

Ocean Cement New Wharf and Fender Repairs



A new wharf and fenders were installed at Ocean Cement's Granville Island Concrete Ready Mix Plant in Vancouver, BC, earlier this year. The new wharf, consisting of a steel pipe pile foundation and a steel/concrete composite deck structure, was designed to replace the plant's existing timber wharf. As the concrete facility was to remain fully operational during the bulk of the construction, there were various demonstrations of innovative planning and solutions throughout the design and construction phases. The design required integration of temporary support structures to maintain the structural and mechanical integrity of the materials handling equipment that was to remain operational. Construction activities required precise sequencing for the demolition and installation of temporary supporting and permanent structures to ensure Ocean could maintain operations.

Lead engineering design services: Villholth Jensen & Associates (Jorgen Jensen PEng.) General Contractor: Vancouver Pile Driving (John Zuk, Sherry Kennedy EIT).

Adaptive Water Management System

Tervita Corporation, formerly HAZCO, was retained to design and construct an Adaptive Water Management System (AWMS) to treat all water within the construction footprint of the Kitimat Modernization Project. The AWMS consists of passive and active treatment elements interconnected throughout the 120 ha smelter site by 5,200 m of high-density polyethylene pipe. The active treatment system is composed of a mobile polymer enhanced treatment and filtration system, which actively monitors for multiple potential contaminants, treats for suspended solids and automatically isolates water that does not meet the discharge criteria. The passive treatment system, including lined ponds and 80 m³ mobile tanks, provides surge control, isolation and primary settling. With this combined treatment and monitoring system, Tervita ensures water leaving the site meets the criteria established by the Ministry of Environment.

Owner: Rio Tinto Alcan. Prime Contractor: Bechtel Canada. Environmental Consultant: SNC-Lavalin Group. Contractor: Tervita Corporation.



Portland TriMet Light Rail Extension

Elevated rail foundation construction required a combined system of drilled shafts (2.5m ϕ) confined within a cellular grid of deep cement soil mixed ground improvements achieved with Cutter Soil Mixing (CSM) installed by Malcolm Drilling. The intent of the CSM confinement cells is to protect the drilled shafts from seismically induced lateral spread and the resulting lateral load along with localized soil liquefaction mitigation and down drag effects. Designed by CH2M HILL, this hybrid foundation system provided a robust, economical and sustainable solution for the site conditions. Light rail service will be extended from Portland State University to north Clackamas County (11.8 km) with a scheduled completion date of September 2015.

Foundation Contractor: Malcolm Drilling Company. General Contractor: Stacy Whitbeck/Mowat JV. Geotechnical Engineer: CH2M HILL. Owner: City of Portland TriMet.

