

SWM Pond Erosion Protection for New Residential Development

Year of Construction: 2025

Location: Barrie, Ontario

Product Installed: Flexamat Plus

Category: Erosion and Sediment Control

CASE STUDY

CHALLENGE

A new stormwater management pond required erosion protection for both its emergency overflow weir and inlet channel. The selected system needed to resist high-velocity storm flows, prevent long-term erosion, support vegetation growth, and preserve the natural character of the surrounding landscape.

SOLUTION

Flexamat Plus was chosen to provide resilient, vegetated erosion protection system capable of withstanding severe hydraulic conditions. The tied concrete block mat integrates interconnected concrete blocks with a high-strength biaxial geogrid and a composite underlayment consisting of a wood fibre erosion control blanket and a synthetic turf reinforcement mat (TRM). The system's open-block design encourages soil contact, root development, and vegetation establishment.

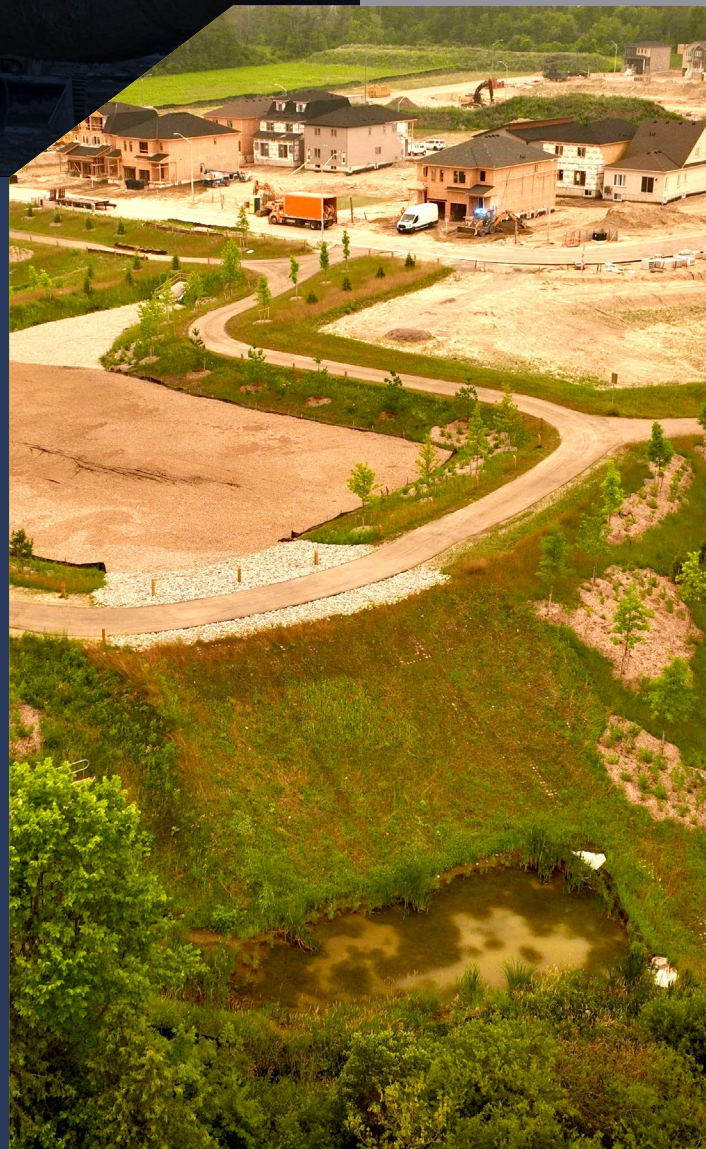
SPECIAL NOTE

The emergency overflow weir and inlet channel shared similar trapezoidal crosssections. Custom layout drawings were provided to the contractor identifying roll lengths and placement to simplify construction and reduced field modifications.

Before installation, both areas were graded and seeded with a native seed mix including Canada Wild Rye, Indiangrass, Sand Dropseed, Little Bluestem, Black-Eyed Susan, Common Milkweed, Canada Goldenrod, New England Aster, Smooth Blue Aster, Wild Bergamot.

Using an excavator, the Flexamat Plus rolls were placed continuously along the 3:1 slopes. Most rolls measured 4.73m wide and incorporated extensions on one side consisting of exposed geogrid and TRM. Adjacent rolls were joined using these overlap sections and secured with 450mm U-shaped anchors installed in 600mm spacing, creating a continuous reinforced seam.

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The 38mm opening between the concrete blocks allow vegetation to establish while maintaining system flexibility. Independently tested in accordance with ASTM D6460, Flexamat Plus provides shear resistance of up to 1,149 Pa and can withstand unvegetated flow velocities of up to 9.1 m/s.

Within a single growing season, vegetation had matured throughout the system, effectively concealing the concrete blocks and transforming both areas into naturalized features that blended seamlessly with the surrounding park while continuing to provide permanent erosion protection.

