry has followed dated, old-fashioned workflows that have caused projects to be overly fragmented and prone to inefficiencies that can cause delays, cost overruns and lackluster teamwork.

But, new and advancing technologies are now rapidly changing the AEC industry, causing the lines to blur between project phases, responsibilities, disciplines and business verticals. This has partly been fueled by the increased accessibility to a multi-material platform with lower initial startup costs. As a result, more structural engineering firms are recognizing the value of 3D models and digital construction data, giving them an incentive to take full advantage of BIM technology to expand the services they offer and improve overall project efficiency.

For an increasing number of structural engineering firms, it has become common practice to create and share highly-detailed, construction-ready models that leverage the full potential of their Building Information Modeling (BIM) software. Many of these firms are also finding that this level of technology allows them to add detailing services to their product offering, acquiring additional revenue and garnering a larger market share for their company.

If you find yourself constantly dealing with project delays, last minute revisions and inadequate collaboration between project teams, making the choice to expand your service offerings can mean the difference between leading the industry or being left in the dust.

“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, Senior Project Manager
Ruby + Associates



Advantage #1

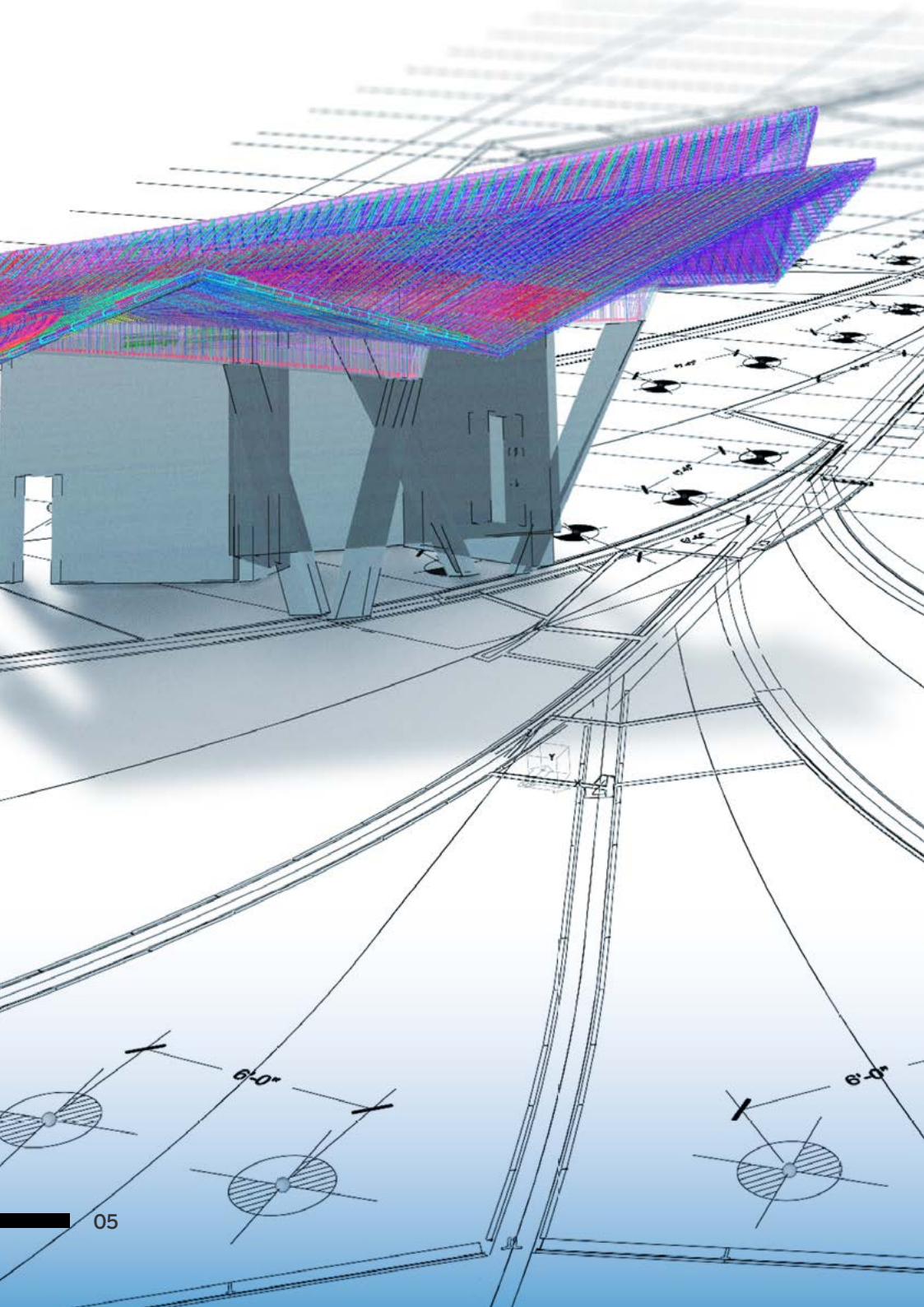
Boosted project kickoff and progress

By connecting the design and engineering teams together at the very beginning of a project, engineering firms of all sizes are finding that the time it takes for them to design and modify their 3D model has been significantly reduced—projects which used to take weeks to get started now take days, or even hours.

In addition to accelerating the creation process, this also allows more control over projects and the ability to enhance them with advanced construction methods, like parametric modeling in which model elements are automatically updated based on design parameters. This further shortens the time it takes to create new projects and deliver information to key stakeholders.

“By getting engaged earlier with the design team, we’re able to develop the connection designs more fully and deliver a connected model that the contractors can use downstream. So, it really enhances the bid process by reducing the unknowns.”

**Darren Hartman, Construction Engineering Practice Leader
Thornton Tomasetti**



Incorporating this level of engagement and collaboration between the design and engineering teams at the beginning of a project ensures an accurate and data-rich constructible model much quicker than using traditional methods. This model can then be used by the engineers throughout the project with everyone from the office to the field and more—starting the project off with full communication and transparency that continues throughout the entire job.

“ We can get right into the details; we can even show the model to the contractors, the erectors and anyone else involved. ”

