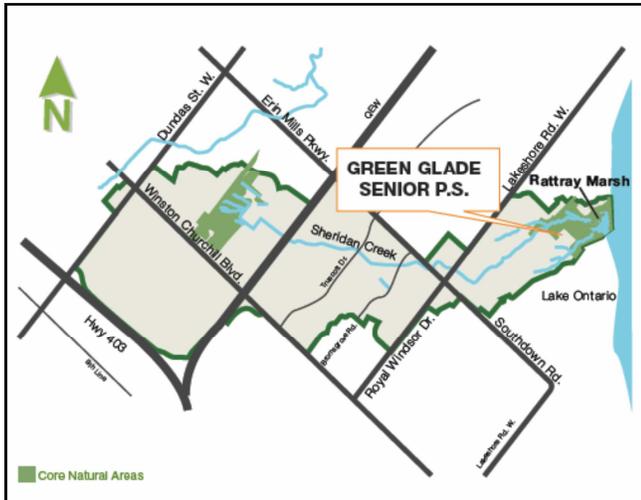


## Overview

Green Glade Sr. Public School is a senior elementary school located in south Mississauga, adjacent to Rattray Marsh, a provincially significant wetland.



Green Glade Public School is located near Rattray Marsh Conservation Area

In 2011, Green Glade and the Peel District School Board (PDSB) staff worked with Credit Valley Conservation (CVC) to retrofit the school property to incorporate a rain garden low impact development (LID) feature. The rain garden accepts runoff from a portion of the school's roof, as well as runoff from a section of the parking lot.

## Goals & Drivers

- Demonstrating the school's and PDSB's commitment to greening their buildings and property.
- Enhancing stormwater management practices at a site adjacent to a provincially significant wetland.
- Addressing nuisance ponding within the parking lot (near a pedestrian walkway) that took place following rain events.

## Successes

The successes achieved with this project include:

**Addressed nuisance ponding** – The rain garden has reduced the nuisance ponding issues in the pedestrian walkway area. It has reduced winter salting requirements and site safety and accessibility issues.

**Opportunities for students** – The rain garden has been incorporated within the school's curriculum through the creation of art pieces that were installed within the rain garden. The function of the garden is also included in science class.

## Design

Prior to implementation of the rain garden, issues with ponding were taking place in the school's parking lot. Ponding was centralized in a pedestrian walkway area, near the front entrance to the school. An example of this ponding is shown below.



Nuisance ponding in pedestrian walkway

Addressing the nuisance ponding issue was one of the main goals of the project. To accomplish this goal an area adjacent to the ponding site was selected as the ideal location for the rain garden. This proposed site encompassed an existing garden and grassed area. A site survey was completed and the drainage area of the proposed rain garden was delineated.

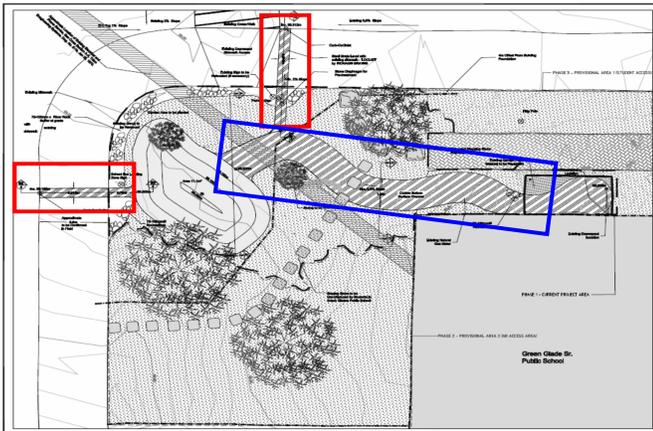


Surveying of the proposed rain garden site

The surveying established that the total contributing drainage area to be treated by the rain garden was 320 m<sup>2</sup>, based upon the portions of the parking lot and roof draining to the garden.

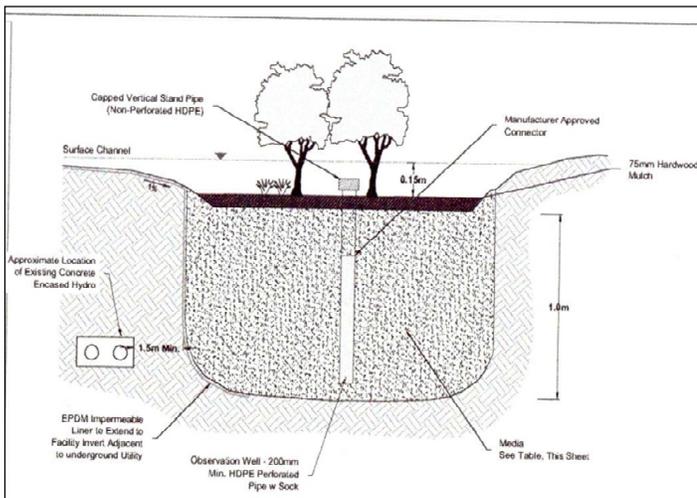
In addition, the rain garden design accounted for the roof top drainage which was directed to a dry river bed

which then flowed into the depression (outlined in blue in the figure below).



Rain garden site plan

The dimensions of the rain garden are approximately 3.5 m long by 1.5 m wide by 1.4 metres deep. The rain garden has a maximum ponded depth of 150 mm and can provide water quality treatment for 7.95 m<sup>3</sup> (7,950 L). An observation well was included in the design plans for the garden. The observation well can be used by school staff to monitor how well water is draining within the garden. Monitoring equipment (depth probes) can also be installed within this well to automatically monitor water levels within the bioretention area (see the figure below).



Cross section of the rain garden

### Landscape Design – Plant Selection

The plant species selected were salt tolerant and would be characteristic of a wet meadow environment subject to both dry and wet conditions. Overall, the intention of the design was to minimize the amount of maintenance required by planting in thick densities to minimize weed growth.

### Operations & Maintenance

During the school year, maintenance of the garden was incorporated into the maintenance of the property by school facility staff. Maintenance included irrigating the plants during establishment and weeding. During the summer months when facility staff are away, maintenance tasks are supported by members of Green Glade's parent council and by Credit Valley Conservation Youth Corps (CYC).



Completed rain garden

### Acknowledgements

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- Green Glade Public School Administration, facility staff, teachers, students and parent council
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- Ontario Ministry of the Environment

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