

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

Specialty Contractor: RK Mechanical

Project: Gaylord Rockies Resort and Convention Center

PROJECT DESCRIPTION

The \$800 million Gaylord Rockies Resort and Convention Center (Gaylord Rockies), part of Marriott International, is conveniently located in Aurora, Colorado just 8.5 miles from the Denver International Airport (DEN). It is the newest and one of the largest hotel and convention centers on the Colorado Front Range, sitting on 85 acres and rising 15 stories high.

The resort features 1,501 hotel rooms, as well as 486,000 square feet of meeting and convention space. In total, the facility contains more than 1.9 million square feet of hotel, retail, recreation, commercial and convention space. There is an indoor/outdoor pool complex, outdoor basketball and tennis courts, walking trails and golf putting greens. In addition, Gaylord Rockies includes the largest automated laundry facility in the region, a state-of-the-art fitness center, a world-class spa and salon, and eight food and beverage outlets comprising of restaurants, bars and coffee shops. Moreover, there is a Grand Lodge, with a 75-foot-tall atrium window, indoor lake with a geyser and a railroad caboose.

Designed to reflect the Colorado lifestyle, the resort features details such as cascading waterfalls over boulders, local nature artwork, native landscaping and elevators made to look like old mine shafts. The outdoor feel continues into guest rooms, with aspen tree-inspired carpets and lumberjack plaid print pillows.

Touted as the largest hotel project under construction in the United States during its development, this facility is having a major impact in Colorado. There were over 1 million room nights booked for convention visitors two months prior to opening to the public, skyrocketing the Denver-area suburb, into the top 50 meeting destinations in the country. According to Aurora officials, 81 percent of the conventions that are already booked at the Gaylord Rockies through the next eight years are organizations that have never held a gathering in the Denver-area before.

Over 10,000 jobs were created during construction, and the finished facility operates thanks to approximately 1,500 local permanent employees. The Gaylord Rockies is bringing new and consistent business opportunities to Aurora, Denver, and the entire state of Colorado.

WORK PERFORMED

RK Mechanical served as the design-assist mechanical contractor on this project. Our team was hired as the trusted single-source mechanical subcontractor for the entire resort, including the hotel and convention center. The scope of work encompassed designing, fabricating and installing all of the mechanical and plumbing systems, including the laundry facility, 10 kitchens and all other aspects of the facility. In total, our scope of work comprised of installing 75 miles of plumbing pipes, 55 miles of hydronic piping, 2.6 million pounds of sheet metal, 4,000 tons of air conditioning, 3,600 boiler horsepower, 1.7 million cubic feet per minute of air handlers, eight boilers and four chillers, as well as system controls.

RK Mechanical provided preconstruction services, including advanced estimating to establish the Guaranteed Maximum Price (GMP) with a final lump sum price. The team utilized Computer-Aided Design (CAD) and Building Information Modeling (BIM) services as well.

Additionally, four other RK business units performed work on this project:

- RK Water provided chemical water treatment services for the hydronic scope of work.
- RK Steel helped with miscellaneous steel needs.
- RK Electrical handled the floats for the elevator pits.
- RK Service performed facility services.

SAFETY AND QUALITY

RK Mechanical is extremely proud to be an ASME and AISC certified contractor, an ABC AQC accredited quality contractor, as well as OSHA VPP Star Worksite and OSHA VPP Star Mobile Workforce accredited. RK is ranked among the 0.03% of American companies with VPP certification at any level and the 53rd U.S. company to earn Star Mobile Workforce status.

RK is rooted in tested processes, designed to deliver predictable results and produce quality products. Annual third-party ISO audits maintain company-wide accountability, fostering an environment of continuous improvement and policy enhancement. By ensuring clarity of goals and expectations early on, the Gaylord Rockies project team established rapport and an open dialog with on-site personnel. Quality Assurance and Quality Control (QA/QC) leaders oversaw the project, helping to ensure that the project teams moved forward according to the schedule and mitigated risks to avoid setbacks.

RK's full-time, licensed Safety Managers and Safety Superintendents were also responsible for creating site-specific training plans, conducting safety inspections, eliminating hazards on site and ensuring compliance.

Despite a total of 700,000 man-hours for our scope of work, only one recordable lost-time accident occurred throughout the duration of the project. That speaks volumes about how important safety is to our team. RK empowers all of our employees to take responsibility for their own safety on site, as well as the safety of those working alongside them.

CHALLENGES AND INNOVATIONS

Weather Delays

Colorado received a heavy dose of unexpected spring rain early on, flooding the project. This forced the general contractor to close the project for a week, as the main entrance for all trades to get into the site was a dirt road that had turned into a flooded mud path, causing transportation and safety concerns. Once the job site was re-opened, our team worked efficiently to get our scope of work back on track.