Matt Smith, Project Engineer
Ruby + Associates

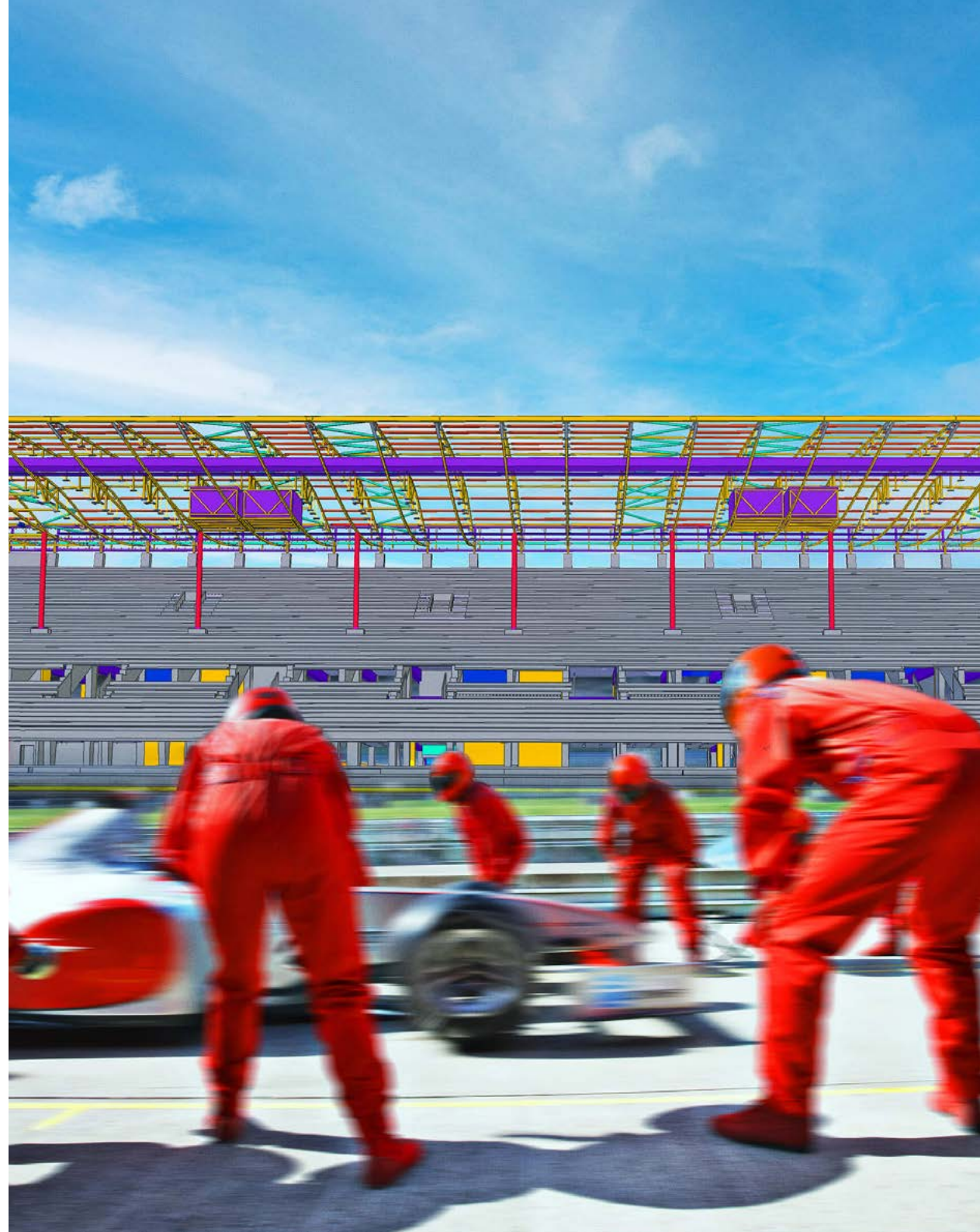
