

AGC ACE Award Submittal

Project Name: HCA Sky Ridge Medical Center Women's Center and Surgery Addition

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

Submitter: JE Dunn Construction Company

Reaching for the Sky....

To deliver the Women's Center and Surgery Department additions at Sky Ridge Medical Center, the team had to aim high and reach new heights. Going vertical has connotations as it relates to the extreme sports of skateboarding, snowboarding, and BMX biking, typically it means an impressive vertical lift from ones starting point. This same connotation carries over into vertical construction.

Imagine taking a building, exposing the top and adding multiple floors vertically. Now imagine that building is a fully occupied and operational during this construction. Now imagine that occupied and operational facility is a lifesaving hospital! An impressive undertaking to say the least, compounded by a compressed schedule. Not only was this team able to deliver this substantial project on time, they did it safely with a mindful eye on the owner's budget and with respect to the needs of the community.

Originally constructed in Douglas County in 2003, a county which up until then had been without an acute care hospital, Sky Ridge Medical Center had been providing services for the south metro Denver community for a decade when this project began. The catalyst to this expansion effort was a desire to meet the needs of the growing community with expanded care availability and also allow the hospital to serve beyond the community by becoming a destination hospital known for its best in care practices.

The magnitude of the scope for the Women's Center and Surgery Department addition cannot be understated. From a big picture standpoint the project included a 116,000 SF multi-wing/multi-story vertical expansion, a 19,500 SF horizontal expansion, and 59,000 SF of renovation. This encompassed:

- 90 Bed MedSurg Expansion
- Expansion of 4 Operating Rooms
- Expansion of the Spine and Joint Center

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- Expansion of the CUP with new chiller, generator, boilers and 5 new air handlers
- Atrium Addition
- 20 Bed Labor and Delivery Expansion
- 28 Bed NICU Expansion
- Medical Records Renovation
- Pharmacy Renovation to become space for Materials Management
- PACU Renovation
- Central Sterile Renovation
- Addition of 2 C-Section and Pre-op rooms
- Renovation of patient floors 3-6 with new finishes
- 16 Unit Birthing Center Addition

All of this was completed in a 21 month schedule! Undoubtedly, this transformation would have a significant positive impact on the community and beyond and our team was committed to being a valued contributor to that positive impact.

Solutions of Special Projects:

This project was completed during one of the rainiest falls in Colorado history, the 2013 Colorado floods also known as the 100-year flood. A storm that washed out roads, flooded houses and wreaked havoc on the state. This created a significant challenge for the team in that delivery of the vertical expansion required removal of 2/3 of the skin from the existing tower while it remained operational. Safety and infection control were the cornerstones of our promise to the hospital, to deliver on that promise we worked quickly and consciously.

Working 12-14 hour days we were able to remove skin from portions of the tower and hoist up temporary metal stud walls with Densglass and fire proofing to re-enclose the structure within the same day. The temporary walls were prefabricated to allow for fast installation. Through this process we were able to eliminate the loss of patient rooms due to rain. We continuously worked closely with the hospital to maintain needed bed count to ensure their required revenue flow.

Another challenge was the distant proximity from the jobsite to our construction office, parking and laydown. The location was selected in an effort not to impede patient access and parking.

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But in a fast track project, every minute counts! To foster productivity and efficiency we set up a large lunch tent and rotated lunches to allow trade partners to eat next to the building to keep them close to the jobsite.

To add further complications, this project was delivered concurrent with a new medical office building being completed on site by another contractor. Close coordination was required with this contractor to allow them to tie in to the Spine and Joint Center lobby that we were working in and to effectively coordinate site logistics. This added to the already complicated coordination effort required to manage our many teams working to deliver the multitude of sub-projects under the umbrella of the massive Women's Center and Surgery Addition project. Some of these sub-projects included the renovation of the Central Sterile Room that feeds equipment and tools to the operating rooms. For this project we had to flip the clean and decontaminated sides of the room which required 10-12 phases to complete in order to keep it fully operational during construction. Further, all utilities for the renovated 2nd floor spaces had to tie-in through the 1st floor. This meant working over 1st floor spaces including a laboratory that functioned 24/7, Operating Rooms, Central Sterile, Cath Lab, Angio Lab, and PACU, all without any demolition to these 1st floor spaces. To accomplish this we painstakingly removed light fixtures and diffusers, working 1-2 ceiling tiles at a time over a 43,000 SF area.

Excellence in Project Execution and Management/Team Approach

Supporting the expedited delivery of the Women's Center and Surgery Addition, we worked with RK Mechanical and Berg Electric to prefabricate bathroom pods in a 30,000 SF warehouse. This consisted of the complete build out and rough in of each bathroom. Once prefabrication was completed and ready for installation, the units were trucked to the site and lifted in place. This minimized the need for onsite laydown space. Prefabricated headwalls were also manufactured offsite, which allowed for less manpower needed onsite for installation and reduced waste. This saved both time and money.

To effectively manage this substantial project, and all of the projects within it, we held trade partner meetings at 8AM every morning to coordinate each day's work and develop look aheads. This project faced constantly changing conditions that required diligent communication and

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planning. For instance a doctor might be conducting a microscopic surgery that could be impacted by the slightest noise or vibration that we may cause, so we would have to adjust our approach on the spot. Every department head had direct contact numbers for our project managers and superintendents to maintain a constant flow of communication, this included the heads of the ICU, ER, PACU, Preop, and ORs.

Construction Innovations/State-of-the-art Advancement

Innovation and quick solutions were an everyday necessity. Since this was an addition to an occupied building on an occupied campus we utilized BIM to understand the most efficient route to run the bathroom pods for installation to minimize impact to facility operation. We also began prework 9-10 weeks prior to construction commencement to install 2 foot stubs to the roof of the existing structure. Many of the existing columns were buried or too low, so we had to take the time to identify and expose them to install the stubs. This prework ultimately cut 2 ½ months off of the construction schedule! Not only did this early work save us time in construction, it also allowed us to survey the points to produce accurate shop drawings. Every piece of steel was custom cut for accuracy based off of the stub locations.

Environmental/Safety

We recognize the value of continuous improvement and are focused on employee safety training, behavioral based safety practices and leading indicators. JE Dunn has partnered with CAT Safety Services to expand our safety skill set at all levels of the organization. Superintendents and Project Managers have a minimum of OSHA 30 Hour training while field Foreman have a minimum of OSHA 10 Hour. Field supervisors are also focused on managing leading indicators vs lagging indicators on their projects. Safety is everyone's responsibility: everyone, everywhere, all the time!

For the Sky Ridge project we went a step beyond and employed a full time safety manager who served as an additional set of eyes to ensure no relax in safety procedures and infection control practices. During the course of this project we encountered two OSHA inspections, two state health department visits, JACO inspection, in addition to other governmental agency

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inspections...ALL WITHIOUT INCIDENT and were able to deliver this project without a single lost time accident.

Excellence in Client Service and/or Contribution to Community

Delivery of this project was marked by a community celebration. For the team the celebration marked the end of a long and eventful journey, a journey that brought them closer together as a team and fostered life long bonds with hospital staff. “We spent so much time together we really became a family. We were so entrenched, we knew to be successful we had to have each other’s back,” said Adam Gross, Superintendent, JE Dunn Construction. Working together, this team reached for the sky and pulled off one of the most difficult construction projects in the state!

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Offsite Prefabrication of Bathroom Pods



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