

Can Digital Twin make project management more efficient?

One leading owner’s rep is pushing that idea with its “OneModel” BIM-sharing approach.

AEC TECH | APRIL 24, 2019 | JOHN CAULFIELD, SENIOR EDITOR



A rendering of the 70-acre Seaport San Diego redevelopment, for which the owner’s rep Gafcon is applying Digital Twin technology to manage the construction process. Courtesy Gafcon

Yehudi “Gaf” Gaffen has seen the good, the bad, and the ugly of construction management as CEO of Gafcon, the owner’s rep firm based in San Diego that he and wife Pam founded in 1987.

Even as construction technology has helped topple silos that separate Building Team members, Gaffen still laments the industry’s dysfunction, especially in what he sees as the needlessly redundant way Building Information Modeling (BIM) data are shared and exchanged during the construction process and beyond. (The insurance and risk management company Aon has estimated that as much as 40% of the data needed to manage a building are lost before they’re handed off to the management team.)

“It’s been my experience that many [BIM] drawings that are assumed to be passed along aren’t,” says Gaffen. “Now, you can’t find anything. This isn’t efficient; it just wastes time and money.”

“The problem has been that there are multiple systems” of communication between the owner and its AEC and management partners, explained John Turner, Gafcon’s Vice President of Innovation Solutions, during a keynote speech he delivered last October at BIMobject Live in Malmö, Sweden. What’s needed, he stated, is a “common data environment” and a platform that allows communication across all stake-holding entities, technologies, and organizational groups.

“The question that needs to be answered,” adds Gaffen, “is ‘how do you warehouse and expand data?’ And the more complex the project, the less efficient the old way of managing information is.”

Gaffen advocates a better way, one that deploys Digital Twin technology to develop “a roadmap, a blueprint” for establishing a protocol for information exchange.

Digital Twin allows users to build the project before it’s built. And Gafcon’s OneModel approach gets all members of the construction and management teams using BIM in the same way. It provides the team with a collaborative and managed virtual environment, where problems can be addressed. The OneModel approach would reduce the time it takes to make decisions, and could be coordinated across the building’s lifecycle.

Turner said OneModel’s goals are to facilitate the four I’s: Integrating the team, incentivizing the team, implementing Lean principles, and Improving the construction process.



Yehudi "Gaf" Gaffen, CEO and Co-founder of Gafcon, is convinced that Digital Twin technology would make the exchange of BIM data more seamless. Image: Gafcon

Gaffen says his company is pitching its OneModel services directly to owners because they typically have the final say about a project's planning, design, procurement, construction, and operations. "Owners need to be committed to this to get the long-term benefits." But Gaffen also acknowledges that selling owners on anything new is tough, sometimes because they aren't completely up to speed on what they need, but also because "a lot of 'vaporware' has been sold" that promised the moon but didn't deliver.

To make its case, Gafcon is showcasing five of its ongoing projects with large teams for which the Digital Twin OneModel approach is being applied. These projects include:

- **The \$1.2 billion, 350,000-sf JW Marriott expansion project in Los Angeles** that is adding a second building with 850 rooms, expanding the parking garage, and increasing the size of the complex's convention center. Working with the owner/developer AEG, the GC PCL Construction and design architect Gensler, Gafcon is using OneModel to establish and support the virtual building process. PCL and Gensler have agreed to document their work on this platform.

- **The \$1.5 billion redevelopment of 70 acres of premium waterfront located between downtown San Diego and its bayfront.** When completed, the project will include three hotels, a 178,000-sf underground aquarium, a 480-ft-tall observation tower called The Spire, and 30 acres of parkland. Gafcon is using OneModel to manage this project's programming and Building Team, which includes Perennial Partners (a joint venture of the general contractors PCL, McCarthy Building Companies, and Southland), Gensler, and Bjarke Ingels Group (which is designing the aquarium). The project is scheduled to break ground in 2021.

Gafcon is also promoting OneModel by seeking partnerships with larger software platform providers such as Autodesk and eBuilder "to scale our influence," says Gaffen. Turner said that Gafcon has been using BIMobject's platform for sharing data. His company also has been using Oracle Primavera Unifier since 2013, and last year signed an agreement to use the Kahua project management platform.

Gaffen recalls that when he started Gafcon, he soon realized that he needed more than just people to keep clients. "We had to integrate technology into our business." OneModel, he says, is the latest iteration of a philosophy that fomented "a convergence of interests, which is always better than confrontation."