Advantage #2

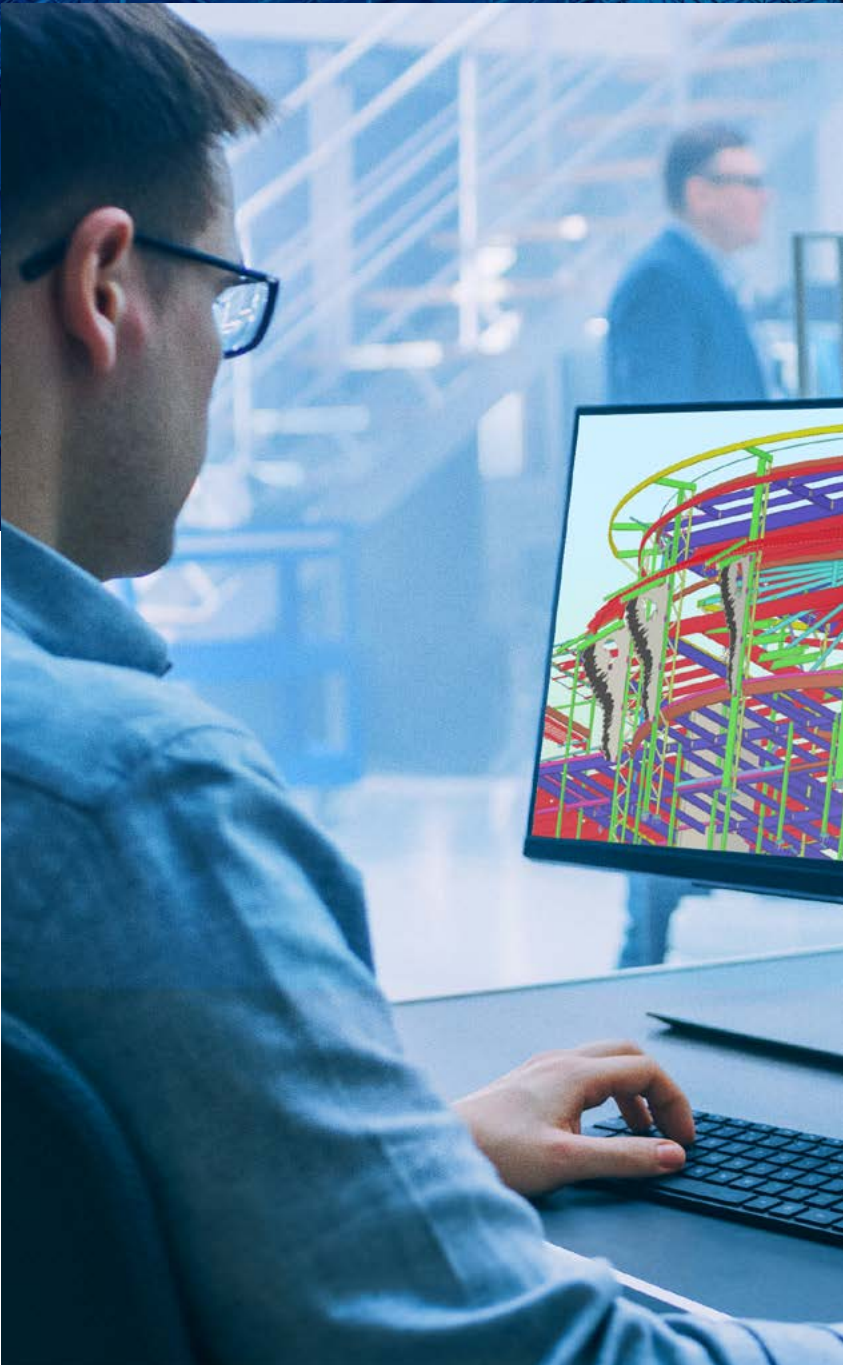
Turbocharging teamwork on complex projects

