

An Innovative Perspective: The Benefits of 3D Capabilities

Interstates strives to be on the leading edge of technology and service for our clients. That's why nearly a year ago, Interstates Engineering and Interstates Construction teamed up and began researching the benefits and challenges of offering 3D capabilities. Through their research, Interstates found that 3D technology offers immediate rewards to clients, with very few extra expenses associated with using the service.

"3D technology has been around for quite some time, and other trades have used it, but it's newer to the electrical industry," states Dave Los, vice president of operations for Interstates Construction. "We wanted to develop a strategy to implement it in the electrical industry. It would help us to better collaborate with the other trades who are using it and more effectively communicate our plans to our clients."

Since 3D's implementation, clients have been very pleased with the flexibility, time, and cost savings that this service offers. Currently, Interstates has five people qualified to do 3D design, and because of the positive feedback received from clients, they are in the process of training more designers and utilizing it on more projects.

"We've found that better questions (from both our people and our clients) come from using 3D models. We are challenged to come up with more efficient ways to route our systems." - Dave Los.

Client Input and Participation

Lowell Dykstra, Interfab manager, had just arrived in Texas to supervise an installation for a client. Recognizing the Interstates logo on Lowell's shirt, the client's engineers approached him and introduced themselves. When Lowell explained that he was there to look at the installation, these engineers had very good things to say about the installation progress. Earlier, an Interstates electrical foreman had gone over the 3D model with these same engineers. Because of this, the engineers knew exactly what to expect and had a large role in deciding the final layout design. "From the positive things these engineers were saying about Prefab and our 3D capabilities, we could tell they were as excited about our work as we were," says Dykstra.

Delivering on a Tight Schedule

By using 3D, Interstates was able to save an Illinois-based client significant time on the construction schedule of a seed corn processing facility. We were contracted to install duct bank for the client and received a fully engineered, completely designed 2D package drawing of the duct bank system. This was one of the first times Interstates had worked with the client, and we were on a tight schedule. We turned the submitted 2D drawings into 3D so our people could better understand the layout as they installed the conduit. And, we know that the 3D drawings minimize rework and speed up the construction schedule. Doug Schrader, senior project manager for Interstates Construction, asked the client if they would like to view our 3D drawings before we began installing. Based on the 3D model we provided, the client modified the conduit design so the plant was better equipped and as a result, operated more efficiently. The install went smoothly and was done on-schedule. After installation, the client specifically stated how pleased they were that the 3D drawings gave them a clear picture of how the conduit was going to be placed.

“In electrical design, we usually have to do quite a few submittals. Using 3D, we can turn around our approvals more quickly, and the client is able to better understand the visual piece.” – Dave Los

Can You Do That Like How Interstates Did?

Ken Cisleski, an Interstates Construction project manager, showed a client a 3D model of where the conduit on his project was going to be placed. Later, a site meeting was held with the client’s representatives and the other trades who were working on the project with Interstates. At that meeting, the client’s representatives asked the other trades about their abilities to do 3D modeling, stating, “Can you do that like how Interstates did?” This request affirmed that 3D was the right technology for this client; they learned from Interstates how well it worked and were pushing other trades to match that level of technology and service.

Why 3D might be right for your project...

1) Advanced Construction Speed

- On-site efficiency
A 3D image is clear and precise; when you have a 3D image of what the install should look like, you can start working without spending a lot of extra time trying to figure it out.
- Less rework
“3D is a visual tool that leads to significant productivity gains. For example, clients can see exactly where a conduit rack will be and how it will fit into the overall picture.” – Lowell Dykstra, Prefab manager
- Fewer interferences
Collaboration between the trades minimizes interferences.

“3D gets everyone on the same page: the client, other trades, and Interstates. We all understand and have a say in how the final collaborative install will look.” – Lowell Dykstra.
- Faster, more accurate material purchases
A bill of material can be automatically generated from the 3D software. This speeds up the material purchasing process and accuracy of the purchases.

2) Client Participation and Confidence

3D is a better representation of the installation design and appearance. Not everyone can read 2D drawings, but since 3D looks more like a picture, it offers realistic visualization for both Interstates and the customer. Clients like how they can move pieces around to better fit their plant.

“We’re becoming better solution providers when we use 3D models. It enables us to have a constructive dialogue with the client about their needs and it helps us to deliver results that are exactly what the client expects.” – Dave Los

3) Safer Jobsites through Using Prefabrication

“When you have 3D design, it allows prefab to happen. We can clearly see what the project is going to look like and what the client is going to need. Maximizing our use of prefab keeps construction in a controlled environment and man-hours offsite.” - Lowell Dykstra.

“At Interstates, we strive to live out our vision of **Understanding Needs ► Delivering Results.** 3D helps us to do this better,” says Dykstra. “There are needs that we may not know about until the customer gets to see and maneuver the 3D model. When clients play a more informed role in the decision process, we get a better idea of what they’d like and can deliver the results they desire.”