

**Category: 13 - Best Building Project – GC (Over \$70 Million)**

**Contractor: GE Johnson**

**Project Name: Vail Health Hospital East Wing Expansion**

The Vail Health Hospital East Wing Expansion project sits at an elevation of 8,150 feet in the heart of a charming ski village sitting in the Gore Creek Valley. The new wing is 350,000 square feet and completes the current Vail Health Hospital campus master plan for a total of 520,000 square feet.

Construction started with the demolition of the original circa-1967 clinic and the removal of an above-ground parking structure that was constructed by GE Johnson in 1990 into a hillside just south of the I-70 frontage road. The demolition enabled construction of a new central utility plant, loading dock, and six-story parking garage with three levels below grade for the existing hospital.

New hospital facilities were built on top of the garage to address the space requirements of growing medical treatment programs, including imaging/radiology, emergency department, and physician group medical space. A grand entryway is featured along the I-70 frontage road to improve patient access to Vail Health. The hospital's helicopter pad was relocated to the top of the new garage from north of the frontage road, eliminating road closures and ambulance transports required by the previous helicopter pad.

An intricate project such as the East Wing Addition could not have been completed without extensive collaboration among the design team, contractor, and owner. The renovation work within the existing hospital required specific coordination with infection control and safety assessment personnel, facilities engineers, and clinical care teams to ensure the wellbeing of patients. Over the duration of nearly three years of construction, many challenges arose in the field. Each challenge was met with open dialogue, assessment of the problem, identification of the expertise within the team to address the issue, and finally, responsibility for members of the team to follow-through. Through collaboration, the team delivered a successful project for Vail Health and an asset to the Vail community. To expand parking, the new parking garage was designed 60 feet below grade and 30 feet below the water table. This required the installation of 40 perimeter wells that gradually brought the surrounding water table down, just below final mat slab. Due to the acre-sized footprint, the team experienced multiple artesian springs that required isolated dewatering, over-excavation, and gravel/geotextile fabric to stabilize the soil and allow

the permanent dewatering system/mat slab to be constructed. GE Johnson and the design team met almost daily to come up with solutions and design modifications for the unforeseen isolated dewatering. During construction, the project diverted approximately one million gallons of water a day during peak season. In winter of 2019, the team placed the mat slab foundation during 26 feet of snowfall, all while keeping the core temp of the 3-foot-thick slabs at the required curing temperatures. Temperature was monitored with wireless sensors that were monitored every few hours for seven days straight, requiring modifications to the heating system based on weather and ambient temperatures.

Quality and craftsmanship were a focus from the beginning, starting with design and coordination with trades and the design team. Several months were spent on the front end of the project ensuring the correct level of design detail and building an exterior mockup. The project included several enabling phases to prepare the existing building for demolition. These phases were designed and constructed concurrently with the design of the new East Wing Expansion project. The initial phase relocated the pharmacy, nuclear medicine suite, outpatient orthopedic clinic, and administration from the existing east wing into the existing hospital's central wing. The hospital's construction spans across many decades, requiring extensive coordination and field verification of existing conditions. The second phase added facility infrastructure including an oxygen enclosure, fuel tank, and electrical pathways to connect the hospital's west wing to the new east wing. The third and fourth phases prepared the existing building and parking garage for demolition.

Over time, many utilities crossed between the building's east wing and central wing, thus every conduit, cable, and pipe had to be traced back to its source and properly terminated to allow the east wing to be demolished without affecting the existing hospital.

To stay on schedule through the COVID-19 pandemic, the project team and subcontractors committed to over seven months of overtime to ensure that the hospital was turned over to the community as planned.

A major project priority was increasing on-site parking, which was achieved by removing the previous garage to build a larger, deeper structure. The new east wing sits atop the sub-grade five-story parking garage that extends 75 feet below the frontage road.

The exterior design is intended to tie the whole Vail Health campus together. It gives the new front door a presence that stands out from the drive-up entry and the interstate. Modern lines

with traditional mountain materials help blend the large massing with the adjacent hospitality nature of the upper Vail Valley. The West Meadow Drive elevation of the building has direct details of the existing portions of the building but starts to pull out its own identity at the pedestrian entrance. This new identity extends to the entry plaza.

The project changed the main entrance to the front of the hospital increasing accessibility for the public. The new main entrance was built with the intention of not overtaking the view from Vail Mountain behind it. When driving to the front door, the building takes up partial view plane, leaving the green trees and snowy runs as a backdrop.

The lobby has a central design element termed “the bean” during design. It gives staff and visitors a reference point and spin-off to other features of the lobby, all while allowing sightlines of the mountain in the backdrop. It is intended to be a feature you would not expect in a hospital, again tying in the hospitality feel that is prevalent throughout the community. The shape was inspired by allowing widening views at every corner.

It was essential that construction did not interfere with hospital operations. For the West Wing Expansion and Renovation, this meant strictly adhering to infection control risk assessment (ICRA) procedures. The renovation work within the existing hospital required specific coordination with infection control and safety assessment personnel, facilities engineers, and clinical care teams to ensure the wellbeing of patients.

During the pandemic, our project sites had a mandatory mask requirement. The project team quickly realized the challenges of working with both a mask and safety glasses. To get ahead of the curve, GE Johnson safety specialists contacted multiple suppliers to locate the best options in the industry to minimize fogging and made these available to all workers on site, helping to mitigate the risks and challenges of fogging safety glasses.

GE Johnson team members emphasized on the importance of pre-task planning with subcontractors. Each morning, project team members would observe and interact with a different subcontractor crew while reviewing their task of the day and identifying the potential hazards associated.

The team also used a hazard recognition program, with QR codes placed around the jobsite to allow any workers to identify safety observations, negative or positive, and bring attention to them. This benefited the project as they were able to identify hazardous trends and take proactive action.

Vail Health Hospital is critical to the health and wellness of Eagle County, Colorado residents and visitors. The East Wing Expansion project adds much-needed capacity and convenience while redirecting in-bound traffic away from a major pedestrian and tourist road in the center of Vail.

Research shows that a hospital's physical space has a huge impact on patients and that they recover better in a modern, comfortable setting. This project provides the community a modern healthcare experience.

The new emergency department (ED) replaces the 55-year-old ED with an additional isolation room, four times the number of bathrooms and private rooms, and three purpose-built behavioral health rooms. The new surgery center increased the operating room capacity by 30%.

The new ambulance bay leads directly into the ED, adding significant efficiency, privacy, and safety for the patient and the crew while keeping everyone indoors in a climate-controlled environment.

The expansion includes the addition of an elevator bank with three elevators serving as one of the main throughfares of the hospital. One of the elevators provides direct access to the new helicopter pad.

Access to the new helipad, located on top of the eighth floor, eliminates 30 to 40 minutes that were previously needed to access the former helipad. Prior to the expansion, patients were transported by ambulance to a helipad near Vail town hall and I-70, posing a challenge for pilots who navigated adverse weather and the freeway to reach the helipad. Ambulances had to navigate the busy highway to transport patients to the hospital. The hospital anticipates around 75-85 patient helicopter visits per year and can now initiate care faster to these patients. The helipad assures patients they are only an elevator ride away from the ED.







