

IS BIM Still BIG?

It's Slow and Steady, But BIM is Still Growing in the Glass Industry

By Megan Headley
and Ellen Rogers

“This is definitely the biggest thing to happen in my career and I've been in this business almost 30 years.” That's what Steve Jones, senior director for McGraw-Hill Construction, said about building information modeling (BIM) when he talked to *USGlass* last year (see *April 2009 USGlass*, page 36). Not long after, BIM presentations were showing up at just about every industry association meeting and company after company announced that their products were now available in the different BIM libraries. Indeed, it seemed the majority of companies felt that BIM was the one thing that would revolutionize the way construction projects and specified and built. Now, a year later, does the industry still feel the same way about BIM?

One Year Later

The initial excitement over BIM has continued with some fanfare from product manufacturers eager to let their customers know they now can be found in various BIM libraries.

For the uninitiated, BIM is a tool that allows planners, designers, manufacturers, contractors, glazing subcontractors and owners to work from the same object-related database. Instead of project drawings of lines, arcs and texts, everyone involved with the construction is able to visualize the entire building with a 3D model representation. While glazing contractors may still be learning the relevance of this tool for their job, BIM seems to most manufacturers to now be a slow and steady inevitability.

“BIM is absolutely becoming more relevant as more and more construction professionals are adopting it,” says Deep Bhattacharya, vice president of development and technology for Old-



AAMA Forms BIM Task Group

The American Architectural Manufacturers Association (AAMA) is taking building information modeling (BIM) seriously; the organization's new BIM Modeling Task Group met for the first time during AAMA summer meeting in June.

Mike Turner of YKK AP America in Austell, Ga., serves as chair of the task group. He explained to **USGlass** that the group hopes to create a standard.

"I think the biggest goal is to start to develop some sort of standard so that manufacturers, when we're investing in the BIM models, we can display the information in consistent manners, so that when the industry is using BIM models, whether it's for manufacturer A, B or C, they're familiar with what they can do with the model," he said.

How this potential standard will play out has yet to be determined.

"I would imagine that there's some sort of sliding scale with how detailed the models are—is it just a model I can use for space planning and rendering or is it a model I'm going to be using for thermal analysis and HVAC planning and daylighting and take-off and things like that? Some architects may want a very heavy model while other types of architects may want a very light model and just a rendering. So that's our goal: to really provide some type of standard so manufacturers can be consistent. It would benefit the industry as a whole because they know what they're getting and how the data's organized," Turner said.

At the AAMA summer meeting Turner enlisted David Bandi, director content and partner development with Autodesk, to present some background on BIM to members.

"BIM can be overcomplicated and at the end of the day it's about selling and getting specified," said Bandi.

He also mentioned that the attributes of the program go far beyond its 3D capabilities. "Yes, it's in 3D but it's all about the data."

He also said manufacturers should want architects to have their data and compare it to that of other manufacturers. "Your unique characteristics will rise to the top," he said.

Bandi also mentioned a fact that some in the industry may find surprising—that according to his company's software sales, BIM has been accepted faster by contractors than architects. "They see the value in it," said Bandi. He also mentioned that sustainability is a key driver for those using BIM.

Bandi said he would like to work with the AAMA committee on future BIM efforts.

"As far as wall systems your group is the first to have stepped up on a committee level," he said. "You tell us what makes sense for your products and we'll adopt it."

castle Glass®. Oldcastle Glass announced in May that it is now offering BIM objects for some of its architectural aluminum products. "Fundamentally, constructing a building from beginning to end is an inefficient process, which has led to billions of dollars in wasted costs."

Bhattacharya says the industry is starting to realize that these inefficiencies can be solved through tools such as BIM. "As we move up the learning curve I expect the use to increase," he adds.

"Expect it to increase" was a common refrain from many of the manufacturers now invested in BIM, as it is not yet widely in use.

"It's still not widely adopted in the majority of projects being constructed," says Mike Turner, vice president of marketing for YKK AP America in Austell, Ga., "but the larger architectural firms are integrating it into their practice pretty quickly."

Tom O'Malley, vice president of sales of Doralco Inc. in Alsip, Ill., adds, "We're hearing that more [architects] are going toward using it, just not as full-throttle as we maybe thought they would." Doralco has been involved in BIM for about a year and a half, O'Malley says, making the storefront manufacturer one of the "veterans" of the electronic movement. He notes that "now," it seems, BIM "is becoming more of a reality instead of just chatter."

Traco in Cranberry Township, Pa., also has been creating BIM models for nearly a year.

"I know from some of the tracking within the door and window industry that there have been more manufacturers listed with BIM in the past year," says Joshua Early, product manager for Traco. "We don't have very much yet, but

I can tell you we're aggressively doing it."

The hopefuls already online (*and for a full list of those glass-related companies, see the BIM Resource Guide on the next page*) trust that by getting involved early, they'll have perfected their role by the time BIM is the "only" way of modeling.

