

October 2011

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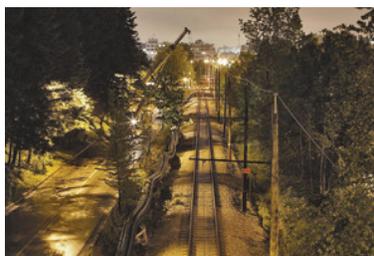
## New Install Runner Up

### Vancouver City Central Transmission Project – HDD & HDPE

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— Oct 27, 2011

As the third-largest film production center in North America, Vancouver is a rapidly growing hub that has showcased the best and brightest the world has had to offer in the last few years, from the 2010 Winter Olympics to the Stanley Cup Playoffs. Through it all, Vancouver has been on the world's stage.



And in the thick of it all is Michels Canada, the prime contractor on the Vancouver City Central Transmission (VCCT) Project, a complicated job that required the use of HDD to install a power cable duct bank under False Creek in the heart of downtown Vancouver. Despite all the activity in downtown Vancouver, the high-voltage installation was the most significant power project to be built in Vancouver in the last 30 years and was necessary to meet demand and strengthen reliability in the city's fast-growing neighborhoods. The project, owned by BC Hydro and engineered by Golder & Associates, consisted of nearly five miles of 230 kV underground transmission circuits, including the 2,789-ft HDD crossing. The 44-in. diameter crossing housed a duct bank consisting of seven 10-in. HDPE ducts, five 4-in. grout pipes and one 5-in. grout pipe. Michels was responsible for the supply and assembly of the ducts and grout pipes, which ultimately weighed 342,000 lbs.

Additionally, Michels grouted the annular space between the borehole walls and the bundle and constructed a transition on either end of the crossing from an HDPE to a PVC duct system, which then was terminated in cable vaults. One of the project's major milestones was the move of the 342,000-lb product bundle from the pipe make-up location on the Heritage Railway Corridor through nearly one mile of city streets to the pullback location. During this move and subsequent pullback, 14 city blocks in the downtown area were closed or partially closed to traffic. The exit side was located at the intersection of two narrow streets on a seven-degree hillside. The work area was small at just 130-ft by 26-ft, and it was nearly within arm's reach of adjacent apartment buildings.



While it was one of the most challenging pipe pulls achieved by Michels and the biggest duct bundle grouting job ever undertaken in North America, the logistical and public relations issues may have posed the highest hurdles. The entry side was located in David Lam Park, which was a popular Olympic celebration site during the games. To mitigate noise, Michels used sound mats and hospital mufflers on equipment and shut down non-essential equipment whenever possible.

The small work area on the exit side meant that Michels crews often found themselves on a first-name basis with the area residents and stopping operations in order to allow a resident to access a parking garage. It was this type of attitude that resulted in Elsie Roy Elementary School, the City of Vancouver Fire Chief and the Vancouver Police Department recognizing Michels for its community involvement.

BC Hydro showed its pride in the project by inviting British Columbia Minister of Energy Richard Coleman to visit the site during the pullback stage and showcased the project to CEOs of various electric utilities from across Canada. Throughout the pipe pullback, Michels continued to look out for local residents by providing shuttles for pedestrians who were trapped on one side of the six-block length of pipe so that they could more quickly get to their destination. The pullback was successfully concluded on May 31, 2011.

A varied and diverse management team was selected from across Michels, including Michels Canada, Michels Pipeline Construction, Michels Directional Crossings, Michels Power, Michels Tunneling, Michels Environmental Resources Group and Pilchuck.

Owner: BC Hydro  
 Engineer: Golder & Associates  
 Contractor: Michels Canada

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