

# How a Canadian Gas Station Decreased Storm Water Pollution and Increased Efficiency



## About

 18,000 sq ft  Brampton, Ontario

Gas stations have a unique set of needs. Even the most durable products are put to the test under the weight of fuel tankers and frequent vehicle traffic. Add to that the need to be able to withstand heavy rain, snow and ice and viable products become a very short list.

Ultramar, an Eastern Canadian gas company, was planning to build a new gas station in Brampton, Ontario, which is part of the Mimico watershed. "Mimico watershed is a completely urbanized watershed within Toronto and Region Conservation's jurisdiction, with over 30% of its landmass featuring industrial land-uses and over 60% of its reach artificially channelized. As a watershed shaped so extensively by human intervention, its management requires close attention to the protection, enhancement and expansion of its remaining natural systems and the improvement of its water quality by improving and limiting urban stormwater runoff<sup>1</sup>."

The gas and home fuel retailer needed a pavement solution that would withstand heavy traffic and harsh climatic conditions, as well as offer significant infiltration and filtration abilities.

Ultramar also wanted pavers that wouldn't fade or lose color in the sun over time, which would lead to a worn down, washed out look that would hurt their curb appeal and affect their business.

**"This is what we believe to be North America's first permeable pavement installation at a gas station."**



# Challenges

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The Toronto and Region Conservation Authority has created mandates in order to reduce the effects of stormwater runoff, which in turn reduces the strain on municipal infrastructures.

Without stormwater management, [polluted runoff creates issues](#) such as:

- Increased downstream flooding risks
- Increased river bank and bed erosion
- Increased turbidity
- Aquatic Habitat destruction
- Changes in the stream flow regime
- Combined sewer overflows
- Infrastructure damage
- Contaminated streams, rivers and coastal water

When exploring options for the Ultramar in Brampton, Ontario, the client was looking for a product that would increase ground permeability, leading to better stormwater management per TRCA mandates. However, due to the pollutant-rich environment that such a business can create, additional filtration measures, such as specific geotechnical fabrics and specially-designed stormceptors, needed to be integrated within the pavement system.

The pavers would also need to be durable since they would be accommodating heavy vehicle traffic on a daily basis. And of course, they wanted a cost-efficient product as well that could be installed quickly and easily as the financial impact of construction delays on this business could not be tolerated.

## Products used:



INFLO

# Results:

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The client chose [Inflo pavers from Techo-bloc](#) for their site. These pavers were created to be a stormwater management paving system for heavy traffic in industrial, commercial and institutional applications, perfect for Ultramar.

Inflo pavers addressed both the TRCA's requirement to increase ground permeability and stormwater management and the client's requirement for a cost-effective solution, as precast concrete pavers are more durable than asphalt in high-traffic areas. In addition to providing vertical, horizontal and rotational interlock<sup>2</sup>, Inflo's unique design offers an internationally-patented mechanical interlock.

**“One of the many benefits of segmental concrete paving is rich, lasting color.”**

Mechanical interlock results in a flexible, yet monolithic, pavement surface capable of supporting tremendous traffic loads, including multiple equivalent single axle loads (ESALs). This tongue-and-groove mechanism combined with a reduced chamfer also greatly improves long-term snow removal efforts as the plow or blower blade will not snag individual units and impact the pavement's surface.

They also have the added benefit of meeting sustainability goals for LEED projects and easing the pressure on potable water supply of municipalities.

The Inflo pavers are also quick and easy to install. Using Techo-Bloc's proprietary mechanical clamp, [the TB100SI](#), the efficiency and productivity of installation can increase to nearly 8,000 square feet per day per clamp, compared to the average traditional installation of 1,000 square feet per day with a team of five laborers. This means the installation was completed in much less time, saving the client money and letting them open the site to customers earlier.

Finally, an unexpected benefit for the client has been lower-than-anticipated winter maintenance costs as the permeable surface evacuates the water from rain events and snow melts so quickly that ice fails to build up.

<sup>1</sup> <https://trca.ca/conservation/watershed-management/etobicoke-mimico-creek/watershed-features/>

<sup>2</sup> <https://www.icpi.org/description-interlock-and-lock-block-pavements>

**If you need pavers that can handle stormwater management and stand up to heavy use, you need Techo-Bloc Blu pavers. [Visit our site](#) Visit our site for more information on these permeable pavers.**

