



# IMAX Corporation

Location: Mississauga  
 Constructed: Fall 2012

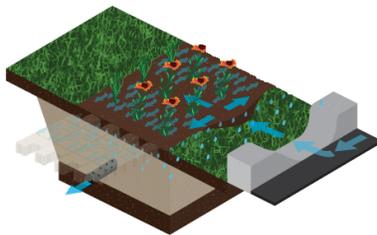


## Project Overview

Credit Valley Conservation partnered with the IMAX Corporation to retrofit their parking lot with innovative stormwater management technologies. The parking lot surface is a combination of traditional asphalt and permeable pavement. The permeable pavement section is divided into three catchments with differing subsurface conditions; Granular “O” base material, ¾ inch clear stone base material, and ¾ inch clear stone bedding material with an impermeable liner. The asphalt runoff drains to one of three vegetated bioretention units; control bioretention, bioretention with Jellyfish® Filter pre-treatment or a bioretention with Sorbtive® Media post-treatment. The parking lot runoff is collected, absorbed and filtered by these low impact development (LID) practices before entering Sheridan Creek (which ultimately drains into Lake Ontario, the drinking water source for much of Ontario). Construction was completed in December 2012 and monitoring commenced in April 2013.

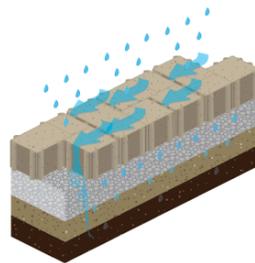
### Bioretention units

Bioretention units infiltrate and filter parking lot runoff by utilizing specialized bioretention soil media and vegetation.



### Permeable Pavers

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.



### Jellyfish® Filter

This unit “pre-treats” the parking lot runoff by removing large particles and oil/grease. The treated runoff then flows into one of the bioretention units.

### Sorbitive® Media

This unit receives runoff from one of the bioretention units and provides polishing to remove dissolved phosphorus.



## Infrastructure Assessment

CVC is working with an expert advisory committee consisting municipalities, regional government, the MOECC, consultants, universities and industry to assess the performance of the LID features at IMAX. Objectives include:

- Evaluate LID performance at controlling and reducing runoff volume, peak flows, quality, erosion and restoring natural water balance.
- Determine whether the LID practices are working as designed and maintenance requirements for optimal LID performance.
- Evaluate the degree to which LID reduces the impacts of extreme weather events due to climate change and builds resiliency in municipal infrastructure.
- Evaluate any changes/impacts to local groundwater quality and the potential to decrease chloride loadings to groundwater.
- Monitor and assess the operational and maintenance needs of LID systems and the subsequent effects on performance.
- Meet the objectives of CVC’s monitoring strategy report (available at bealeader.ca)

## Performance Findings

- The total volume reduction for rain events less than 25 mm ranged from 64 to 90 per cent for the bioretention treatments. For the permeable pavement treatments it was 62 to 99 per cent.
- Pollutant load reductions for the bioretention units for rain events less than 25 mm were 97 to 99 per cent for total suspended solids and 57 to 90 per cent removal for total phosphorous. For the permeable pavement treatments load reductions were 93 to >99 per cent for total suspended solids and 92 to >99 per cent for total phosphorous.
- The bioretention unit with the Jellyfish® Filter pre-treatment had a distinctly lower median effluent event mean concentration for total suspended solids than the other two bioretention facilities.
- The bioretention unit with the Sorbtive® Media post-treatment had a distinctly lower median effluent event mean concentrations for total and dissolved phosphorus than the other two bioretention facilities.

	Asphalt to Bioretention to Sorbtive® Vault IX-2	Asphalt to Jellyfish® Filter to Bioretention IX-3	Asphalt to bioretention IX-4
Total Suspended Solids (mg/L)	19	8	13
Total Phosphorus (mg/L)	0.10	0.22	0.15
Dissolved Phosphorus (mg/L)	0.04	0.16	0.14

Median effluent event mean concentrations for bioretention treatments



Aerial photograph of the site, including expanded parking lot

## Successes

The successes achieved with this project include:

**Innovative project** – this retrofit is one of the first commercial parking lot retrofits in Ontario incorporating a variety of LID technologies. A LID “treatment train” has been implemented with the Jellyfish Filter and Sorbtive® Media systems to go beyond the level of stormwater treatment typically provided in commercial parking lots.

**Better Functioning Parking Lot** – the IMAX parking lot retrofit with LID provides a better functioning parking lot with improved drainage and aesthetics. The old parking lot posed a number of issues including crumbling asphalt and year-round ponding, which would flood the outdoor electrical cabinets causing power outages in the building.

**Creating Green Jobs & Building Market Capacity for Innovative Technologies** - the project is also spurring the growth of Ontario green jobs through the use and promotion of the specialized stormwater management systems – the Jellyfish® Filter, and Sorbtive® Media. Testing of these new products will expand the market for designers, contractors, suppliers and manufacturers.

**Demonstration Showcase** – LID features at IMAX Corporation have been showcased through numerous presentations, events, media and site tours. Notably, CVC and IMAX won the 2013 Minister’s Award for Environmental Excellence.

## Proud Partners

