Project: 50Fifty
Category: 10 – Best Building Project – General Contractor (\$40 - \$70 Million)
Company: Hensel Phelps Construction Co.

# **Project Overview**

Collaboration between owner, 5050 S. Syracuse LLC, architect, Clutch Design Studio, and, general contractor, Hensel Phelps, led to an impressive 396,975 SF Class AAA mixed-use building with unique attributes that complement the neighboring businesses while providing a one-of-a-kind office space. The 12-story core and shell office building was constructed as a precast concrete structure with a structural steel-framed office above on a tight site with limited laydown area. The building features 522 parking spaces on two floors of underground parking and six floors of enclosed above ground parking, and six floors of office spaces. The building design emphasizes the well-being of its tenants with natural light, a fitness center with locker rooms, two open air light wells, a well-lit porte cochere, a marble finished lobby with floor to ceiling glass, and three rooftop terraces. By using an unconventional material to resolve backfill issues, building on a tight site, coordinating the installation of over 400 unique curtainwall sizes, and working with low tolerance finishes, these challenges showcased Hensel Phelps' preconstruction and construction expertise to ensure cost, schedule, and quality certainty from the start to the completion of this project.

## **Solutions of Special Projects**

With the tight site and distinct design, the 50Fifty project had to overcome challenges surrounding steel laydown and curtainwall installation. In conjunction with the steel trade partner, Puma Steel, Hensel Phelps coordinated the steel erection in a unique manner. Hensel Phelps had only one lane of the site available for trucking because the DTC Architectural Control Committee (ACC) does not allow truck staging on the streets, meaning that the team could not block the drive lane for use as storage and to shakeout the steel. The team devised a plan to laydown and shakeout the steel on level 6 (up to level 6 is precast floor, above that it is steel). This allowed the building to be erected in two phases with the majority of it erected in phase one, and then the team dropped back and completed the structure over the laydown area.

This method allowed the steel laydown and installation to be completed without interrupting the traffic around the site perimeter.

The installation of so many high-end finishes during the construction of 50Fifty required the Hensel Phelps team to execute a particularly high level of craftsmanship. To meet the designer's vision, Hensel Phelps and our trade partner, Phase 2, set a course to delivering zero tolerance, flush finishes for the 12 restrooms on the office floors. The trade partner worked on the framing offsets for each item, including mirrors, Italian stone feature walls, towel dispensers, and sinks. These items were part of two different designs for the men's and women's restrooms. Additionally, a high level of protection was required for the high-end finish work by covering the floors and mirrors prior to painting to ensure a quality finish for the completion of 50Fifty.

### **Excellence in Project Execution and Management/Team Approach**

The 50Fifty project completed on time and because the project team was so diligent in managing the budget, \$420,000 was returned to the Owner. However, initially there were budget constraints to overcome and Hensel Phelps was required to meet these cost parameters during preconstruction in order to move the project forward. Early in the Schematic Design (SD) phase, with input from key design-build trade partners, Hensel Phelps helped to influence the design and was able to achieve a budget for the mechanical and electrical system that was acceptable so that we could then provide an initial project cost estimate. Using Hensel Phelps' proprietary Trend Estimating process, we identified each change made to the design in real-time and provided feedback to the team as the design continued to evolve. This process resulted in a Final Guaranteed Maximum Price at the completion of the Construction Document drawings that was very close to the initial SD estimate provided in the early stages of the project. Getting all trade partners on board early to provide crucial input and engineering expertise to install the correct MEP systems for the building resulted in \$1M in savings for the Owner.

The complex nature of the exterior façade with more than 400 curtainwall sizes to install led to a comprehensive approach developed with the curtainwall trade partner, Harmon, Inc. to maintain construction quality and the schedule. This approach ensured a quality installation despite such low tolerances all while still maintaining the project schedule. Delivery trucks and coordination of installation was paramount to the success of the design and aesthetic of the building as each

custom curtainwall had to be installed in a specific spot on each floor. Coordination of curtainwalls with the steel layout on level 6 required the team to work a second shift between 5-10PM. The units were unpackaged and prepped on the top deck of the pre-cast parking structure so that steel could be set during the day while the crane and curtainwall were set during the second shift. The curtainwall team worked closely with the steel team to maintain the schedule.

#### **Construction Innovations/State-of-the-Art Advancement**

Innovation and elevation of Hensel Phelps and industry standards started with no space for the amount dirt needed to backfill the shoring wall with a 4' gap that was 25' deep on the project. There were also safety concerns with diesel powered compaction equipment in the backfill cavity and tying up crane time to move compaction equipment between cleanouts as backfill progressed. An unconventional material was used to resolve this issue, Flash Fill, which is a 200-psi concrete strength backfill material that is capable of being shoveled and proven as a useful material for backfilling trenches and casing conduits for electrical companies. Hensel Phelps backfilled the entire perimeter in six mobilizations at night, installed 350 yards of material in a six-hour shift. Flash Fill sets in ten minutes so after each night the team performed the next lift of waterproofing, thus decreasing the overall backfill effort substantially. With the success of this backfill material, Flash Fill is being used on other Hensel Phelps construction sites.

### **Environmental/Safety**

For onsite safety during 50Fifty, third-party engineers were hired to ensure safety for pump out riggers, hoist attachments, and the dock. On top of that, for the 201,980-pound plate girder precast, a special engineer was hired to review and validate the erector's plan of dividing the plate girder into three sections; to witness the installation; and to test the components to ensure the plate girder would support the weight of the corner of the building.

With neighboring businesses and large exposed parking lots, the 50Fifty team researched whether a hammerhead or a luffing tower crane would benefit the project the most. The team chose the luffing crane due to safety measures: it eliminated any operations occurring directly above the businesses, parking lots, and busy streets. Also, the luffing tower allowed for the precast garage structure and larger steel pieces to be erected without the need to break the pieces down to allow for setting. Safety goes hand-in-hand with production, schedule, and quality for Hensel Phelps and nothing is more important than sending everyone home safely each day. For this reason, Hensel Phelps uses a comprehensive safety and health program on every project. Evidence of 50Fifty's safety excellence is the fact that the project achieved zero lost time accidents even with 310,732 worker hours. Hensel Phelps hired a third-party auditor to visit the jobsite to ensure safety was consistently monitored and adjusted as needed. 50Fifty received a higher Zurich safety score than any of the other jobsites in our local district: 74. Safety is not just a process at Hensel Phelps: it is our culture that extends beyond the 50Fifty team to every trade partner and vendor working on our projects.

The design and construction of the 50Fifty project used an integration of energy-efficiency strategies, building site design and environmentally friendly building materials. The team worked with over 20 different manufacturers to secure the right material to meet the LEED Gold requirements from concrete, wall mesh, dap mesh, structural steel, and steel decking.

# **Excellence in Client Service and/or Contribution to Community**

To promote the construction industry career paths to offset the labor shortage in Denver, 50Fifty project offered Construction Industry Training Council (CITC) Master's Apprenticeship program jobsite tours and opportunities to talk with our staff across the entire jobsite from our project manager to our superintendents to our foreman. This allowed an opportunity for inner city children an inside look at different career opportunities after high school with options of attending college or being trained for a craft role. Also, RISE Commercial Property Services worked with the team to schedule tours as a part of the curriculum for college students from the University of Denver for architecture and real estate program. Students then followed up with one on one's to ask more questions to understand the industry and career opportunities with the specific roles they were exploring as a career.