In addition, a harsh winter storm froze our team's previously completed underground pipe work. Once the pipes thawed out, our crew diligently searched for any possible leaks and repaired them before moving on to the next installation phase.

Construction Schedule

Some of the unpredicted construction complications, such as weather delays, and the heightened speed-to-market to accommodate guests and events that had already pre-booked, created the need for an accelerated construction schedule. Completing a project of this size in less than three years required the project to be split into two sections at the seventh floor. To accomplish this, a temporary roof was built on this level, so that rough-in work could be completed on floors one through six, while the higher levels of the structure were still being constructed.

Project Size

The project was unique due to its immense horizontal project site, which made getting materials to their appropriate locations challenging. Our team's innovative solution was to build specially made carts that would fit through doorways. The carts simplified material transportation and streamlined installation. For the rough-in finishes, our team prioritized materials and loaded carts by area. For example, all appropriate ductwork would go into a cart, along with any plumbing fixtures specific to

the space being worked on. Once all of the components were in each cart, our team went section by section installing everything needed for each specific area at once, with all the materials easily accessible in the cart.

RK Mechanical also designed and built custom pipe cradles attached to forklifts for this project. They were used to install four hydronic pipes, which were each 18” at the widest point, simultaneously along the ceiling of the Colorado Trail. This behind-the-scenes services hallway contains a total of 90 miles worth of piping. Without these cradles, the team would have had to install one hydronic pipe at a time.

Labor

While manpower shortages are a problem nation-wide, RK’s recruitment team worked tirelessly to overcome them on this project. The team organized a job fair in Aurora, recruiting and hiring local workers for this project early on. As a result, we enrolled 30 new apprentices into the RK Apprenticeship Program, many of which are now close to earning their journeyman license.

VALUE ENGINEERING

Value engineering and project alternative selection is a systematic and organized process at RK. Our team’s level of experience in selecting equipment, systems options and constructability all played a major role in the value engineering effort on this project, with a total of \$7 million in cost savings for the owner.

Specific efforts on this project included:

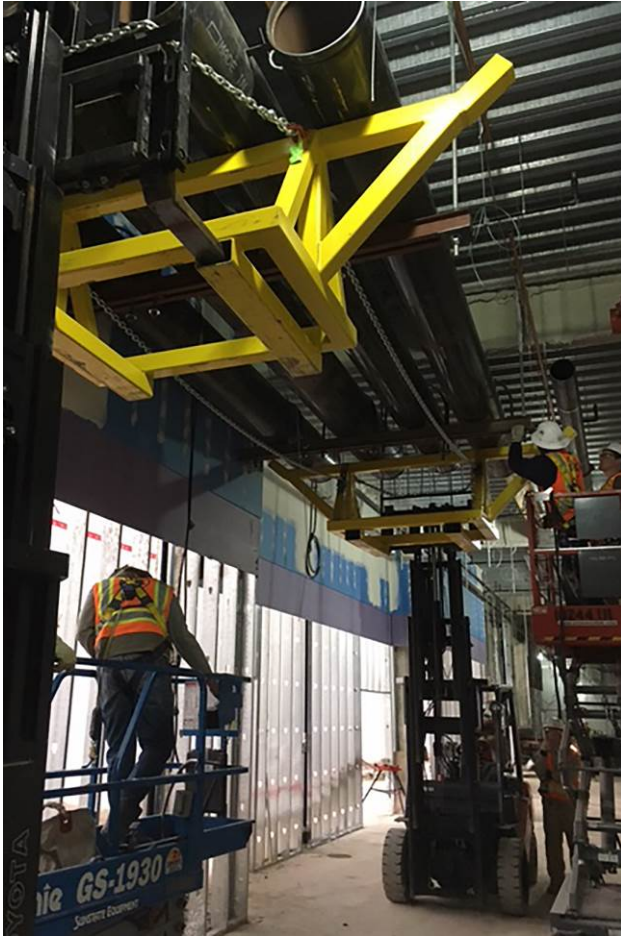
- RK Mechanical recommended changes to the central utility plant with a reduction of 1,000 tons of chiller sizing.
- After receiving drawings that weren’t finalized, our team analyzed and redesigned the entire mechanical system for the facility.
- RK Mechanical recommended and designed changes to the underground work. The initial plan for underground work was 30-feet deep, but our team assessed that 18-feet would be sufficient. By suggesting multiple sanitary and storm exits of the building, this allowed the depth of the underground work to rise significantly.
- Our team performed just-in-time deliveries to avoid congestion of materials on-site.

