



How Cloud-Based Model Conditioning Differentiates Satterfield & Pontikes in Preconstruction and Beyond

Satterfield & Pontikes Construction (S&P) is a general contractor based in Texas. Founded in 1989, S&P now averages \$500M in annual revenues and is a market leader in K-12 educational construction in Texas. As an ENR Top 400 Contractor and Top Green Builder, the firm's scope spans general contracting and construction management for multiple commercial market segments and other select services.

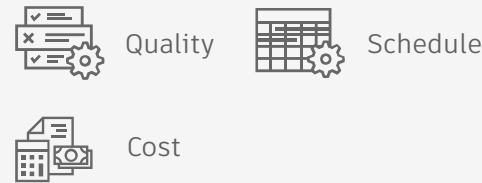
S&P uses Assemble within Autodesk Construction Cloud™ to improve the preconstruction process, from bid packages to owner expectations.

Customer Snapshot

FIRM SIZE: <500
FIRM TYPE: GENERAL CONTRACTOR
REVENUE: \$318 MILLION
FOCUS AREA: INSTITUTIONAL
HQ: HOUSTON, TX, US

PHASE:**CAPABILITIES:**

- Model Conditioning

OUTCOME:

S&P's in-house Select Services team leads 3D coordination, production tracking, and project schedule tracking. The team integrates with internal project stakeholders and external contractors to ensure speed and collaboration during preconstruction and construction.

With the implementation of Assemble, they have:

- Increased estimator efficiency through iterative model-based quantification and estimating
- Provided owners better visualizations and transparent project details to remove any doubt and enable faster decision-making
- Enhanced construction workflows with work in place tracking and percent complete time management

The firm tackles iterative preconstruction by tracking changes and proactively communicating with designers and owners via Assemble. Change management is made seamless by automatically tracking changes from iteration to iteration, enabling the team to monitor and quickly illustrate any impact on scope and budget.

The data is also translated for construction and used to create accurate bid packages. Schedules are built by project phase, and sequence then shared visually with the entire project team during preconstruction to improve collaboration.

Transparent communication with all downstream stakeholders helps ensure timelines and reduces the likelihood of any painful conversations with owners down the road.

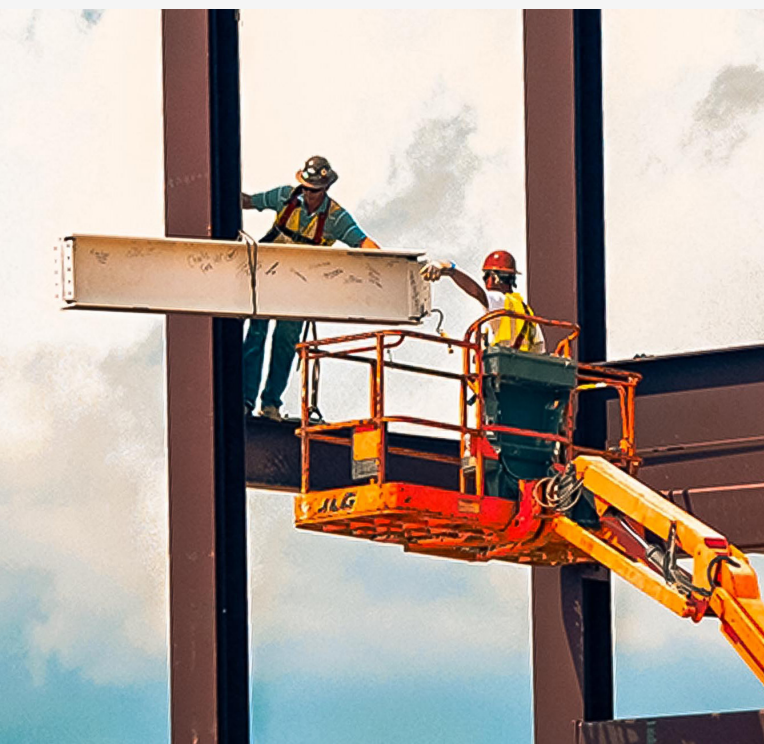
All of this translates to winning at the interview with a new owner, as the firm can have a well-defined game plan that an owner can quickly understand and justify.

Gaining Efficiencies in Preconstruction

Assemble helps S&P gain efficiency in preconstruction with cloud-based model conditioning and model-based quantification.

"We use Assemble from the moment we receive the model to estimate quantities and do a virtual 3D takeoff quickly," says Robert Pleasants, a BIM/VDC manager with S&P Select Services.

Model-based takeoff supplements S&P's traditional



2D estimating methods. By breaking down specific scopes of work and identifying installation locations, the team can create a more accurate estimate using the 3D models, 2D sheets, and project inventory within Assemble.

