

# Bulletin

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## Embracing Building Information Modeling p. 4



## Feature Article

# Embracing Building Information Modeling

## BIM's Benefits for Subcontractors

by Elizabeth Johnson

**B**uilding Information Modeling (BIM) continues to sweep through the construction industry. According to the McGraw Hill Construction report, The Business Value of BIM, BIM usage has increased 75% in the past two years.

BIM, simply defined as a 5-D model, takes a 3-D model of a construction project and adds time and cost information. The new technology has created a process that streamlines construction projects, making changes easier and reducing down time. It is most effective when all trades update the model to create the complete picture.

Washington, D.C. subcontractors in all trades are embracing this tool.

Jerry Shapiro, Sheldon Shapiro and Mike Mohnacks of mechanical contractor Shapiro & Duncan examined the industry and decided to go with BIM nearly three years ago.

"We thought BIM offered a lot of value for the industry and wanted to lead the trend," says Sheldon Shapiro, CEO of Shapiro & Duncan.

Electrical contractor Mona Electric uses BIM on multifaceted projects, including the Newseum in Washington, D.C., which was architecturally complex and very power intensive.

"BIM and 3-D modeling techniques are most commonly used on technically complex projects," says Randy Kurty, senior vice president at Mona Electric.

### Building Information Modeling (BIM)

is the development and use of a computer software model to simulate the construction and operation of a facility.

—The Associated General Contractors of America, *The Contractors' Guide To BIM*, AGC Publication No. 2926, Edition One, 2007, p. 3.

While 3-D modeling is still more prevalent than BIM, both benefit subcontractors in several ways. Three of these benefits have come to the forefront for saving subcontractors time and money and reducing conflict on the job site.

### Improved Scope Definition

BIM produces a more accurate coordinated drawing which improves prefabrication and minimizes change orders. Building owners and general contractors no longer need to read blueprints. Visualizing the project makes decisions for finishes and other aspects of the project much more efficient.

Shapiro & Duncan planning department manager Paul Gemmell notes that using BIM keeps projects on schedule

as well. He points to their recent completion of the Northern Virginia Forensic Laboratory as an example.

"That project was very complex and we finished it on schedule with only one coordination RFI written and we credit BIM for that," says Gemmell.

### Better Trade Coordination

Each trade knows when and where they have to work and when and where other trades will be working so they don't end up in the same space at the same time. This upfront knowledge helps avoid costly materials changes and project delays.

"Before the first pipe is put in the ceiling, you can discover interferences where two trades are trying to work in the same space," Kurty explains. "It's a lot easier and cheaper to fix it on a computer screen than after the material and equipment is installed."

"Now we create the drawings and send them to the architect, engineers and general contractor so that they can visualize any problems and then we send it to the field foreman so that they can walk crews through the process before it starts," explains Gemmell.

### Prefabrication of Materials

BIM allows for increased off-site prefabrication, where subcontractors can realize the most efficient construction of materials. BIM documents make prefabrication more accurate than when using prior methods. This accuracy and efficiency leads to cost savings for subcontractors. In a tight market, these savings can keep subcontractors competitive when bidding for projects.

According to The Business Value of BIM, subcontractors expect to achieve even more value in the area of prefabrication in the future. Subcontractors plan to fabricate larger pieces of the project off-site.

### The Future of BIM

Building owners and architects and engineers increasingly demand BIM on their specification requirements. Over the next few years, the industry will continue to evolve from 3-D modeling to BIM utilizing the "Information" in Building Information Modeling.

### BIM's Benefits for Subcontractors

- Better understanding of project
- Improved scope definition
- Improved planning and scheduling
- Ability to quickly perform "what if" analyses
- More accurate quantity estimates
- More accurate vendor price quotations
- Reduced errors in the field and rework
- Better trade coordination—collision avoidance
- Increased prefabrication ability
- Reduced risk
- Better ability to monitor and control project

—Thomas E. Glavinich, University of Kansas

DE, PE, BIM and the Electrical Industry presentation to the Electrical Alliance

## Feature Article

“We’re getting closer to the day when every project will use BIM on some aspect of it, if not use BIM for the entire project,” predicts Kurty.

