Adolfson & Peterson Construction

Front Range Community College Westminster Campus Renovations

CATEGORY 3: Meeting the Challenge of a Difficult Job – General Contractor

OVERVIEW:

What started as a $12 million project evolved into a 6.5-year, $28 million partnership between our firm, OZ Architecture and Front Range Community College (FRCC) and a complete transformation of the Westminster Campus. Beginning in December of 2010, we have led non-stop renovation and tenant improvement work in areas throughout the quarter-mile-long FRCC facility. The result is a more functional, friendly and welcoming environment for the more than 10,000 students attending the institution each year.

The multi-phase project included the consolidation of all student services, including admissions and registration, advisement, career counseling, tutoring, testing, financial aid, disability services and cashiers, into one centralized 35,000-sf location. Features of this new Student Center project include a chic student lounge, coffee station, lactation station, new bathrooms and five study rooms that can be used for student clubs and meetings.

The team's other campus improvement efforts in the facility included reconfiguration of spaces, HVAC upgrades, structural upgrades, building envelope improvements and cosmetic upgrades to science spaces, mathematics classrooms, a computer commons/IT suite, nurse bed lab, OR suite and performance/lecture hall.

SOLUTIONS OF SPECIAL PROJECTS:

Working in a quarter-mile-long facility that opened in 1977, with several subsequent renovations and additions, presented unique challenges that we overcame in the following ways:

Focus on Pre-Planning. We led a detailed preconstruction process that included investigating the in-place building systems, verifying as-built documentation and developing method of procedures for the construction to minimize disruptions of student and faculty activities. The

discovery process conducted by the project manager, site superintendent and major subcontractors included studying systems that may be affected, looking above ceilings to verify existing conditions and understanding how planned shut-downs and tie-ins would affect ongoing operations. Pull planning sessions were used to schedule and set expectations, while allowing for multiple shifts per day enabled work to be completed quickly during class breaks.

Managing Changes to the Project Team. The original project architect was replaced during construction, and the owner's representative retired before the project was completed, which meant that we became the knowledge-base for the building. We worked closely with OZ Architecture – once they were brought onboard – and FRCC to make sure designs were feasible without requiring shut-downs to essential services. Communication and teamwork were the keys to success.

Maintaining Building Functionality. All work had to be designed, planned and executed perfectly in order to ensure that no scheduled classes or events were impacted throughout construction. This sometimes required unique processes, like working on the mechanical systems backward from the diffusers back to the air handling unit in order to keep the air flowing until a shut-down to changeover to the new units could be managed. In addition the team did a lot of night work in order to avoid disrupting the class schedule. No classes were canceled due to construction in the more than half decade that our team was on campus.

EXCELLENCE IN PROJECT EXECUTION AND MANAGEMENT/TEAM APPROACH:

On an occupied renovation our role is to make the owner's life easier from start to finish. During preconstruction our team helped the owner and the design team understand the impacts of decision-making so that during construction there were no surprises.

Focus on Budget and Schedule. The aging FRCC Westminster campus was desperately in need of upgraded spaces to better serve the needs of 21st Century students. The more than 20 different scopes of work completed by the project team throughout construction were funded through more than a dozen different sources, including student fees, state bonds and additional higher-ed funding. This led to the growth in the contract size from less than $1 million to more than $28

million as funding became available. In our firm, FRCC had a partner that was always looking at how best to plan construction to produce high-quality results, while stretching every dollar to ensure the budget delivered the desired scope of work. The schedules were developed collaboratively and had very hard deadlines based on the start of semesters and scheduled breaks. The team met all deadlines and delivered within the budgets for each phase.

