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CENTRAL BOULEVARD CASE STUDY

Central Parkway is a low impact development (LID) retrofit streetscape project in Mississauga, Ontario. The project utilizes Silva Cells as an underground bioretention system to manage and treat stormwater runoff while simultaneously providing the uncompacted soil volume necessary to grow large trees.

As part of the redevelopment of Central Boulevard, the City of Mississauga partnered with DeepRoot, TD Friends of the Environment Foundation, and Credit Valley Conservation to install the Silva Cell system, as well as assessment equipment in order to monitor site performance, including water quality and quantity.

Stormwater treatment has become an increasingly important issue to the Greater Toronto area over the past several years as the population has quickly increased and spurred development at the same time that the area has begun to experience more frequent, high intensity storms due to climate change. Polluted runoff from these events flows from hardscapes and enters into Lake Ontario, negatively affecting water quality, causing erosion, and harming the local ecosystem.

The Silva Cell system at Central Parkway acts as an underground bioretention system, removing stormwater pollutants and controllingrunoff volume for water flowing into Cooksville Creek and Lake Ontario. Runoff from 1,046m2 of surrounding impervious surfaces is directed into existing catch basins and then throughout the system via two distribution pipes. The soil acts as a filter to remove nutrients, and excess water is discharged to a storm sewer through an underdrain at the base of the system.

Performance findings from 2015 were very strong, showing a 97% average stormwater volume reduction and a 96% peak flow reduction as well as helping to replicate a natural water balance in an urban setting, contributing to erosion control, improved water quality, and protection of natural aquatic habitat.

The integrated approach also contributes aesthetic value by way of six salt-resistant Chanticleer pear trees that are planted in the median to provide green canopy cover along the roadway. The six trees have access to 39.66 m3 of soil each from the Silva Cells plus the soil in the planter. The total soil volume (planter and Silva Cells) in 105m3.

Installation Summary

Average soil volume per tree: 6.61 m^3 (233.33 ft^3)

Number of Trees: 6

Total Silva Cells: 140 Frames, 70 Decks

Installation Date: 2015

Project Type: Transit

Intallation Type: Integrated—Trees and Stormwater

Project Site: Municipal/government

Project Designer: City of Mississauga

Contractors: Pacific Paving Inc.

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