

2017 ACE Awards

Category 6 – Best Building Project – Specialty Contractor (\$6-10 Million)

Specialty Contractor: Ludvik Electric Co.

Project Name: Strata Vail

The Island in the Rockies

Nestled high in the Rocky Mountains, between the highest elevation on the US Interstate System and a 12.5-mile-long, 1300-foot-deep river gorge lies the narrow Vail Valley. With Vail Valley being analogous to an island, building in this remote part of the mountains provide challenges not generally anticipated with other, less isolated areas. One such challenging project was that of the Strata Vail (AKA “The Lion”). Being 310,789 square feet, including three levels of underground parking, seven above ground levels of retail and public space, and 66 residential units, Ludvik Electric knew that we would have to rely on our expertise, building in this location with problematic access and housing, to succeed on this “Island in the Rockies”.

Solutions of Special Projects

The biggest challenges that Ludvik faced with the Strata Vail project were the access to the location and the unpredictability of nature in this region. Both affected the deployment of materials and manpower, with weather being the biggest offender. Multiple closures, in both directions, to the jobsite occurred because of accidents, poor weather conditions, avalanches, and rock slides. Since there were only two routes into Vail, The Eisenhower Memorial Tunnel and then over Vail Pass or through Glenwood Canyon, to anticipate this restriction and significantly reduce risk of delays, Ludvik Electric utilized prefabricated rough-in packages by unit, in deck lighting flexible conduit runs, unit trim packages, and pre-bent conduit runs. Through prefabricating and consolidating the deliveries into building area packages and staging in the areas they were to be installed, Ludvik was able to not only mitigate delays, but was able to alleviate space appropriation for materials at the congested jobsite.

Another significant challenge of building in one of Colorado’s mountain resort communities is the availability of skilled labor. Ludvik’s use of prefabrication helped minimize the required labor work force needed at the site, however, we had to find ways to attract and retain additional manpower. Through the use of per diems and a rotating four-tens schedule, Ludvik was able to

acquire enough workers to meet the installation requirements while employees were able to enjoy three-day weekends.

One unanticipated impact to the project was a complete shutdown that occurred due to criminal investigations. During excavation activities, a human skull had become unearthed and the authorities were immediately notified. Because of this delay, Ludvik Electric was later required to accelerate a portion of the site work to hit project milestones. Additionally, the project was the target of a major theft in which tools from multiple trades were stolen, impacting the ability of many other trades to complete their work. Activities such as these act as a not-so-friendly reminder that there are just some events you can't predict!

Excellence in Project Execution and Management/Team Approach

As on all projects, MEP (Mechanical, Electrical, & Plumbing) coordination is instrumental to success. Ludvik worked directly with the mechanical/plumbing and fire protection subcontractors, including the sharing of submittals to speed along MEP coordination. This allowed for all power requirements to be reviewed against the contract documents long before installation occurred. Additionally, Ludvik coordinated with the mechanical contractor to share an office space. This close proximity between partnering trades accelerated coordination, built a team mentality throughout the duration of the job, and significantly reduced the potential for conflicts.

Construction Innovations/State-of-the-Art Advancement

Due to restricted space limitations in the Strata Vail building, routing and placement conflicts between the trades was an issue. To avoid these conflicts a BIM (Building Information Modeling) model was created prior to installation. Once completed, including all trades, the electrical model was exported from the coordinated BIM model to create prefabrication and installation drawings. From these drawings, Ludvik could prefabricate conduit bends and hangers. This also contributed to conflicts during installation and reduced the need for more tools and equipment on the site.

The BIM model was also exported to layout drawings and put into a Trimble Total Station or robotic GPS surveying equipment to locate lighting fixtures, fire alarm device locations, sleeve and anchor layouts, and feeder conduit penetrations. With the ability to locate the lighting and

fire alarm devices on the forms prior to concrete placement, Ludvik had the ability to install in-deck conduit and prefabrication reducing excessive manpower, material, and manhours later in the project. Additionally, the Trimble Total Station allowed Ludvik to pin-point the center of foundation wall conduit penetrations with its laser feature. BIM modeling points also assisted in locating load center locations prior to the installation and layout of walls, providing us the ability to install unit feeder cabling before any framing work occurred, pushing the completion of the electrical power distribution earlier in the schedule.

Environmental/Safety

Due to project schedule delays, beyond Ludvik's control, extreme compression of activities occurred near the end of the project. To obtain an early Temporary Certification of Occupancy, Ludvik Electric worked closely with the Town of Vail Authority Having Jurisdiction enabling us to trim, test, and protect fire alarm devices during work activities of unfinished work in multiple areas of the building. This coordination allowed Ludvik to be able to test and trim prior to the completion of other trades' work. The ongoing construction work created multiple false fire alarms which Ludvik was required to continuously clear to allow for uninterrupted construction. Following the completion of other trade's activities, Ludvik Electric obtained a report that there were damaged smoke heads from the fire alarm control panel. After replacing damaged equipment, created by other construction activities, the Owner was left with a complete and functional fire alarm system.

Construction in Vail consists of building in an area where being green is the community lifestyle. As such, there are strict guidelines that place limitations on the industry, including limiting light pollution. Ludvik provided and installed exterior lighting that met and exceeded the Town of Vail requirements, reducing light pollution and allowing a view of the night mountain sky. Additionally, Ludvik Electric reduced the amount of unsightly trash from the job site through repurposing prefabrication boxes. The boxes containing in-wall prefabrication were converted into waste containers once the prefab had been installed. Upon completion of rough-in, these boxes containing all Ludvik trash were removed, eliminating needless garbage from the site and making for a much more pleasant and safer work environment.

Safety is a number one priority at Ludvik Electric. Our Corporate Safety Rules Manual, the Site Safety Plan, and the Field Pre-Task Plans on the jobsite all involve putting safety first, thinking

through each individual activity and identifying and mitigating risks. Also, Ludvik's Corporate Policy includes no hot electrical work, and as a result no arc flash or shock hazards occurred on the project.

Excellence in Client Service and/or Contribution to Community

When it comes to client service and community contribution, Ludvik Electric strives to meet and exceed our customer's needs. Due to our in-depth review of submittals and design documents, we were able to bring items to our customer's attention that saved them potential costs even though some of these were not within our scope. For instance, Ludvik noted in the review of appliance packages, that the hood vent within the kitchens required a clearance above the cook tops that would not be available due to ceiling heights and cabinet sizes. This observation saved the customer tens of thousands of dollars in re-work and incorrect equipment. It is because of these efforts that the customer for the Strata Vail project is a repeat client and has awarded Ludvik an additional mountain project.

Understanding the challenges of building in remote locations within the Colorado Rocky Mountains is something that Ludvik Electric grasps well. Our team came prepared with plans to mitigate risks and increase efficiency despite unpredictable weather and special challenges. It is the events such as avalanches, rock slides, and criminal investigations, creating interesting opportunities!

Ludvik Electric Co. staked their flag on this "Island in the Rockies", and with a solid game plan, risk mitigation, and anticipation of Mother Nature's fickleness, proved that this was a job we could be proud to claim.









