

Building Information Modeling poised to change the construction industry

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Common perception that it's "just for the big guys" just plain wrong

Construction Corner

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Mention Building Information Modeling (BIM) and most Canadian construction people will still look puzzled.

"Don't think I've heard of it," one told me recently. "Not for me," said another. "It's only for the big guys."

That's a common perception, partly because some BIM systems aren't simple, and partly because the technology is being used mostly on federal government projects in the U.S. by big firms.



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But BIM is also starting to establish a presence in the U.S. homebuilding market. A couple of big production builders are using it, and so are a few custom builders.

And they're discovering that they are saving time and money and producing homes that are exactly what the buyers want.

The production builders using it aren't building huge tracts of housing with only a half-dozen or so models. Instead they are the builders that allow buyers at least a degree of customization of the several-dozen plans the builder has on file. That can mean anything from variations in elevations and basements down to floor coverings and counter-tops.

We already know that BIM has proven effective in commercial construction. The heart of the system is the development of data-rich, intelligent three-dimensional models used by multiple members of a project team. It enables them to identify anything in the plans that might interfere with anything else. They can run "what-if" scenarios. They can produce accurate quantity and cost estimates, even develop schedules before ground is ever broken.

Well, the same thing can happen in residential construction.

BIM might be specified by commercial owners who have 30 or 40 or 50 projects on the go. Homebuilders using it might have 50 or 60 or 70 houses on the go at once— as many or more projects as a commercial owner, but smaller.

Production builders work from stock of plans, and the list of options.

The modeling system puts everything together to produce a complete set of plans and materials, and creates a virtual walk-through for the buyer.

That can be done by BIM software residing on the company's server, or, often, by a company that specializes in such services.

Custom homebuilders are using BIM in much the same way, except that they begin with the design process.

That means they talk to the buyer, then create a unique home starting with just a blank sheet of paper.

Some software developers consider custom builders and remodeling companies to be ideal candidates for BIM, especially since getting started is not an all-or-nothing proposition.

There is a tendency to start with the big-ticket items, like bills of materials and construction documentation. Then, comfortable with that, most start focusing on the smaller things

That means you can produce a model that can be peeled back layer by layer, like peeling an onion. The buyer (and homebuilder's staff) can see a three-dimensional representation of the home, including the roofing, brick, stone or stucco, floor coverings, wall finishings, kitchen layout, the works.

Most manufacturers of CAD software now all have their own versions of BIM as far as I know, and all offer a variety of bells and whistles that can be plugged into a basic program.

So a fairly small homebuilder can buy something that will produce a visual representation of a home, run what-ifs, and let the user see elevations, plans and sections. It can even be integrated with most leading estimating programs to do digital takeoffs.

As BIM goes, that's fairly basic, and it isn't likely to cost much more than \$1,200 or so.

So, if you're thinking of some New Year's resolutions, why not put BIM near the top of the list?

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