

Category: 7 - Best Building Project - Specialty Contractor (Over \$10 Million)

Contractor: Encore Electric

Project: Gaylord of the Rockies Resort

Rising out of the plains like the Rocky Mountains, the Gaylord of the Rockies Resort looks like a castle from nearby Denver International Airport. It's the first-of-its-kind-in-Colorado for the Marriott brand of hotels. Guests can expect a mountain modern getaway with unique spa, entertainment and restaurant experiences, and since the hotel opened in December 2018, guest comments have been consistent about the special experiences they are having.

During its scheduled 36-month construction, this hotel was the largest non-casino hotel being built in the United States. Its one million square-foot space on 86 acres of property proved to be extremely complex, topping out at 15 floors with nine restaurants, one lazy river, one spa, one pool atrium and one caboose.

Encore Electric was contracted by Mortenson Construction and WELBRO (MWJV) to safely provide quality, comprehensive design-assist services and installation of power, lighting and life-safety systems to the one million square-foot hotel as well as its 30 acres of remaining outdoor space around the hotel, which was a significant effort. Here are some of the results of the work of Encore Electric craftspeople:

- **Thirty-two electric rooms** provide service to the lobby, Grand Lodge, all of the hotels shared spaces, entertainment and spa facilities plus the 1,501 hotel rooms that range from single rooms to presidential suites with individual kitchens, multiple rooms, lounge areas and a bar.
- **Three, 13.2kva substations at 4,000 amps each** service the hotel's electrical needs.
- **Nine commercial industrial kitchens** to serve all of the hotel restaurants and pool area. Electricians were required to anticipate equipment amperage needs when equipment was not yet specified.
- **Three equipment pump rooms** provide service for water features, pools, lazy river, two-story slides, and an infinity pool.
- **A multi-faceted life safety system including an intensive smoke control system with two Distributed Antennae Systems (DAS)** for emergency communication in the event of the fire. All of the restaurants required specific life safety components, including bringing power to cooking hoods to protect the cooks, avoid fires and mitigate danger.

The project required the ability for smoke to evacuate the building in less than 10 minutes. Four smoke machines were used during the testing phase to verify the system could clear the smoke in the proper amount of time.

- **A world-class spa and fitness center house** 42 pieces of exercise machines to give guests the opportunity to experience mile-high workouts.
- **Stadium lights around the outside property perimeter** light the property for ease of navigation and security. Other exterior lighting includes: Lighting around the basketball courts, tennis courts, putt-putt course and lazy river. Cabanas next to the pool all have lighting, power and AV systems.
- **192 UHD televisions** make up a 71 foot-wide flat screen in the sports bar off of the Grand Lodge, making it the largest television in Colorado. Encore had to install an additional transformer and electrical panel just to provide power to this TV!
- **One antique red caboose** sits inside the 10-story Grand Lodge area. The Caboose was originally built in 1929, and all wiring is completely new within the caboose.

Coordinating the manpower requirements of the project was a huge undertaking for the Encore Electric team, including hiring enough manpower to get the job done on time and on budget, while making sure every single team member received the special safety training needed on a project of this scale, where more than 200 contractors were working at any time. The projects overall manpower peaked at 1,700 craftspeople. That's a lot of collaboration working with the Encore Electric team alone.

Encore has found that when employees work in an environment they enjoy, working with people who truly care about them, its employees are excited to come to work. Their excitement shows up in quality work and helps with safety, too. In more than 315,000 man hours worked, there was only one recordable safety issue for Encore Electric.

There were several unique aspects of the Gaylord of the Rockies project. The one area that stands out is the Grand Lodge, with its 10-story ceilings, Lutron & Pharos lighting control systems, and Rocky Mountain theme. It is a project like no other.

The Grand Lodge was built to be impressive while giving the guest the feeling they are actually near mine shafts, flower fields and streams of the Rocky Mountains. With at 10-stories high, lighting was installed 101 feet in the air. To accomplish this, eight 135 foot snorkel lifts were used at one time to install the can lights and electrical on the ceiling. "It was a dance to

coordinate who needed to be where,” said Dave Van Stelle, superintendent on the project. “Throughout the day, lift operators would negotiate deals with each other as to where they were parking their lifts. It required constant negotiations. Eventually, Encore Electric switched to work weekends to offset times with other crafts who were also working in the same space. Every light in the Grand Lodge and all other “front of house” areas of the hotel are operated by Lutron & Pharos lighting control systems, and there were hundreds of fixture types. Many fixtures were owner-provided with no advanced information or detail. Encore electricians ran cabling for everything utilizing an 11-page spreadsheet that outlined the type of dimming, location of drivers, type of wires, and type of fixtures, dimming panel locations, and more. That way, hotel managers and staff are able to dim lights using an iPad or mobile devices to create ambiance.

Diming lights and changing their colors are just two ways the hotel will be creating environment. To follow the themes, electricians created hidden access for motors and electrical panels. Cooling systems were required on some transformers, and hiding the fins and fans was a challenge. Encore electricians went the extra mile to make the environment aesthetically pleasing.

To accommodate safety requirements of the project, there were controlled access zones that created unique challenges. With the footprint of the hotel being so large and so high, and the need to move hundreds of people in an out for work stop and start at the beginning of shifts and breaks Controlled Access Zones (CAZ) were created for safety purposes. This meant that no trade could work above another and daily mandatory CAZ meetings were held to coordinate vertical trades.

Fifteen floors high above the Aurora plains, believe it or not, snow accumulates. The owner desired to have a snow melt system in place. The team estimates it may be the largest of its kind in Colorado. Encore Electric lead Josh Chinander was the snowmelt foreman who handled 90% of it on his own. He was outside every day in the cold and windy conditions.

Overcoming challenges on this project were handled in a number of ways, including teamwork, Virtual Design and Construction and prefabrication.

Encore Electric teams trusted each other. Small teams were created as part of larger teams on the project. This brought a high degree of accountability and safety. With daily huddles on the small

team and asking about risks and safety, issues could be discussed and addressed prior to them becoming larger issues.

And it wasn't just the construction team that was cohesive. The Virtual Design and Construction (VDC) team had a constant presence in the trailer. With the size of the project, precision mattered and there was no way to get to precision without the VDC team with their total station points and preplanning. The result was more than 10,000 can lights, 100,000 points made with total station. Now that takes planning.

Another area that takes pre planning is the forethought it takes to build with hard lid ceilings and post tension cabling. It was critical to understand how to place cables running in a grid and to make sure enough sleeves in the concrete were placed to run wire. Getting conduit and sleeves set ahead of time in the right places took significant VDC modeling. There was only one chance to place conduit and junction boxes where they needed to be. Once it is closed, it is closed.

Prefabrication also helped keep the jobsite clean and free of debris so that crews could operate safely. There was no inventory or shelving on site. Can you imagine what it would be like for 200 contractors to store all of their inventory on site?

Due to ongoing design changes, Encore Electric built flexibility in the prefab program. Every box Encore prefabricated had adjustable p-rings and sliding stud mount brackets. Electricians only needed five box types for the entire project that had adjustability for the field.

During the three years, more than 200 different specialty contractors were working on the project at any given time, providing work to thousands of construction craftspeople, who are now proudly driving by the hotel on their way to the airport knowing that they were a part of history.