When you decide to take more control over projects by bringing detailing in-house, you're allowing for more transparency between teams by creating a framework for all stakeholders to be involved throughout the project lifecycle. This way, each stakeholder can understand why decisions are being made, who is making them and the impact of those decisions on the overall project.

“ By providing more information and a better, constructible project upfront, we really believe there is risk mitigation in the project. ”

Jason McFadden, Construction Manager
Barton Malow





“ Our mitigation of some of the risk we take on by offering detailing services is that we have a good crew of people who understand the process. They’re very intimate with how stuff is being fabricated, delivered and erected. ”

Todd Lackey, Senior Project Manager
Ruby + Associates

Using the constructible model as the real-time, single source of truth for all project stakeholders allows the engineering firm to ultimately have full control over the project data, enabling them to ensure proper collaboration and mitigate the risk of errors that can happen when working with outdated data.

Effective collaboration eliminates many of the change orders and RFIs that often cause significant delays by giving engineers the ability to fix problems in the office, rather than on the jobsite. Additionally, because the lines of communication are clearer, you can expect better outcomes in risk mitigation from designers and engineers more clearly discussing and identifying potential challenges and risks in early stages of the project.

Advantage #3

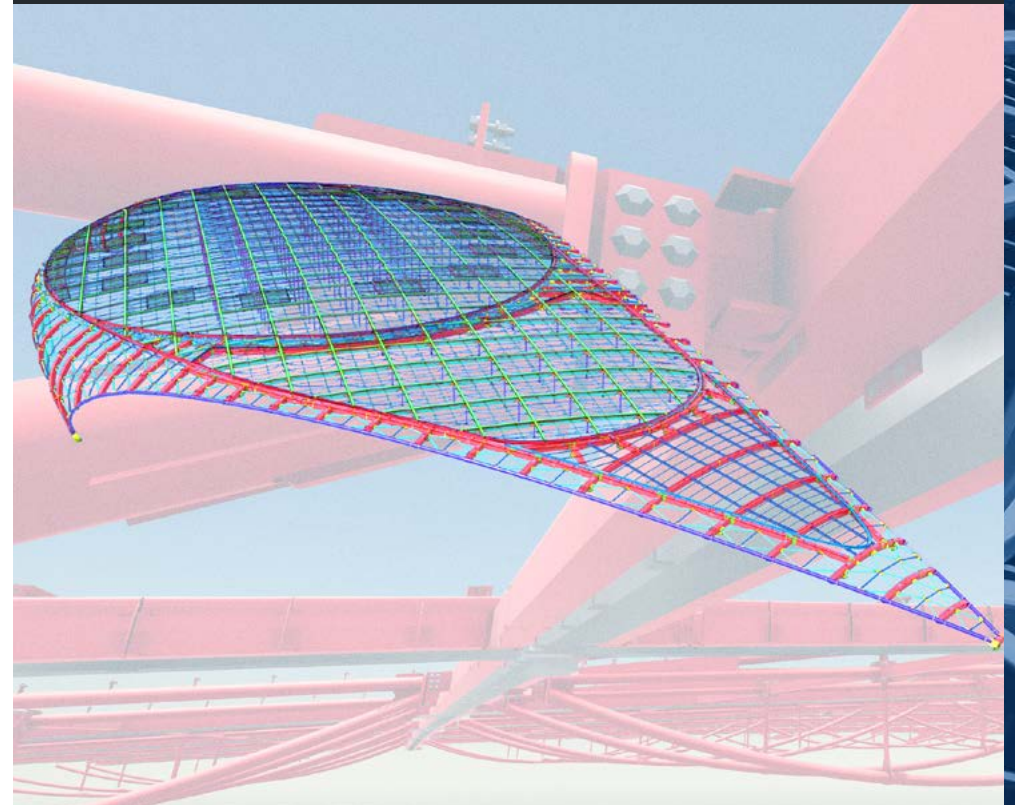
Expand your revenue streams

Of course, a major benefit for engineering firms who integrate steel detailing in their projects is the increase in project revenue. Taking control of this additional step in the process requires additional work upfront, but using the right BIM technology helps you tackle key components of the project, ensuring the rewards of bringing in this new revenue stream is worth it.

A truly constructible BIM software gives you the access to accurate and detailed model information that makes it possible to take care of the detailing process in-house. This allows your team to offer a better experience for your clients and increases the chance they'll use your firm again, creating a continuous stream of revenue from happy clients.

“ [Because we offer detailing services] our fee is higher, so we're being compensated with that. ”

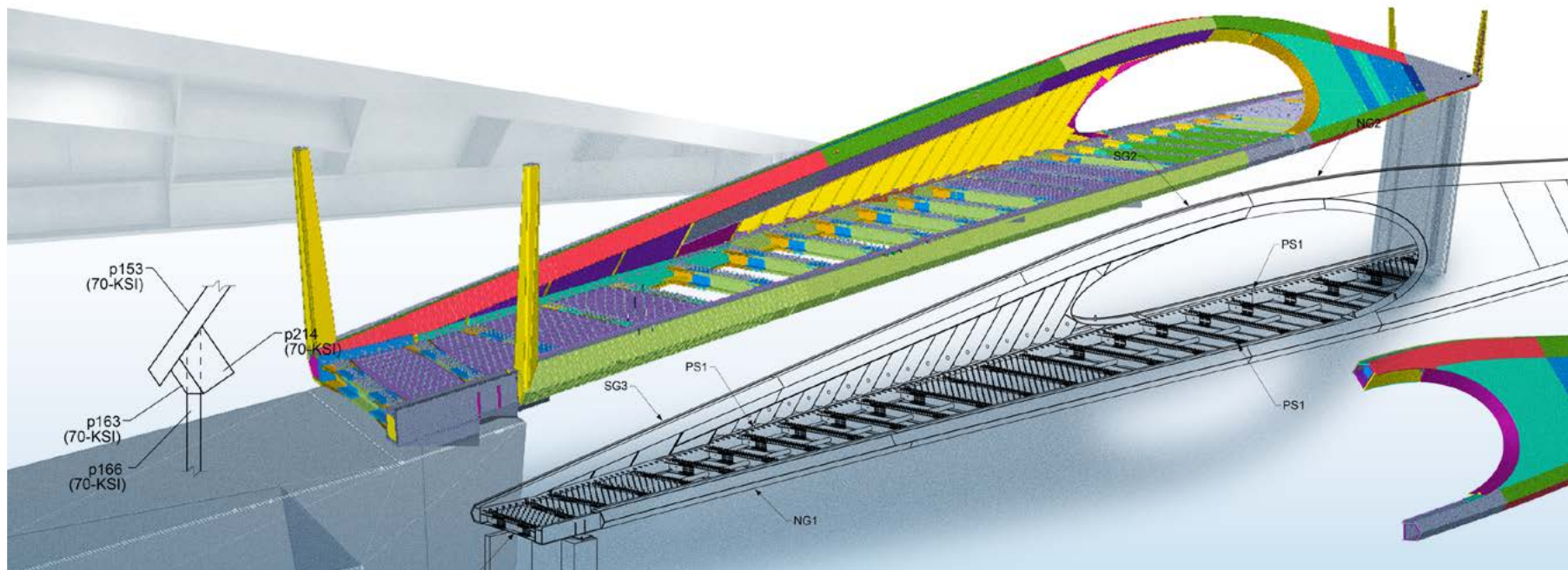
Todd Lackey, Senior Project Manager
Ruby + Associates

