

CATEGORY 2:

MEETING THE CHALLENGE OF A DIFFICULT JOB – SPECIALTY CONTRACTOR

SPECIALTY CONTRACTOR: Intermountain Electric, Inc.

PROJECT NAME: DEN Concourse A Data Center Re-Life Project





The striking architecture of the Denver International Airport, DEN stands out against the flat plains surrounding it. Cathedral-like, tented domes rise above northeast Denver, mimicking the Rocky Mountain peaks and serving as a beacon of innovation for modern airports across the globe. DEN's Concourse A data center is the core of the mighty airport's daily operations. More than two decades after it's creation, the data center was sorely in need of renovation, including upgrades to old systems and the implementation of new electrical equipment. The data center required an entire remodel without interrupting the travel plans of millions of passengers.

Intermountain Electric, Inc. (IME) has an outstanding record of deftly executing highly technical projects, while maintaining normal operations for existing, active facilities. Early in 2016, IME was awarded the bid as the electrical contractor for the DEN data center renovation, entrusted with this incredibly exacting work to be completed in the ambitious timeframe of one year. Our long-standing relationship with the company that runs the data center at DEN and strong ties to the project's general contractor, who was a relatively new partner, meant that communication and goodwill flowed from the very onset of the project kickoff. IME helped to establish that collaborative attitude during the planning stage and continued throughout the execution phase to keep all members of the project looped in to our team's progress, challenges, and breakthroughs.



IME was tasked with completely upgrading and expanding the electrical equipment in the data center, including installation for power, controls, a brand new fire alarm system, emergency power system, and new state of the art equipment. In the process of determining the new equipment that the DEN team wanted installed in the data center, it became clear that structural modifications would have to be made to the building in order to meet weight requirements. IME is adept at working in restrained conditions and responding in an agile manner when projects are impacted by design changes midstream. The project team constructed partition walls to block off tools, equipment, and the temporary cooling equipment needed to cool all of that from the public's path. Large hydraulic taxi rollers were used to bring this oversized equipment through secured areas and relied on strategic planning to make these technical moves with such cumbersome machinery. Our attention to detail and planning, ability to measure and lay everything out in the field, and utilization of IPADs at the site for electronic document sharing kept our team in step with project milestones and made executing difficult tasks, seamless.

The location for the scope of the work to be completed, in the heart of the airport's busy terminals, was the most difficult area for our team's daily operations, due to the building's design. In this sterile and secure airport environment, all team members went through screening zones with every tool and piece of equipment needed to complete each day's work. We followed strict guidelines for monitoring all tools, including a check out system that required team members to sign tools in



and out for use. The confines of the area, layout of existing structures, and multiple levels of the data center posed incredible logistical challenges for our team to overcome.

On a project of this scale, with the potential to impact not only airport staff and personnel but also travelers from around the world making connections in Denver, IME understood the importance of clear communication and strong partnering with the general contractor, DEN, and the city of Denver. One such instance when IME was in close communication with all three partners in order to avoid timeline set backs and cost impact, occurred when our team needed to get main switch gear up to the third level of the data center. In a complex maze of pipes there was no clear pathway for our team to pull cable, so we did an immense amount of research in connection with the city to determine where the existing conduits were in order to piece our raceways together and get from point A to B. That combination of communication and close partnership with the city meant IME didn't install as much conduit, just more cable, without additional cost to the airport and little interruption to passengers and personnel using the space.

Beyond collaborating with our main partners on the project, IME worked together with the Denver Fire Department to ensure the renovated building met the latest of new regulations and codes. Using good old-fashioned research and preplanning, our fire alarm system specialists worked to install the new system while keeping the old system live. An incredible amount of planning and



coordination with DEN, the general contractor, and the Fire Department allowed our team to do a full and complete cut over in two hours, get the new system back online and tested, without impact to critical systems and airport operations. IME enacts rigorous procedures when turning off systems in order to avoid affecting existing operations.

On top of the new fire alarm system, our team updated the emergency power off (EPO) system, which enables the power supply equipment to be shut down from one button. IME was the original contractor entrusted with that system's installation ten years earlier, so it was fitting our team had the honor and challenge of tying in the new system to the old system, without ever shutting off the old one. Our team walked the project alongside the Fire Department team to check for compliance after all major upgrades to the data center's systems were made.

Throughout all phases of the project, IME kept safety at the heart of our work. As on every IME project, we engender a culture of safety from day one. Mornings at the job site began with all crew members reviewing safety procedures, determining what special care needed consideration for working in different public areas that day, and staying vigilant on dust control and clean up. Throughout the day, personnel are checked on and daily hazard analyses are completed while weekly site wide meetings included a safety touch base with all trades. Our team tested all equipment in advance to ensure proper functioning, and as always, we get the right tools for the right job.

“It’s fair to say that without IME’s involvement in this project it would not have been completed within the required timeframe, nor to the level of quality demanded by a facility of this nature. IME’s collaborative attitude throughout the project’s execution was key to the successful completion of the project. They remained steadfast in their commitment to the projects on time completion even through multiple challenges and design changes along the way that could have thrown the project off course.”

- Denver International Airport’s Construction Project Manager

When working in areas that impact the public, IME is committed to the fact that it’s not just the security of our crew; it’s everyone’s wellbeing that we’re safeguarding.

The IME crew that worked together on the data center electrical renovation had truly strong bonds, as they’d been working as a team on other projects for some time. When a team knows each other well, risk is mitigated. Each IME team member understood the roles of the others, watched out for each throughout the long days of highly technical work, and acted as part of the IME family. It was a celebration and highlight for everyone when the electric room was all set with the new gear and the time came for commissioning.

Denver International Airport’s Construction Project Manager on the project shared this feedback about working with IME, “It’s fair to say that without IME’s involvement in this project it would not have been completed within the required timeframe, nor to the level of quality demanded by a facility of this nature. IME’s collaborative attitude throughout the project’s execution was key to the successful completion of the project. They remained steadfast in their commitment to the projects on time completion even through multiple challenges and design changes along the way that could have thrown the project off course.” While the Project Manager of Roche Constructors, Inc., the general contractor for the project, had this to say about working with IME, “There were a lot of unforeseen conditions that came up with the DEN data center. The biggest one had to do with the pre-action fire alarm system. IME was the leader in getting the appropriate people involved and meetings set up to solve this problem. IME shows that each task they take on is their most important task and they allocate the appropriate resources to make it happen.”

In February 2017, one short year after the project’s kickoff, IME and our general contractor in partnership with the City of Denver and Denver International Airport, completed the renovation and expansion of the DEN data center. With no items on our punch list after inspection and no issues with the IME installation, our satisfied client could rest assured the airport data center would continue to operate smoothly with the most up to date equipment and high-functioning workspace for staff and personnel. IME worked diligently to keep the data center active throughout the project and supported the airport in helping millions of travelers reach their final destination. With the right team of experts, there’s no limit to how high a project can fly.