

# The **Builder**

**BUILDING YOUR BUSINESS**

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*The Alberici Corporation headquarters in St. Louis, which was honored by the U.S. Green Building Council in late 2005. The LEED Platinum rating achieved by the building was done so with the help of Vertegy, and the building was rated the Greenest Building in the World. Photo provided.*

## **Green And The Machines**

### *Experts Comment On Integration Of BIM, Green Building*

**BY ANDY COLE**

With sustainable building and Building Information Modeling (BIM) advancing on the construction industry faster than a chorus of mid-season boos around Rex Grossman, it's becoming more and more important that contractors not only understand these advances, but see how the mixture of them can affect their business.

Technology and the environment may seem like strange bedfellows, but in terms of mixing

BIM with green ratings systems, a number of industry professionals feel they go hand-in-hand when it comes to making a better building. There's a sentiment from those partial to each of the two prevalent green ratings systems that contractors not quick to pick up on BIM and other changes could quickly go the way of the caribou.

"These aren't just things that are popping up that are going to go away," said Ujjval Vyas of Foran Glennon Palandech & Ponzi of sustainable construction and Building Information Modeling. "It's very important that contractors start to use this technology and get out in front of it, because the ones who don't get out in front of it are going to find themselves left behind in

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**100<sup>th</sup>**  
**100<sup>9</sup>**

## Economists: Commercial Construction To Rise In 2007

The new congress, inflation prices that remain high and a steady commercial construction market were some points hit on by three construction economy experts during an economic outlook conference call by the Associated General Contractors of America.

The call included comments from: Ken Simonson, Chief Economist of the AGC; Jim Haughey, Chief Economist of Reed Construction Data; and Jack Basso, Chief Operating Officer of the American Association of State Highway & Transportation Officials.

Haughey remarked that overall construction spending was up 4.9 percent in 2006, is projected to rise another 3.5 percent in 2007 and could see around a 7 percent increase in 2008. A 16 percent gain is expected in healthcare building in the coming year and the educational market will remain strong, according to Haughey.

The areas of slowest construction growth in the country will remain the northeastern and pacific states. Areas of highest growth will be in the south and the Gulf Coast, where rebuilding continues after Hurricane Katrina.

While talk continues that the industry is experiencing a shortage of workers, the numbers don't always tell the same story, according to Simonson.

"It's easy to exaggerate the shortage of workers," Simonson

said. "We've been hearing for years that the construction market hasn't been able to attract new entrants, but the numbers say that the people in the industry have grown double or triple the rate of the economy."

Immigration legislation was on the minds of the economists, who fielded questions on how the newly-elected Democratic Senate and House of Representatives might change things. An abundance of low-skilled workers are available, but that number gets lower as the skill level escalates.

"There is an abundant supply of workers at the low-skilled end," Haughey said. "The minimum wage increase might have an impact on other industries, but the impact on construction will be marginal because so few people in construction are actually impacted by minimum wage."

After a period of heavy inflation in the construction industry, next year's numbers may seem like a brief reprieve. However, Simonson is quick to point out that numbers are still high. "It looks like a bit of a breather on inflation," he said. "Inflation has been increasing at a rate of close to 10 percent. It looks like it's going to be down to 6 ½ percent for the next year, but 6 ½ percent is still huge. There was a recent slight drop in oil prices, but it seems as if that's going to end."

Look for more on the economic outlook for the coming year in future editions of *The Builder*.

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a hurry.

"The AGC released a guide (Contractors Guide To BIM) because they understand how critical it is that contractors pick up on this. BIM and sustainability, be it with LEED or Green Globes, are interlinked. It all goes back to getting a building that performs better. Owners want to get their money's worth." The Builder had a chance to discuss these advances with a number of individuals experienced and knowledgeable in green building and other industry trends. Thomas Taylor of Vertegy Consultants, Leon LaJeunesse of Custom Contracting and Vicki Worden of the Green Building Initiative joined Vyas in discussing how sustainable building ties into BIM and the future of the industry. You'll see what they have to say in this Builder and the next.

In addition, two education professionals were asked what impact changes to modernize the construction industry have on teaching the future leaders of the industry.

#### EDUCATIONAL IMPACT

As the number of LEED and Green Globes buildings grows, so too does the impact of sustainable building on the construction industry ... and how tomorrow's leaders in the industry will be educated.

In classrooms around the country, students are learning how green building ties into BIM and other industry advancements. As construction methods shift, educators like Dr. James Adrian of Bradley University's Civil Engineering and Construction program are helping students roll with the changes by expanding course offerings and looking into new technology.

