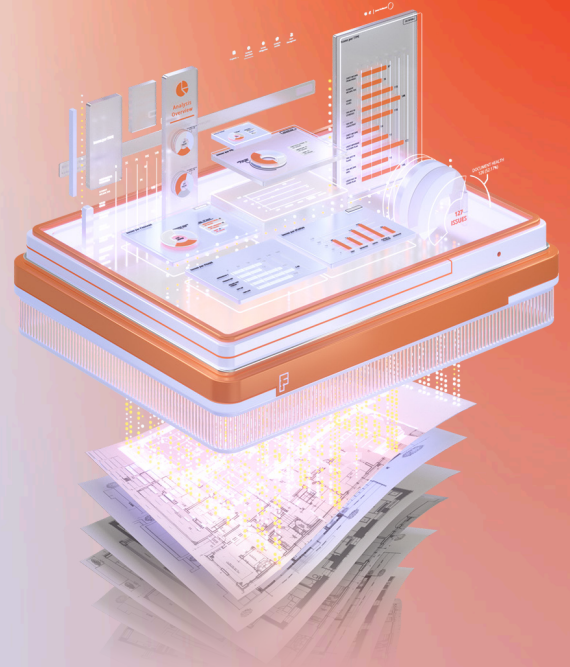




Flintco: Innovating Construction with **Firmus AI**

How the Tech Leader Leverages AI for
Preconstruction Clarity and Efficiency



ABOUT FLINTCO, LLC.

Through a spirit of collaboration, a commitment to excellence, and a culture centered on integrity and accountability, Flintco provides innovative construction solutions with an unrelenting focus on quality, safety, cost, and schedule. Flintco was founded in 1908 and maintains eight full-service offices. The company is registered or licensed in 34 states and offers a full range of construction services, including preconstruction services, construction management, design-build, general contracting, and project management.

Vision

*The unwavering
pursuit of the
perfect construction
experience.*



Situation

Flintco is an industry-leading champion of technology and innovation. Through pioneering initiatives like their Technology Innovation Council (TIC) shared with sister company Alberici, and FX360, an initiative for creating “excellence all around” the organization, the company pursues continuous improvement with a passion.

Flintco’s Vision Statement is: ***The unwavering pursuit of the perfect construction experience.*** Their focus is on making projects safer and more efficient, with high-quality outcomes for owners. Flintco relies on in-house subject matter experts to help address pain points or inefficiencies within workflows at

every stage of project delivery, including “back of house” functions.

In this case study, Flintco focused on the process and workflow around preconstruction while using Firmus, which is usually deployed at the design development (DD) and construction documents (CD) stage. Firmus uses AI to analyze construction drawings to identify inconsistencies and missing information within design set plans and schedules, allowing preconstruction teams to focus on technical and strategic aspects of a project.



Challenge



Flintco identified the handover process from preconstruction to field operations as an area that could benefit from a process update. They looked at RFIs, constructability reviews, and how information applied during preconstruction can help operations teams deliver more schedule and budget certainty for owners. Flintco focused on ways to enhance bid accuracy and streamline procurement through better decision-making and by mitigating uncertainty from incomplete design packages — earlier.

“For any contractor, being more accurate, more efficient in how we bid projects is the key to our success and sets us apart.”

— Michael Thole, Director, Corporate Quality

Solution

During a Technology Innovation Council meeting, Flintco began researching applications around the QA/QC process, particularly in preconstruction.

“I started to look at what integrations existed in the Procore® App Marketplace, and that’s what initially drew us to Firmus,” said Michael Thole, Director, Corporate Quality at Flintco. Thole is based in the company’s Austin office.

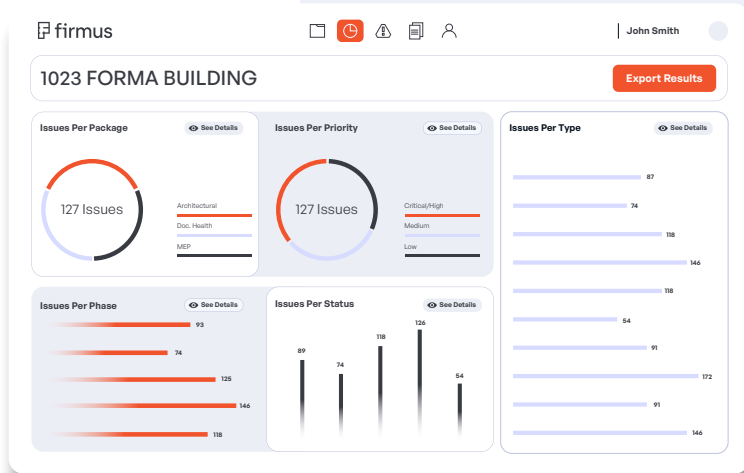
Flintco requested a demo from Firmus, which led to a decision to run a proof of concept within their Preconstruction Department. “We had a healthcare project in Tulsa undergoing a constructability review,” Thole said. “Once we got the results from the initial Firmus analysis, saw what it could do, and vetted the results across our Preconstruction departments, we had a consensus to move forward.”



