**Category: Best Building Project – Specialty Contractor ($2M-$6M)**

**Contractor: Duro Electric**

**Project: South Suburban Recreation Center**

**Project Summary and Overview**

When asked to be a part of the new sports and recreation facility for the South Suburban Recreation District, Duro could not resist. This new facility boasts 206,000 square feet of indoor athletic space which contain a fieldhouse with two synthetic turf fields, two gymnasiums that can be transformed into basketball/volleyball/pickleball courts, three sheets of ice, as well as the administrative offices for the district. The central ice arena has the capacity to seat 800 spectators allowing the district to host both regional and national competitions. The electrical contract amount for the project was just over $5.7 million. Construction for the new facility began in December of 2019 and wrapped up January of 2021.

The South Suburban Recreational facility was designed by the architect firm Perkins & Will and Adolfson & Peterson was the general contractor.

**What challenges and obstacles were present?**

This project posed a variety of challenges, especially with the power consumption and design specs for the ice arenas and other equipment. The power service to the building involved a 5,500 amp, 3 phase, 480 volt service. To put that into perspective, that is enough power to run over 350 single family homes. The main electrical room had 176 conduits, of varying sizes, installed underground with many of the runs 700’ in length, which made pulling wire through them extremely difficult. The electrical equipment for the ice plant was built in Canada and did not comply with U.S. electrical codes and standards. The 1,000 amp motor control center and other equipment had to be rearranged and special wire was needed to get the equipment up to current standards.

The gymnasium required the installation of 39 motors used to move the various sporting equipment around so the courts could be utilized by different groups. Volleyball nets were designed to be raised and lowered, basketball hoops were installed so that they could be raised or moved to the side as necessary. All of this equipment was designed to be controlled from a programmable controller so district staff could quickly and efficiently change over the courts as needed.

The project, due to the size and scope, experienced significant delays for the installation of the underground electrical systems, and work did not start until March of 2020.

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

To combat these challenges, Duro worked diligently to maintain coordination with the Adolfson & Peterson construction team and other trades on site.

Prefabrication played a critical role in keeping the project on time and on budget. In an effort to get the project back on track from the underground construction delays, the Duro prefab shop built custom racks for the underground piping in the electrical rooms. The team also prefabricated all of the exterior parking light poles to streamline set-up and installation in the field. They pre-measured and cut the bulk of the conduit runs, panelboards and lighting circuits for the interior of the building. The coordination between the prefab shop and the field leadership team saved countless hours in manpower and material overages.

In addition to the prefabrication of the electrical rooms, the Duro team looked at additional options to reduce labor costs and hours on the project. The team identified an alternative measure that would save considerable resources with the exterior site lighting wiring and installation. High density polyethylene (HDPE) conduit with connectors was purchased to reduce costs and expedite the installation of the thousands of feet of underground site wiring. This product is a very durable and weather-resistant which resulted in added benefits for the client.

Part way through this build, the world experienced the COVID-19 pandemic. Duro took quick action to comply with local and state guidelines and promptly began implementing protocols for the protection of all workers on site. The project team worked closely with the Human Resources and safety departments to keep them apprised of any employees that called out sick They were diligent in not allowing any employee that was presenting symptoms come to the jobsite for the safety of Duro’s entire crew, as well as the safety of the other crafts on the jobsite. As protective equipment rapidly became unavailable, Duro took the initiative to identify ways of getting our workers the protective equipment they needed. The Duro prefabrication shop transformed Duro tee shirts into cloth face coverings for employees to wear as recommended by the CDC and WHO. As COVID restricted personnel movement and created a sense of isolation at times, the Duro safety and HR team made a point to get out to the project (as restrictions lifted) for a check-in and to answer questions employees had and to reconnect with the workforce on site.

**Who were the key players on this Project?**

Brian Simpson - Project Manager, worked tirelessly to ensure project coordination and schedules stayed on track.

Dave Miller - Project Superintendent, took charge to ensure that the project ran as smoothly as possible, working to keep employees motivated and engaged during the COVID pandemic.

Chris Able - Project Foreman, was instrumental in ensuring the buildout and completion of the power distribution and system design.

Carl McLaren – Foreman/Fire Alarm Installer, was critical in ensuring that the building met all applicable NFPA and local codes. Mr. McLaren and his team ended up installing approximately 43,000’ of fire alarm cable throughout the building.

Nate Gallo – Prefabrication Manager, was instrumental in coordinating field and prefab shop plans and materials.

**Special Training & Techniques**

This project utilized a lot of elevated mobile platforms and articulating boom lifts. Much of the project involved installations of electrical systems and components 35’ in the air. It was imperative that employees received specific training on the equipment. The Duro safety department conducted several in-person training sessions to accommodate the project’s needs. Additionally, with the amount of underground work on this site, all of the project leadership team attended an in-depth trenching and excavation class.

**Project Safety**

The South Suburban Recreation Center project was completed with a total of nearly 40,000 labor hours without an OSHA recordable incident. The project management team also coordinated regular Job Hazard Analysis (JHA) to identify and address safety concerns, as well as routine safety audits by the Project Manager, Superintendent, 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 Adolfson & Peterson to identify and address jobsite safety concerns and work practices for high-hazard tasks. Duro created specific Methods of Procedure (MOP) for system shutdowns and change overs. These processes created a greater level of understanding and coordination among the various project teams.

As with all Duro projects, safety played a critical role in the success of this build. The field leadership team and the safety department wanted to make sure this project began on the right foot with a sit down to review project timelines, site-specific construction operations, foreseeable hazards, and crew makeup. Throughout the job, the project superintendent and safety worked to identify employee training that would be needed and conducted on-site. Some of the training conducted included equipment-specific safety and operations, trenching and excavations, first aid and CPR, fall protection, and confined space. This project also had the privilege of receiving customized fall protection and ladder safety training from a leading fall protection manufacturer.

The South Suburban Recreation Center project was used as a beta test site for the revised and updated Duro Electric stretching program. The new program utilized more dynamic movement and breathing techniques to increase body function and focus the mind. The new program was a success and rolled out to the rest of the company.

A picture containing text, light

Description automatically generated

A close-up of a server room

Description automatically generated with low confidence

A picture containing indoor, steel, miller

Description automatically generated









A picture containing text, outdoor, sky, ground

Description automatically generated

A picture containing text, indoor

Description automatically generated

A person wearing a helmet

Description automatically generated with medium confidence