

# Brasfield & Gorrie Leveraged BIM to Drive a Collaborative Bid Process



## ABOUT THE COMPANY

### Headquarters:

Birmingham, Alabama with 12 locations throughout the Southwest U.S. and Texas

### Founded:

1964

### Company Size:

2,600+ employees

### Annual Revenue:

\$2.4 billion

### Role:

General contracting, design-build, and construction management services

### Business Challenge:

Looking for opportunities to improve the efficiency and accuracy of construction, while involving its own field teams and contractors earlier in the construction process to produce a more collaborative construction process.



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Chad Waters  
Brasfield & Gorrie

WHEN NATIONAL CONSTRUCTION FIRM BRASFIELD & GORRIE WAS AWARDED A \$603M CONTRACT TO CONSTRUCT GEORGIA'S LARGEST HEALTHCARE PROJECT TO DATE, IT TURNED TO ASSEMBLE AND ISQFT TO INVOLVE SUBCONTRACTORS AS EARLY AS POSSIBLE TO IMPROVE THE EFFICIENCY AND ACCURACY OF CONSTRUCTION.

## INTRODUCTION

Brasfield & Gorrie, one of the largest privately held construction firms in the nation, continually looks for better, safer and more efficient ways to build its projects. For more than 50 years, it has sought out and tested new technologies and innovative practices. When it finds something that proves its worth, Brasfield & Gorrie puts it to work.

The company's commitment to continual improvement has allowed the company to grow to include 12 offices and approximately 2,600 employees throughout the Southeast with an annual revenue of more than \$2 billion. It's worked on world-class facilities, including the Georgia Aquarium in Atlanta, Ga.; the College Football Hall of Fame in Atlanta and the Auburn University Student Center in Auburn, Ala.

Since 2003, Brasfield & Gorrie has used Building Information Modeling (BIM) as an integral tool during the preconstruction phase. Its teams found BIM improved communications and coordination between trades and reduced the number of change order requests. This has led to fewer material changes and last-minute field changes as well as improved site logistics and safety. Since adopting BIM processes, Brasfield & Gorrie has seen efficiencies in building schedules and substantial cost savings.

## TAKING A DEEPER DIVE

Brasfield & Gorrie regularly ranks among the top healthcare general contractors in the nation, with healthcare making up approximately a third of the company's revenue through hospitals, medical buildings and senior living facilities. In 2016, Brasfield & Gorrie was awarded a \$603M contract to construct Georgia's largest healthcare project to date—the Piedmont Tower Expansion in Atlanta. Immediately, it worked

## WHY BIM?



BIM, or Building Information Modeling, is a sophisticated process for creating and managing all of the information on a project—before, during and after construction. BIM enables the design team, constructor and owner to work together with a 3D generated model resulting in better design coordination and improved constructability. Once the building is completed, BIM delivers a complete set of information, allowing the owner to efficiently manage and maintain the building.

Unlike 2D drawings, BIM builds the entire building – and all the systems – in a “virtual space” which takes the planning, building and operating phases to a much higher and productive level. This productivity translates into real savings in time, money and utility.

with its design team to maximize the use of BIM technology, including uploading the 3D models created in Revit to the Assemble platform. From there, Brasfield & Gorrie’s virtual design + construction (VDC) team broke down the models into very specific, usable views.

“The first thing we like to do is understand the constructability of the job,” says Contessa Hayter, Senior Virtual Design & Construction Coordinator at Brasfield & Gorrie. “We created a ton of views with this job, separating out the beams and columns. Using our model in Assemble, we were able to generate model-based quantities for the engineering team and then create visuals to help the client understand what was represented in our estimate.”

With the integration between Assemble and iSqFt, Brasfield & Gorrie loaded the various 3D model views to iSqFt’s Bid Management platform. This allowed them to share the views quickly and easily with their preferred subcontractors to collaborate on the project.

Giving subcontractors access to the 3D model views along with project drawings has enabled them to get a more thorough picture of the project, resulting in more accurate bids. Any time there was an update to the models and documents, subcontractors received an email alert so everyone was working with the most up-to-date information.

With the Assemble and iSqFt integration, Brasfield & Gorrie was able to filter out objects in the model in Assemble and share them with specific subcontractors through iSqFt. “For example, it was unclear with the drawings which partitions were drywall vs. CMU. With the 3D model, we were able to filter out the CMU partitions and through iSqFt, we shared those with our masonry subcontractors to make sure they had identified all the locations they needed to,” says Chad Waters, Chief Estimator for Brasfield & Gorrie. “We were able to confirm both quantity and where the CMU partitions needed to get to installed.”

