



# SOLENO

MASTERING WATER SUSTAINABLY

SOLENO

CASE STUDY: SUMMER 2024

## RESIDENTIAL DEVELOPMENT CARRÉ DES LÉGENDES IN SAINT-JEAN-SUR-RICHELIEU

### Innovative Solution for Sustainable Urban Infrastructure Systems

Soleno's expertise and sustainable water solutions have once again demonstrated their effectiveness in the stormwater treatment project for the future Carré des Légendes residential development in Saint-Jean-sur-Richelieu (Bd Saint-Luc, phase 1). The Solflo Max non-perforated high-density polyethylene (HDPE) retention systems, equipped with chimney-type manholes, provide an efficient solution for stormwater management. These systems are durable and environmentally friendly, ensuring optimal performance for years to come.

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## THE CONTEXT

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The densification of municipalities presents a multitude of complex challenges. Urban infrastructure systems, particularly sewer systems, are often aging and ill-suited to meet both the increasing population and the growing impacts of climate change. Consequently, sustainable stormwater management is becoming an increasingly critical issue.

When creating new residential developments, it is essential to implement a strategic and precise action plan for stormwater management. Project owners are typically required to provide retention systems capable of capturing and retaining rainwater on their properties during heavy rainfall. This measure helps prevent flooding risks and relieves municipal sewer systems, ensuring sustainable and efficient management in an evolving urban context.



## THE SOLUTION

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To meet the specifications of the plans and requirements, Soleno opted for an innovative stormwater management solution, which incorporates oversized retention basins using 1200 mm diameter pipes. This product, the Solflo Max Class A, stands out due to its minimum compression strength of 320 kPa, allowing it to withstand heavy loads while maintaining optimal performance. It is compliant with the following manufacturing standards: BNQ 3624-120, CSA B182.8, ASTM 2648, ASTM 2306, or AASHTO M294. This installation is complemented by 900 mm smooth exterior wall manholes and catch basins, ensuring efficient and sustainable water management on the site.

The contractor installed two separate storm sewer networks: one with a capacity of 210 m<sup>3</sup> and another with 64.5 m<sup>3</sup>. Each storm sewer network includes catch basins, manholes, and pipes to ensure effective drainage of impermeable areas. By opting for an oversized pipe network, Soleno capitalized on the excavation and installation already planned for the project, allowing the installation of larger diameter pipes without the need for additional above ground or underground retention systems.

Moreover, the use of chimney-type manholes and catch basins simplifies the installation compared to conventional structures, offering a solution that is both more efficient and economical. This approach meets technical requirements while optimizing resources and minimizing costs associated with stormwater management.

## THE BENEFITS

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For a large-scale project like this one, Solflo Max HDPE pipes offer numerous advantages. They resist chemical agents, corrosion, and vibrations, and can last over 100 years, making them the most eco-friendly option for stormwater management.

Their installation is quick due to their light weight and pipe length, reducing the number of joints and minimizing the risk of infiltration. In this project, the use of the bell with integrated gaskets (BIG), patented and exclusive to Soleno, ensured perfect sealing against infiltration and exfiltration of transported water.

The Solflo max pipes are available in a variety of sizes, ranging from 100 mm (4 inches) to 1500 mm (60 inches), and can be custom manufactured to fit specific projects. They also allow for connections to existing PVC or concrete pipes. This solution offers substantial savings through optimized manufacturing lead times and exceptional customer service.

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## PRODUCTS USED

### Manhole/Catch Basin Chimney Type

Manhole/catch basin chimney type with smooth exterior walls eliminates the need for frost-resistant geocomposite. As it is made from HDPE, it has excellent resistance to de-icing salts, abrasives, chemicals, and vibrations. The chimney diameter can be equal to or less than that of the main pipe, which prevents oversizing, reduces the amount of work during installation, and lowers the cost of the complete system.



### Non-Perforated Solflo Max

Non-perforated rigid dual wall pipe, with a smooth interior and corrugated exterior walls, for roadway use. It provides a compression stiffness of 210 kPa or 320 kPa, depending on the selected diameter. The length of the pipes reduces installation time, and the number of joints required, compared to traditional concrete pipes. This is a durable and resistant solution to de-icing salts. Used with the Bell with Integrated Gasket (BIG), exclusive to Soleno, the Watertight Non-Perforated Solflo Max pipe (R320) provides perfect watertightness and complete prevention of sediment infiltration and conveyed water exfiltration.



### Double Bell with Integrated Gasket Clips

For gravity networks requiring perfect watertightness from ground water infiltration and conveyed water exfiltration, Soleno's exclusive patented Bell with Integrated Gasket (BIG) is the best solution. Each bell is provided with clips that help validate the quality of the installation and the depth of the interlocked overlap.



## DISCOVER OUR PRODUCTS



Manhole/Catch Basin  
Chimney Type



Non-Perforated  
Solflo Max



Double Bell with  
Integrated Gasket Clips



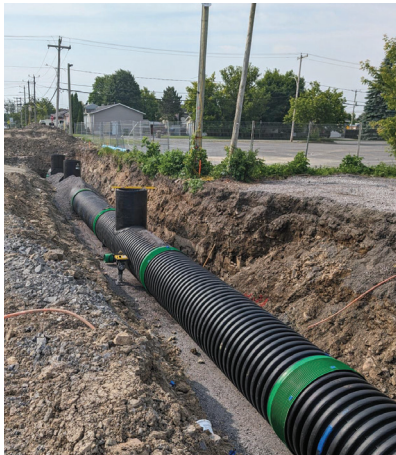
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