



CVC Head Office

Location: Mississauga



Project Overview

During an expansion of the CVC Head Office, CVC had a goal of achieving LEED Gold certification. This included the construction of two parking lots built with permeable pavement to capture stormwater runoff. In addition, a rainwater harvesting system was installed in the basement to retain and re-use roof runoff. Monitoring activities at this location were initiated in summer 2014 and are currently ongoing.



← Permeable Pavement

An alternative to traditional pavement, permeable pavers allow rainfall and road runoff to pass between joints in the pavers into an underground gravel storage layer. Stored water can infiltrate into the surrounding native soils.

Rainwater Harvesting →

Rainwater collected from the roof and water from a sump pump are stored in a rainwater harvesting tank and re-used as a source of non-potable water for flushing toilets and outdoor hose bibs. This helps decrease CVC's municipal water usage.



Successes

The successes achieved with this project include:

Demonstration showcase – The LID practices at CVC Head Office have been showcased through numerous events and site tours, and represent LID practices that can be installed at a typical medium-sized commercial office building. In addition, it demonstrates features that may be eligible for Mississauga's Stormwater Charge Credit Program.

Performance - Results from the monitoring period show that the LID at CVC Head Office reduces the runoff volume of rain events by 63%. This is an improvement from typical parking lots where the majority of runoff travels directly into the storm sewers and into our streams and Lake Ontario. The site also removes 81% of total suspended solids.

Water conservation – The rainwater harvesting system has allowed CVC to use over 400 000 L of reclaimed water, reducing the strain on the municipal drinking water system and leading to a total cost savings of \$845 from August 2013 to December 2015

Protecting the environment – This project embraces the spirit of the environment by showcasing how to manage and clean stormwater before it enters the Credit River.

Infrastructure Assessment

CVC has worked with various experts in order to evaluate the overall performance of the LID at CVC Head Office. The objectives include:

- To evaluate the performance of the LID features at controlling runoff volume, peak flows, and water quality
- Evaluate long-term maintenance needs and maintenance programs, and the impact of maintenance on performance.
- Assess the ancillary benefits, or non-SWM benefits, such as reducing strain on the municipal drinking water system

Performance Findings

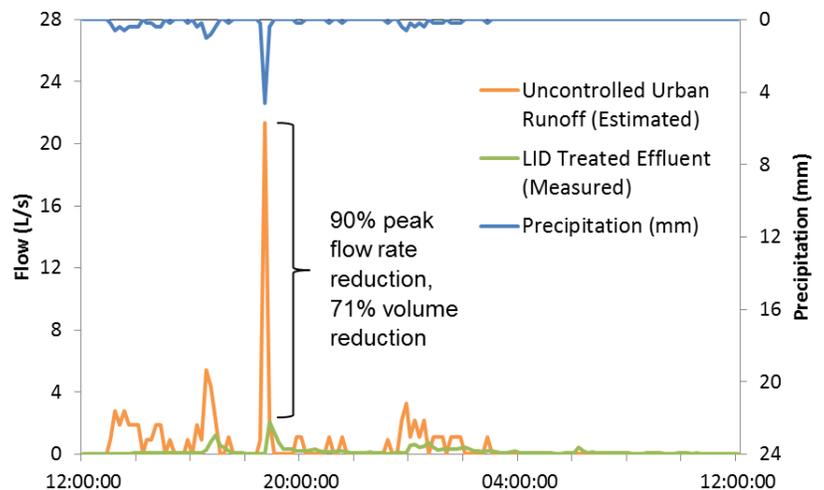
The CVC Head Office LID allows a typical office building parking lot to mimic a more natural environment which has significant benefits for water quality and water runoff:

- 67% volume reduction for rainfall events ≤ 25 mm in size
- 81% total suspended solids removal
- 69% total phosphorus removal
- Median of 81% reduction in peak flows over all events
- Over 400 000 L of reclaimed water used, leading to a cost savings of \$845 from August 2013 to December 2015

Volume & Peak Flow Reduction Performance

On October 3 and 4 2014, CVC Head Office experienced a typical high-intensity storm event with a rainfall of 17.4 mm over 14 hours and a peak rainfall intensity of 27.6 mm/hr.

As the figure shows, even for this higher-intensity event, the LID at CVC Head Office reduced the storm volume by 71% and reduced the peak flow rate by 90%. In a traditional parking lot, almost all of the rainfall would have been uncontrolled urban runoff adding stress on the municipal system and the environment.



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