

Project: **9th & Colorado Redevelopment; Blocks 2 and 4**
Category: **#12 – Best Building Project: General Contractor (\$40 - \$70 Million)**
Company: **Kiewit Building Group, Inc.**

Project Overview

From the remnants of the former higher education campus along Denver’s bustling Colorado Boulevard, a new community neighborhood has risen. **9th & Colorado** is a massive 12-block, 26-acre redevelopment. It is an exciting contemporary community with diverse housing and places to work, shop, entertain, and gather in a pedestrian-friendly setting.

Construction of the multi-facility project was completed in multiple phases based on neighborhood "Blocks." Kiewit was engaged in Spring 2017 to serve as the construction manager/general contractor responsible for the overall coordination of construction activities, horizontal infrastructure, and Blocks 2 and 4. All Blocks include site improvements for outdoor spaces like plazas and patios for outdoor dining and open space. Individual Blocks include:

- Block 2 – a 56,878-square-foot block with 98,100 square feet new construction of a two-story core and shell building for a movie theater, street-level restaurants, and retail.
- Block 4 – a 56,878-square-foot block with 359,120 square feet new construction of a five-level building for core and shell office space, street-level retail, and a seven-level parking garage.

Solutions of Special Projects

Several noteworthy challenges impacted the project, including unforeseen conditions from the former building's deep foundations; a slow-moving permitting process; a constricted construction zone with multiple independent contractors; cost and schedule impacts from tariffs; and adjacent dense neighborhoods encumbered with long-lasting interruption.

Unforeseen Conditions

The parking garage at Block 4 sits where a former research facility once stood. During foundation work, Kiewit ran into several old concrete foundations. Work was halted while a plan was developed to address the unexpected subsurface debris. This, along with performing foundations during the wettest months of the year, delayed start of vertical work by a month.

The solution involved changing the concrete pour strategy from sequential to simultaneous pours. This approach required a great deal of coordination of crane time, pour schedules, and twice as many craft workers on site working multiple cores. This strategy allowed deck construction to start a month sooner to make up for lost time.

The parking garage consisted of nearly 25 deck pours, each containing around 400 cubic yards of concrete. Pouring decks during winter added several weather-related delays. This often meant making two pours per week to keep up with the schedule. The owner's testing subcontractor, architect, structural engineer, rebar subcontractor, and concrete subcontractor, along with Kiewit, had to be in constant communication to finalize each pour before completing the next.

Permitting & Approval Processes

In Denver's robust construction market, permitting processes are understandably challenging. This was compounded by extra reviews and approvals needed for the complex construction development, including five independently run tenant construction projects. Kiewit managed this challenge with extra diligence and oversight.

Contractor Complexities

The 9th & Colorado construction site was a moving mosaic of construction activity. Kiewit held the responsibility of overall site management and coordination of multiple general contractors (GCs); hundreds of sub-contractors; suppliers delivering materials (average 10 per day); vendors providing services for workers; and waste management systems removing debris and replacing porta-potties and trash receptacles. At times, as many as ten separate GCs worked around each other, sharing the project site and access roads. To add to the complexity, all GCs were managed by different owner representatives. Additionally, five tenant finish contractors were contracted

separately to build out individual tenant spaces while Kiewit worked to complete core and shell construction.

Overseeing this process required a high level of expertise in construction management and precise systems to orchestrate a cohesive workflow, and the Kiewit team proved its worth. Kiewit required weekly meetings and numerous pre-activity coordination meetings. Suppliers were instructed to hold their materials until needed, allowing a process of "right-time" delivery. Kiewit helped the client manage six retail tenants, coordinate inspections and certificates of occupancy, and organize trash control and clean up after respective contractors. Kiewit's dedicated team members worked with tenants on the multitude of coordination needs. The Kiewit team assisted the client in non-contractual tasks to ensure outstanding status items were completed, even assisting in other contractors' close-outs and permitting processes.

Another complexity consideration is the project's location along Colorado Boulevard, one of Denver's busiest roads that averages 57,000 vehicles per month. Any disturbance on this road creates massive traffic impact. To minimize interference, Kiewit performed lane widening on an expedited schedule to minimize disruption.

Disruption from Tariffs

Massive tariffs resulting from volatile U.S. trade policy disputes with China could have decimated the project, whether from cost impact, delayed deliveries, or lack of material supplies. The tariff crisis could have caused a seven-month delay in construction start after pricing. Kiewit's strategy for avoiding this risk and minimizing further delay included locking in key subcontractor pricing before contracts were in place and premature purchasing of critical materials. This resulted in a savings of 3%, or \$1.8 million.

Community Impact

The impact of this project on the surrounding Congress Park neighborhood was immense. Kiewit formed a partnership with the community, not only to strategize ways to minimize impact and develop open channels of communication, but to build a friendly rapport through transparency and partnership.

The neighborhood had already been inconvenienced for years by the time Kiewit mobilized on-site to start work. Kiewit quickly developed and maintained productive communications with neighbors and extended as many courtesies as possible throughout the build. Strict quiet hours were maintained. Kiewit worked with the owner to create and host relationship-building events that enabled open communication that kept neighbors informed of current and upcoming construction activity. Start-up events were held so neighbors could ask questions, stay abreast of project shifts, and establish an understanding around upcoming inconveniences. Kiewit also worked to celebrate neighbors and acknowledge their patience at parties with food and live music.

