

Adams 12 FutureForward at Washington Square

Adolfson & Peterson Construction

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11. Best Building Project – General Contractor (\$10-\$40 Million)

Overview

The completion of FutureForward at Washington Square (FFWS) — Adams 12 Five Star School District’s newest Career and Technical Education (CTE) campus — fulfilled a promise of a community-supported 2016 Bond Program to expand CTE opportunities for students across the District by 80%.

During construction, the District launched a year-long initiative to develop a unique brand for its CTE program, which engaged more than 70 focus groups and two surveys with input from more than 3,500 people - students, staff, parents and industry partners. Ultimately, stakeholders chose “FutureForward” to encompass all CTE programming District-wide.

Until FFWS opened in August 2020, approximately 25% of students interested in CTE programs at the District’s existing Bollman Technical Education Center were being turned away due to space constraints, a process Principal Marvin Lewis described as "agonizing.” The construction of a second, centrally located CTE campus to meet a growing student demand for career training was identified as a priority of the 2016 voter-approved bond, which also provided funding for a major renovation of the Bollman campus. Adolfson & Peterson Construction (AP) was selected for both projects.

At the school’s grand opening, Principal Marvin Lewis remarked that, "It took a lot of hands to make sure we could walk into this building, even today, and see how beautiful it is," noting the perseverance of AP to continue construction through COVID-19 and other site-related construction challenges.

AP constructed the new 49,500 sf facility, which features three high-bay learning labs to accommodate existing A12 CTE programs — such as construction trades, welding, an introductory diesel mechanic course and EMT training — and expanded programming that includes criminal justice, forensic science and fire science programs and an advanced diesel mechanic program. This new facility brings to life Adams 12’s vision for expanding CTE programs throughout the District.

Solutions of Special Projects

The project faced several site utility complications that threatened the project schedule. As-built drawings failed to show two existing utilities onsite. A 50-year-old sewer line was discovered along with a section of water line that then had to be upsized. Per the City, 1,000 feet of the sewer line had to be internally flow-filled and another 1,000 feet internally lined to prevent the imposed load of the 126th Avenue Extension from collapsing it.

Stormwater utilities are typically the deepest and should be installed first, but on this project, City plans and permits were delayed nearly a year. Consequently, all utilities were installed “at risk” to maintain schedule. Domestic water, sanitary sewer, fire, electrical and geothermal utilities were installed first, which caused a complicated, costly and time-consuming approach to retroactively install stormwater utilities. To avoid damaging the new utilities, extensive planning, coordination, survey, as-builts and hydrovac excavation was required to ensure the stormwater could be installed without striking other utilities. An elaborate temporary drainage system was also required to allow water to flow away from the 14’ over excavation of the building.

Project Management

From budget issues to unforeseen site-related delays and the onset of COVID-19, this project was not without substantial challenges. Initially, the project was \$6.2 million over budget. After identifying more than 125 value engineering opportunities, AP worked closely with Cuningham Group to optimize efficiencies, such as modifying selections for the superstructure and resulting

exterior skin materials. Through these efforts the team reduced the overage to approximately \$1 million by fGMP, at which point the school was able to secure additional funding to cover the overage.

About halfway through the project, the COVID-19 pandemic arrived. Faced with unprecedented uncertainty, AP implemented the highest levels of safety and precautions, working as a team to move forward with the established project schedule.

The onset of COVID-19 presented a unique set of safety challenges, but our team responded quickly and implemented safe working guidelines that respected physical distancing, new planning protocols, jobsite screenings and additional hygiene solutions, all of which kept the construction site open and safe for working.

Construction Innovation

Designed with an emphasis on energy efficiency, the campus features a full geothermal well system to support the building's radiant floor heating and cooling, which includes 70 wells for the new structure and 40 wells to support future expansion. This specialized system, which entailed 505' deep wells without the need for backup boilers, was designed by Image Engineering Group (IEG), a mechanical engineering firm that was specifically chosen by our design partner for their expertise and focus on environmentally friendly MEP systems for school environments. The unique and sophisticated system also features needlepoint ionization filtration, which enhances air quality with very low energy output.

Our boots-on-the-ground mechanical engineering partner, US Engineering, assisted with building understanding, flagging issues and concerns, and doing the hard work of learning and applying a new-to-us technology. With collaboration at the lead, we submitted hundreds of change directives and worked closely with the design team to clarify intent and ensure that the system operated to its full potential. Ultimately, the cooperative process was an excellent learning experience for all involved including IEG, who gained useful insight into how their unique system functions in different contexts.

In addition to the unique geothermal technology that keeps the building functioning efficiently, the building features a high-performance envelope that includes insulated precast panels, masonry veneer and metal panel walls with continuous insulation, thermally broken window frames, optimized glazing as well as LED lighting throughout.

Safety

Every employee onsite underwent an extensive safety orientation and attended weekly toolbox talks, monthly “all hands” meetings and crisis management drills. The team coordinated with the City of Thornton to provide live fire hydrants and a paved access road for access to the building prior to beginning vertical construction.

Before earthwork began, testing revealed asbestos-containing materials in the soil. 6-12” of topsoil was abated and repeated until testing determined safe air and soil quality levels. AP hosted asbestos awareness training and adjusted the schedule to compensate for delays.

Much of FFWS was built using precast panels embedded with steel, which was welded in angles/seats and tied to the structure at additional embed locations to bring the superstructure together. This complex technique requires the use of powder-actuated fasteners, which, as they are similar in form and function to a firearm, require special licensing to operate. After assessing trade partners and discovering that many were not qualified to use or work alongside the required equipment, AP enlisted the expertise of a representative from the equipment manufacturer (Hilti) to conduct onsite training and maintain compliance with our Safety Exhibit B. Additionally, a large crane was brought onsite to transport the panels, which required multiple shutdowns and proper zoning to prevent safety incidents.

Community Contribution

As the skilled workforce shortage becomes clear on the national scale, education systems, employers and current and future workers are looking to Career & Technical Education (CTE) programming to fill the gap and support the future economy.

In 2016, for the first time in 12 years, Adams County voters passed a bond that would afford significant upgrades to schools in the Adams 12 Five Star School District. Among substantial improvements was the commitment to expand CTE opportunities by 80%. Today, students are excelling in the District's vibrant CTE program, which has been named "FutureForward" to represent the competitive advantages CTE students gain as they move into their post-high school futures.

A 2020 study on job growth and education requirements, conducted by Georgetown University, concluded that 2/3 of the country's 7 million+ open jobs are medium skill positions that require training or education beyond high school, but not a full four-year degree. The same study revealed that only 43% of the workforce are trained to fill those jobs.

CTE programs offered by FFWS provides students a competitive advantage as they enter the workforce. Students can earn concurrent enrollment college credits, as well as certifications including CNA, OSHA, HBI, I-CAR, ASE, PSM-I, EMT, CPR, HAZMAT, CPAT and AWS. The school also hosts signing events for students who are hired by companies before they graduate, much like the events schools host when students receive scholarships from major universities for sports.

A "Building as a Teaching Tool" design philosophy was carried throughout the design of FutureForward at Washington Square and features exposed building structural systems as well as cross bracing, exposed mechanical ductwork and the use of raw steel.

Excellence in Client Service

"To say this project would not have been the success that it was without AP's exceptional team is an understatement...The AP team's professionalism mixed with fun personalities all striving for teamwork, is truly what helped make a complicated project less stressful and even enjoyable. I welcome the opportunity to work with this team again and cannot appropriately express the gratitude and accolades that this AP team deserves for a project well done."

- Theresa Wieck, Construction Sr. Project Mgr., Adams 12 Five Star Schools









