



## PHILADELPHIA SEWER REPLACEMENT A WORK OF ART

**F**acing a task that might have daunted even Rocky, engineers from Philadelphia's Water Department needed to replace the deteriorating Central Schuylkill east side intercepting sewer line running beneath the city's famed Art Museum. They decided to install a parallel sewer line and use the existing sewer as an overflow line.

To accomplish the task in this busy area — besides the museum and the historic Waterworks building, there are also a number of boat houses for the area's university rowing teams located along the eastern bank of the Schuylkill River, and the adjacent Kelly Drive is a major commuter thoroughfare — they needed to address a couple of concerns. One was the sheer volume of water. Up to 29 million gallons per day (mgd) passed through the line. The length of the new sewer line was also a factor. It would have to run approximately 1,100 feet.

The solution to these concerns was to provide a bypass system that would reroute the waste water around the construction area, from a sump

created just upstream of the new overflow connection to a point beyond a new distribution box that would connect the new sewer with the existing sewer. With the bypass in place, the construction crew could work in dry, uninterrupted conditions with greater safety and efficiency while they built a distribution box and tied in the interception line.

City engineers, working with the two prime contractors, Kenny Construction Co. and Driscoll Construction Co., and with Godwin Pumps of America, Inc., utilized a bypass system built around eight Godwin Dri-Prime® DPC300 12-inch diesel-driven pumps, six primary units and two units as backups. The capacity of the system is more than 35 mgd, which leaves a cushion for rain events. Godwin Dri-Prime Pumps were chosen because the volume of water and the length of the bypass lines required exceptional reliability. They are also cost-effective, with lower operating costs and manpower requirements for their operation.

The Godwin Dri-Prime pumps automatically self-prime and can run dry if necessary. These are important features because sewer flow can be intermittent and pumps in some sewer bypass systems can occasionally see little or no water flow, although that was not a factor in this project since the main interceptor line flows continuously. The Godwin pumps can also pass solid materials up to 3.5 inches.



Godwin Pumps Sales Manager Michael Delzingaro. "The pipe is strong, allows runs of any length, requires little maintenance, and, when the job is finished, it can be easily disassembled and reused. This installation is a major undertaking," he continues. "Godwin Pumps is the only rental equipment supplier who has the resources and the ability to handle a project of this size. Our Dri-Prime DPC300 pumps are recognized as industry standards."

The pumps fed into four 18-inch lines running parallel from the pump location to the end of the construction area. Three of the lines discharged into the sewer via 20-inch diameter core drills and the last line discharged into a manhole located just beyond the Spring Garden Street bridge.

The 18-inch discharge lines were made of HDPE pipe, which Godwin Pumps supplies in 50-foot lengths that the company's fusion technicians cut and weld on the job site to meet project requirements. "It makes for a clean system," says

Bids for the project were let out in mid-1999. Initial work began shortly after as Kenny Construction Co. did the tunneling for the new sewer line. Driscoll began its part, setting up the bypass system and constructing the new distribution boxes in April, 2000. Work was completed on this phase in Summer 2000. When the project is complete, the bike path will be restored for public use. "People will be able to enjoy the area again in comfort," Delzingaro adds. "They'll never know we've been here."



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