

Canadian Forces Station - St. John's St. John's, Newfoundland, Canada

Located on the north shore of Quidi Vidi Lake in Newfoundland, the Pleasantville site of the Canadian Forces Station St. John's holds a significant place in Canadian military history. First used as a training ground for the Royal Newfoundland Regiment during World War I, the station's facilities were constructed by American forces during World War II. Today, the station is heavily used by the Royal Canadian Navy and supports approximately 225 Regular Force, 57 civilian employees and 485 Reservists.

In use since 1941, the station was in need of repair. The Pleasantville Consolidation project began in June 2011 and, when completed, will see the construction of a new multi-purpose facility which will replace 16 existing military buildings. Recognizing the site's strategic and operational value, the Canadian Lands Company (CLC) reserved approximately 16.5 acres of land at the Pleasantville site for the Department of Defense to construct its consolidated compound. The small space and solid bedrock surface presented challenges that were resolved with the efficient and effective use of land.

Project plans called for the construction of five retaining walls throughout the property. As a preferred provider for both the general contractor (Bird Construction) and the installer (Rock Construction Ltd), Concrete Products

Owner: Canadian Forces Station - St. John's

Engineer: Newlab Engineering Limited

Contractor: Bird Construction

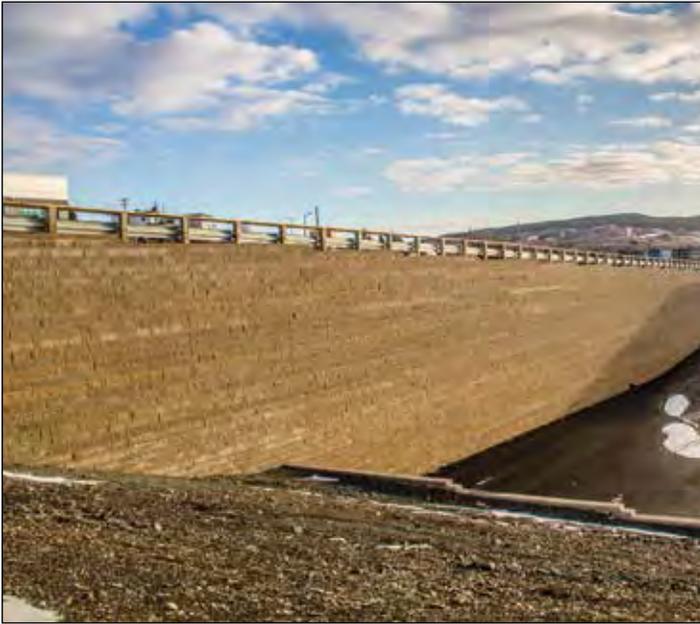
Keystone Producer: Concrete Products

Technical Description:

- Keystone Compac® III - Straight Split
- Total Wall Area: 35,000 sq.ft.
- Maximum Height: 29'

Installation: 2012





Limited, a Keystone Licensee, was selected to supply 35,000 square feet of Keystone Compac III units for this project. The Pleasantville Consolidation project marked the first time the next generation of Keystone's Compac Unit, the Keystone's Compac III unit, would be used in Newfoundland. As a result, Design Engineer, Steve Greeley, Newlab Engineering Limited, worked closely with Keystone from specification development and product selection, through installation, to ensure all engineering and logistics were in place.

Initially, several other products were considered for the project. Ultimately, the near vertical construction option of the Keystones Compac III unit set it apart from other proposed solutions. The near vertical construction application was critical given that several of the walls would support newly constructed loading docks and main parking areas, while other walls were built to increase the amount of usable land surrounding the new facility. In one location, a nearly 29-foot wall was needed to support a main parking area. The use of Keystone Compac III saved over two feet of area from being consumed by wall materials, allowing for more parking surface and sufficient space for larger military vehicles to drive and turn.

Working together, Construction Products Limited and Newlab Engineering Limited ensured the walls were stable and secure as the site's bedrock foundation proved to be a major construction challenge. Before any construction on the facility or retaining walls could begin, the site needed to be blasted. Holes were drilled into the bedrock and dynamite placed inside. According to Joe Blundon, General Manager, Concrete Products Limited, the remnants from the blasts were crushed on site and used in conjunction with earth reinforcements, as structural fill behind the walls. The bedrock posed a different type of challenge for a wall built near the back of the property. Blasting and removing bedrock to install geogrid would have required workers to go beyond the project's property line, which was prohibited. Along the lower portion of the wall installers were able to create shelving in the bedrock where the wall could be built.

The retaining wall portion of the project was completed in 2012 thanks to the close proximity of the Concrete Products Limited's production site and the Compac III's ease of installation. "The product site was less than a kilometer away," says Blundon. "We could supply the installers as fast as they could install. The installers really narrowed down the installation. They became very quick." Keystone Compac III units continue to be specified and installed, regularly, throughout Newfoundland.