



Integrating BIM for Long-Term Benefits

California Team Fits BIM in a Cube

by Michael Gardner

In a nondescript warehouse and office building in the rolling foothills about 45 minutes northeast of San Jose, California, two associates are charting a next step in drywall and plaster project management by envisioning how to harness the potential of building information modeling — or BIM — in a new way.

Frank Nunes and Cody Nowak, each an industry veteran, collectively believe that assisting trade contractors with integrating BIM into their management process will reap significant long-term benefits for those willing to accept the concept.

Nunes is the CEO of the Wall And Ceiling Alliance, a Pleasanton, California-based association that advocates for the interests of the wall and ceiling industry. He was instrumental in the creation of WACA in 2010 and has more than 35 years of experience in interior and exterior construction. WACA members are union drywall and plaster contractors based in Northern California.

Getting Involved with BIM

Nunes is very aware that WACA's foray into BIM is not in itself revolutionary. "My interest is focused on expanding the partnership aspects of the BIM experience as opposed to re-casting the BIM process in itself," he explains. "Our sense is that while there are drywall and plaster contractors involved with BIM, to date the tools have been viewed as more useful for the structural and physical infrastructure portions of projects.

"We want to change that for our constituency," Nunes continues, "get them more comfortable with BIM, and increase contractor involvement in early project design. With the support of the WACA Board, coupled

with significant input from Ben Duterte and Mike Nonn of our technical team, we've moved forward."

Recent research supports Nunes' thoughts and suggests that while demand for BIM appears to be growing, particularly among owners and general contractors, wholesale acceptance by trade contractors continues to lag. A 2017 study by Dodge Data & Analytics found that while 46 percent of the general contractors or construction managers surveyed who were using BIM were using it on more than one-half of their projects, only 30 percent of surveyed trade contractors were doing the same.

Interestingly, the same report found that, in general, trade contractors were comparatively more comfortable with the complexities and functionality of BIM programs than

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architects and engineers. According to the survey, trade contractors believe BIM's best attribute is its ability to provide the latest version of a design and view using that trait as a means to avoid costly rework once a project commences.

While Nunes brings the technical drywall and plaster background to the team, Nowak brings over a decade of BIM experience, including stints with an Autodesk channel partner and Martin Brothers, a leading California-based contracting firm that has done more than \$4 billion of work since its creation in 1932. Martin Brothers was an early adopter of BIM and Nowak helped the organization create and implement a BIM "CAVE."

A New Kind of Experience Room

After gaining considerable BIM experience, Nowak created the Collaborative Ultimate Building Environment (CUBE, for short) concept.

"Given my experience as a VDC/BIM coordinator and my background in working with the AEC community," Nowak says, "I began to believe that the conventional BIM workflow approach was becoming somewhat outdated, so I came up with the BIM CUBE model."

He has started CUBE, a new business that offers BIM CUBEs constructed and branded specifically to meet the needs of clients.

Nowak designed the CUBE to be a mobile standalone room that projects on two 20-foot by 13-foot walls using a 1:1 human scale, thus creating an immersive experience of the built environment before construction commences. As changes are made in the BIM authoring tool they are reflected instantly in the 1:1 human scaled view.

"This new approach permits owners, end users, and different trades to collaborate more effectively in real time," Nowak explains. "I've also designed each CUBE to be mobile, so it can be set up at jobsites, in expos and trade shows, and in an office setting."

And it is indeed a 20-foot-by-20-foot cube you view when you walk into the WACA warehouse. Nowak and Nunes want to make it usable by all potential input partners on a project, including manufacturers, suppliers, contractors, and designers. As a result, they intend to load the CUBE with technology that will enhance user flexibility and accommodate several design and software packages.

The timing of this move from CAVE to CUBE appears apt based on comments contained in a recent article authored by Matt Ball of

Autodesk. He notes that the "move from 2-D drawings to 3-D models is well underway and gaining steam in the architectural, engineering, and construction industries, thanks to tangible bottom-line returns from streamlined workflows."

Ball identified 11 benefits of using BIM and in his top five were three that fit directly into the approach Nunes and Nowak are implementing: less need for rework and duplication of drawings; improved collaboration; and better visualization of the product being produced. The increased complexity of construction projects is also boosting the need for BIM-oriented design, in particular those that incorporate structures that are being commissioned by high-tech companies in the San Francisco Bay Area. The challenge for WACA is to figure out how to get its members involved early-on in the design and project development stage so that they can be an effective resource for an owner or general contractor.

"No question that is a definite need, but there's more to it than that," says Nunes, who goes on to explain that the BIM CUBE approach is also aimed at getting fresh, new talent into the industry and onto jobsites. "There are still some positions for tradespeo-

ple who simply want to walk onto a jobsite and do nothing more than operate a screw gun," he says, "but what we are trying to create is an environment where individuals are fully trained in multiple aspects of construction and therefore are able to bring value to a project, both on the job and in the office. Effectively, that's what we promote as an organization. Use our contractors and you will work with well-trained, quality individuals."

The Bay Area is well recognized as an incubator for innovative business thought that often is a by-product of the group-think approach taken by dedicated people working in a non-traditional environment, such as a warehouse. Maybe Frank and Cody are on to something.

Michael Gardner

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Complex exterior wall systems benefit when a collaborative process is implemented using BIM modeling

