

## GREENING OF ST. CLEMENT SCHOOL PLAYGROUND

playground a demo site for tree growth & stormwater management



The St. Clement School in Montréal, Canada, like many schools across North America, has a large asphalt playground used by children for exercise and games. When the local school board decided to do a retrofit of the grounds, one goal was to provide more shade and a greener space for the children, giving them a place close to nature while also reducing the heat in this part of the city.

This demonstration project was initiated by Nathalie Bédard, a landscape architect and rainwater specialist at Solutions Éco-Smarts, and Hélène Godmaire, at the time director of Great Lakes United, a non-profit agency that advocates for water protection in the Great Lakes and St. Lawrence watersheds. GLU, along with INSPQ, contributed money toward the project.

Charlotte Gaudette, a landscape architect involved in many school ground redesigns, and Marie Duguay, an engineer at Vinci Consultant specializing in bioretention and stormwater, collaborated closely on the design. They took this opportunity to innovate and show how to integrate stormwater into the design from the beginning of the process. Because schoolyards are often paved to facilitate maintenance, they

needed to find a solution that could green the space without reducing the play surface, and increase stormwater storage without being a burden on the ground maintenance.

The site design for the new playground called for the use of Silva Cells to supply the new trees planted in the yard with adequate amounts of soil. In addition to growing large, mature trees, Nathalie Bédard's stormwater vision was key in convincing the main engineer that they can also benefit from using Silva Cells for stormwater management capability. The soil volume contained in the Cell system will be used to capture stormwater on-site in two catchment areas on the playground, one of which is 1,000 square meters, and a second which is 445 square meters .

As the trees grow, the St. Clement schoolchildren will have an increasingly pleasant place to spend time outdoors. Interacting with nature will become an integral part of the school experience. The design of the schoolyard will also serve as a green infrastructure demonstration site, showing the City of Montréal and other Great Lake municipalities how adequate amounts of soil and trees can be increased and stormwater can be treated on-site.

**Installation Summary:**

Soil volume per tree: 11.9 m<sup>3</sup>/423 ft<sup>3</sup> (Area 1), 10.9 m<sup>3</sup>/388 ft<sup>3</sup> (Area 2)

Stormwater treatment capacity: 9.5m<sup>3</sup> (2,500 gallons/0.0077 acre ft) [Area 1]; 4.4 m<sup>3</sup> (1,150 gallons/0.0035 acre ft) [Area 2]

# of Silva Cells: 75 decks, 150 frames (Area 1); 34 decks, 68 frames (Area 2)

Catchment area: 1,000 m<sup>2</sup>/10,764 ft<sup>2</sup> (Area 1); 445 m<sup>2</sup>/4,790 ft<sup>2</sup> (Area 2)

Number of trees: 6

Client: Montréal School Board

Project designer: Solutions Eco Smarts , Mousse Architecture de Paysage and Nathalie Bedard

Contractor: Les Paysagistes Damiano Inc. and Les Excavations D.C.P.

Engineers: Vinci Consultants

Installation date: August 2012

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