

## **Frasier Meadows**

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

#### **Duro Electric**

##### **Overview Statement**

With an existing full-service senior living complex, and a new construction building in progress, maintaining a consistent source of power was crucial to the safety and well-being of the residents, facility staff, and construction teams on site. In an effort to provide a high level of service and expertise for this project, Duro Electric partnered with ECM and Pinkard Construction on this 15 Kilovolt change-over project at the Frasier Meadows Retirement Community complex in Boulder, CO. The project involved replacing the existing community utility yard with a new electrical service and upgraded equipment. The change-over required setting and installing 5 temporary generators while minimizing down-time to the existing community. Due to the complexity of the project and the necessity for maintaining operations, the project team had to come together to overcome the unique challenges such as; designing and building custom vaults to get the new equipment above the existing floodplain, and coordination with the community staff to minimize disruption to the residents and critical medical equipment. Safety was a top priority throughout this project, for the residents and the workers, as high voltages were present and critical life-safety systems needed to remain in service. The Frasier Meadows community, and Pinkard Construction, were extremely satisfied with the project results and the level of commitment and attention to detail from the Duro team.

##### **Project Narrative**

When you have a well-established community business partner and an existing full-service senior living complex, with a new construction building in progress, maintaining a consistent source of power is crucial to the safety and well-being of the residents, facility staff, and construction teams. A project like this requires a contractor to provide a high level of service and professionalism to get the job done on-time and within budget. To meet this challenge, Duro Electric partnered with ECM and Pinkard Construction on the 15 Kilovolt (kV) change-over project at the Frasier Meadows Retirement Community. This project was part of the new-build construction of The Prairies building, a 98-unit independent living apartment complex. The

Prairies is just one of the many upgrades and new build plans that are part of Frasier Meadow's \$90 million capital improvement investment. The contractual amount for this project was for \$1.2 million. Some of the other projects slated, or in progress, include a new Arts & Education Center, an expanded Wellness Center, pool upgrades, and new dining areas and common spaces. The architect for the overall project is Hord Coplan Macht Inc. Architects.

The project involved replacing a utility yard with an updated electrical service and upgrading equipment while keeping the existing campus running and operational. With Frasier operating memory care, healthcare and skilled nursing services, it was imperative to keep the facility functioning with minimal disruption to the electrical system and existing equipment. Project coordination and planning was paramount and Duro's team of professional and dedicated staff made this project successful for everyone involved. The residents at Frasier Meadows experienced little to no disruption to their daily routine and were able to access all the services necessary for their health, safety and comfort.

Continuous collaboration with the Pinkard Construction and Frasier Meadows teams, and the development of a detailed schedule, ensured the project started off on the right foot with everything in place prior to the shut-down and transfer of service. The plan included multiple phases with specific dates, times and parts necessary to make sure targets were met. The project started with the design and procurement of a temporary power service to feed power to the existing buildings. The equipment used on the project included; 2 - 500 kV generators, 2 - 150 kVA generators, and 1 - 100 kVA generator. The challenge was not only in the design and set up of the 5 generators being used, but the coordination with Green Brothers Oil to ensure that fuel for the generators would be provided in a timely and consistent manner. Each generator was fueled daily for a period of 23 days straight, running 24/7 to ensure Frasier had the power to continue operations as necessary. More than \$60,000.00 was spent on the rental and service of the temporary generators. Due to project teams comprehensive planning and attention to detail, none one of the generators ever ran out of fuel during operations.

In addition to the temporary power service, the team had to plan and design a system to connect the existing buildings to the temporary generators. This involved boring holes in the rocky soil

typically found throughout the Boulder, CO. area. A total of approximately 9,200 feet of DLO cable was run from each of the generators to feed power to the various buildings and structures. Special care and consideration was given to ensure that no existing utility or underground system was damaged during the boring process. This included obtaining locates for the existing 15 kVA electrical cables, domestic water, sanitary sewer, phone, and cable wires. The winter conditions and frozen soil had to be factored into the plan to ensure that all target dates were met, and the systems were available to transfer power as expected.

One of the greatest challenges facing the project included designing and installing a structural concrete pad underneath the existing utility yard to house the new vaults and equipment while providing a safe working area. The construction of these custom vaults was to ensure that the new equipment would be above the floodplain that the property is in. The area had seen extensive flooding in 2013 and many of the previous and existing structures had to be extensively remodeled or demolished as a result. Each of the concrete vaults weighed anywhere from 8,000 – 11,000 pounds with the equipment and Vista switches being set on top weighing upwards of 6,000 pounds.

Safety was a critical component to the success of this project. Safety for all the employees involved in the process, as well as the safety of the Frasier Meadows residents and facility workers. Switching the service feed to each of the existing buildings would require exposing employees to 15kVA live wires therefore, the project leadership team devised a plan to de-energize the entire campus at one time and placing each building on its own generator, minimizing power disruption and increasing employee safety. Weekly toolbox meetings and daily safety briefings helped to identify potential safety concerns and address methods of control or hazard mitigation. Employees were given the opportunity to voice concerns or identify and address hazards with the project management team, the Safety Manager, or HR department.

Given the scope of work on this project, it was imperative that the people involved received, or had previously attended, a class on the National Fire Protection Association (NFPA) 70e Standard for Electrical Safety in the Workplace. Bill Rome, Duro Project Superintendent, had completed a class on the NFPA 70e safety requirements prior to the start of this project. It was

because of his understanding of the work process and the safety hazards involved that he was able to improve the work coordination and develop a strategic plan to de-energize the equipment and minimize worker exposure to the voltages present. Bill's commitment to worker safety and his understanding of the electrical system resulted in a project that went without incident or worker injury.

The team stayed focused and motivated throughout the project due to their enthusiasm for their work and their willingness to maintain a valuable relationship with Pinkard Construction and Frasier Meadows. The project team took satisfaction from providing a custom solution to an otherwise complex project while taking pride in accomplishing this monumental task while maintaining safety and quality.

*“Part of my motivation with this project was taking a difficult task and making it run smoothly. It's nice to have a general contractor and owner happy that we performed as we said we would, per our shutdown schedule.” – Bill Rome,  
Duro Electric Project Superintendent*

Some of the team members that made this project a success included Gary Axtman and Eric Melanson with ECM and Bill Rome, Project Superintendent, for Duro Electric. Their innovation and collaboration on the project, and their dedication to providing exemplary service to the client made this project a win for everyone involved. Frasier Meadows Retirement Community and Pinkard Construction were exceptionally pleased with the results.

*“The front-end work that the Duro team put into this was second to none. Duro had this project planned down to the minutes. The expertise that Mark Stark, Bill, and Eric's team brought into this is one of the reasons we partner with Duro on projects like this. We can always count on Duro to be there in the late hours of the night when technical issues arise, for that Pinkard is always privileged to have Duro on our team. The customer impact for sequencing this work was the primary factor for how this power transfer work was executed.” – Tim Moreau, Pinkard Construction Senior Superintendent*