"We knew ... that people weren't going to hit the ground running, that it was going to take some time and it's continuing to build on itself," says Joanne Funiyak, market manager and BIM coordinator for all of Pittsburgh-based PPG's construction businesses. "I think we're still a couple years away from it being 'full-blown,' but I think a lot of the building product manufacturers are positioning themselves to be part of it. That's what we're trying to do:

position ourselves, be accessible."

Funiyak also points out that by getting involved early, PPG has become a resource to its customers that are just learning about this online universe.

"People are still trying to get their hands on it—it's such a new concept out there," she says. "People are starting to look for folks that have gone through it, asking, 'how can you help me' or 'can you point me in the right direction?'"

And Funiyak notes that it's not just product manufacturers jumping on the BIM-wagon.

"We just had a message that Wisconsin now mandates BIM (*on the last page*) ... If it's going to start being required we have to make sure we definitely are participating and have the right information available," Funiyak says.

USGlass BIM Resource Guide

In 2008, USGlass published a list of the glass companies that were participating in the BIM libraries created by BIMWorld (now Autodesk Seek) and Sweet's Network (see April 2009 USGlass, page 30). That list totaled 24 companies. This year we updated it—to include nearly 200.

As PPG's Joanne Funiyak pointed out, many of PPG's cus-

tomers turn to them with questions about getting involved with BIM simply because they plunged in first, so if you're thinking about diving in you may want to speak with the experts at the following suppliers.

Advertisers have received an enhanced listing. For additions to next year's list, e-mail mheadley@glass.com.

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Cost Versus Rewards

Those non-BIM-believers out there point out that there is a cost for manufacturers to have their products listed in a BIM library. Those manufacturers that have gotten involved say this isn't a major hurdle—but the return on investment (ROI) is yet to be quantified. Funiyak says the cost, thus far, of being listed seems to be worth the benefit, "from what we can tell at this point."

"It's difficult to say right now," Turner says. "We get demand, we get inquiries about whether we have BIM models, but trying to equate that to sales revenue ... it's probably more branding than anything right now."

Early agrees. "I'd say that [ROI] is to be determined ... I think it's still too much in its infancy to see what the return on the investment is going to be."

According to O'Malley, "There's that initial cost but after that it's really not a huge." He explains, "You spend what you want to spend. You put as much money into it model-wise as you can and go from there ... So far we do not have all our products on there—we started with our sunshades and the products that we felt would be most relevant or easiest for the architect and their client to see how the product looks on the building."

Funiyak notes that pricing has been a problem so far only in the sense that it's a question that comes up from customers. "We're just a component so we can't really provide that information, so that's been a challenge."

BIM's Limitations

Upon getting involved these BIM pros say you won't find much surprising with this new modeling system.

Turner points out that because the technology is still relatively new, "There are some limitations with the BIM models themselves. For instance, where millions start and stop. Some things have to be manipulated a little bit to make the model seem more realistic. And sometimes you have to compromise on the

Wisconsin DSF Now Requires the Use of BIM on Certain Projects

Effective July 1, building information modeling (BIM) is now required on certain construction projects by The Wisconsin Department of Administration, Division of State Facilities (DSF). The DSF recently completed its BIM guidelines and standards, which is now required on the following projects advertised on or after July 1:

- All construction (new and addition/alteration) with total project funding of \$5 million or more;
- New construction with total project funding of \$2.5 million or more; and
- Additions/alterations with total project funding or \$2.5 million or more, including new addition costs of 50 percent or more of the total.

Though required only for the above-mentioned projects, the DSF also encourages the use of the BIM guidelines and standards on all projects.

The new guidelines and standards cover architectural/engineering (A/E) services in a design-bid-construct project delivery format. Some of the specific areas covered include the required use of BIM and 3-D software; model quality; work effort compensation schedule; and the expectations and relationship to the current A/E Policy and Procedure Manual.

According to data from the state's 2007-2009 biennium, the DSF made A/E selections for nearly 700 projects; less than 40 percent of which would have been required to use the new BIM criteria. According to information from the DSF, the value of implementation [of the guidelines and standards] is that although these projects make up only five percent of the count, they represent \$700 million in making up 60 percent of the advertised budgets.

Currently, five projects over the \$5 million threshold are up for A/E selection in the coming months, followed by 18 more in the next two years. Projects include the Department of Military Affairs, Department of Administration, Department of Corrections and the University of Wisconsin System.

► **For more information, visit www.doa.state.wi.us.**

technical accuracy of what the product actually does. Those things are being worked out with software, but right now there are a few limitations where the BIM model itself doesn't really match the exact installation process."

O'Malley points out that getting involved with BIM does take an upfront commitment. While it may make modeling and construction easier in the long run, it takes a little work to get to that point.

"It does take some time to put all the stuff together for [the BIM libraries]." He adds, "But the initial time and effort will be worth it in the long run."

Early points out that the new system does have some complexity to it. "We're still learning, even though we're involved in it you still learn about it everyday," he says. While it may be straightforward to use, he says that the only real challenge, if it can be called such, "is making sure you have the right information in there."

