Pepper Construction Builds a Highly-Effective Model-Based Cost Estimating Process

WITH TRIMBLE WINEST AND VICO OFFICE

Premier Midwest general contractor leverages Trimble's WinEst and Vico Office to produce more accurate estimates and to provide detailed cost breakouts leading to higher-value client conversations

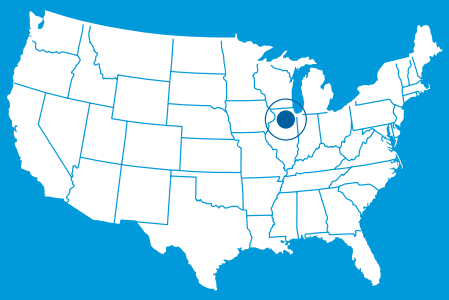
Solution

Trimble WinEst and Vico Office Software

Find out more:
gc.trimble.com

profile

Pepper Construction is one of the largest contractors in the Midwest and the company proudly leads the industry in virtual, lean and sustainable construction. The company is fourth-generation family owned and serves clients across the nation with comprehensive teams in Illinois, Indiana, Ohio and Wisconsin. Pepper Construction works in markets such as healthcare, education, manufacturing and light industrial, environmental remediation, data centers, entertainment, hospitality, retail and interiors, among others.



Location
ILLINOIS, USA

BUSINESS CHALLENGE:

To increase competitiveness, Pepper Construction team leaders wanted the ability to develop granular-level breakouts within estimates to give customers more insight into project costs. Looking to meet these goals and to also inject consistency, speed and accuracy into its pricing process, Pepper Construction turned to BuildingPoint Midwest and Trimble for help.

SOLUTION:

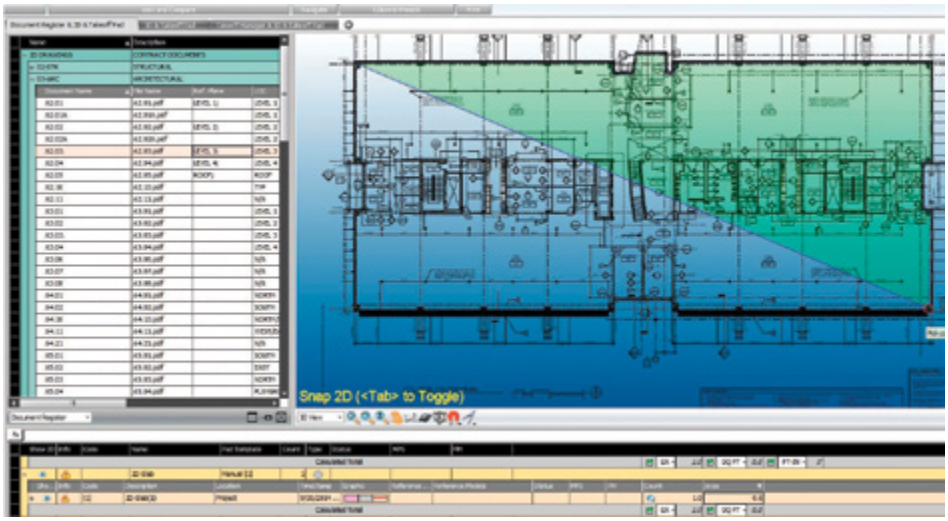
Trimble® GC Estimator Suite, which includes WinEst, Vico Office and three Vico modules.

RESULTS:

- **Improved estimate accuracy and consistency** – With model-based estimating, the team has reduced the risk of errors and omissions in the estimate and increased cost visibility showing other areas where the client can save money
- **Accelerated digital takeoffs** – Reduced time required for takeoffs by about 50 percent
- **4D BIM for scheduling and 5D BIM for estimating** – By linking WinEst with Vico Office, the team can calculate 4D and 5D quantities and bring those directly into the scheduling component of the preconstruction process very early
- **Increased cost transparency with cost breakouts** – Can create cost breakouts to provide granular-level review of the estimate (i.e. finishes, title costs, landscaping, etc.). This insight results in high-value conversations with customers

