

RK Specialties, Inc. (DBA: RK Steel)

UCCS Village at Alpine Valley

Best Building Project (\$2-\$6 Million – Specialty Contractor)

## **AN OVERFLOWING RIVER: STUDENT GROWTH INCREASES NEED FOR HOUSING**

As the fastest growing campus in Colorado, the University of Colorado Colorado Springs (UCCS) was in desperate need of additional student housing. To accommodate student growth, the Village at Alpine Valley was developed. Consisting of four individual buildings named after Colorado rivers, the project site comprises 210,000 square feet. Three of the buildings – La Plata House, Cucharas House and San Juan House – offer a total of 515 beds and have large lounges on each floor for student community.

The fourth building, Roaring Fork, is a two-story, 400-seat, indoor and outdoor dining hall and marketplace with a rooftop garden. This building also serves as a multi-purpose event space with astonishing views of the mountain range to the west.

## **PREPARING TO UNDOCK: PUTTING THE CREW IN PLACE FOR A SUCCESSFUL JOURNEY**

With a resume full of higher education projects, Kiewit Construction Company was the top choice for building UCCS Village at Alpine Valley. Kiewit partnered with Page Southerland Page, Inc., as the architect and Martin/Martin and KL&A as the engineers for the project.

RK Steel was contracted by Kiewit to fabricate all structural steel and miscellaneous metals for the four buildings, including exposed steel beams, stairs and the Roaring Fork wrap-around steel patio railing.

## **(RE)ROUTING THE TRIP: EXPEDITED SCHEDULE RESULTED IN QUICK-TURN PRODUCTION**

The Village at Alpine Valley project consisted of two phases. Phase I included the Roaring Fork Dining Hall, La Plata House and Cucharas House; phase II included completing the San Jose

House to close out the project. Each phase was aligned to finish before the 2015 and 2016 fall school semesters began.

During Phase I, 14 inches of snow fell in Colorado Springs, more than three times the average. This unexpected snow flooded the construction site and stalled the project by over a month. In response, Kiewit developed an aggressive schedule to ensure the dining hall would be finished before the 2015 school year started. The expedited schedule caused a ripple effect, challenging the entire project team, including RK Steel.

#### ALL DETAILERS ABOARD

In order to meet the new time constraints, RK Steel hired additional manpower to supplement our in-house CAD department. This manpower boost sped up the detailing process and our team was able to submit drawings for three buildings at one time.

#### WORKING THE NIGHT SHIFT

Fabrication for the dining hall steel was initially bid at a four-week duration. After the major schedule delay, the schedule was reduced to two weeks. The RK Steel shop set up two shifts, one day shift and one overnight shift, along with overtime on weekends to meet the project demands for just-in-time delivery of prefabricated products.

The RK Steel installation and erection crew was also affected as their schedule was reduced from seven weeks to five weeks. In order to accommodate this schedule, the erectors worked 10-12 hour days in the field and overtime on the weekends.

#### DEAD WEIGHT

Several field issues arose while trying to maintain the tight schedule. On the first day, our team was surprised to find only a small portion of the mason's work had been completed - meaning the foundation was not done and the mason's scaffolding was in our team's way. This delay pushed our start date out an additional 14 days.

Originally, construction of the residence halls were scheduled so that one would be finished prior to the other, allowing RK Steel to shift its work back and forth between residence halls. Instead, the residence hall construction occurred simultaneously. This made it difficult for RK Steel to maintain manpower for both buildings.

To remedy the situation, RK Steel implemented two shifts and overtime in the shop to keep up with the demanding schedule. Sequencing was used to build the stairs three levels at a time so that we could continue to feed the project. However, due to other trades that were behind schedule, our installation schedule was again delayed and forced us to store our materials in our yard for three months.

