NEW MILLENNIUM
BUILDING SYSTEMS

FLEXIBLE to the FINISH

BIM and Beyond

By Carl Pugh, P.E.

Catching the BIM wave requires an understanding of the forces behind it.

Sooner or later, informed owners and developers will put the wrecking ball to poorly orchestrated building design and construction practices. They will come to recognize inflated contingency fees for what they are, and they will reward those of us who showed them a better way.

BIM is a technological response to a people problem. At its core, BIM is communication solution that requires multiple trade disciplines to play well together in the same sandbox. So to the extent this new tool can make communication easier, BIM or some variation of the concept will one day be added to every trade's business-building toolset.

Retooling the Office

Retooling is inevitable, once a sense of urgency compels us to gather the knowledge needed for BIM implementation. So where is this sense of urgency to come from?

Our company recently asked dozens of building design and construction professionals about their views on process improvement. A key finding was that 80% ranked communication as very important. Yet only 24% said they were extremely satisfied with the quality of current communication.

We also interviewed dozens of fabricators to learn their views. The majority of respondents complained about incomplete structural drawings and the resulting need for constant and often contentious RFIs. Many expressed a tone of resignation on this issue, as though the "process" is now one of documentation—not for the purpose of communication and project advocacy but more often as self-defense against predictable problems and attempts at payment deductions.

This is one of the important differences between BIM and e-mail. Building information modeling is not just a computerized way to reactively document our miscommunication; it is a proactive tool for enforcing effective communication.

The General Services Administration recognized this fact two years ago when it mandated that new buildings designed through its Public Buildings Service use BIM in the design stage. GSA has further announced that all of its contracts will be completely BIM-based by 2012.

Meanwhile, the U.S. Army Corps of Engineers is leading the way on BIM adoption, noting in its presentations that BIM requires a change in the design process—which requires a change in the way we do business.

Speak Now or Forever Hold Your Drafting Pencil

Organizational change can be complicated for a small business. Fabricators can learn how from their adoption of AutoCad and other computer-based efforts to simplify business tasks, increase accuracy, reduce costs, and increase workflow.

BIM promises similar outcomes, and yet it will take time for a company, let alone an industry, to lock in what is a technological approach to marrying multiple design and construction disciplines. This is all the more reason why steel fabricators need to have a say in the matter, before they are handed a "solution" that does not take into account their ideas for making BIM truly work.

Once fully informed of the challenges around BIM implementation, fabricators can make sure their employees know what procedural changes are required, and that employees feel the same level of urgency to make these changes happen.

Steel Resolve

Steel fabricators should especially feel a sense of urgency and opportunity, as they come to know the business implications of BIM. On any steel project, it is the steel package that sets the framework for that project's success. When the steel package is efficiently designed, engineered, and erected, the owner's buying power is maximized. You eliminate a chain reaction of costs ranging from field delays to unnecessary added fuel costs, as all subsequent trade participation is integrated into the steel package at their professional best.

It all comes down to this: Fabricators are the steel package design and engineering experts. They must take their seats at the architectural and engineering table, fully prepared on BIM. But more importantly, they must do so with an understanding of the forces that are bringing them together. They must show architects the new design possibilities of steel, advise structural engineers on ways to minimize material and fabrication costs, and work with erectors to see a project through to its successful completion.

Fabricators are about to partake in a new kind of business conversation, whether that conversation is first facilitated by BIM, or by their own decisions to change and grow.