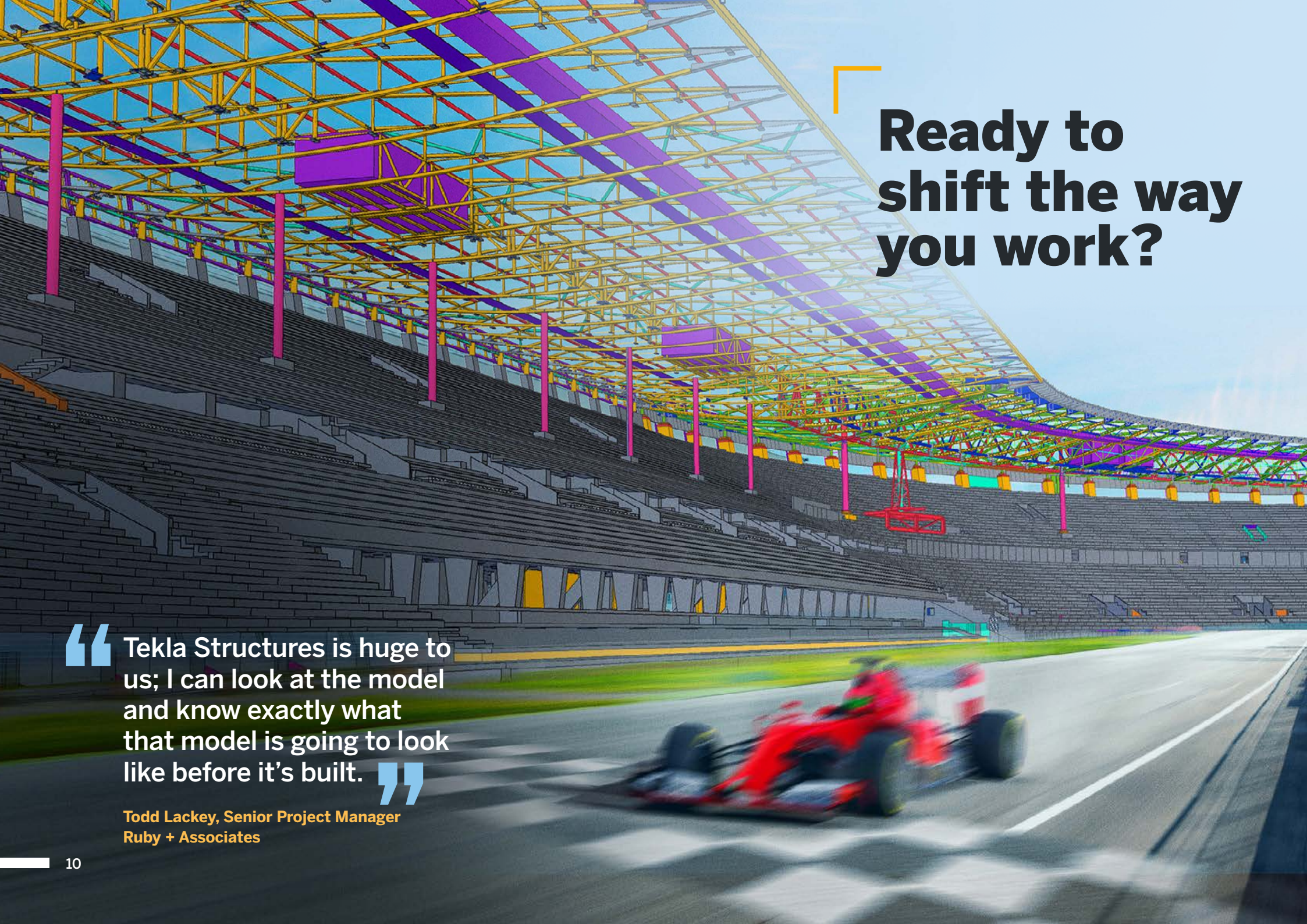


With more engineering firms taking advantage of this type of technology, it's more important than ever for engineering and construction firms to also provide value to their customers by giving them accurate data and insights in regards to material costs. Taking the initiative when it comes to handling cost estimates throughout the project reduces unnecessary waste of both time and personnel, increasing the bottom line for you and your client.

“When we integrate those services together, we come up with a much better project in the end that provides more information to the bidder and the contractor down the line.”

