Craig Hospital Addition & Renovation

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

The Craig Hospital Addition and Renovation stands as one of the most logistically challenging, personally rewarding projects in GE Johnson's 50-year history. In total, this project spanned forty-two months of construction, working in, around, and atop a functioning rehabilitative healthcare facility while it was continuously operational, serving patients and its community. The required phasing of the project over the forty-two-month timespan was complex, requiring detailed pre-planning and coordination of many parties. The dynamics of the communication and relationships among the hospital executives, staff, patients, and patient family members was paramount, requiring and deserving a dedicated Patient/Staff Liaison from GE Johnson. Additionally, coordination with the surrounding neighbors and the City of Englewood was a key element to ensure project success. GE Johnson maintained an excellent safety record and contributed to the establishment of a robust and successful project culture which fostered an involved and proud project team.

The project encompassed five phases which were each comprised of sub-phases to add new patient rooms and offices; this was no small feat. Craig specializes in treating and rehabilitating patients with spinal cord injury and traumatic brain injuries who are extremely sensitive to various aspects of the construction process such as noise, lights, and vibrations. All construction was performed and completed on schedule while Craig Hospital was fully functional and occupied.

Coordinating Success

A key factor to the project's success was the great communication efforts by the entire project team – including RTA Architects, Craig Hospital, GE Johnson, and major subcontractors such as MTech, Olson Plumbing, Encore Electric, ISEC, Gary Leimer, Colorado Hazard Control, and KHS&S. The team worked together to have robust communications and coordination throughout every phase of the project.

GE Johnson provided a dedicated Patient/Staff Liaison to coordinate with the hospital staff, providing frequent communication and answering questions and concerns of the end users. This individual was the conduit through which Craig Hospital and the GE Johnson team, allowing both staff and patients at Craig to voice concerns or ask questions throughout the construction process. The Patient/Staff Liaison was integrated into all coordination and communication between the hospital staff and the construction team, no matter how major or minor the coordination efforts were. This individual was available after hours and on weekends, as well, in the event of an emergency.

The GE Johnson project team coordinated with the Craig Hospital executive team to setup a project-specific website for staff and patients to access updates on the latest construction news and upcoming activities. Users could log on and submit questions, as well, which were answered promptly by GE Johnson and Craig Hospital staff.

Coordination did not stop within the footprint of the project site. The project team coordinated with the local neighborhood, including private homeowners and business people, to mitigate any disruptions in the area. This included providing public safety considerations such as safer sidewalks, better ADA access for the surrounding area, and a maintained bike path throughout construction. GE Johnson coordinated with the City of Englewood on shut downs of access roads to the hospital to maintain good wayfinding for detours and temporary closures. Additionally, there was special coordination with the nearby Swedish Medical Center to ensure coordinated logistics, services, and emergency routes for extended patient care.