Michael Thole
Director, Corporate Quality

Flintco applies constructability reviews on their projects based on risk, complexity, and size of the project. These reviews are typically done at DD's and CD's in concert with

prepping the estimates from their preconstruction teams. Flintco applies subject matter experts in areas like building service systems, building enclosure and structural systems, to review the drawings together with the preconstruction team. So, if project elements require quality controls, they can account for costs around those in their early estimates.



“Firmus meticulously completes the more repetitive ‘mundane’ tasks required during a review with great efficiency and accuracy,” said Thole. “Using Firmus allows our preconstruction teams to focus on the technical aspects of the design while delivering a

reliable and thorough plan check of the drawing set itself.”

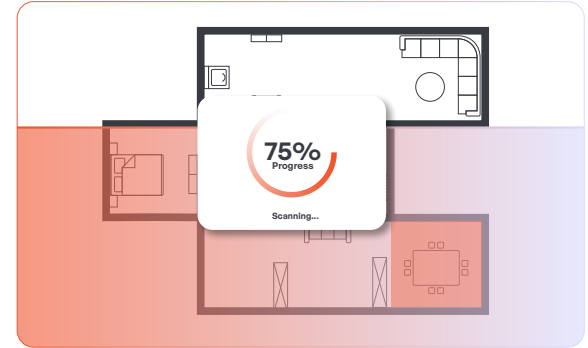
Benefits



Firmus increases design review efficiency and improves bid accuracy while reducing risk during preconstruction. Flintco deployed Firmus across the enterprise, allowing for the standardization of work processes within the Preconstruction Department.

Scanning your blueprint

Scanning
Square_Building_Blueprint.PDF



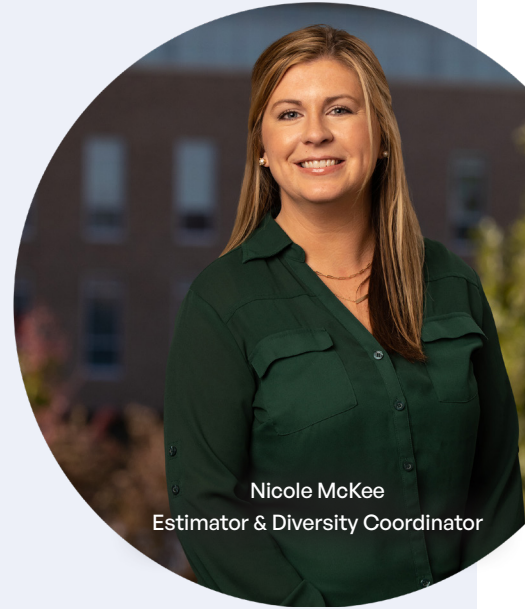
01. Efficiency

Depending on its size, reviewing a plan set can take up to three weeks when done manually. Firmus can complete a comprehensive analysis in as little as 48 hours.

Healthcare Campus

Flintco recently used Firmus on a large healthcare project with a design set to match in their Southeast Region. The Firmus analysis identified discrepancies between the door schedule, the doors shown on the floor plans, and other views.

“That analysis helped us pinpoint and streamline those issues,” said Nicole McKee, Estimator & Diversity Coordinator at Flintco in Memphis. “We grouped all the relevant conflicts in one RFI for each building. For instance, if a door was shown on the door schedule but not on the floor plan, we would list them all for each building grouped under main topics.” The amount of time saved was impressive.



Nicole McKee
Estimator & Diversity Coordinator

“I can honestly say the Firmus analysis, just the generation of RFIs alone, saved us days,” McKee added. “I think Firmus is an essential tool for us moving forward.”



Eric VanGilder
Director of Preconstruction

02. Bid Accuracy

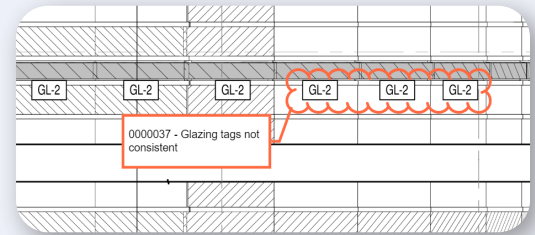
Firmus excels at helping general contractors manage the bidding process for competitive sealed proposals (hard bid) jobs, GMP, and those structured as a Construction Manager at Risk (CMAR).

