GTAA
PARTNERS IN PROJECT GREEN
A PEARSON ECO-BUSINESS ZONE

stay connected
www.partnersinprojectgreen.com

CASE STUDY

Calstone Inc.
Water Stewardship

1.8 million L of water diverted annually

9,300 L of rainwater storage

4 of 6 downspouts diverted

Managing Stormwater Runoff On-site Through Source Controls

"The idea started as a rainwater harvesting tank and some raspberry bushes. With the help of Partners in Project Green, the project has grown and we're now committed to capturing 100% of the rainfall off our roof."

Jim Ecclestone,
CEO/President, Calstone Inc.

Background

A corporate leader in water stewardship for the Highland Creek watershed

Calstone Inc., a manufacturer of steel-based furniture products located in Scarborough, has extended its commitment to sustainability by installing innovative Low Impact Development stormwater management infrastructure on their property.

After receiving $5,000 from City of Toronto's Hometown Heroes Earth Day award to install a rainwater harvesting tank and plant a garden, Calstone approached Partners in Project Green's Water Stewardship Committee. Using funds from an Ontario Ministry of Environment and Climate Change Showcasing Water Innovation grant and Partners in Project Green's Water Stewardship capital grant, the stormwater management retrofit

CALSTONE INC.
Your Furniture Solutions Partner

Sustainable Technologies Evaluation Program

Toronto and Region Conservation for The Living City

XCG Environmental Engineers & Scientists

GROUNDS COVERED

TORONTO

Ontario

GTAA PARTNERS IN PROJECT GREEN
A PEARSON ECO-BUSINESS ZONE

stay connected
www.partnersinprojectgreen.com

CASE STUDY **Calstone Inc.**

Collective Stormwater Infrastructure Project

The long-term goal is to increase and replicate the number of these initiatives in the GTA by taking a collaborative approach to their execution and completion.

Above: Calstone Inc. site, before and after project construction

project was scaled up by an investment from Calstone, to reach a final project value of $97,920.

Partners in Project Green, a collaboration between the Toronto and Region Conservation Authority and the Greater Toronto Airports Authority, works with businesses in the Greater Toronto Area to improve their sustainability performance.

The Problem: On-Site Stormwater Management

Renovation plans were shaped by on-site investigations and a collaborative design approach. Before construction commenced, geotechnical reports were consulted to estimate the water table depth below the property and tests were performed to determine the asphalt pavement thickness and permeability of the underlying subsoil (3.3 mm/h). Calstone's expansion, improvement and maintenance plans were developed and reviewed by Grounds Covered, XCG Consultants Ltd. and the Sustainable Technologies Evaluation Program (STEP). An important lesson learned was that, although there are inherent challenges in collaborating with so many partners, the ability to provide maximum added value to a project increases when all parties remain fully engaged.

Above: Aerial view of the Calstone Inc. site

The Solution

Stormwater source controls retrofitted on-site include two rainwater harvesting tanks, one of which overflows into four interconnected ponds. Four of the six roof downspouts were disconnected from the storm sewer to feed into the tanks and ponds. Three of the ponds provide temporary water storage and infiltration functions while the fourth functions as an attractive permanent water feature. Employees and visitors are able to walk along the edge of these ponds on a permeable walkway, which leads to an infiltration trench at the back end of the building that also connects to the infiltration ponds.

GTAA PARTNERS IN PROJECT GREEN
A PEARSON ECO-BUSINESS ZONE

stay connected
www.partnersinprojectgreen.com

CASE STUDY **Calstone Inc.**

Collective Stormwater Infrastructure Project



Above, from left to right: Calstone Inc. site during construction; one of two rainwater harvesting tanks; view of porous walkway and infiltration ponds from the back of the facility

These stormwater best management practices set Calstone apart from other medium-sized businesses in the area by providing a distinct, enhanced green space for employees and showing dedication to exemplary water stewardship within the Highland Creek watershed. Since stormwater infrastructure servicing this area is aging and does not meet current standards, this showcase of lot-level stormwater management practices demonstrates to the community ways that the cost of retrofitting municipal infrastructure could be avoided.

Once fully operational, the stormwater management system will be able to capture 100% of the rainwater from Calstone's 3,900 square metre roof, which will be used to enhance employee green space, irrigate landscaped areas and for on-site stormwater infiltration. Annually, this will divert approximately 1.8 million litres of rainwater from being directly discharged to the municipal storm sewer and, thereby help to restore a more natural water cycle to Highland Creek.

Next Steps and Future Applications in Ontario

Monitoring the performance of the stormwater management system as well as the official planting of native, drought-resistant trees, plants and shrubs will be completed in 2015. The understanding gained from evaluating the treatment and cost effectiveness of such systems can be used to inform decisions about future private property retrofits across southern Ontario.

Calstone Inc.'s project was a stop on WaterTAP's 2014 domestic media tour as it aligns with Partners in Project Green's objective to showcase lot-level stormwater management techniques to lower the burden on aging municipal infrastructure. The long-term goal is to increase the number of these projects in the GTA by taking a collaborative approach to their execution.

Contact Information

Eric Meliton
Project Manager, Partners in Project Green
Toronto and Region Conservation Authority
(647) 338 – 5239
emeliton@trca.on.ca
101 Exchange Drive, Vaughan, Ontario, L4K 5R6

This project has received funding support from the Government of Ontario. Such support does not indicate endorsement by the Government of Ontario of the contents of this material