

GE Johnson Construction Company

St. Francis Medical Center Expansion

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

Overview

Imagine facing a medical emergency – your baby is born prematurely, your spouse is having a heart attack, you're seriously injured in a car accident – and not having access to a hospital. Maybe there's one in your area but it's overcrowded and incapable of providing timely assistance.

That's the scenario that St. Francis Medical Center (SFMC) is working hard to prevent. In the quest to provide the most advanced, highest quality healthcare in the Colorado Springs area, SFMC recently recognized the need to expand their facility.

The U.S. Census Bureau estimates that El Paso County's population grew by 10.6% between 2010 and 2016, and it continues to grow. This population increase has driven the demand for services at SFMC.

Since 2009, SFMC emergency department (ED) patient volumes have doubled to 53,000 visits per year. Surgery volumes have increased 63 percent, and the number of babies admitted to the neonatal intensive care unit (NICU) per day has more than doubled.

This new addition to the existing SFMC campus will meet the growing need for NICU and ER services in the Colorado Springs community. It encompasses 168,580 square feet of new construction across a four-story expansion.

The first floor is the new emergency department with additional shell space. It consists of 31 exam rooms and six observation rooms, with intake and SuperTrack patient segmentation spaces for those with less acute injuries. The second floor adds four new operating rooms (ORs) and post-anesthesia bays, support space, and shell space for future expansion. The third floor includes a wellness garden, NICU expansion that more than doubles capacity for baby care, and

antepartum rooms. The new design is family-centric, providing showers and bathrooms for family members. The fourth floor is devoted to mechanical space.

A new garden level was also part of the scope, featuring covered parking and an emergency medical services lounge. The precast garage contains structural steel, stucco, brick, and storefront windows.

Solutions of Special Projects

GE Johnson was contracted by Penrose St. Francis under the integrated project delivery (IPD) method. This required continuous and detailed collaboration with the client, design team, and other stakeholders to effectively reduce cost and improve schedule. Working as a united team, challenges were readily overcome, obstacles more easily recognized, and solutions were clearly and quickly discovered. Resolving conflicts as a group resulted in more efficient and informed decision-making.

Communication was essential to avoid disruptions to the existing facility since the addition connects with the existing hospital in multiple locations. In each case, the IPD team collaborated with SFMC staff to determine the best approaches and work times to reduce the impact to the operating facility.

One of the keys to the success of this IPD project was co-location. Having the various teams together in a common workspace improved comradery, sped up and streamlined communication, and eliminated the siloing that can often occur on construction projects. Using the IPD method, the team successfully completed the project 57 days ahead of schedule and approximately 4% below the construction estimate.

Construction Innovations/State-of-the-Art Advancement

The SFMC expansion and addition was the first IPD project for Centura Healthcare and one of the first in the State of Colorado. This delivery method contributed to the success of the project. The GE Johnson team later had the opportunity to present lessons learned to various groups to assist in educating others in the industry about this new-to-Colorado method of contracting.

The first step in the design process was an analysis of the current state of the facility. This involved an environmental perspective, considering vehicular traffic patterns, demographics, the character of the existing facility, views to and from the site, prevailing winds, sun patterns, utility locations, easements, and zoning restrictions. In addition to site analysis, the design team observed the existing facility to better understand how departments operated, patient and staff behavior, and answer architectural questions regarding light, sound, flow of movement, finishes, and aesthetics.

Following this exercise, the design team and key SFMC staff crisscrossed the country, visiting NICUs at the University of Kansas Hospital (Kansas City, KS), Children's Hospital Colorado (Denver, CO), Saint Joseph Hospital (Denver, CO), and Memorial Hospital of South Bend (South Bend, IN), as well as the EDs of University of Colorado Hospital (Denver, CO), Methodist University Hospital (Memphis, TN), and St. Anthony Hospital (Denver, CO). The team jointly attended conferences to learn about trending NICU and ED care models, advances in technology, and outcomes of design.

The design team then began to create a working program. In a two-day programming session, they examined the working programs for the ED and NICU and provided an evaluation of the allotted square footage and quantities. NICU and ED staff tested layouts and shaped their ideal departments.

Following research by the design team, the Family Integrated Care model was adopted for the NICU. This model serves to decrease average length of stay for families by fully involving parents in the day-to-day care of their infants. Because parents are an integral part of the care team and participate in decision-making during the development of their infant, single-family rooms became the focus for the new NICU.

The single-family room encourages positive family interaction and parental overnight stays. Each private room features tuneable lighting to support infant circadian rhythms, refrigerator drawers for breast milk, a family sleeping zone with privacy curtain, and a full restroom with

shower. A family pre-discharge room supports parents preparing to exit the hospital, modelling the experience of home with the safety net of nursing staff nearby. The NICU features biomimicry throughout the unit, imitating natural biological systems, as well as indoor and outdoor rest areas to provide a comfortable environment for families.

Creating a baby-friendly hospital was a project goal. The Baby-Friendly Hospital Initiative (BFHI) encourages breastfeeding and provides resources, skills, and support for mothers to be able to continue breastfeeding their infant. Research shows that breastfeeding protects infants from illnesses; protects mothers from breast, ovarian, and heart diseases; supports a mother-baby bond; and reduces cost to a hospital and to the family.

Environment/Safety

In addition to the implementation of GE Johnson's Stretch & Flex program (a daily dynamic stretching warm-up for everyone on site) and other standard safety protocols, the St. Francis project team implemented something called, "What if...?" This program allowed team members to submit suggestions for improving safety, quality, and production. A review panel met regularly to consider the suggestions and to select the ideas to be implemented. The panel also determined individuals that should be recognized for making a significant contribution to the program. Awards and prizes were issued on a monthly basis. This program empowered anyone on the jobsite to speak out and contribute to the project.

Because St. Francis was an IPD project, trade partners were empowered and expected to help manage safety and be fully engaged in the safety protocols on the project. Having the trade partners accept responsibility and play a key role added another layer to the safety program. GE Johnson offered training to all trade partners to ensure they had an understanding and practical knowledge of safe practices.

Excellence in Client Service and/or Contribution

Construction of the original SFMC facility was completed by GE Johnson in 2008. To better serve the increasing patient load, SFMC once again selected GE Johnson for the largest onsite

expansion to date. The project represents the continuation of the Penrose-St. Francis Health Services/GE Johnson partnership, a relationship that has spanned 30 years.

The impact the new SFMC facility will have on the Colorado Springs and El Paso County community will be both substantial and long-lasting. The benefits of the expansion include:

- An enlarged, more efficient emergency department. Using a split-flow model of care improved the efficiency, reducing patient wait times and improving patient satisfaction. This was achieved by focusing on a proper level of acuity, more accurate patient room assignments, clarified wayfinding, improved ease of patient/family communication with staff, and improved organization of staff stations and resource layout.
- An expanded NICU with decreased length of stay. After research by the design team, Family Integrated Care was adopted. This model decreases the average length of stay by encouraging parents to spend time with their infants and assist with care. The single-family room supports Family Integrated Care by creating an environment for positive family interaction and parental overnight stays.
- Additional surgical services. Through cost and schedule gains obtained in other areas of the project, four operating rooms were added to the original design.

The 168,580-square-foot expansion meets the swelling need for emergency and specialized healthcare in the Colorado Springs area. This addition enables St. Francis Medical Center to provide area residents with necessary birthing, neonatal, pediatric, emergency, trauma, imaging, surgical, and critical care services. It is also enabling SFMC to better carry out their mission: caring for those who are ill and nurturing the health of the people in our community.