

Category: 4 - Best Building Project – Specialty Contractor (Under \$2 Million)

Contractor: Duro Electric

Project Name: Greenwood Village Maintenance Facility

Project Scope

The Greenwood Village Maintenance Facility was a yearlong project that started in February 2019 and was completed in February of 2020. The project finished at 5,694 manhours from our electrical team that at one point ramped up to six electricians lead by Duro Foreman, Brice Hill. The General Contractor for this project was FCI, and their leads on this project truly collaborated with the Duro Electric team to ensure our success. Jake Shippy, Project Manager, Jake Reise, Superintendent, and Logan Lense, Project Engineer of FCI worked directly with our Duro Electric leads: Jake Jacobson, Project Manager, and Brice Hill, Foreman, to successfully complete this project which included demolition, new construction, and tying an existing maintenance facility and generator into the new structure—all while the tenants were on site in four temporary trailers during all phases of construction. Total value for this project was \$783,921.

What did it take to secure this project?

The project was originally over budget much more than anticipated by the owner, designers & Construction Management team. The team put their heads together to find resolutions to bring the project back into budget while providing the owner the original design intent with cost effective solutions. This required our Chief Estimator, David Orosz, to work with the team on creative solutions.

The design team was rejecting suggested solutions so Duro Electric proposed to the Construction Management team (FCI Construction) multiple cost modeling sessions allowing the owner to decide what alternate materials & methods would be acceptable & their associated costs. Some of those solutions were:

The light fixture package as specified was high-end decorative products. Duro Electric worked diligently with the lighting rep and the specifier to find equal products while maintaining design intent, quality products & getting the costs in line with the budget. The lighting rep felt many of the fixtures wouldn't be needed to meet required foot candles, performed their own photometrics & were able to reduce the qty of light fixtures providing further cost savings. The team found additional savings by utilizing wireless lighting controls as well.

The original specifications were above and beyond what is required by code or normally used on similar projects. The team suggested a per code installation & deleting unnecessary materials. Duro Electric continued to provide multiple cost modeling for various options so the owner could decide which items were must haves, nice-to-haves or unnecessary & removed from the specifications. At the end of the project the owner was delivered what they originally designed at a reduced cost & the budget was maintained.

What challenges and obstacles were present?

There were several challenges that presented themselves during the course of this project. The first challenge at the start of the project was identifying the best method to tie the existing maintenance building and generator into the new structure being built. A second challenge was identifying the best method to power four temporary trailers during the course of the project that the Administrative Office Staff worked out of the duration of the project. A third challenge was the open structure in the lobby and determining the best method to place fire alarms and lighting in this area of the building.

How did the team rise to the occasion to mitigate and overcome these challenges and obstacles?

The team was able to isolate the generator that was already in the maintenance facility, so in tying the building in, there was no interruption to power for the Office employees. Duro supplied a 400 amp gear to power the temp power to the trailers.

The second challenge was supplying power to the four trailers being utilized for office work. The team supplied a generator to power these trailers, and only performed their shutdowns

during overtime hours in the late evening or weekends to ensure that there were no business interruptions to the Office Staff.

In order to successfully install the lighting fixtures and power in the lobby area, the team worked closely with the BIM Modeler and coordinated the location and timing of the lobby pipe work and installation of the cable tray. The pipe needed to be bent specifically to accommodate the duct work that would be installed at a later time.

What unique construction techniques or instruments were used?

This project used unique siding from Germany that took roughly four months to arrive as well as a Japanese Terracotta roofing. The project required some redesign as the terracotta arrived, as it was discovered the weight of the Terracotta was too heavy for the design of the original support beams. The Duro team had prefabricated the piping that was going to power the outside of the building. However due to the redesign involving the Terracotta, the prefabricated items were no longer feasible to use due to the installation of a nine-inch steel wall around the project to better support the Terracotta roofing. The Duro team needed to re-route outside power underground, which was not in the original plans. This was very late in the project around December of 2019, making it a difficult effort to accomplish, but the team was able to install the pipework underground without interfering with the look and feel of the structure.

Who were the key players on this Project?

Jake Jacobson – Project Manager, did a fantastic job organizing and planning for this project

Brice Hill – Superintendent, remained very positive and kept the crew highly motivated

Jeff Keys – Journeyman, helped to train and teach apprentices so they would be successful

Project Safety:

This project went full cycle without any loss time injuries due to pride, professionalism, performing the work in a safe manner, looking out for their fellow team members, and increasing the level of safety awareness daily. The project management team also coordinated regular Job Hazard Analysis to identify and address safety concerns, as well as routine safety audits by the Project Manager and Foreman. Employees were encouraged to bring any safety hazard or near-

miss to the attention of the project field leadership team. There was a high level of communication between Duro and FCI to identify and address jobsite safety concerns and work practices for high-hazard tasks. Duro created specific Methods of Procedure (MOP) for equipment shutdowns and change-overs. These processes created a greater level of understanding and coordination among the various project teams.