BOLSTERING COLORADO

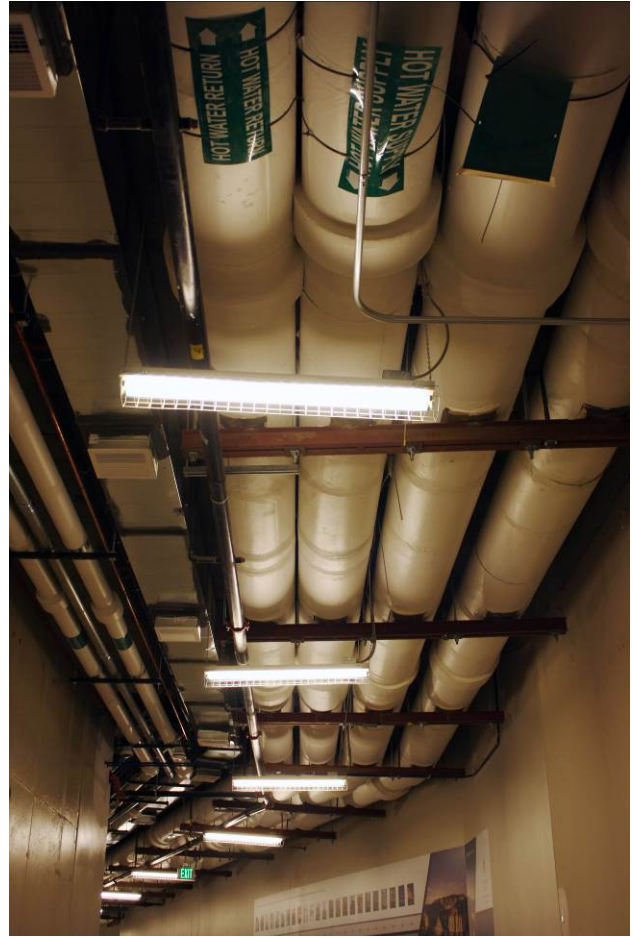
Over the next five years, the Gaylord Rockies Resort and Convention Center is predicted to bring more than two million visitors to Aurora and \$7 billion of economic growth to the state. RK Mechanical is extremely proud to have been a part of creating this exciting and unique convention center that goes well beyond the boundaries of a typical hotel, bringing new opportunities to Colorado.



Project Mid-construction



Install of Colorado Trail Hydronic 4-Pipe Mains



Completed Colorado Trail Hydronic Piping Mains



Boilers in Mechanical Room



Largest Automated Laundry Facility in the Region



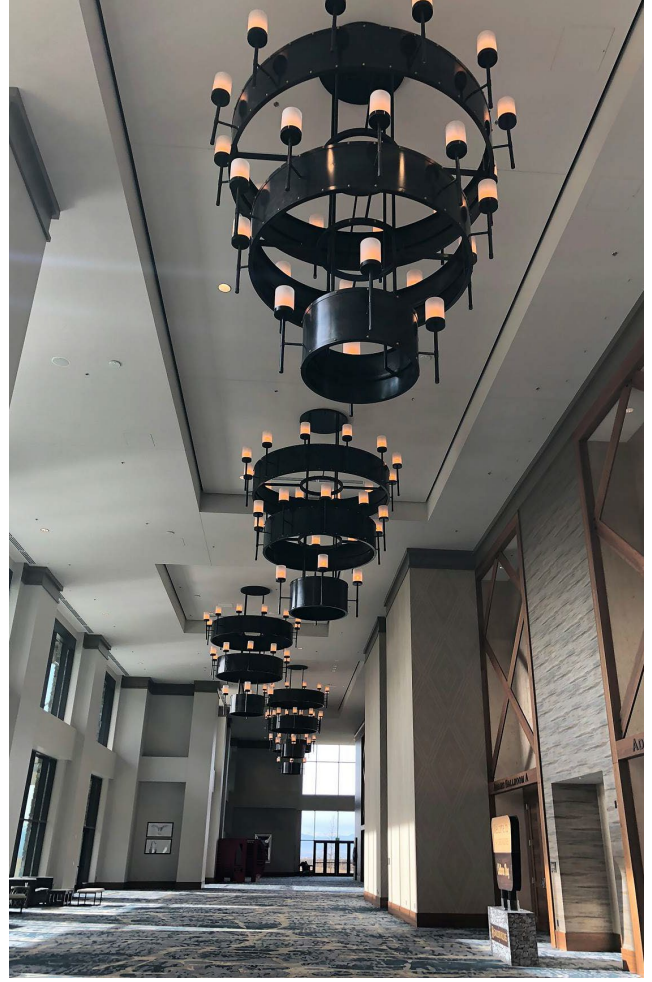
Grand Ballroom



Restaurant Interior



Grand Lodge Interior



Main Lobby Corridor



Project Nearing Completion