

Category: 9 – Best Building Project – Specialty Contractor Non-MEP (Over \$2 Million)

Contractor: Baker Concrete Construction, Inc.

Project Name: 18th & Market

Project Narrative

Building better structures, building better lives. Baker Concrete Construction, Inc. (Baker) and its co-workers live by this purpose. This calling to deliver to a higher standard was on full display from preconstruction to topping out on the 18th & Market project in Denver, Colorado. The construction of this project was not unique to Baker, but the preconstruction process was. It was the first project in which Baker's Rocky Mountain Group was selected to assist in the design process. To make it even more special, it was originally designed as an EPICORE structure, then re-designed during the design-assist process as a cast-in-place frame. Despite a significant redesign effort, the construction of the project was delivered on time.

The 18th & Market project, also known as the Fitzgerald, offers modern living in a historic neighborhood setting. The 556,000 square foot, 11-story building includes two levels of underground parking, ground-floor retail and co-working spaces, and luxury apartments. The Fitzgerald also includes a state-of-the-art fitness center, amenities and a resort-style swimming pool with a rooftop social lounge for residents.

Solutions of Special Projects

The design-assist team consisted of the owner, Greystar Development & Construction (Greystar); the general contractor, Milender White Construction (MWC); the architect, Johnson Nathan Strohe (JNS); the structural engineer, Enayat Schneider Smith Engineering; and Baker. The Baker design-assist team consisted of estimators, formwork designers, scheduling specialists, on-site managers and field personnel.

Baker secured a position on the team based on our ability to design-assist the conversion from an existing EPICORE MSR (Multi-Story Residential) Composite Floor System and Infinity metal stud wall design to a more durable and sustainable fireproof cast-in-place concrete frame. This conversion was uncommon because the project design was complete and ready to build as an EPICORE structure.

Re-designing the project at this stage required almost a year of collaboration and pricing exercises to anticipate and solve design challenges. For example, the redesign called for the addition of concrete columns up the entirety of the structure, which affected room layouts. In response, the architect, engineer and Baker team worked closely to evaluate and price three different column span layouts (short-span, mid-span and long-span). Ultimately, the structure was designed with a mid-span layout. Other changes included the addition of soffit areas to accommodate balconies, precast overhangs and the widening of column bays. The team also converted the flat plate slab pool design to a sloped soffit plate pool design to avoid structural beam conflicts.

Another benefit to using design-assist: the team could assess in real time how proposed design changes would impact the schedule. While Baker field staff offered feedback on both constructability and the schedule, the team also realized it would need to compress the construction schedule to accommodate the extended time required for the redesign. Our team determined the best approach would be to split the footprint in half and build the project in two simultaneous phases, using a separate tower crane for each side. This approach resulted in a more accelerated construction schedule.

Baker's ability to identify project plan challenges, present options and devise creative solutions resulted in cost-effective means and methods, sustainable building solutions and seamless constructability.

Excellence in Project Execution and Management/Team Approach

To manage the execution of this massive project, the Baker team implemented the integrated project delivery (IPD) method. The team used IPD tools and techniques to increase productivity, reduce waste, compensate for time overruns, enhance final product quality and reduce conflicts between the owner, architect and engineer during construction. The team also used the PlanGrid software platform to enhance collaboration and to clarify and expedite the design-assist changes made during the execution of Baker's scope of work.

Between March 11, 2019 and May 15, 2020 the Baker field team installed 1,929 tons of reinforcing steel, 15,584 cubic yards of concrete structural decks and 4,815 cubic yards of concrete vertical walls and columns. By moving forward with precision and speed, the team lost only four construction days due to weather—even through the tough Colorado winter.

Baker co-workers have a well-earned reputation for being personally invested in the success of their projects. One example of this came early in construction, when Baker was working on the below-grade-level foundations. The site was congested with foundation work, and there was not enough room for the plumbing subcontractor to mobilize its equipment to drill sumps. Rather than allow this to delay the project, the Baker team made its on-site equipment available to the plumbing subcontractor, thereby keeping the schedule on track.

