

Enhanced Pervious Pavers with Engineered Media

Project: Rumble Pond Retrofit Project

Location: Richmond Hill, Ontario

Owner: Town of Richmond Hill

Landscape Architect: Schollen & Co. Inc.

Engineer: RJ Burnside

Contractor: Gateman Milloy

Approving Agency: Ontario Ministry of the Environment (MOE)

Product: Sorbtive® Media



In 2012, The Ontario Ministry of the Environment (MOE) awarded a \$1 million grant through the Showcasing Water Innovation Program to the Town of Richmond Hill for implementation of the Rumble Pond Retrofit Project. This site was not only a stormwater quality and quantity facility, but also a functional park area for nearby residents.

The funding was directed to explore leading edge, innovative and cost effective solutions for managing and protecting water resources. The project goals were to meet or exceed current standards for water quality, apply innovative treatment technologies, reduce the risk of community flooding and downstream environmental impacts, and provide a recreational space for local residents to enjoy. As a result, The Town of Richmond Hill partnered with Imbrium Systems to showcase Sorbtive Media in combination with a pervious paver pathway around the Rumble Pond.



Sorbtive Media, an engineered media designed to capture high levels of phosphorus, was applied in combination with the permeable interlocking pavers to enhance the overall pervious pavement treatment capability. On the East portion of the Rumble Pond park, pervious interlocking pavers were used to construct an 820 m² (8,825 ft²) pathway around the perimeter of the pond.

Sorbtive Media was employed in two separate portions of the pathway. In one section of the pervious pathway, Sorbtive Media was applied into the joints between the permeable pavers, displacing the use of a portion of the small-sized standard aggregates commonly applied to the paver joints. In an alternate pathway section, the engineered media was employed below the pathway displacing open-graded aggregates commonly used to create a reservoir around an underdrain. The layer was 200 mm (7-inches) thick surrounding the 100 mm (4-inch) underdrain below the paver system. In both applications, enhanced treatment occurs as runoff passes through the pervious pavers, comes into contact with the Sorbtive Media, and allows it to adsorb dissolved phosphorus, while also trapping particulates.

Use of Sorbtive Media as a component to enhance permeable pavement is a low cost way to treat runoff that is not infiltrating into the surrounding ground. Sorbtive Media's fast reacting kinetics and long-lasting ability to adsorb dissolved phosphorus creates an enhanced treatment system, capable of removing high levels of total phosphorus.

With future monitoring of the site planned by the Town of Richmond Hill, the ability to compare the performance of each enhanced design treatment condition is anticipated at Rumble Pond, while the site continues to provide enjoyment as a functional recreational space for the local community.