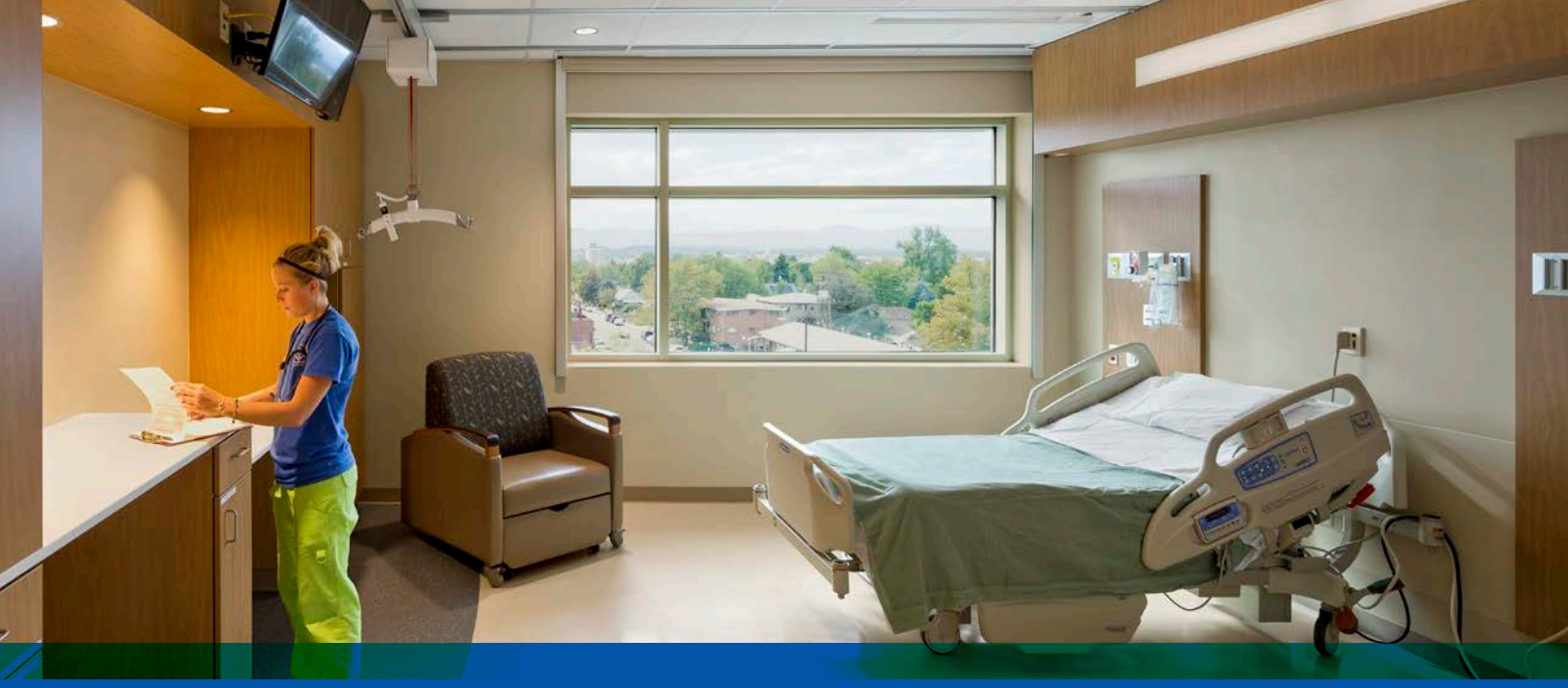
Overcoming Obstacles

The project faced a variety of obstacles and challenges. These included logistics coordination for street closures of the surrounding neighborhood, mitigating unforeseen job conditions, and executing a construction plan which supported continuous operation of the existing facility.

The logistics coordination of the project was constant. One particularly challenging task was shutting down Clarkson Street, which ran through the middle of the Craig Hospital campus. The shift from a through-traffic street for the neighborhood traffic, staff and patients at both Craig Hospital and Swedish Medical Center, was a major step-change. The re-route also included changing the emergency ambulance route to Swedish Medical Center.

This challenge was overcome through close coordination and negotiation with the City of Englewood's various departments, including building department and public works. Even public bus routes were re-routed. It was agreed that during the construction work some of the city sidewalks, crosswalks, and ADA ramps would be updated. This closure also required coordination and planning with Swedish Medical Center, their hospital, staff, and patients. Numerous meetings with the City and Swedish Medical Center were held in order to work through all the details to

Reception



Patient Room

change Clarkson Street from a through traffic street to a dead-end turnaround at Craig Hospital. Coordination for directional and wayfinding signage was agreed upon and custom-made to accommodate the change.

As on many projects, unforeseen job conditions threatened to extend the schedule. During excavation, an old barrel cask pipeline was found which had to be removed in order to properly excavate and install the new underground sanitary and storm systems. When construction of the addition began, walls and foundations were discovered in the existing structure which were not shown on any historical drawings. Abandoned foundation walls were found at the old pool area of the structure, along with interior brick and concrete masonry unit (CMU) walls which were buried in drywall framing. Both had to be demolished. Additionally, unsound flooring was found various areas which had to be demolished and re-poured. Old sidewalk slabs were incorporated into the building slab during previous expansions which had to be shored and reinforced. Existing slabs had electrical conduits which were still live. This unforeseen condition was dangerous and could have affected the functioning hospital in adverse ways. These discoveries negatively affected the flow of the planned construction activities, but the team accommodated each of these surprises and reworked the plan using building information (BIM modeling), self-perform labor, and prefabricated exterior wall panels to stay on-schedule.

The project was further complicate by the requirements of occupied site construction. Wall separations between occupied spaces and construction required temporary framed and dry walled tunnels which had a minimum one-hour fire separation rating, a functioning detection and fire protection system, and emergency lighting and notification of egress. The construction team constructed the separations, which were

inspected and approved per code, in order to have a way for the existing hospital staff to get around while still building new spaces around the separations. Ultimately, the separations, which acted like tunnels and averaged seventy-five feet in length, would be demolished and the existing spaces were completed for renovation. Often, the tunnels were directly in the middle of the main renovation floor space. Additionally, the construction team created temporary locations for emergency stations such as the generator panel, medical gas panels, and fire alarm panels. These were located and re-located various times throughout construction to accommodate the code for a functioning hospital.

The project required a dedicated fire watch professional to inspect and log all areas which did not have fire protection. The responsibility for meeting this requirement was shared between GE Johnson and Craig Hospital staff in order to provide twenty-four-hour coverage for the project. From a fireproofing standpoint, the existing conditions within some of the mechanical room spaces made it very difficult to complete the renovation per code requirements. The construction team worked closely with Craig and the design team to develop an alternate method of code compliance through means of the State-recognized FSES, which made the renovation possible. This required extensive discussions with the local fire department, City of Englewood Building Department, and the State DFS with coordination from everyone to ensure compliance and quality construction.