Knowing which service to become involved with is usually the big question for new users, Funiyak says. "There are

BIM providers everywhere, like there are spec providers everywhere. Just trying to figure out where you should be, what's being used the most ... that's always a challenge no matter what we do."

Spreading the word about BIM and informing customers on its challenges and limitations—and benefits—are probably the biggest hurdles to overcome, Funiyak says. "Just trying to educate folks on how to use our information in their design. We need to continue to educate folks—and make sure that they're aware that our information is available and can be used."

Are Contractors Signing On?

While more architects are perusing BIM libraries, glass industry manufacturers and suppliers still see their customers, the glazing contractors, as having a ways to go.

"I don't think they're really integrating," Turner says of glazing contractors. "My feeling is that I don't think they're integrating into it too much ... The general contractors are using it for

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planning their equipment placement and their project flow, and manufacturers are supplying the models for architects to use in their renderings or space planning and possibly some daylighting analysis.”

Early adds, “The architects are the people that are going to be using it and it’s for a package for them to really create a file on their project and have all the specs and all the data for what they’re going to use. For them it’s a great resource, they want to know what products are actually in their building, in their specs, so that comes from the manufacturer level. For the glazing contractors ... I haven’t seen the glazing contractors get too much into it.”

“It’s mostly still the architects,” O’Malley agrees. However, he adds, “We’re pretty aggressive in going out and seeing our customers and letting them know we’re doing it. They’re happy because they’re starting to hear it more.”

A few contractors that engineer and design curtainwall assemblies are already involved with BIM and appreciate where it is headed.

“BIM is still a truly revolutionary product that will eventually change the way projects are designed, estimated and project managed,” says Jerry Kern, vice president/division manager for Trainor Glass Co.’s location in Riviera Beach, Fla. Kern adds, “My feelings are that for the glazing industry, there are some instrumental changes that need to be made in the way the models are virtually constructed for it to be a more accurate representation of the product. However, even in its current level of development, it is a tool that will help efficiencies in design and budgeting of projects.”

Permasteelisa S.p.A. announced in March that it is combining the use of both Autodesk architectural and manufacturing 3D design software and services throughout its curtainwall creation process. By integrating this combination of Autodesk technologies, including

BIM files, into its design and business system, the glazing contractor hopes to improve its ability to react to customer demand, as well as focus on increased quality of product and service. The new Permasteelisa Moving Forward system is expected to accelerate the company’s ability to react to customers from initial inquiry to final installation.

Nick Bagatelos, president of Bagatelos Architectural Glass Systems in Sacramento, Calif., says that he had no choice but to dive into BIM to land the glass installation on Cathedral Hill Hospital, the 26-story hospital in downtown San Francisco on which the company is currently working.

“We actually negotiated a project about two years ago and they demanded that we do the BIM modeling. We have jumped into it—and it’s actually helped the project and been a good learning experience,” Bagatelos says.

The company wound up committing a number of resources to understanding the ins and outs of BIM.

“I realized it was something that I wanted to do for my company, so I ended up hiring a BIM manager,” Bagatelos says. Under the direction of the engineer, who is adept at several different 3-D modeling systems, the company invested in the necessary software programs and, further into the process, two more drafting professionals. All of which leads Bagatelos to comment, “All in all, for the industry it’s a good thing—but it’s expensive.”

Because of the expense, he recommends that, at this present time, contractors pursuing large, complex mid-to high-rise buildings make the investment while glaziers after smaller work steer clear.

“I don’t see it as an advantage for a million or a one million dollar job,” Bagatelos says. “But the project we’re working on is about a \$22 million project and for that project it’s absolutely worthwhile.”

For those complex projects, though,

Bagatelos says the advantages quickly become clear. “The advantages are the ability to communicate in a more clear way with the architect’s intent. There’s less chance for repetition-type error. With most projects the architect will do a design and then redraw it and then we’ll have corrections. With the 3-D modeling, if we’re involved in the beginning stages ... the downstream from that are drawings that are extremely accurate and are exactly what’s going to be in my project drawings, in my submittal drawings as well as my manufacturing drawings.”

Year of the BIM?

While last year it may have seemed like BIM models would quickly become the norm, now users are learning that this process will be slower than expected, but still steady.

Bagatelos notes that since taking on BIM, “The rewards have been unexpected. I did it because it was demanded of me but I’ve learned a lot and it’s opened my engineering staff’s eyes to a lot of possibilities with it. I don’t know if they’re all paying off now—but I see the possibility of them paying off.”

“There’s a lot of awareness built up about the program but I still think they’re still trying to formulate some more structure around what BIM is,” Early adds. “I think it’s going to be there, it’s just a matter of getting more architectural firms onboard, getting more users, getting more manufacturers to come in. It’s a process to get that done.”

“Eventually all the projects will be done in BIM,” O’Malley says. “If you’re not part of it you’re going to be running on the sidelines.” ■

the authors



Megan Headley is the editor and **Ellen Rogers** is a contributing editor for USGlass.

