

Category 6: Best Building Project – Specialty Contractor (\$6 - \$10 million)
Specialty Contractor: Hunt Electric, Inc.
Project Name: City Heights Residence Hall at CU Denver

Introduction

In the heart of downtown Denver, CU Denver combines urban life with an opportunity to receive an education for the future growth of its students. This campus has been operational for nearly 50 years but until 2021, has been a commuter campus as students resided off-campus. With the new City Heights Residence Hall and Learning Commons, this wasn't just a project for CU Denver, it's a game changer. City Heights is a space where first year students will live on campus for the first time in the University's history. It will help the college enhance and improve student retention while reducing the cost of living. As stated by CU Denver, "Studies have shown that students who live on campus stay in school, matriculate faster, perform better, and feel more connected to their faculty and fellow students".

With this bold vision, CU dreamed big with a 555-bed, seven-story building positioned in the center of campus. Not only does this location allow students walking access to all facilities around campus, but amenities are available within the City Heights, making this building truly unique. From the onset, CU knew Design-Build would be the preferred construction method. Under JE Dunn, Hunt Electric got to work to make the first student residential building exactly what the school envisioned.

Solutions of Special Projects:

Design of the City Heights began in August of 2019 with an aggressive completion of August 2021, allowing for just two years from the start of design to final completion! Hunt Electric acted immediately to make the most of the compressed timeline with construction taking place simultaneously with design. As soon as design was completed with certain facets, material was purchased and shipped locally to combat lengthy procurement lead times. All items were sorted, pre-packaged by area/room, and delivered to site using the just-in-time delivery method.

During design, Hunt Electric left no stone unturned. Design guidelines were utilized as a starting point with numerous entities within the University being consulted to ensure the right path was

followed. With power being derived from the on-campus Medium Voltage loop, the University was consulted to allow versatility for MV campus operations. Hunt accomplished this by incorporating two S&C Switches from the campus loop that feed two service transformers, one 120/208V and one 277/480V. These transformers allow the building to operate at two voltages for increased power distribution flexibility.

This same coordination approach was taken with the University on the Tele/Data backbone, campus Fire Alarm system, Security system, and Emergency Power distribution. Identification and coordination of all on-campus systems allowed the underground and tie-ins to be done perfectly within the planned sequence of construction without any delays to the project or interruption to existing campus facilities.

Excellence in Project Executions and Management/Team Approach:

With multiple state-of-the-art construction processes planned for the building consisting of structural steel, post-tension cable structure, and load-bearing cold formed framing, the team worked together to coordinate and sequence the building in the most efficient manner. This design led to a unique sequence of slab and structural assembly requiring the team to construct all facets with the end goal in mind. Think of it as assembling different sections of a puzzle separately with all sections connecting seamlessly at the end! The sequence began by pouring concrete and completing the second level deck on the north side of the building footprint, then moved to the south side to form and ready the slab on grade. This allowed the MEP crews to rough-in the underground on the south side while the concrete/structural crews worked on north side. Once complete the MEP crews could move to the north to complete the underground rough-in while concrete/structural crews build the upper levels. Alternating work between these two sections of the site decreased congestion and allowed trades to work faster and more efficiently. Having all crews on the same page with a detailed end goal, allowed the “puzzle to be assembled” as the building expanded.

Hunt controlled costs by establishing and maintaining the budget with accuracy from the start. As the building evolved in design, value engineering was utilized to absorb scope changes to allow the design team to deliver a better product at the same budget. Hunt worked with the design team and provided a lighting package that reduced costs while still achieving specific

photometric layouts and finishes unique to each aspect of the project. Collaboration prevented budgetary surprises as the team made educated cost decisions throughout each step of the process while holding each other accountable to the lead times and installation deadlines. Hunt's design team delivered detailed dorm room layouts and provided numerous classroom layouts consisting of multiple floor boxes, displays and data requirements needed for today's classroom environment. To allow design and future expansion capabilities, Hunt incorporated a versatile electrical power riser with electrical room placements enabling cost effective buyouts and installations. This involved precise placement of risers for electrical installations and required coordination with complex structural design to keep the risers out of all structural conflicts and avoid exposed ceiling areas preventing congestion and/or ceiling height restrictions.

Construction Innovation/State of the Art Advancement:

Hunt Electric's Engineering department coordinated with all the other trades in weekly BIM meetings. This empowered trades to work together to find solutions to problems before we encountered them in the field. These layouts were detailed and purposeful with the budget and end-goal in mind. Finishes were reviewed throughout the modeling process to ensure no detail was left unnoticed. This included lighting placements, feeder and branch routing, device and floor box locations and how they interacted with furniture which was being designed simultaneously.

Utilizing BIM, Hunt Electric used a Trimble Machine to set and survey over 1,800 points throughout the building via GPS to ensure accurate installation of all stub ups, in floor receptacles, and gear locations before walls were laid out. Hunt's in-house expertise from design to execution of the installation was evident throughout the entire process.

With lighting being a major factor, Hunt designed a Lighting Control System that enhanced student and faculty safety while saving energy. The system distributed wirelessly controlled relay packs throughout. This innovation reduced costs, improved the schedule, and increased end-user flexibility by using smartphone programmable relay packs. The result was a facility that is safe without compromising energy savings.

Environmental/Safety:

Hunt Electric made reducing environmental impacts the central focus of this project. The initial design goal was to target LEED Silver. However, as design and construction evolved, this goal increased to LEED Gold. The electrical design incorporated high efficiency interior LED lighting with occupancy and daylighting controls throughout all areas of the building. In the end, the building achieved 55.2% energy savings compared to an ASHRAE 90.1-2010 baseline. This equates to 38.1% cost savings!

Safety is an integral part of Hunt Electric's culture. As a result, there was zero lost time injuries with more than 62,000 labor hours worked. This was an incredible feat for a seven-story project executed on an active college campus. This safety record was the result of sequencing work, daily crew planning, and weekly safety talks to ensure all employees understood the hazards for each step of work. In addition, the COVID-19 pandemic hit in the middle of the project forcing immediate changes. Face-to-face meetings were replaced with video and phone conferences, crews were provided with additional PPE and onsite protocols for check-in and health verification were implemented. Crew hours were changed allowing team members to work safely, be able to communicate properly and still hit scheduled milestones.

Excellence in Client Service and/or Contribution to Community:

The Owner-GC-Sub relationship on this project was unparalleled. As stated by Josh Daniel, Senior Project Manager, JE Dunn: *"Hunt Electric was selected early in the CU Denver City Heights project on a design build best value selection process and have proven their significant value as an exemplary Trade Partner. Their Design and Estimating Teams provided thorough design development and cost analysis providing the University with the very best information to make key project program decisions with ultimate confidence. Hunt's field operations executed the work with grit, dedication, passion, and excellence that resulted in an exceptional client experience. It has been a pleasure partnering with Hunt Electric who rose to the occasion on all project challenges and was a key Team Member to the project's success."*

The City Heights project was the perfect showcase to display how taking a design-build approach brings all construction partners together, can deliver a project that meets a demanding schedule, and is built to the highest standards. Not only were the objectives met, but the building was turned over for TCO weeks ahead of schedule! This can only happen when there is a trusted relationship between the construction team and the ownership. Hunt Electric was proud to lead the way in providing electrical services to make the project an outstanding gamechanger for CU Denver.









