Portico Church

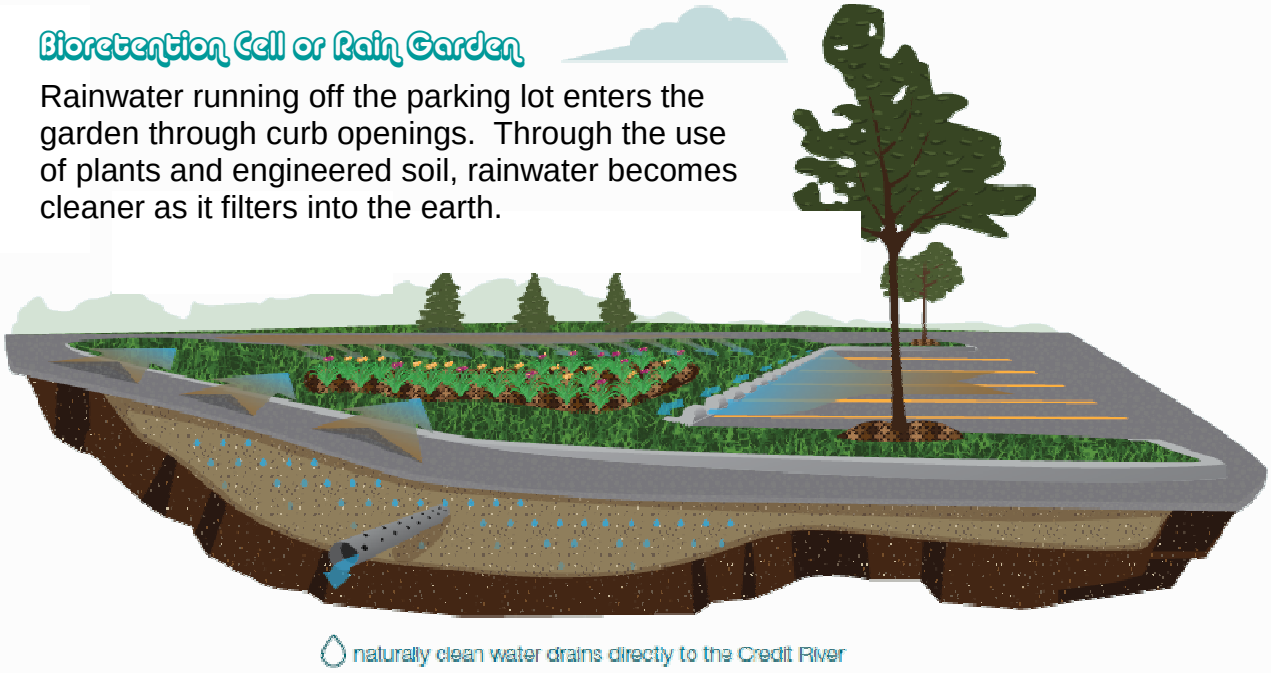
Site Location: Mississauga, ON

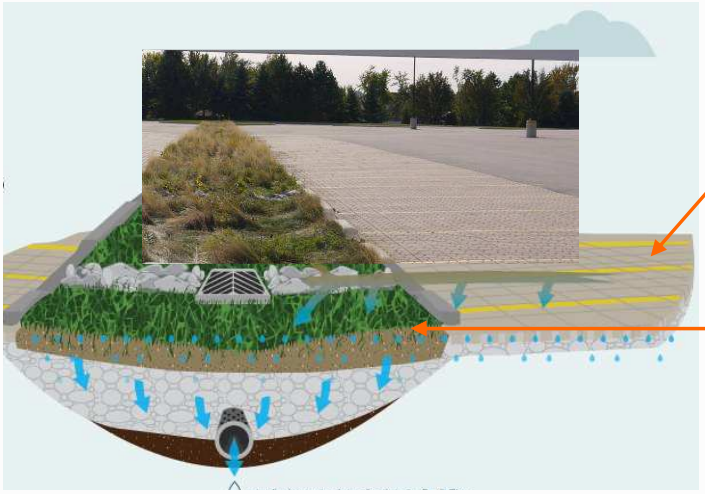
Project Overview

The bioretention cell, permeable pavers, and bioswale at Portico Church absorbs and filters runoff from a 5 acre parking lot that would have otherwise drained directly into the Credit River. The LID design will completely capture 90% of all storm events that occur in a typical rain year. The parking lot construction including the permeable pavement was completed in 2009, while the bioretention areas were added to the parking lot islands in 2011.

Bioretention Cell or Rain Garden

Rainwater running off the parking lot enters the garden through curb openings. Through the use of plants and engineered soil, rainwater becomes cleaner as it filters into the earth.





Permeable Pavers

An alternative to traditional pavement, permeable pavers allow rainfall and road runoff to be filtered as it flows into the ground. Excess water then flows to the bioswale.

Bioswale

The bioswale absorbs and filters parking lot runoff as the water flows through the plants and engineered soils and into the ground.

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Assumption and Maintenance Protocols

Bioretention is a new stormwater practice to Ontario and property owners and municipalities need standard methods for certifying a newly constructed practices and protocols for maintaining them for the long term. Portico Church bioretention is among seven sites where the following protocols are being piloted:

- Verification of design drawdown times with water level monitoring equipment.
- Testing bioretention soils for adherence to the specification
- Assessments of plant coverage, survival and health
- Topographic surveys for comparison to design plans
- Types and frequency of maintenance activities required

Initial Findings and Lessons Learned

- Bioretention soils, to ensure it meets specifications, must be tested and approved by the design engineer before soil is brought to the site.
- Landscaping for vegetated LID practices must fit the surrounding urban aesthetic standard; this typically means a neat, clean, organized and colourful landscape.
- Monitoring with water level loggers began in June of 2012. Preliminary review of the results has found that surface ponding has not exceeded 24 hours.

How Monitoring Supports Our Stakeholders

Monitoring activities at Portico Church and the six other bioretention sites will assist in the development and refinement of LID guidance and retrofit guides available at www.bealeader.ca.

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