"Green building isn't a fad; it's something that going to be here to stay, so it's something students need to know as much about as

possible," Dr. Adrian said. "If we see a trend in the construction industry, we'll offer a course on it as an elective, but we want to be certain we don't just create a course for every buzz word. Some are going to be fads that aren't going to last."

"Our reaction to the current wave of technology as educators has been to keep up with it in the classroom. We're spending time on BIM and Autocad and stressing the integration of all these things and how they're going to affect the construction industry."

An increased demand for green building may lead to an educational center geared toward those trends in the long-term plans for Indiana State University, according to a member of its faculty.

"We're actually considering the idea of promoting and building a center for sustainable construction a couple of blocks from where we're at," said Dr. Lee Ellingson, a Department of Manufacturing and Construction Technology professor at Indiana State University. "If that ever comes to pass, obviously it would change our curriculum a great deal."

Dr. Adrian wants to highlight the advantages of a college education, but also wants his students to keep in touch with what the students from the "School of Hard Knocks" are learning.

"I am concerned a bit as an educator, because even with all the technological advancements, we need to be sure our students still know which end of the shovel to pick up," Dr. Adrian said. "Also, it's important that we not lose sight of the need for field experience. There's always been this gap between college graduates and the guys who have used that time practicing in the field. This new technology could make that gap bigger."

Feature

# Green And The Machines

Experts Weigh In On Impact Of Building Information Modeling, Green Building

BY ANDY COLE

The following is the conclusion of an article printed in the December issue of *The Builder*. Four construction professionals dedicated to sustainable building and two education professionals were asked about the impact of BIM (Building Information Modeling) and green building on the construction industry, and how those two elements together could create better buildings and save contractors money.

VICKI WORDEN  
GREEN BUILDING INITIATIVE

Each professional, whether partial to the green ratings system from the United States Green Building Council (LEED system) or the Green Building Initiative (Green Globes), saw 3-D modeling as another important part of creating a building that lasts.

Worden is working to increase GBI's use and further develop and publicize the Green Globes rating system. She points out that buildings using sustainable construction are starting to prove that they can stand the test of time, making things cheaper in the long run for those who build them.

"From a competitive advantage angle, Green Globes is already well positioned with internet and software-based tools," Worden said. "I think Green Globes is extremely focused on actual building performance.

"These ratings systems help construction companies measure their performance

and increase their efficiency. You could say that about BIM, also, and in the long run it doesn't cost as much to build using these tools."

While those out in front of the LEED and Green Globes initiatives may have different viewpoints about how to accomplish the same thing, the entire sustainable construction community has noticed the industry as a whole taking a step forward. The increased numbers of green buildings and an upswing in the use of systems like BIM show Worden and others that the industry is capable of more than just standing still.

"There are a lot of numbers out there that are showing increased awareness of green building and BIM and increased knowledge in both of those," she said. "I think health issues are a big concern to some, and that's increased the public's awareness of green building, as well. People want to know what impact that building is going to have on their health.

"Green building and BIM are economically sound, which has also increased their reach. Where they might not have a few years ago, people in the industry now understand how these advancements can help their bottom line."

THOMAS TAYLOR  
VERTEGY

Alberici Constructors of St. Louis has a history of being a leader in green building, and Vertegy Consultants – founded by Thomas Taylor of Alberici – has proven

to be just as progressive. Not only did the Alberici headquarters earn a LEED Platinum rating, it was named the "greenest" building in the world by the USGBC. Vertegy also spurred the building of a green auto plant – the General Motors Assembly Complex in Lansing, Michigan.

"Any time you're using information about the building, you're going to make a better informed decision," said Taylor. "If you use the information the model gives you, you're going to end up with a better building.

"When you can use a tool like BIM for some other things that are out in the marketplace right now, it streamlines the process and limits the mistakes you're going to make. It makes a difference in the life-cycle of the building and the costs of

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## How Can We Help You?

Have a construction-related problem or question? Call your professional trade association. While each BA staff member can assist you, you may often find it helpful to speak directly with the individual who has primary responsibility for a particular area. His or her name is provided for your convenience.

- Al Leitschuh.....BA Governance  
Industry Relations  
Strategic Planning  
AGC Liaison
- Mike Schultze..... Industry Relations  
Government Relations
- Denise Capasso.....Labor  
Safety
- Ryan Schoonover.....Marketing  
Membership Development
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maintaining that building.”