Gemmell agrees, “There are several aspects of BIM that have not been fully utilized. I think the scheduling aspect will become very hot in the next five years.”

Subcontractors not currently using BIM or 3D modeling will need to get up to speed to remain competitive. The leaders at Shapiro & Duncan offer three tips to firms starting to use BIM. First, examine current projects and expenses and decide where the organization should go. Second, don’t put a toe in, go all in and be willing to make an investment. Third, get field buy-in

from foremen, otherwise firms can end up spending double on prefabrication and modeling. **B**



Elizabeth Johnson

Elizabeth Johnson is a writer at Frost Miller Group, a Bethesda-based firm which helps regional and national construction companies with strategic marketing initiatives.

## Million-Dollar Ideas

by Justin Jacobs

**W**ith A/E/C firms holding tight to their purse strings these days, marketing teams industry-wide are finding it more and more challenging to create and implement effective marketing strategies. However, excessive marketing dollars and elaborate campaigns are not always essential to achieve desired goals. I’ve noticed several examples outside of our industry over the past few years that have convinced me that it is possible to apply simple, inexpensive marketing ideas that will produce significant ROI from A/E/C clientele.

Take the case of Jason Sadler, an average guy who leveraged his following on Twitter, Facebook, and his daily UStream video to convince companies they could use him for cheap, yet effective advertising (<http://iwearyourshirt.com/>). His strategy? Jason will wear a T-shirt with your corporate logo in his daily video and anywhere else he goes for a full day. As he sold more and more days, his story became viral on the Web and it didn’t take long before everyone wanted a piece of this young man’s advertising reach. Jason eventually sold every day of 2009 and is said to have brought in nearly \$70,000. All this without changing anything in his daily routine but his shirt.

Not simple enough? Let’s look at 21-year-old college student Alex Tew from Wiltshire, England. Several years ago, he came up with the idea of the “Million Dollar Homepage” (<http://www.milliondollarhomepage.com/>) to raise money for his tuition. Billing his new site as an opportunity to become part of history, Alex put the one million pixels that comprised his homepage up for sale at \$1 each. Similar to the Jason Sadler story, this endeavor became viral, and in the first four weeks alone, he sold more than 300,000 pixels to companies that placed their logos in 10x10 pixel blocks (minimum). He eventually sold out the entire million dollar homepage later that year. Truly a unique million dollar idea.

So what can those of us in the A/E/C industry take away from this? Truth be told, it doesn’t matter what industry you are involved with. The fact remains that clients want to be involved with something they feel is unique and provides value or return on

their investment. As we can see from the two examples above, it doesn’t take a large corporate piggy bank to achieve either.

**To get you started, here are a few low-cost solutions for marketing in a down economy:**

- **Update existing marketing materials**—This usually can be done in-house at minimal cost. Updated collateral and website information is a great excuse to reconnect with current clientele and reach out to prospective targets.
- **Get everyone involved with business development activities**—Yes, even you folks without marketing or business development titles! This can involve attendance at networking and association events, setting up meetings with existing and prospective clients, or joining committees that are linked to target agencies. Everyone has a comfort zone in which he or she can establish relationships. And these relationships are the cornerstone to building new business.
- **Use of social media—get on the train or get out of the way!**—By now, we’ve all seen the variety of ways professionals are utilizing social media to get our message out and establish our personal networks. Whether you use LinkedIn, Facebook, or Twitter, the fact is that social media has proven to be a valuable and cost-effective tool for marketing A/E/C services. The Design & Construction Network (LinkedIn) is a great place to start, which holds free networking events that attract hundreds of industry attendees in the DC metro area.

These are just a few of the many ways to jump-start your marketing program in this unpredictable economic climate. The next time your firm looks to you for the “next million-dollar idea”, don’t let budget worries stifle your enthusiasm. With the use of modern technology and a little ingenuity, you just might turn your biggest ROI from a \$0 investment. **B**

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## Guest Article