#### MAPPING IT ALL OUT

After all of the scheduling shifts, Kiewit created a four-week construction schedule for the trades to follow. To ensure our team followed the strict schedule and was prepared with materials on-site, our team used OneNote to track the status of work orders in the shop using on-site dates when materials were needed to schedule deliveries to the job site. We were able to share OneNote with the entire project team so updates were given in real time and allowed for ship tickets to be processed immediately.

#### **SWIMMING UPSTREAM: ARCHITECTURAL DESIGN IS NOT ALWAYS THE EASY ROAD**

The stairs in the residence halls presented an opportunity for innovation as the architect did not want any clips or connection points visible from underneath. While the original concept was to anchor the stairs using clips and supports from underneath the landings and stringers, RK Steel was challenged to find an alternate solution.

RK Steel's solution was to use TS stringers with a dog leg to support the landings by through bolting the TS into the cores in order to fasten the stairs. The headers for the landings were then welded to the dog leg of the stringers to support the inside stair stringer leg. This process makes the installation more difficult because the inside of the stringer leg, on both the downward and

upward stringer, is unsupported until the header piece can be securely fastened in place to carry the leg. RK Steel successfully completed the installation and helped realize the architect's vision.

### **FACING THE RAPIDS: TURNOVER LEADS TO COMPLICATED COMMUNICATION**

Personnel changes made by the general contractor while the project was in process tested our team's ability to communicate with the general contracting team effectively. Many conversations and decisions needed to be recaptured multiple times. In addition, there were many requests for information (RFIs) on the project that took much longer to be addressed and resolved.

To keep the communication open and efficient despite these setbacks, RK Steel maintained well-documented RFI logs, submittal logs and CO logs.

### **PANNING FOR GOLD: THE ROAD TO LEED GOLD CERTIFICATION**

The project was designed to meet LEED Gold certification. RK Steel's contribution to the LEED standards was to track the recycling and processing facility records of its suppliers. We recorded the receipt and acceptance of recyclable content for the project and submitted Material Tracking Records and invoices to the general contractor to assist in LEED certification.

### **LIFE JACKETS REQUIRED: SAFETY IS OUR TOP PRIORITY**

**RK Steel is proud to report we had zero recordable accidents, restricted days and lost-time accidents on this project.**

Daily pre-task plans, job hazard analysis sheets, weekly toolbox talks and equipment inspections were part of our routine at the job site to ensure a safe and healthy work place.

RK Steel, a Diamond Level ABC STEP Award recipient, is committed to zero incidents on every project. Our SHOW Me Safety Program states our commitment to "providing and maintaining a safe and healthy workplace, to ensure that every employee makes it home from work safely every day." Our full-time, licensed Safety Managers empower our employees to take responsibility for their own safety, as well as that of those working alongside them.

We are extremely proud to be OSHA VPP Star Worksite as well as OSHA VPP Star Mobile Workforce accredited, ranking us among the 0.03% of American companies with VPP certification at any level and as the 53rd U.S. company to earn Star Mobile Workforce status.

### **CRYSTAL CLEAR: QUALITY YOU CAN SEE**

Quality is integral to every process, service and product at RK Steel. We're proud to be an ISO 9001:2015 and AISC certified contractor, meaning that we have clearly defined, documented and streamlined all of our processes and procedures so customers can rely on predictable, top-quality results.

High standards and a strict quality control system using both ISO and AISC procedures in the RK Steel shop ensured that all steel parts were delivered to the job site as designed. If any steel required modification, it was due to owner-driven changes or a non-steel related issue in the field.

### **RELAXING ON THE RIVERBANK: SUCCESS FOR UCCS**

Since the Village at Alpine Valley was completed for the fall 2016 semester, it has been buzzing with excitement. The 515 undergraduate students who call the resident halls home, enjoy the easy access to hiking, UCCS's recreation center and the rest of campus. The Roaring Fork Dining Hall is a popular spot for students to hang out, study and share meals. For years to come, the Village at Alpine Valley will be a highlight of the UCCS campus.