Excellence in Execution

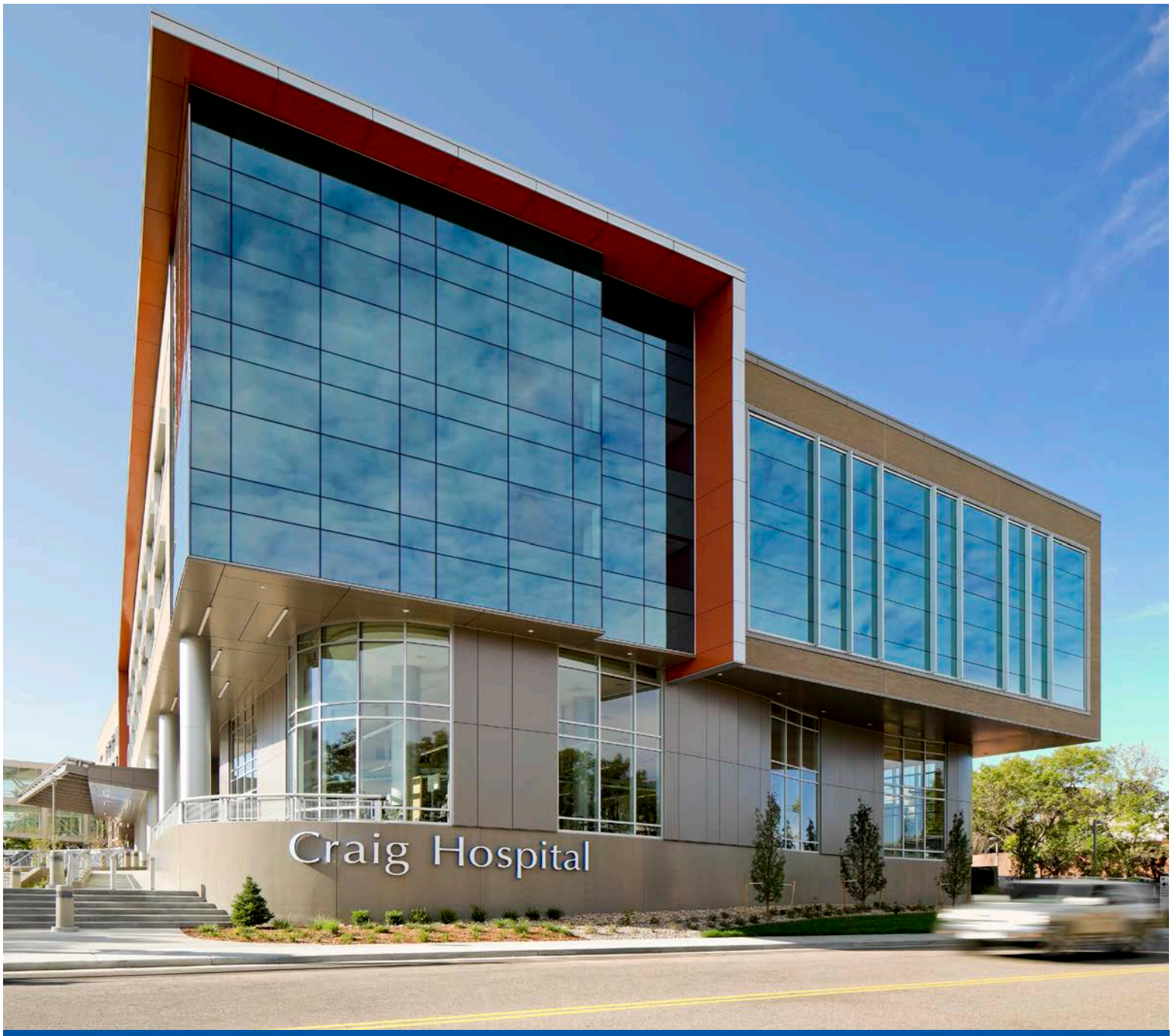
The team approach and execution methods provided for excellent team communication, strong relationships with patients, staff, the design team, local jurisdictions and state officials, as well as the surrounding community. Teamwork created a project culture which ultimately delivered a safe and successful project without interruptions to ongoing operations.

Safety was a main focus of the project, and was fostered by the core team and every trade on the jobsite. Every individual was empowered to stop any unsafe work and agree upon a solid plan before continuing work. Safety observation reports were utilized as a measure to track and control safety trends on the job. Safe work was celebrated and incentivized throughout the build. In total, the project encompassed 205,000 man hours with only one lost time incident was recorded!

Ultimately, the power of a strong relationship with Craig Hospital, subcontractors, and community stakeholders was established through robust communication and coordination, delivering a huge hospital expansion safely and on time.

Therapy Pool

Physical Therapy



Exterior Addition

Chapel

Community Mobility Rehabilitation Room

Entrance