CASE STUDY

RETAIL

Wal-Mart, Guelph, Ontario, Canada

As a result of its proximity and initial dependence to the Speed River, the City of Guelph, Ontario is similar to other watershed communities where urban development has impacted the river's ecology and functioning. Today, the community relies on groundwater to replenish its drinking water supply. Recently, a CULTEC stormwater management system was installed at a new Wal-Mart site to help recharge Guelph's aquifer. In addition, the existing municipal storm sewers were at capacity, prior to the Wal-Mart site development. Through storage of stormwater in the CULTEC system, the site discharge rate was reduced and improvements to the municipal storm sewer were not required.

Commercial development inherently causes changes to the environment by creating impervious surfaces such as parking lots and roofs. During snow and rainfall events, stormwater run-off is displaced by these areas preventing natural infiltration into the soil. CULTEC underground stormwater retention/detention systems work to capture and treat run-off to prevent pollution to the natural groundwater.

Engineers from Pitura Husson approved the CULTEC system which consisted of 1,380 Recharger® 330 HD chambers configured in eight storage beds. The Recharger chambers are dome-shaped with perforated sidewalls and fully open bottoms to allow for maximum infiltration. In addition, placed at the front of the system were nine CULTEC

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CULTEC™

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Wal-Mart

Stormfilter® 400 components, plastic water quality units consisting of a series of pass-through filters to remove debris, silt and fines from stormwater. Together, the CULTEC products form an effective stormwater best management practice along with an underground installation that will maximize useable land area.

"The installation of the system was straightforward and a CULTEC representative was onsite to help with any questions we may have had," said Joe Monteiro, the project's subcontractor from Terra-Alta Construction Limited. "The entire process took less time than originally anticipated — less than a full day with only three workers."

Parking Demand Ratios for Selected Land Uses

The ultimate size of a building directly coincides with the number of parking spaces provided. Since the CULTEC chambers are installed underground, you not only alleviate the need of having a pond, which significantly reduces the usable land area, but you can also construct a larger building. The bigger the building — the more you can rent out — the more you can rent out — the more revenue you can make.

LAND USE	TYPICAL PARKING RATIO USED
Single Family Home	2 spaces per dwelling unit
Professional Offices	1 space per 200 sq. ft. gross floor area
Retail	1 space per 250 sq. ft. gross leaseable area
Restaurant	1 space per 50 sq. ft. gross leaseable area
Industrial	1 space per 1,000 sq. ft. gross floor area
Church	1 space per 5 seats
Golf Course	4 spaces per hole

Per the Center for Watershed Protection in 2000.

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