Construction prognosticators see increases in green building and the use of BIM in the commercial industry in the coming years. Taylor has noticed that these tools have become the rule rather than the exception for many corporations as time has gone on.

“There are many different reasons why a wider amount of people are accepting this,” he said. “Both sustainable building and BIM have been around long enough now that people are familiar with them and know about the advantages of them. You’re seeing people like Ford and Toyota and Anheuser-Busch use those tools more and more.

“The costs of raw goods and fuel and energy are rising. None of those things are going to diminish any time soon, if ever. Green Globes offers an alternative to the ‘Brand X,’ which would be the LEED system, and the emergence of that signifies that more people are looking to green building as an option to take costs down.”

Green building can lead to a lighter price tag in labor, materials, waste disposal and up-front costs during construction and less money for energy, maintenance, water and insurance once the building is in operation.

“Any of the ratings systems look to see how you reduced the amount of overall labor,” Taylor said. “Reducing labor and using recycled materials are part of that. To me, green building takes in a lot more than just the environmental concerns, and that’s where BIM comes into play. It’s not about trying to get tradespeople out of the picture or architects out of the picture, it’s about making the entire building more efficient.”

Still, Taylor was quick to point out that neither the technological advances in construction nor the green building ratings systems guaranteed a contractor anything.

“It depends on if the drawings are good and the information is done correctly,” he said. “BIM is not the magic bullet. There are still a lot of variables.

“There are new things coming online so quickly now, and just because somebody says it’s sustainable doesn’t mean it is. As a contractor, you have to be careful.”

### LEON LAJEUNESSE CUSTOM CONTRACTING

Since founding Custom Contracting in 1987, Leon LaJeunesse has worked tirelessly with clients to help them realize the advantages of green building. He served as treasurer for the USGBC and is currently on the Builders Association’s Board of Directors.

While Custom Contracting focuses on green building, it wants to stay ahead of the game in other areas, as well, which is where building information modeling comes in.

“With the integration of BIM, you can incorporate the energy modeling that’s already a part of green building and make for a much more efficient overall delivery of the building,” said LaJeunesse.

“Even if the contractor isn’t looking for a specific certification, they’ll use the green building standards as a guideline.”

In addition to saving money, each approach can help cut down on fumes that would normally make for an unhealthy work environment. While green building has the capability of cutting

down on some of the health-related pitfalls, programs like BIM compliment sustainable building by stopping some problems before they become problems.

“Looking at it from a trade labor standpoint, there are a lot less toxic materials used which means not as many fumes,” LaJeunesse said. “Unions are starting to understand the installation of green buildings better and they’re starting to learn more about the positive impacts not only for the environment, but for the people working on the buildings.

“There are fewer variables, and if everyone’s around the same table you know whose taking responsibility. (BIM) just makes things easier.”

### UJJVAL VYAS ALBERTI GROUP, LLC

Any construction project will have its difficulties, but Ujjval Vyas sees recent developments in the industry as ways to lessen or even eliminate some of the bigger problems contractors encounter.

“You run into three problems: You never have infinite information, you never have infinite resources, and you have to make the decision immediately,” Vyas said. “People in the industry are seeing sustainability and BIM as a way to help with all of those problems.

“People are plunking down big money for these buildings. If you want a building to perform better, you need to use these tools. Owners who want to get their money’s worth are realizing that.”

A former instructor of architecture at both the graduate and undergraduate levels, Vyas specializes in construction law and sustainable building continues to be a major focus for him. As end results of the changes the industry is going through, he sees a streamlined bidding process and a much easier way for the owner of the building to get real information.

“With or without green building, BIM is a very useful tool for limiting risks,” he said. “That’s magnified when you start to use some sort of building information modeling because you know even more about the building and the problems that could come up.

“If you’re an owner and there’s a problem with the building, you don’t want any of the finger-pointing between the architect and the contractor and the subcontractors that sometimes happens. You want to say ‘here’s a problem ... go fix it.’ Mixing in building information modeling is more likely to give the owner someplace specific they can go with a problem, rather than just a general idea.”

In addition to contractors getting wise to what BIM can do for them within the parameters of sustainable building, Vyas sees many more advantages to those in the marketplace.

“For a long time, owners would say ‘that’s just the way it’s been,’” he said. “For a long time, anybody in a red pick-up truck could be a contractor. Companies now are doing a great job of pre-screening who they build with, which is great because it’s forcing the bidding process to go to the lowest possible rate.

“One of the benchmarks of sustainable building is saving energy wherever it’s possible to do so and that ties into BIM, as well. In general, it just helps create a better, more efficient product.”