Besides the increased time savings resulting from model-based quantification, an additional benefit is a faster QA/QC process. The team can quickly identify discrepancies or omissions between the model and sheets to address issues early in the preconstruction phase to reduce change orders or delays downstream.

Bid packages are created and conditioned for internal and external reference, isolating specific scopes of work to provide validated and only relevant detail for subcontractors.

“The ability to group, sort, and filter the model and quantities the way you want allows for an efficient process to assign things to bid packages and greatly reduces time and effort in validating subcontractor bids,” says Pleasants.

Additionally, if the team sees a discrepancy in a bid package versus the model, it’s standard to walk through the model with the subcontractor visually.

“You can have the 3D model on one screen and the 2D sheets on another,” says Pleasants. “So that communication is easier with subcontractors or owners more familiar with 2D.”

This is a big time-saver for subcontractors, as they get ahead of any RFIs they would have otherwise discovered in the middle of construction.

As the preconstruction design process progresses, the team can instantly quantify and visualize all changes in new design iterations to perform variance analysis.

For example, a team illustrates changes using color-coding by material and change type. A visual can show the detail of an iteration example in which 2500sq ft of one kind of wall is removed and 4600sq ft of another is added. Critical decision-making data is illustrated as well, such as cost and schedule impacts.

Owners appreciate the transparency and ease of collaboration for decision-making, and it’s crucial in S&P’s K-12 market. For clients that are public entities with responsibilities to taxpayers, transparency is vital for building confidence and establishing stakeholder buy-in.

“When we can break down areas by floor types, wall types, per area and per phase, and show visually the cost and quantity and schedule implications of the various options,” says Pleasants, “it goes miles for an owner who is trying to figure out how to manage costs and time.”

Tracking decisions made as the model evolves also improves collaboration when “people get amnesia” after the value engineering (VE) exercise. Key decisions and supporting VE criteria are documented inside the Assemble model, creating an audit trail for later verifications.

Finally, the S&P team uses Assemble to layer in sequencing Information. One such example breaks down a six-story office building and parking garage into several different phases. The team can dive deeper into each phase and look at bid packages and quantities associated with each phase.

This carries downstream benefits as the firm easily exports inventory in Assemble to Navisworks to create a 3D schedule simulation.



Project management uses these reports to track onsite production by percent complete throughout the whole project. Not only does the firm produce progress reports in this manner, but it also creates ‘three-week lookaheads’ in Assemble to anticipate scheduling variances before they occur.

S&P says there was initial hesitation at the launch of Assemble. However, after the first illustration of potential project tracking reports was introduced, the practical value translated so easily that stakeholders quickly insisted on them.

“Now scheduling is coming to us early on to see if we can provide them a production rate report, as it has become a necessary part of project management,” says Pleasants.

How Cloud-Based Model Conditioning Creates Differentiation

There’s no question that preconstruction is more efficient with the cloud-based model conditioning of Assemble. Mike Diehl, Senior VP of S&P Development, says these efficiencies are clear wins for owners. They provide:

1. Speed
2. Quick feedback
3. Effective change management
4. GC vetting and subcontractor bids
5. Transparency

It’s important to note that transparency is not only good for owners - it’s good for contractors, too.

“Contractors who refuse to provide transparency will only hurt themselves in the long run,” says Diehl. “Their competition is leveraging this technology to better position our work, which allows us to do more negotiated work with owners.”

Diehl cites the example of an owner who is busy and under deadline and budget pressure. For such a stakeholder, knowing what changed quickly as the design progresses is priceless.

“As an owner, I can’t wait until the final GMP bid pricing to know we’ve gone 10% over on glazing, and now the price is up by \$1 million,” says Diehl. “I need to know that now and how the design can address my concerns before we spend all this money to finish the design.”



“

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-Robert Pleasants
BIM/VDC manager,
S&P Select Services

As partners, S&P’s commitment to transparency is an effort to give back the time an owner might have otherwise spent to vet their GC and their subcontractors. This transparency, notes Diehl, is of greater value than any competition that may operate by throwing out the lowest numbers to win the work.

S&P has proven that visually rich data, conditioned appropriately for the audience, builds confidence for owners and speeds up preconstruction significantly. This translates not just into winning a project but maintaining a long-term relationship built on trust. Trust comes from proactively illustrating iterative changes and clearly and easily vetting estimates from contractors and subcontractors.

Cloud-based model conditioning and model-based quantification provides benefits throughout the project lifecycle, from preconstruction to handoff. For S&P, the earned trust and better collaboration it provides with owners is a proven winner.