Darren Hartman, Construction Engineering Practice Leader
Thornton Tomasetti

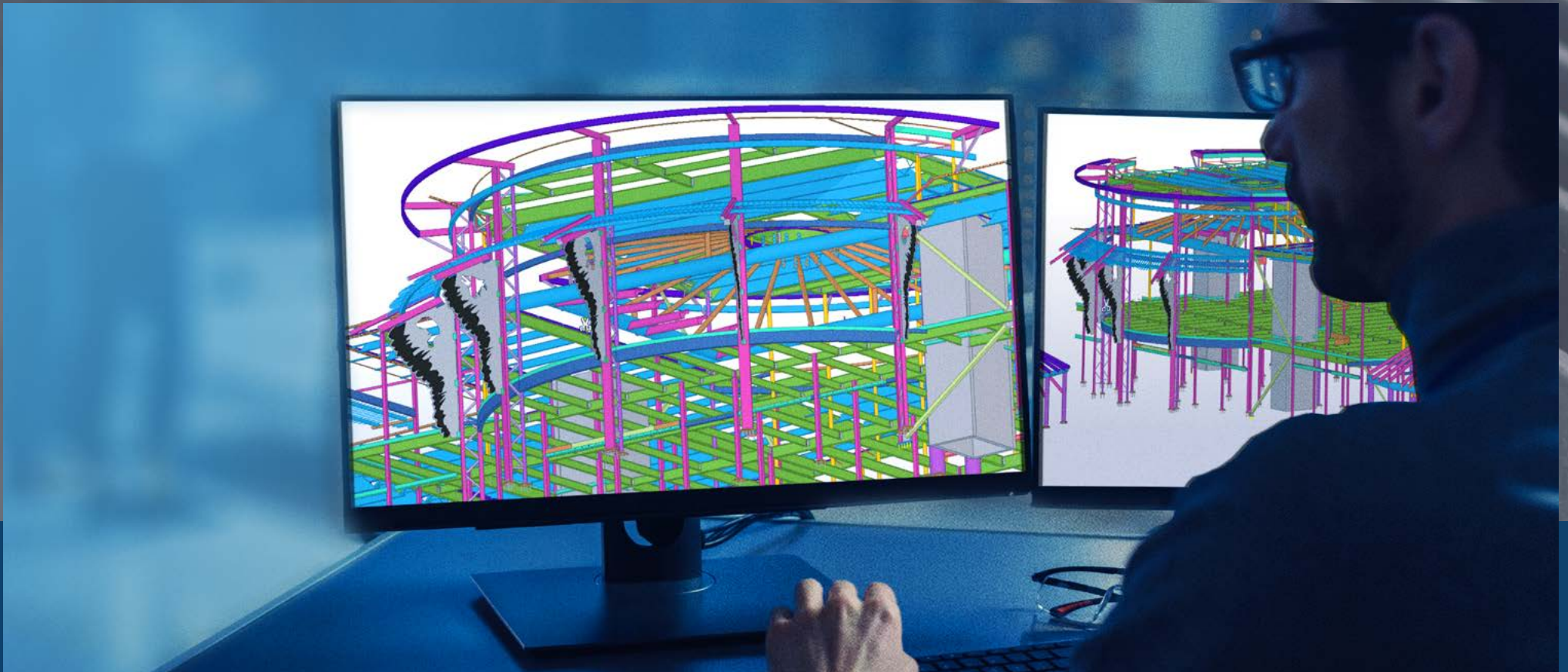




**Ready to
shift the way
you work?**


“Tekla Structures is huge to us; I can look at the model and know exactly what that model is going to look like before it's built.”

Todd Lackey, Senior Project Manager
Ruby + Associates



With today's advances in BIM technology, engineering firms of all sizes are seeing the value in using data-rich and intelligent 3D models to help them expand their business offerings by offering steel detailing services to their clients. This ability allows for more control over projects and increases their competitive advantage in the industry.

As the technology needed to enable detailing services has become more cost-effective and accessible, more structural engineering firms will be jumping onto this trend—and those who choose to remain stagnant may find themselves left in the dust. As a construction professional, if you're not currently operating at a constructible level, you could find yourself slipping behind as industry trends continue to develop.



You can find out more by scheduling a demo with one of our Tekla specialists and see what steps you can take to accelerate the way you work.

Request more info