Excellence in Project Execution and Management/Team Approach

At the beginning of the project, a "Success Board" was created, establishing an agreed-upon buy-in of actions, practices, and project success measurements by all team members. Communication and coordination were critical. Under Kiewit's leadership, the project ran smoothly thanks to daily "6am play-of-the-day" coordination meetings with all contractors and a commitment to work side-by-side with all parties.

One complicating factor was that the project was subject to "Small Business Enterprise" and the "First Source Program" mandated by the Denver Urban Renewal Authority's land development requirements. Many program participants lacked the experience, bandwidth, and/or expertise needed to deliver on the program requirements. Kiewit's team offered assistance throughout the process, supporting subs in preparing, drawing, and revising construction drawings. Typically, these changes would necessitate a small business to rebid, but the Kiewit team was able to help them translate, often overlaying the old set of drawings with the new.

Challenging Building

Another example of extraordinary project execution was the challenge of building design via multiple design teams for the Block 2 theater building. The theater building core and shell is a complex design featuring 38 massive jumbo beams (the largest being W40x503 and just under 30,000 pounds) for the second floor, angled at a 3-degree twist on two sides. Also, a separate

architect was responsible for the design of the tenant finish. Frequently, the two plans did not align. There was significant MEP coordination, theater requirements, sound transmission, and vibration issues that required resolution by the construction team.

Construction Innovations/State-of-the-Art Advancement

Kiewit implemented a progressive, all-inclusive construction technology software called "InEight" to streamline and coordinate functions and activities using real-time information. This software was used in various aspects of project management, field execution, and administration.

Environmental/Safety

Safety was prioritized and programmed into the project with heightened levels of execution. Teams, policies, and processes were designed to track safety with elevated attention on prevention. Multiple strategies were used, including project-start and continuous training among all contractors, as well as events and educational opportunities to enhance safety.

Kiewit's "Craft Voice in Safety" program was deployed, where each subcontractor selected lower craft individuals to serve as a conduit relaying safety-related concerns through independent private channels of communication.

Another safety program employed was Kiewit's "Safety Rodeo" that includes working with vendors like 3M to provide training and demonstrations of specific use of tools, and the proper tie-off of every tool in an individual's tool bag.

"Safety BBQs" were scheduled at key milestones and were catered for on-site craft workers and office personnel. Real safety statistics and occurrences were shared with the team, and feedback was requested from individuals to make improvements and correct concerns. Awards were provided for excellence in safety measures and performance.

Excellence in Client Service and/or Contribution to Community

Giving back to the community was an overarching goal to offset the disruption from construction activities. Kiewit implemented several programs, including "COLFAX Brush Off," where ten

blocks along Colfax Avenue were adopted for a massive Saturday clean-up. Twelve team members participated in removing graffiti, clean signs, and picking up trash. Another program Kiewit participated in was "Mercy Housing Holiday Drive," where Kiewit organized truckloads of donations two years in a row.



Southeast aerial view of the Commercial Area site. Preparations underway to set the final jumbo beams, 286,677lbs in total. This would complete the framework for the off-set second story of the movie theater. *Photo by Two24media.*



Turning a corner, Kiewit completes the last of four pier caps to bridge across existing deep foundations left behind from the previous building. The last two pier caps were 21ft x 7ft x 9ft and each spanned across two 6ft x 25ft drill piers, in total adding over 200 cubic yards of concrete to the project. *Photo by Sensera Systems.*



Birds-eye view of the Block 4 construction. Ahead of schedule, the north and south deck of Level 3 are being prepped for a simultaneous pour. In total, there would be twenty four deck sections and over 8,000 cubic yards of concrete placed. *Photo by Two24media.*



Kiewit staff organized and donated more than 50 household appliances and other household goods for their “Mercy Housing Holiday Drive.” The community outreach event was held two years during construction activities on the 9th & Colorado project. *Photo by Kiewit.*



Aerial view at Colorado Boulevard looking east at Blocks 4 and 2. The theater building with street level retail and restaurant (Block 2), is behind and to the right of the corner retail block. The office building and parking garage with street level retail and restaurant (Block 4), is on the left along Colorado Boulevard between 8th and 9th.

Photo by Kaarl Hoopes, Falcon Aerial Imaging.



Birds-eye view of Block 2 shows southwest corner of the theater building. Street level provides storefront areas for retail and restaurant. *Photo by Kaarl Hoopes, Falcon Aerial Imaging.*



Birds-eye view of Block 2 shows northwest facing corner of the theater building with surrounding street level storefront for retail and restaurant. *Photo by Kaarl Hoopes, Falcon Aerial Imaging.*



Southwest corner of Block 4 facing the multi-use building with office, parking and street level retail and restaurant. *Photo by Kaarl Hoopes, Falcon Aerial Imaging.*



East side of Block 4 looking towards Denver. Birds-eye view shows the multi-use building with office, parking and street level retail and restaurant.
Photo by Kaarl Hoopes, Falcon Aerial Imaging.



Northwest corner of Block 4 at the corner of 9th & Colorado. Birds-eye view shows multi-use building with office, parking and street level retail and restaurant. *Photo by Kaarl Hoopes, Falcon Aerial Imaging.*