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Construction

Computerized modeling takes headaches out of project plans

Premium content from Memphis Business Journal - by Andy Ashby

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More general contractors, architects and clients are using Building Information Modeling in construction projects, hoping to foresee any problems before the first brick is laid.

Building Information Modeling allows the user to see a computerized building plan in three dimensions as opposed to the typical two-dimensional computer-aided design and drafting drawing.

Linkous Construction Co. Inc. and Askew Nixon Ferguson Architects Inc. are using BIM on work at the **FedEx** hub in Memphis. Linkous Construction first tried the program when it built a new facility for **Onyx Medical Corp.** and came away impressed.

"We'll probably never do another major project without it again," **Rusty Linkous**, director of business development, says. "It's an invaluable tool in pre-construction before we put a pick in the ground."

Architects design the building in a BIM program called Revit, and can then add other disciplines such as mechanical, electrical, plumbing and structural to the design.

BIM is a generic term with several companies producing their own software versions. Revit is a version developed by software company **Autodesk Inc.**

"What it allows you to do is virtually build the building on your computer before you step on the construction site," Linkous says.

The contractor can run a conflict resolution program which can foresee problems in the design before construction begins. For example, a sprinkler head could be inadvertently designed to hit part of the structure.

"Before Building Information Modeling, those types of things always happened, but they were

issues you fixed in the field, which cost you time and money,” Linkous says. “A lot of these conflicts are very small, but some can be very significant in their fixes.”

The program also allows a contractor to show the owner what a building will look like before it’s completed. They can see blueprints, elevations or even tour the building, inside and out. In the model, you can go into a room and take away part of the ceiling to see the underlying structure or duct work. The owner can also place furniture, equipment or finishes into the model.

“It allows an owner to see how the space flows for his needs,” he says.

The initial investment for a general contractor, including training of personnel, is approximately \$20,000. Additional annual costs for BIM training as the technology expands can be expected, Linkous says. But BIM also has post-construction benefits.

“It gives the owner the best set of as-built drawings he’ll ever have,” Linkous says. “From a building maintenance standpoint, it’s a very valuable tool.”

The computerized modeling system also involves input from the design team, contractor and owner, so it promotes collaboration and transparency in the construction process.

“Everyone is looking at the same thing,” Linkous says. “It’s not just a dry run, but you can continue to manipulate the design until the owner has it exactly as he wants it.”

Construction, engineering and architecture companies can buy or lease BIM software. Employees must also take classes, usually out-of-town, to learn the system.

Scott Dicus, partner at Askew Nixon Ferguson Architects, is seeing more general contractors using this technology, or at least learning about it.

“I think it helps them bid their projects and look at conflicts,” Dicus says. “It also helps them coordinate with architects.”

Dicus has also seen some building owners and clients asking for Building Information Modeling.

“Some are even demanding it,” Dicus says. “That’s where I see the industry is heading. You’re starting to see more and more of it become mainstream.”

Linkous Construction Co. Inc. General contractor President: R.E. Linkous Employees: 105 2009 work completed: \$102.2 million Address: 1661 Aaron Brenner Drive, Suite 207 Phone: (901) 754-0700 Website: www.linkousconstruction.com

aashby@bizjournals.com | (901) 259-1732