Port of Oshawa

Marine Combi-Wall with Tie-Backs

Oshawa, ON

Project Snapshot

- 60 m long sheet pile wall
- 160 m long armour stone wall
- 226 m long combi-wall
- Large-diameter tie-backs
- Concrete cap

Project Background

The Port of Oshawa is Durham Region's gateway to world markets through the St. Lawrence Seaway. This national deep-sea port has handled over 500 vessels and shipped more than 3 million tonnes of cargo over the past decade. On average, the port handles $23 million worth of cargo annually, from salt and steel products to asphalt and grain.

Project Description

In May of 2014, Oshawa Port Authority awarded the contract to Soletanchey Bachy Canada (SB Canada) for the Major Consolidation Project at the Port of Oshawa. This challenging project involved relocating the heavy industrial uses of the west wharf to the east wharf and would require a significant upgrade to the east dock face. This was not the first time SB Canada has worked at the Port of Oshawa. In 1937, SB Canada (Bermingham) installed the existing wall which had been in place for 78 years.

This time, the project had two main items; the removal of the existing wall which consisted of a 60 m long sheet pile wall and 160 m long armour stone wall, and then the installation of 226 m of Combi-Wall. The new wall is a combination of 98 pipe piles, alternating with 78 sheet piles.

The resulting dock face held back 8 to 10 meters of soil, and supports the docking of ocean freighters. High strength tiebacks were installed to hold back the top of the wall. Finally, the piles and tiebacks are cast within a concrete cap, and receive a series of bollards, fenders, ladders and backing curbs along its length.

Owner
Port of Oshawa
General Contractor
SB Canada
SB Canada Personnel
Mark Reinders
Period of Work
2014

Innovative Solutions

The installation of the combi-wall required strict and accurate placement to avoid compounding error building over its length. SB Canada developed a template that enabled accurate placement of the pipe piles and minimized the compounding error.

This turnkey project for SB Canada showcases our wealth of expertise. SB Canada undertook the excavation of giant armour stones (some the size of compact cars), and the backfill of granular material. Vibratory hammers were used to drive large diameter pipe piles, small and slender H-piles, and sheets of varying sizes. Conventional crane mount drilling and high-end, lead-mount reverse circulation drilling was done to remove the soil and rock respectively. Complex welded elements, difficult field alignment, and rough, wet working conditions display the versatility of our welding team. Despite the early onset of winter, large diameter tiebacks were accurately drilled off a barge buffeted by winds and waves in order to maintain the owners schedule.

The Port of Oshawa is pleased to have a new docking facility that is longer and capable of taking larger vessels that was completed on time and on budget.

"SB Canada completed the project on time and at all times were professional and innovative, even suggesting a money saving alternative to the original design. The Oshawa Port Authority does not hesitate to recommend SB Canada in their future endeavors".
- Ms. Donna Taylor
President & CEO, Harbourmaster