With a rich 90-year history, Pepper Construction is a true industry leader and innovator in the construction industry. The company works with clients in a variety of markets ranging from higher education and healthcare to environmental remediation and hospitality. Pepper Construction's approach is rooted in Integrated Construction Services. The goal of this delivery model is to maximize productivity, efficiency and safety to deliver greater value to clients. Integrated Construction Services delivers full support for preconstruction planning, estimating, high performance, safety, quality, virtual construction and mechanical, electrical, and plumbing (MEP) coordination with design and trade partners. Keith Dougherty, vice president of preconstruction for Pepper Construction, explains that the company's cost estimating process has long been a foundational component of delivering exceptional results for clients.

Pepper Construction worked with Trimble distribution partner BuildingPoint Midwest to adopt Trimble's database-driven estimating solution, WinEst, about seven years ago. WinEst gives Pepper Construction the ability to create, manage and update cost estimates in an integrated and efficient way. They selected WinEst for its Excel-like look and feel and powerful database capabilities. They were also looking to introduce more consistency into their pricing process and to give estimators the ability to manage and integrate detailed project estimates, using cost-knowledge management. In addition to adopting WinEst, the company also selected Trimble Vico Office to bring together construction estimating, scheduling and design management. The platform delivers a tightly integrated 3D-4D-5D workflow and is a BIM-neutral platform where multiple types of BIM models can be published, synthesized, and augmented with cost and schedule information.



GC Estimator

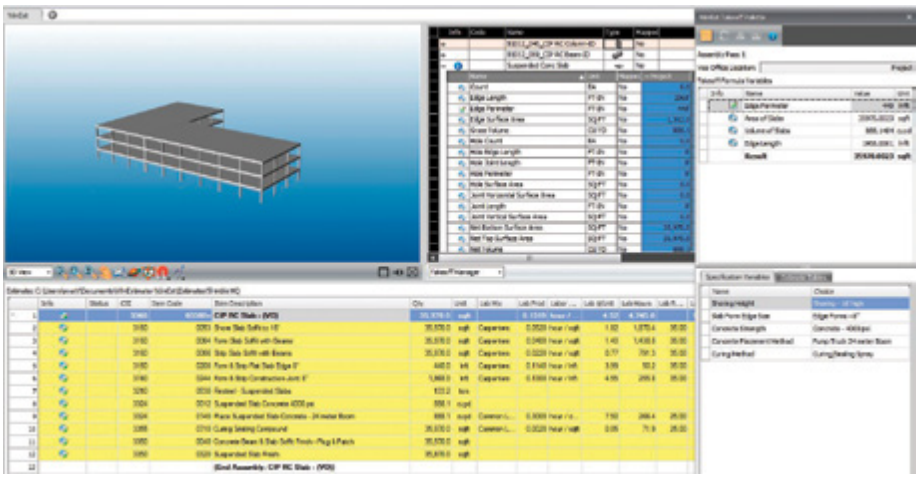
"With a 3D model our team can visualize the construction sequence and completely account for all building materials and ensure we're not missing anything," said Krueger "This visualization helps reduce potential errors and sheds light on other areas where we can save money or make recommendations about costs."

"Our executive team has always been supportive of what we're doing in terms of preconstruction services," said Dougherty. "They understand that it takes great people and the right technology to set us apart. WinEst and Vico from Trimble were the clear winners for us because the solutions give us so much versatility. We can use them across dozens of different markets to create more accurate and contextual estimates, much faster."

The estimating team began by building out the groundwork for company's cost-estimating database within WinEst. They set up job cost codes and created an in-depth intelligent cost estimation database that includes cost histories and company best practices, and a job cost report template so estimates are consistent. Over the last several years, Pepper Construction has grown from having five estimators on its pre-construction team to 17 people and today each is using WinEst to develop cost estimates.