“On CM Projects during the design phase when plans are at a 50% to 95% CD Level, we can get a lot of the questions answered with the Firmus analysis before we send the drawings out to trade partners. It helps us eliminate some of those gray areas and confusion during the bid period that have traditionally been addressed by addendum. This results in better pricing for the owner,” said Eric VanGilder, Director of Preconstruction.

03. Risk Mitigation

Contractors everywhere are accustomed to working with early work packages and procurements when the design isn't fully complete. A limited design set presents a real challenge to the operations side.

“Firmus instills the confidence that as we do purchase orders for long lead items or early equipment, or even break ground and start putting piping systems in as part of our early works packages, we're confident in the fact that the design is well developed for that scope and we don't have any lingering questions in those areas,” Thole said. Flintco used Firmus in advance of putting a large glazing and curtain wall bid package on the street. The glazing schedule showed various curtain wall, storefront, and spandrel glass systems by color code to help identify placement.



Firmus flagged multiple inconsistencies in the drawing set where curtainwall systems were incorrectly tagged as spandrel glass. Flintco's preconstruction team was able to quickly review the design documents and verify the unique quantities necessary

“Nobody wants to see a piece of plywood plugging a hole on a building facade because the glass order was inaccurate.”

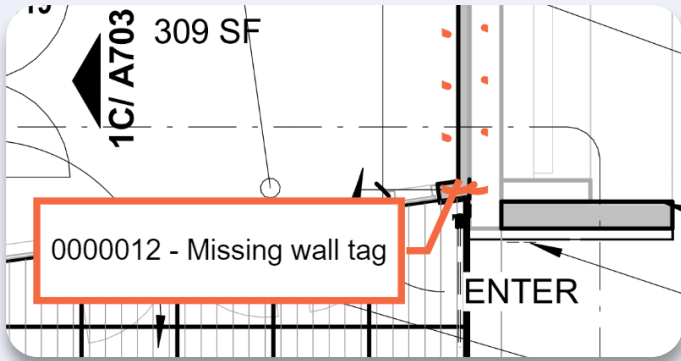
— Michael Thole, Director, Corporate Quality

before purchasing. The result improves “first-time quality” in the field. Nobody wants to see a piece of plywood plugging a hole on a building facade because the glass order was inaccurate. The same scenario applies to doors and hardware schedules, which have become a long lead item since the pandemic caused supply chain issues.

Flintco is also using Firmus to review and confirm Civil and Mechanical scope such as checking that piping entering a building, and inside it, has the same diameter pipe, for

example. By resolving those types of details during preconstruction before operations mobilizes on-site, project teams can deliver more schedule certainty for owners, and potentially eliminate costly rework.

“With the pace of construction today, we’re trying to stay ahead of design completion with the confidence of knowing what we’re facing,” Thole said. “Firmus helps us do that.”



Flintco also uses Firmus to analyze later document sets. In one example, Firmus flagged a retaining wall adjacent to a fire station with no corresponding geotechnical data. Flintco investigated further and determined that there were no underground issues beneath the retaining wall. “Firmus helped us look closer at the plans without having to spend multiple hours combing through them and potentially not seeing the issue.”

“The Firmus analysis, helping us identify potential conflicts as well as helping us work out scope gaps, makes my life easier.”

— Nicole McKee, Estimator & Diversity Coordinator

Summary

Flintco typically applies Firmus at an early to midpoint before construction documents (CD) are complete. The earliest they apply it is at a midpoint during DD's.

“Running Firmus at a midpoint during design development and before releasing the construction documents to trade partners is where we see the most value,” Thole said. “We also use it on change packages that come out during construction. We can do a quick comparison of a previous design set to quickly and accurately verify if our questions were resolved.”

Thole said the machine learning aspect of Firmus is especially intriguing. Each time an iteration of a drawing set is uploaded, Firmus captures that data and learns from it. Construction by its nature is a transitory business and institutional knowledge can be fleeting. The Firmus knowledge base just keeps getting more robust.

“The coolest part about Firmus is that we probably don't know half of what it can do yet,” Thole said.

ABOUT FIRMUS

**Firmus is the market leader in preconstruction
AI design review and risk analysis.**

Firmus' easy-to-use platform enables general contractors, developers, and AEC stakeholders to detect and mitigate design issues early. Adopted by some of the largest construction and design-build firms in North America, Firmus' solution increases efficiency and bid accuracy while mitigating risk. Securely managed from a single cloud-based platform, Firmus provides the most reliable and cost-effective design review AI in the industry.

[Learn more about Firmus](#)