

Urban Residential Development chooses Treatment Train

Project: Quartier Greenwich Sotramont

Location: Ville de Montréal,
arrondissement Pointe-Claire, Québec

Owner: Sotramont

Engineer: Stantec

Contractor: L.A. Hébert

Approving Agency: MDDELCC

Product: Stormceptor STC-14000 &
Jellyfish JF12-27-5



The City of Pointe-Claire, an on-island suburb of Montreal in Quebec, Canada, is an entirely urbanized and developed area. The soil conditions underneath the dense urbanization are a combination of clay-rich soils and limestone, both of which are not ideal for infiltration.

As the nearly 15 hectare “Quartier Greenwich Sotramont” high-density residential development project was designed, the City of Pointe-Claire wanted the stormwater treatment to consist of manufactured treatment devices, rather than Low Impact Development (LID) applications for ease of maintenance and upkeep. Use of manufactured treatment devices in urbanized, highly developed areas are common due to the limited land space, land value, and ability to often place utilities underground.



The residential development’s storm sewer connects into the municipal system, which discharges into the Terra-Cotta watercourse, flowing into the Bay of Valois and then into the St. Lawrence Seaway. The Terra-Cotta Natural Park is a public, 39 hectare natural green space in the heart of Pointe-Claire. The community has treated the preservation of this park with the utmost importance due to its ecological and recreational value. The City of Montreal’s monitoring program, “RUISSO”, has determined the water quality in the Terra-Cotta watercourse to be poor. This, in combination with the Valois Bay’s being used for recreational purposes, drove the desire to fully address the stormwater quality.

The engineering firm, Stantec, chose to implement a stormwater treatment train design using a Stormceptor, followed by a Jellyfish Filter. A combination of the Stormceptor STC 14000 pre-treating the membrane-based Jellyfish Filter JF12, was manufactured and supplied under license by Lecuyer. These systems were designed to provide superior stormwater quality treatment and manage the expected 10 m³ of annual sediment anticipated, with no more than two cleanings required annually. Initial system inspections are initiated as a standard component of Lecuyer’s Quality Assurance Program.

Jellyfish[®] Filter

The treatment train approach is very effective in pollutant removal, while balancing maintenance frequency. At this site, the Stormceptor was designed to capture the “first flush,” trapping TSS and hydrocarbons, with the Jellyfish removing ultra-fine particles and associated pollutants, including the required 40% Total Phosphorus, before discharging to the Terra-Cotta watercourse. Designing the Stormceptor as pretreatment to the Jellyfish Filter extends the period between membrane cartridge rinsing and replacement, positively impacting the life-cycle cost. Both the technologies have defined maintenance procedures, offering easy curb-side inspections and pollutant removal. In the case of the Jellyfish Filter, the membrane cartridge filters have a straightforward, easy rinsing procedure prior to re-use. Additionally, once these systems are maintained, they are functionally restored to the original design, which is a beneficial feature in comparison to many other land-based treatment systems.

Another significant design benefit is that the entire Stormceptor and Jellyfish Filter treatment train consumed only roughly 10% of the land footprint required to implement typical land-based treatment systems, or LID applications for pollutant removal.

CASE STUDY

