

ACE AGE Awards Submission 2017 Entry Form

Category: 11 – Best Building Project – General Contractor (Over \$70 Million)

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Project Name: Colorado State University Aggie Village North

Project Description:

As the culture of the Colorado State University (CSU) continues to grow, so do the needs of the campus in order to accommodate all of the incoming students. The new 10-acre Aggie Village North was designed as a residential learning community, with the three buildings that comprise Aggie Village designed to integrate academic spaces into living areas and encourage interaction among the students. The village features an inter-cultural connections community, as well as a grand courtyard with outdoor programming space for 500 people and office space for the Division of Student Affairs. The three-, four-, and five-story LEED® Gold certified residence halls feature 972 student beds with a variety of single/studio rooms and two, three, and four bedroom units, along with both private and communal bathrooms. Meeting each individual's price point, each fully-furnished apartment unit contains its own kitchen, dining area, living room, bathroom, and bedroom. With its ample bicycle stalls and close proximity to campus, Aggie Village North places a priority on the pedestrian experience.

To maintain the aesthetic look of the expanding campus, the building structure includes three and four levels of wood framing and structural steel elements above elevated concrete podium decks, asphalt shingles (on sloped roofs), thermoplastic polyolefin (TPO) roofing (on flat roofs), and concrete masonry unit (CMU) stair and elevator cores. The exterior skin composition includes precast panels, brick, stone, metal wall panels, stucco, and aluminum windows.

Solutions of Special Projects:

The CSU Aggie Village North project already had an ambitious schedule of 19.5 months, which was then further constrained down to 18 months by project re-bid requirements due to budget constraints. Despite this extremely aggressive schedule, PCL and our subcontractors created a phased plan to meet tight deadlines revolving around student housing needs.

Upon mobilization to site, the project team encountered and worked through unforeseen

abandoned utilities, frozen subgrade, and deeper-than-anticipated bedrock resulting in extended caisson drilling lengths and durations. Additionally, during the spring months in both 2015 and 2016, the project team encountered unsuitable subgrade materials and significant weather impacts that had a dramatic influence on the project schedule.

As one can imagine, these substantial challenges put the completion of the project and student move-in for the fall 2016 semester in significant jeopardy. There was a strong possibility that nearly 1,000 students may not be moved in for the fall semester pending completion of construction.

Knowing the significance of getting the project completed to facilitate student move-in, PCL worked collaboratively with the client and design team to put together and implemented 'outside the box' schedule mitigation measures (to accelerate the schedule due to factors outside of the project team's control), accelerated select critical-path subcontractors, and increased manpower to facilitate milestone dates on the project. At the peak of construction, over 500 workers were on-site daily, and over 1,000,000 work-hours were ultimately worked on the project, the culmination of which resulted in a successful, on-time completion.

Excellence in Project Execution and Management/Team Approach:

Upon award of the hard-bid Aggie Village North, the project team was tasked with looking for cost-saving measures to allow the incorporation of owner bid-day alternates that the client's end-user (CSU Housing & Dining Services) wanted to include in the project scope. This included durable solid surface countertops in the units, academic spaces/classrooms in the north building, and the build-out of the south half of the west building.

PCL and our subcontractors were able to collaboratively come up with nearly \$750,000 in cost savings items that were accepted and incorporated by the client. These ideas ranged from varying materials that provided the necessary quality at a lower cost point to altering design details in a manner that saved labor costs.

These accepted cost savings measures secured enough value for the end user to incorporate the

bid-day alternates that made the facility better align with student needs. Working collaboratively with the design team, these cost-saving measures were incorporated into the contract documents without compromising quality on the project.

Construction Innovations/State-of-the-Art Advancement:

The Aggie Village North project had numerous energy efficient and environmentally friendly design elements resulting in a LEED® Gold certification for the project. Some key elements included high efficiency boilers, sunshades, 800 bicycle parking spaces and covered bicycle parking, a car share program, construction waste recycling, low-flow fixtures, re-purposing of previously harvested wood into architectural elements, and an energy-efficient mechanical system sequence of operations.

These features will minimize yearly building operating costs for CSU's Housing & Dining Services providing additional funding for repair of other critical facilities. The inclusion of significant bicycle parking spaces, a car sharing program, and close proximity to the campus's MAX bus shuttle line encourages eco-friendly alternative transportation methods for students in the apartments.

Environmental/Safety:

Safety at PCL is more than a word that is preached by our project staff at the jobsites, it is a culture that starts at the top of our organization and is embraced by every employee no matter their position, location, or experience. PCL's safety program encompasses not only inspections and documentation requirements, but is also behavioral based. We believe in having workers who think safe and act safe, and demonstrate the safety culture to other workers around them, ensuring they look after one other.

Our project team is proud to have worked more than one million work-hours on the CSU Aggie Village project without a lost time accident. We attribute this to a strong culture of safety and safety awareness developed on the project through proactive oversight and management by the PCL team. While many safety measures facilitated this culture of safety on the project, we believe the following were among the most critical elements:

- **One-on-one training:** With the explosive growth in the construction industry in Colorado over the past three years, many safety infractions are the direct result of a lack of proper training or understanding of safety requirements, rather than a behavioral issue. To this end, the PCL team offered lunchtime safety training sessions and safety system presentations along with one-on-one explanations of safety requirements. These were completed with PCL and subcontractor employees to elevate the overall effectiveness of project site safety.
- **Behavioral Based Observation (BBO) training:** This program highlights the need to watch how people work and ensure proper use of available safety protocol. During project safety committee meetings, a random sampling of workers on the project were trained in proper BBO inspections. Positive safety behavior and practices were always emphasized and rewarded through the project duration
- **Worker empowerment:** During all-hands jobsite safety meetings, the PCL team focused on fostering a safety culture where all workers felt empowered to ask questions, look out for each other, and shut down any operations that they felt were unsafe.

The above measures and others facilitated a safety of culture on the CSU Aggie Village North project, and resulted in the tremendous safety statistics achieved on the project.

Excellence in Client Service and/or Contribution to Community:

The CSU Aggie Village North project has been a landmark project in many ways, including:

- At the time of its award, the largest capital improvement/construction project on Colorado State University's campus
- The largest student housing project ever constructed by Colorado State University
- One of the largest student housing projects ever constructed in Colorado
- The only apartment housing project located on the Colorado State University campus
- The project was awarded LEED® Gold certification
- Over one million workhours/trade worker hours performed on the project

- The project employed over 500 people at the height of construction
- Over 433,000 square feet of new construction on a 10-acre site
- Educational mixed-use facility, containing residential apartments, common areas/amenities, administrative/office spaces, and academic/educational classroom spaces

Despite unforeseen factors, the project team banded together as solution providers and completed the project on time to facilitate student move-in to the new apartments prior to school start. CSU was a key partner and an appreciative client, as summarized by Tom Satterly, associate vice president for Facilities Management:

“I wanted to congratulate [PCL] on the recent completion of 900+ rooms at Aggie Village North, well done! As a team, PCL, CSU Housing and CSU Facilities came together... and found a way to bring this project in on time for our students. Housing Director Jim Dolak commented to me today on the positives of the project, evidenced by our students and their parents moving in full force this week. Thank you for all the hard work and commitment!”









