

ROAD TO SUCCESS

Ontario street construction project goes green with a vegetated wall

By Lauren Alaniz

The Dissette Street Widening and Reconstruction Project in Bradford, Ontario, Canada, began in mid-2010. The project had several features that set it apart from other projects of its kind; chief among those was the need for the structure to be a vegetated green wall system because the project was so closely located to sensitive conservation lands on its north side.

Because of this need, the engineering firm RJ Burnside of Newmarket, Ontario, designed the 264-meter-long wall—which ranged in height from 3.5 to 8.6 meters—with Maccaferri’s Green Terramesh, a prefabricated modular

system made from hexagonal double-twisted wire mesh, to reinforce the 60-degree slope. The final design was stamped by engineering firm Chung & Vander Doelen Eng. Ltd. North Rock Group was chosen as the general contractor and Rocky River Construction performed the installation.

Issues arose over the course of the project that required close attention to detail regarding the wall footings due to the weak soils on the site. This required careful consideration of the design and engineering of the wall’s foundation. Once these issues were resolved, the Green Terramesh was installed and backfilled with granular “b” material.



The wall used a prefabricated modular system made from hexagonal double-twisted wire mesh to reinforce the 60-degree slope.



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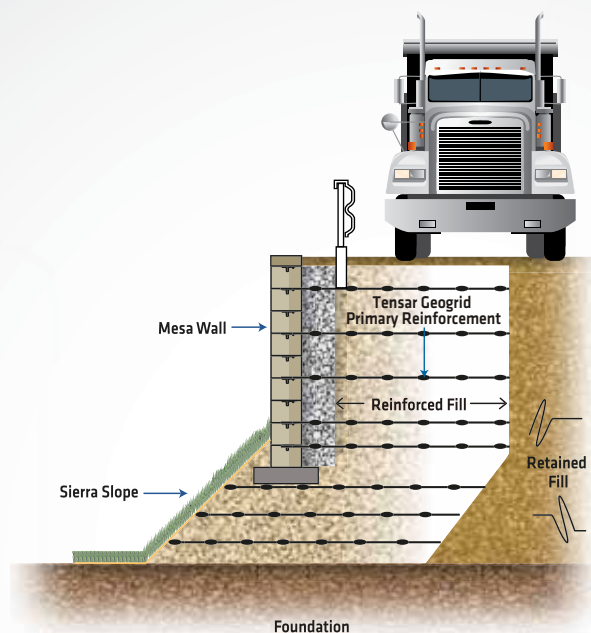
Enhancing the Soil

Biotic Earth Black, a biotic soil amendment, was applied to the exterior of the Green Terramesh system at an application rate of 3,500 lb per acre to account for the minimal amount of fine soil particles in the soil layer on the near-vertical system. Biotic Earth Black is ideal for situations where topsoil quantity or quality is marginal because of its water- and nutrient-storing capacity, as well as situations where vegetation is needed but a topsoil layer is lacking entirely. Another feature the soil amendment provided for this project was the promotion of the much-needed soil "life": the mycorrhizae and bacteria needed to create sustainable vegetation. The soil amendment allowed for a perpetually lush stand of vegetation on the site and will continue to support vegetation in successive years.

Fibramulch hydromulch was chosen for the final layer in this system and Dol Hydroseeding applied it on top of the Biotic Earth Black. This product was chosen for this site because of its ability to be used on severe slopes and its lower-than-average water needs for application, allowing for a 25% faster installation time. "The Biotic Earth sprayed nicely into the crevices, and then the Flex Guard really trapped it in place to the surface," said Peter Etherington of Fibramulch.

Why Green?

Green wall systems like the one used on this project are flexible; unlike some hard armor systems where seams or joints must match up exactly to be visually successful, green armor systems are more forgiving while maintaining the



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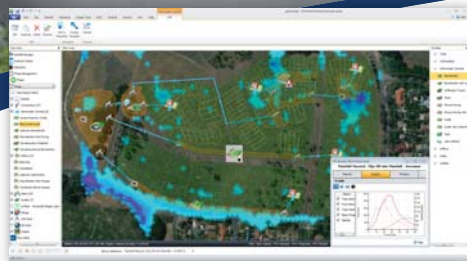
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The green wall on the Dissette Street project provided the vegetated system required because of the adjacent sensitive lands, the structural integrity required for the design, the flexibility needed due to the weak soils on site, and the aesthetics required for the finished product.



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aesthetic integrity of the project. This was especially important on the Dissette Street project because care needed to be taken with the wall foundation. Using a green wall in this instance allowed for flexibility due to specific site conditions while maintaining visual integrity. "Not only do you get the site-specific structure you need, you also get the vegetation you want," said Santino Tersigni of Maccaferri Canada Ltd. "It's the best of both worlds."

While maintenance costs often are assumed to be higher for green wall systems, the opposite can be true. Standard walls may have ongoing maintenance costs from replacing individual cracked or damaged segmental blocks. Green wall systems also eliminate graffiti or similar vandalism concerns, making them a good design option for areas where those are perpetual issues.

The green wall installed on the Dissette Street project successfully met all of the particular needs for the site. It provided the vegetated system required because of the adjacent sensitive lands, the structural integrity required for the design, the flexibility needed due to the weak soils on site, and the aesthetics required for the finished product. Green walls can fill a niche in the construction industry, and with technological advances in the products used in their implementation over the past few years, they are becoming an increasingly viable option for the industry. **SWS**

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