

Stoney CNG Bus Storage and Transit Facility

Calgary, Canada (2017)

BACKGROUND

When the city of Calgary needed a new indoor bus fueling and transit facility to store and maintain Calgary Transit's new fleet of Compressed Natural Gas (CNG) buses along with their existing diesel buses, General Contractor PCL Construction Management Inc. and Ready Mix Provider Lafarge Canada Inc. were tasked with building the massive 44,300 m² / 476,840 ft² concrete floor that could withstand heavy erosion.

The \$174 million-dollar, LEED Gold facility was built in the Stoney Industrial Area in NE Calgary to become the largest indoor Compressed Natural Gas (CNG) bus fueling complex in North America. The facility houses a minimum of 424 buses, 36 maintenance bays, including two detail cleaning bays, on-site compressed natural gas fueling infrastructure and staff facilities. A fleet of 40-foot standard buses, 60-foot articulated buses and 35 foot or smaller shuttle buses are stored in the facility.

CHALLENGE

Concrete floors in transit facilities can experience severe abrasion. The constant heavy traffic continually exposes the concrete to abrasion and wear from the hard particles in bus tires. Support vehicles, service equipment, dropped tools, chemical attack and exposure to freeze thaw conditions can also cause damage to concrete floors. Deteriorating concrete surfaces can become a hazard for people and equipment, and the resulting safety concerns can affect the operational efficiency of the facility through costly repairs or even suspended services.

SOLUTION

Lafarge Canada Inc. recommended and promoted the use of Hard-Cem® in this project. Hard-Cem®'s proprietary technology provides concrete with superior hardness and improved durability in relation to abrasion and erosion. Added at batching, Hard-Cem is an integral concrete hardener providing full depth concrete hardening that will increase the abrasive-erosive resistance of concrete subjected to heavy traffic and long-term abrasion from vehicle wear in transit facilities. Concrete surfaces and operational efficiencies are maintained lowering maintenance costs and extending facility service life for a clean safe workplace.

DEVELOPER:

Plenary Group (Canada) Ltd.

ARCHITECT:

AECOM Canada Ltd.

GENERAL CONTRACTOR:

PCL Constructors Management Inc.

READY-MIX:

Lafarge Canada Inc.

PRODUCT:

Learn more at kryton.com
Hard-Cem®



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Kryton International Inc.

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Lafarge supplied over 7500 m³ (9800 yd³) of 35MPa (5075 Psi), Class C-1 exposure Hard-Cem® concrete. In all, over 1,500 concrete trucks were used in the concrete pours.

The Stoney CNG Bus Storage and Transit Facility opened in March 2019, and it joins the growing list of Hard-Cem® Transit applications which include: Toronto Transit Commission McNicoll Bus Garage, Toronto, ON, Spring Gardens Administration Center and Garage (Bus Barn) (Calgary, AB), South Edmonton Transit Facility (Centennial Garage) and North East Transit Garage (Edmonton, AB) and Hamilton Transit Facility (Vancouver, BC).