Storm Water Cistern

TOWN OF CALEDON

Green Development Program

Creating solid partnerships with the development community is part of the natural course of business. The Town of Caledon's **Green Development Program** strengthens that link. By providing development charge discounts for new green commercial and industrial buildings, the Town of Caledon enables developers to create more sustainable projects in our community.

Overview

A storm water harvesting system collects storm water from roofs, and sometimes parking lots, and diverts in into a storage cistern instead of discharging it into the municipal storm sewer as with conventional storm water management. Stored storm water can be used for irrigation, toilet and urinal flushing or priming traps. A form of filtration is required to screen collected rainwater prior to reuse. Cisterns can be stored above or below ground and sized to store enough storm water to meet the reuse demand. Cisterns can be made from steel, concrete or plastic.

Advantages

- Reduction in conventional storm water infrastructure and sewer use charges
- Reduction in peak flow from runoff and demand on municipal storm water infrastructure

Logistics buildings with large roof areas offer high potential for storm water capture and reuse. The amount of storm water generated from the roof of a 300,000 sq.ft. logistics building during a typical July rain event in Ontario is approximately 210,000 L; total water generation for July is approximately 2,100,000 L. The simplest use of captured rainwater is irrigation (given small flushing loads and no process water loads). Assuming 50% lot coverage and 10% site landscaping requirements, a 300,000 sq.ft. logistics building would require irrigation for approximately 5,600 m^2 of landscaping. If the entire area is planted with turfgrass, water requirements for July using a conventional sprinkler system is approximately 620,000 L, or roughly 20,000 L daily. A cistern able to meet these requirements for a full week between rain events should hold approximately 140,000 L or 140 m^3.

An alternative strategy is to use a mix of native and drought-tolerant shrubs, trees and groundcovers requiring less water. Combine this with a smaller conventional system or a high-efficiency drip irrigation system. Drip systems use low pressure to deliver water through perforated flexible tubing, best suited for small landscaped areas.

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CALEDON
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To learn more about our Green Development Program, contact the Economic Development & Communications Department

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Savings

For the heavily irrigated turfgrass example provided, extrapolated annual water savings (assuming storm water is reused only during irrigation periods) are approximately 2,500,000 L. Assuming water and sewer charges of $1.2/m3 in Peel Region, the annual savings are $3,000.

Suppliers | Contacts

Landscape Ontario – Horticulture Trades Association | www.horttrades.com

Concrete Precasters Association of Ontario | www.cpaontario.com/index.html

Case Study | Examples of Technology in Use

Metro Label Printing Facility, Toronto ON

This 12,260 m2 warehouse containing label press equipment, office space, truck loading docks and parking uses a 18 m3 rainwater collection cistern for flushing toilets and some manual irrigation (the facility had a permanent automated irrigation system connected to the municipal supply that met the majority of the irrigation needs).

Government Incentives

No known government incentives.