Model-based estimating and digital takeoffs

About 18 months ago, Dougherty explains that Pepper Construction was awarded preconstruction of a $60 million senior living facility project in Illinois. To generate takeoffs, Dougherty explains the team was performing on-screen digital takeoffs, generating quantities and then manually entering them into WinEst. A Project Engineer on the effort, Rachel Krueger, explains that the conventional 2D on-screen takeoff process can be time consuming and tedious because there's no good way to visually confirm that all items required have been identified. For example, if the structure includes complex tie-in location, or has a complicated exterior façade that has unknown elevations that aren't included in the construction documents, the estimate will be incomplete. Looking for an alternative, the team began a model-based estimating process using WinEst, Vico Office and Autodesk Revit.



GC Estimator

Today WinEst is fully integrated with the company's quantity takeoff tool which gives the team access to one database of items and assemblies alongside their 3D BIM quantities and 2D electronic plan takeoff. Krueger likes that with WinEst they have the item library with the data for the current market. With WinEst and Vico Office there is also a bi-directional link between the views. And, since quantity takeoff is a live view, newly published and activated model versions result in automatically updated quantities, providing estimators with direct feedback as they work. Dougherty explains that building the model in Revit first, the team found that they can calculate exact quantities and tighten up the estimate significantly, reducing the time required for takeoffs by 50 percent. With help from this new estimating process, Pepper Construction won the $60 million project and they are currently in negotiation with the same project owner for a $70 million job.

Greater transparency and improved communication about estimates and schedules

Kip Turner, senior manager of preconstruction at Pepper, explains that the team plans to adopt this model-based estimating process fully across the preconstruction group. Over the next several months they will be training the rest of the team on how to use the Revit modeling software in conjunction with WinEst and Vico Office.

"When we can build in that environment with the model, we can add the necessary parameters and get to that very granular level of detail that owners want to see in the estimate," said Turner. "By linking WinEst with Vico, we can pull out 4D and 5D quantities and bring that directly into the scheduling component."

Krueger believes the ability to view takeoff items in the context of the 3D model and project schedule are critical because it improves team collaboration and client communication. Also, discussions about safety, trade coordination, site planning and logistics, scheduling and sequencing happen much earlier and in a more coordinated way.

"Model-based cost estimating is an important differentiator for Pepper because it further emphasizes our communication and our understanding of our projects with the client" said Krueger. "It provides a level of transparency in the estimates. When we can highlight an item in the estimate and then it highlights all the items directly in the model, there is a level of reassurance with the client that we zeroed-in on the scope of the project."

Creating breakouts and filters

Dougherty believes one of the biggest benefits of WinEst is the ability to create cost breakouts by area or major component of a project. This capability allows the Pepper Construction team to dig into the project details and show the client specific costs at a granular level. This capability helps clients understand everything that goes into the estimate, instead of receiving an overall number that lacks context.

For example, on a recent $200 million-plus renovation of a massive entertainment venue, Pepper Construction created 110 different area breakout estimates. By breaking the project down into individual areas it was easier for the owner to see the quantities and pricing for items like tile, finishes, landscaping, lighting, and much more. This allowed the owner to see that finishes, for instance, were much higher than anticipated. With detailed cost breakouts from WinEst, the Pepper Construction team was able to have a strategic conversation with the client about alternatives and develop valuable what-if scenarios.

Wowing customers

The Pepper Construction team likes that they can use WinEst in meetings to tell the estimate story in accurate and impactful ways. The team can highlight line items in the WinEst application and at the same time indicate all associated items in the model.

"In terms of delivery, we have found that being able to visually show a client exactly what items we are referring to when we are talking about costs, greatly improves the conversation," said Krueger. "It provides a higher level of confidence in our takeoffs and a greater level of understanding on the client's end. This helps them accurately compare our services and helps us stand apart in terms of what we can deliver."

BuildingPoint Midwest serving Illinois, Indiana, Michigan and Wisconsin, is dedicated to improving productivity for the construction industry through advanced and intuitive technologies. Our portfolio of Trimble solutions streamlines communication and collaboration throughout the Design-Build-Operate (DBO) lifecycle to realize greater efficiency and profitability. Over the past five years, Trimble has acquired more than 30 companies in the construction industry to realize its vision for BuildingPoint. Through the adoption of our advanced software, hardware and service offerings, general contractors and construction managers, architects, structural professionals and building owners realize greater efficiency and profitability.

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