Delivering Quality Construction. The highest material quality was contained in the new student center space. The team went above and beyond to make sure that this space was inviting to students. For example, during pre-planning it was discovered that the lobby area was 3-1/2 inches out of level. In order to give the illusion of a level floor the new tiles installed in the area were all custom cut. In addition, a 12-foot-wide switchback stairway was installed that included some high-end architectural metals. Due to space limitations the stairway had to arrive in pieces and welded together in place. The quality of the finished stairway made it impossible to tell that it had not been prefabricated offsite. This focus on quality construction extended to the spaces that are invisible to public. Our robust QA/QC process was implemented and FRCC is extremely satisfied with the final product.

CONSTRUCTION INNOVATIONS/STATE-OF-THE-ART ADVANCEMENT:

Innovative Solutions to Maintain Building Function. The FRCC Westminster campus is an important institution for continuing education in the region, helping to improve the lives and livelihoods of adults of all ages. This importance to the community and the 10,000 students who walk its halls each year cannot be overstated.

For this reason, our firm, in coordination with our design partners, developed innovative strategies and scheduling techniques to guarantee the facility would continue serving students at full capacity during construction. Some strategies included:

- Planning for future work that was two years or more out from being completed in order to find space in FRCC's academic calendar for when the construction could take place and allow time for the school to alter the class schedule as needed.
- Cator Ruma, acting as the MEP Engineer, designed all the air handlers at the beginning of the project despite the changeovers having to happen at various times

throughout construction when a shut-down could be managed. The 20,000-gallon hydronic system was shut-down only once over a school break for installation of new taps and tie-ins to the new air handler units.

- Custom wood-framed rolling scaffolds were developed that could be moved in and out of spaces to accommodate night work, but keep the corridors clear during the day.
- The team created as-built drawings with hyperlinked RFIs that could be easily searched. The team maintained a paperless office trailer, which kept all the construction documents up to date and eliminated the potential for error.

The team's nimbleness and creativity allowed FRCC to have the benefits of a renovated facility with no surprises or unplanned disruptions.

ENVIRONMENTAL/SAFETY:

Focus On Safety. Our work on the FRCC Westminster Campus Renovations required safety to be the primary focus of both the planning and execution of construction activities. On any given day during the fall and spring semesters, up to 6,000 students, staff and visitors could be navigating the building corridors, often immediately adjacent to where work was proceeding. The unique building design meant nearly all work was completed within or near these corridors. Maintaining the student and faculty safety, while keeping the building completely operational throughout construction was key. To that end, the team applied some tried and true methods that have proven successful:

- Hardhat stickers allowing for the easy identification of all construction personnel
- Isolation of work areas behind temporary walls, which helped with noise and dust mitigation, while also controlling access
- Unique custom scaffold and scissor lift crane placements specific to the work zone
- Required project-specific safety orientations for all AP and subcontractor staff
- Regular safety meetings to discuss specific project hazards and keep everyone apprised of FRCC requirements and events
- Wayfinding signage directing for alternate routes

- Regular communication with faculty and staff to inform on upcoming construction activities

Unique to this project, our team was incorporated into the campus crisis management planning for security and lock down/lock out. The team trained with the campus security personnel to ensure that everyone knew what to do in case of an emergency. These procedures were relayed to the subcontractor partners during their orientations and updated as needed at all-hands safety meetings. The total hours worked on the project approached 200,000 with zero recordable or lost time incidents.

EXCELLENCE IN CLIENT SERVICE AND/OR CONTRIBUTION TO COMMUNITY:

Revitalizing FRCC's Westminster Campus will have a profound impact on the community by continuing to provide a top-notch educational facility for generations to come. The client expressed their happiness with our work as follows:

"(Adolfson & Peterson Construction is) meticulous in their estimating, bidding and contracting process selecting the best subs for the job that provide a good quality product. I have been immensely impressed by the quality of the construction and amazed by the speed that they are able to drive their projects always completing the project on time, even when we have caused delays.

I have not met one person from AP that is not professional, responsive, have great personal values and ethics, are dedicated to their work and just easy to work with."

- Therese E. Brown, Vice President, Front Range Community College Westminster and North Metro


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