A significant benefit of the addition of 3D model views earlier in the bid process is the increased accuracy resulting from collaboration. As part of the Piedmont Tower project, there was an instance where the 3D models identified several locations where materials were omitted in the 2D drawings.

“We got a call from a structural steel subcontractor we had solicited. He had started takeoffs and was putting a proposal together. He noticed some steel was shown in the model that wasn’t included in the drawing,” says Chad. “We shared screens and took a look at what was shown in the 2D drawings versus the 3D views. We combed through the drawings and made a list of eight or nine different locations that included very similar conditions and were able to get clarification from the structural engineer.

“But that didn’t slow us down. After receiving confirmation from the structural engineer that our assumptions were correct, we knew what steel needed to be where and we were able to capture what size it was.”

Identifying the omission early in the preconstruction phase eliminated what possibly could have been a significant change order and a delay in the construction schedule. “Being able to share the model let us dive deeper in the design, helped fill in the gaps in the design and is truly reducing our risk at this level of pricing,” says Chad.

“ iSqFt allows us to collaborate better, so if our subs have questions, we can share screens and look at the same items in question. It opens the dialogue and speeds up that learning curve. ”

Chad Waters  
Brasfield & Gorrie

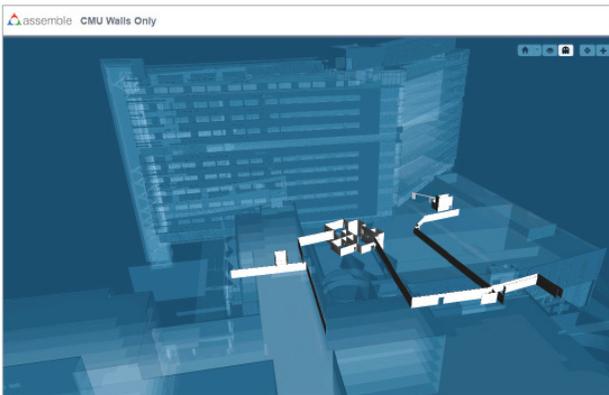
## AN ALL-ENCOMPASSING PROCESS

Brasfield & Gorrie self-performs several trades and uses BIM models to get a full understanding of the scope of work it will be self-performing as well as coordinate with its field teams.

“Internally, we are taking a much deeper dive into the structure to figure out the nuances as early in the process as possible,” says Contessa.

“For example, we self-perform much of a project’s concrete work. We use the models to understand lift and pour sequences and create drawings for that. Discussing crew size analysis and constructability review with our project managers, superintendents and field engineers, getting them involved in this process as early as possible. We want to make sure our involvement is an all-encompassing process and ensure our field team get the benefit from the technology.”

## PROVIDING A BETTER QUALITY



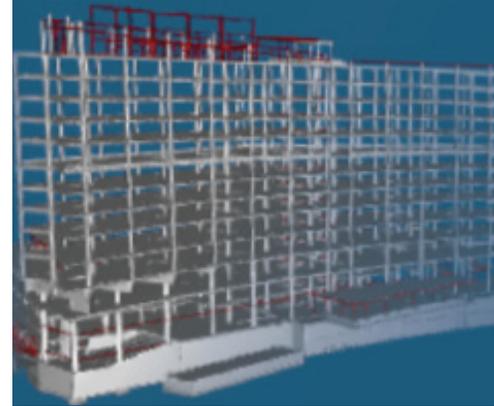
“We used the integration during the schematic design (SD) and design development (DD) rounds of pricing for the Piedmont project. We saw an increased level of insight from the subs who were seeing the jobs for the first time,” says Chad. “The model was able to shorten that learning curve and let our subs see the ins and outs of a job that might not be shown on a 2D drawing.”

“iSqFt allowed us to collaborate so if our subs had questions, we could do a ‘go to meeting,’ share screens and be looking at the same model and pointing to exactly what they had questions about. It opened up the dialogue and sped up that process.”

“We go from model to drawings and drawings to model to see what shakes out regarding information that isn’t clear and then get clarification,” says Contessa.

“Being able to dig in this way and understand what is in the model and not in the plan set has helped the team provide a better quality in this preconstruction process,” says Chad. “The more we use it, the more subs are digging into it, the more RFIs we get, the more things that are caught that weren’t shown in the drawings... the benefit really becomes exponential.”

## A MORE COLLABORATIVE BID PROCESS



Within the Assemble platform, general contractors can create several views of the model, extracting very specific details and scopes of work. The Assemble integration with iSqft lets general contractors easily share those model views with their subcontractors, providing in-depth project details. Subcontractors work collaboratively with the general contractors and design team to gain clarity on a project’s scope, resulting in more reliable, accurate bids.



Visibility to Constructability®