Construction Innovations/State-of-the-Art Advancement

To ensure we consistently “hit the schedule” with pours, Baker teams implemented several proactive quality measures. One such measure is our comprehensive pre-pour inspection. We manage this process with our proprietary "Device Magic" software, which is installed on iPads for mobility in the field. This software enabled the team to coordinate, track and communicate real-time inspections, quality control measures and documentation, daily logs, and best practices with speed, efficiency and accuracy. In conjunction with Device Magic, our projects implement Baker's Safety, Schedule, Quality and Production (SSQP) philosophy with weekly tracking and quarterly on-site audits. SSQP focuses on delivering projects safer, faster, at a higher level of quality and with more efficiency.

In addition, the 18th & Market team developed a “ribbon system” to streamline the identification of inspection areas. In the pour area, red ribbons identified areas that were incomplete or required modifications prior to pouring. Green ribbons identified work areas that were complete and ready for the pour. This process eliminated errors and allowed visible inspection status confirmations throughout the accelerated pour schedule. This inspection system is now used on other Baker projects.

Environmental/Safety

Safety is a way of life at Baker so much so that we have built a company-wide culture committed to being Incident and Injury Free (IIF). As part of this effort, Baker's IIF education program is mandatory for all co-workers. In addition, our philosophy on safety is that it is a team effort. In line with this, our project team used the Baker Mobile Training Facility to conduct onsite safety

training for both our co-workers and our external construction partners. Baker's Mobile Training Facility is a truck pulled trailer that is used as a classroom to teach safety classes.

Baker has maintained an EMR under 0.70 for the past nine years, which is well below the industry standard of 1.0. Baker has established a global safety plan, and every project has a site-specific safety plan. On the 18th & Market project, the Baker team worked a total of 126,075 field manhours with 16,488 supervision hours over a 14-month construction duration and experienced zero lost-time accidents, one recordable incident and zero OSHA violations.

The Baker team, like many others, faced the challenges of working through the COVID-19 pandemic. As construction was deemed an essential business, our team resolved to face the challenge with a no-lost-time effort. To achieve this, the team adhered to strict COVID-19 protocols, such as following social distancing guidelines and wearing proper personal protective equipment (PPE). Because it is nearly impossible to finish concrete while maintaining six feet of distance, our finishers wore both masks and face shields to protect their fellow co-workers.

Excellence in Client Service and/or Contribution to Community

MWC's "Project Pride" award is given monthly to recognize subcontractors for good housekeeping, site organization that enhances safety and quality, and morale. The Baker team received the "Project Pride" award over five consecutive months—a record for MWC.

Baker is heavily involved with local workforce development initiatives and is an elite member of the Associated General Contractors High School Construction Connection Team. As part of this community outreach, the Baker team hosted high school students from McLain Community High School during the project. The students received a jobsite tour and learned about all aspects of the project from the design-assist phase through construction. It was a great opportunity for the Baker team to engage with future members of the construction industry.

Closing

The 18th & Market project required an uncompromising commitment to high standards throughout planning, execution and follow-through. Most of all, it required teamwork. Project success hinged on assembling a team that was all-in on producing superior outcomes. We are proud to have been

part of this team and to have had the opportunity to contribute innovative design and delivery solutions to one of Denver’s newest landmarks.

“We recently completed the 18th & Market Street Project with Baker Concrete Construction. The Baker Team from Estimating to Operations was fully engaged and connected from top management to boots on the ground. Their commitment to excellence never wavered from the beginning of design-assist through the last deck pour. Reinforcing excellent safety and quality on site was their primary focus. We appreciated their professionalism and a trusting relationship that will last for decades to come.” – Bret Bemiller, Project Manager for Milender White Construction











