COMPANY

Luckett & Farley

LOCATION

Louisville, Kentucky

SOFTWARE

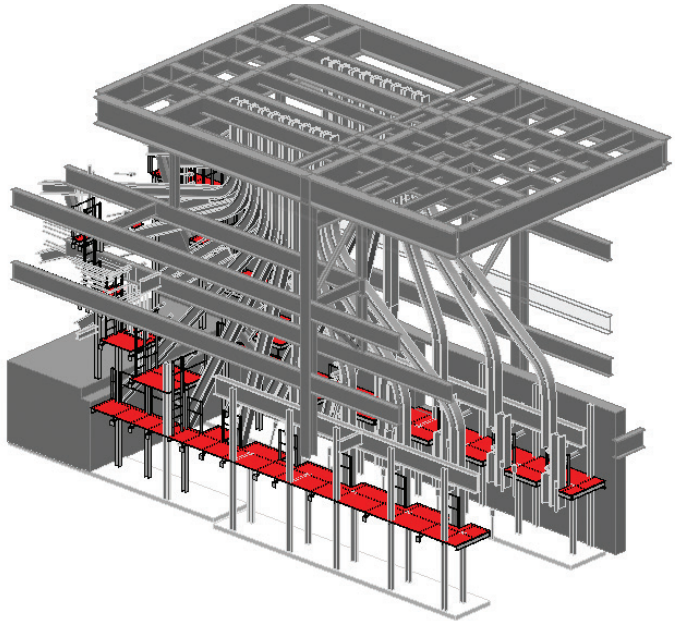
Autodesk® Building Design Suite Premium, including Autodesk® Revit®

Push your limits

Kentucky design firm adds new services and wins more work with BIM and Autodesk Revit software

With help from BIM, Autodesk Revit, and point cloud technology, we were able to put together accurate construction documents and meet our client's schedule. We could not have done this project in any other way without significantly impacting the overall process.

—**Gregory Buccola**
LEED AP BD+C
Director of Structural Marketing
Luckett & Farley



Luckett & Farley created as-built drawings from the point cloud. Image courtesy of Luckett & Farley.

The firm

Founded in 1853, Luckett & Farley is the largest architectural firm in Kentucky and one of the oldest continuing design practices in the United States. Today, the employee-owned, multidisciplinary firm offers clients in the public and private sectors a broad range of services, including architecture, engineering, interior design, and construction management. A key component of the firm's success is its commitment to technology.

"We like to think of ourselves as a technology company that solves complex infrastructure and design problems for our clients," says Gregory Buccola, SE, LEED AP BD+C, structural services market director at Luckett & Farley. That's why the firm has standardized on Building Information Modeling (BIM) for all new projects. "Our CEO is a strong believer in the benefits of BIM." The firm's design tool of choice is Autodesk® Revit® software, included in Autodesk® Building Design Suite Premium and Ultimate, which combines BIM, CAD, and visualization software tools in a single suite.

The challenge

Luckett & Farley engineers recently had an opportunity to push the limits of their expertise with BIM. "A long-standing client approached us with a problem," says Buccola. "To meet OSHA requirements, they needed to reconfigure a series of maintenance platforms and ladders within a steam chamber at their manufacturing facility." The interior of the chamber was a dark and complex web of structural steel, piping, and equipment that made development of an accurate set of as-built drawings quite difficult.

Time was short on the proposed project. "Every day that this chamber was not operational cost our client millions in revenue," says Buccola. As a result, Luckett & Farley had only two opportunities to enter the chamber before preparing construction documents. Contractors responding to the RFP would have no opportunity at all to verify existing conditions. "They would have to rely entirely on the accuracy of our designs when preparing their bids."

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Luckett & Farley created accurate as-built drawings of the complex steam chamber in under a week

The solution

With only three weeks between the creation of as-built drawings and the beginning of construction, Luckett & Farley had to work quickly. "It became very clear that the only way to ascertain all of the as-built conditions and produce a realistic set of drawings was to perform a 3D reality capture," says Buccola. "That was really the only way to convey all of the constraints to the contractors and allow them to produce bids that did not contain premiums for ambiguity."

Truescan 3D, a sub-consultant, performed the actual 3D laser scan of the chamber. "In two sessions, they scanned the entire inside and outside of the chamber and created a point cloud containing literally millions of data points," says Buccola. Luckett & Farley input the point cloud file into Autodesk Revit to produce an easy-to-understand 3D model of the chamber.

Creating as-built drawings from this model was a quick process. "Using Revit, we could slice, dice, and manipulate the model to understand the composition of the chamber," says Nick Eckhart, vice president of design technologies & innovation at Luckett & Farley. Within four days of creating the model, Luckett & Farley had accurately represented about 80 percent of the chamber, including the structural steel, surrounding overhead shield, walls, piping, and drive shafts.

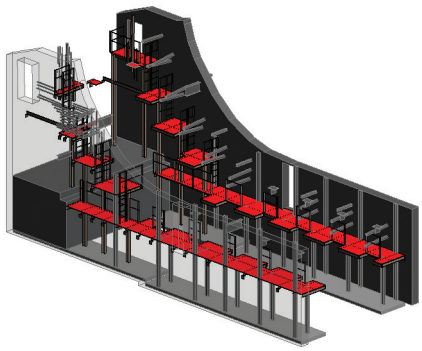
The result

"With help from BIM, Autodesk Revit, and point cloud technology, we were able to put together accurate construction documents and meet our client's schedule," says Buccola. The precision of those documents helped the client put the project out to bid without worrying about having to shut down the plant again for the contractor to verify existing conditions. "We could not have done this project in any other way without significantly impacting the overall process."

The firm's proficiency with BIM and Revit has helped it offer new services, including Scan to BIM services. "We could not have offered that service without Revit, BIM, and point cloud technology," says Buccola.

Better Quality—More Work

"The ability to win work is our biggest challenge," says Eckhart. "BIM and Autodesk Revit help us improve design quality and better convey design intent during the bid process and beyond, into the project itself. That enables us to secure more work and to receive early buy-in from our clients once a project begins."



Luckett & Farley used Revit to highlight new maintenance platforms. Image courtesy of Luckett & Farley.

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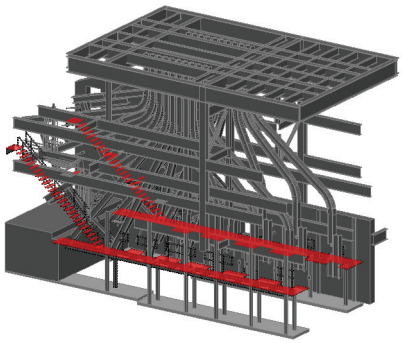

Luckett & Farley used Revit to highlight projected demolition. Image courtesy of Luckett & Farley.

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