

Beyond Blocks and Bricks

Number Six

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Another thought about BIM

For building information management—BIM—to work, the 3-D model of the building created by the designer must appear exactly as the finished product. Prior to constructing the building, the model must be examined carefully to be sure that all the pieces fit together without interference. The model must also be examined carefully to be sure that it is possible to build what has been modeled—is the sequence of construction possible? (*When, in the process of constructing the building, changes are made, the model must be changed to match reality so that the 3-D model can become the as-built drawings.*)

In the ideal BIM model, the designer works with contractors, subs, and vendors to produce an accurate model before construction begins. When the process is design-build, the contractors, subs, and vendors of specialty products are selected early-on and are ready and willing to participate because they have been assured that, if the job goes, they have the work. They are ready and willing because the greater up-front costs associated with participating in the BIM process can be recouped as part of the overhead costs in their bids.

When the process is delivered traditionally, via competitive-bid, how does a designer convince contractors and vendors to participate when only one of the contractors and only some of the potential subs and vendors can win the work? Remember, if there are ten contractors bidding a project, there is only a 10% chance that a particular contractor will win the bid. (And a 90% chance of losing the bid!) As up-front costs of BIM are greater than in traditional product delivery, participating prior to the award of the bid involves the contractors, subs, and vendors spending more money than is usual without changing the likelihood of gaining the work.

In the competitive bid model, where the contractor, subs, and vendors do not participate in developing the model, the designer must have a comprehensive knowledge of the intimate details of how it all goes together in order to construct the 3-D model.

Don Short, an estimator, has some thoughts about BIM and the demands that it puts on the project team. Be aware that Don holds some strong opinions. I didn't learn about buildings and how they go together while studying Architectural Engineering at Penn State—schools of architecture and engineering do not teach that. I learned about buildings and how they go together while working as a laborer and while learning the craft of estimating.

What's all the fuss about this BIM thing?

26 November 2010 Via Engineering News/Record and Don L. Short II, president of The Tempest Company, never hesitates to tell you what he's really thinking about the construction business. Tempest Co. is based in Omaha, Neb., and provides estimating, scheduling, project controls, construction consulting and expert services, including arbitration services.

I keep hearing and reading about all of this fuss and hullabaloo about this BIM thing - Building Information Modeling. Architects, engineers, and owners are singing the praises of information in 3-D, 4-D, or even 5-D!

So what is the fuss? BIM hasn't even caught up with estimators and the estimating profession.

Architects and engineers tout the benefits of being able to see the project in 3-D. Estimators have to do this and have been doing this for centuries. They use the 2-D plans to visualize how they fit in 3-D so they can reliably estimate the costs.

The architects and engineers proclaim BIM will let them see the project in real time 4-D to spot problems. Again, estimators have been doing this for centuries. They have to determine the means and methods of the project in order to correctly estimate the costs.

When was the last time that an architect or engineer had a design that was complete? Not just 60% or 70%, but let's say 95% to 98% for a design-bid-build project? Not in a long time! Estimators have been filling in the blanks before architecture became a profession.

The architects, engineers, owners and others are touting BIM as a great means to share information and improve the construction process. This could be considered the "I" in BIM.

The trouble is this system relies upon the architects and engineers putting in the correct information in the first place. Big mistake! One way to correct this is to provide some training and education for architects and engineers. Ask any contractor for a course of study!

Oh, by the Way... My take on the BIM is: Bim! Bam! Boom! It is just another attempt to curtail a major crisis in construction due to a lack of "How To" knowledge in the design professions. It does accelerate communications, but it is still GIGO (garbage in, garbage out) only faster without trained and educated personnel.