



SOLENO

Mastering Storm Water

1ST
DEVELOPER
OF SUSTAINABLE SOLUTIONS
FOR MASTERING STORM WATER

USE OF KRAH PIPES FOR THE REHABILITATION OF THE STORM SEWER ON SAINT-PIERRE STREET SOUTH IN JOLIETTE

What does the need to change a storm sewer in the city of Joliette, Quebec have in common with an innovative European HDPE pipe design and manufacturing process? Soleno's expertise in meeting a major engineering challenge by reaching overseas for technologically advanced product to solve a complex situation. At a time when a marked increase in the frequency and intensity of rainfall events has prompted various levels of government to impose more restrictive regulations to avoid the risk of sewer overflows that could have consequences in terms of human health, as well as the health of flora and fauna, the City of Joliette needed to repair and bring into compliance a portion of its stormwater drainage infrastructure that would be called upon to carry a greater volume of water caused by new residential developments. To fulfill this contract, the construction firm Sintra Inc., along with the engineering firm Parallèle 54, needed a versatile pipe capable of meeting the specifications required by the circumstances. They called on Soleno to provide them with a HDPE product that would meet their particularly high expectations.

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THE CONTEXT

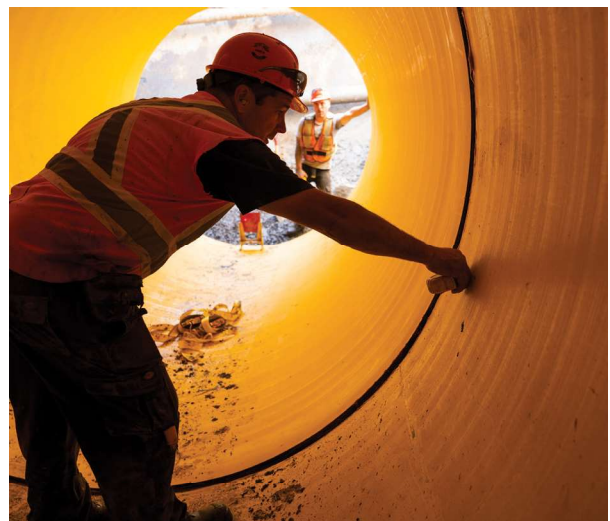
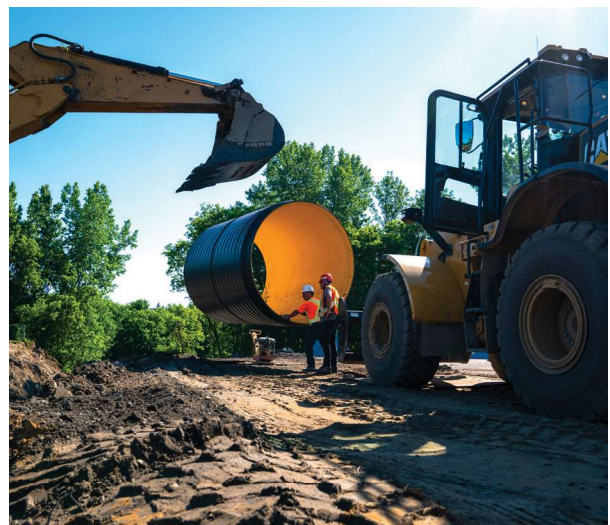
DEEP CHANGES FOR STORM WATER PIPES IN JOLIETTE

The City of Joliette, Sintra Inc. and Parallèle 54 chose to trust Soleno to supply the products needed to upgrade the storm sewer system under Saint-Pierre Street South. The work site, active from June 2019 to November 2019, offered limited space between neighbouring homes to carry out the work, which involved replacing 350 metres of pipe at the bottom of a 7 metres deep trench. The pipe had to be able to carry a significant flow of water, while withstanding the combined pressures of the weight of the overlying fill and the water table. In order to meet the requirements of the engineers' specifications, Soleno's technical team proposed the use of 2200 mm and 2400 mm HDPE pipes manufactured by the German company Kraih in its factory in Estonia, a North American first for these products, which have been renowned in Europe for over 40 years.

THE SOLUTION

350 METRES OF 2200 MM AND 2400 MM HDPE KRAH PIPES

Indeed, Kraih's HDPE pipes were perfect for the particularly complex specifications of the project. Their light weight made them easy to install, as they did not require a crane, as would be the case with a concrete pipe of similar diameter. A simple excavator was all that was needed, greatly speeding up the operation, therefore cutting down cost drastically. Also, the high compressive strength of the pipes made it possible to withstand the high pressures that would be exerted on their external surface. Their large diameter and excellent roughness coefficient allowed them to easily accommodate the high water flow that would be required to pass through the storm sewer system. Kraih's HDPE manhole had the same advantages as the pipes themselves. In addition, an HDPE manhole does not need to be oversized for the diameter of the pipes, unlike an equivalent concrete product. Once the proposal was approved, Soleno took charge of all the logistics and technical support required for the project to proceed smoothly. Soleno's Quebec ingenuity and international vision enabled it to provide an affordable and sustainable solution to a local municipality's problem.



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THE BENEFITS

THE DURABILITY, LIGHTNESS AND STRENGTH OF HDPE

Thanks to Soleno's proposal, the City of Joliette was able to complete the work within its budget and schedule. HDPE structures and pipes are much lighter than comparable concrete products, making their installation quicker and more affordable. In this project, Krah's 2200 mm and 2400 mm pipes were on average 15 times lighter than the outdated concrete products being replaced. A unique feature of Krah's technology is its method of manufacture, which allows the product design to be tailored to the unique specifications of a project. The range of possibilities is vast in terms of diameter, product size, durability and hydraulic properties. Krah's 2200 mm and 2400 mm diameter pipes were smaller than their predecessors but could handle the same amount of water flow. Capable of withstanding the pressure of the overflow, the water table and the frequent passage of cars on the roadway above, as well as corrosion, abrasion and the effects of de-icing salts, Krah's products will ensure the durability of the storm sewer system on Saint-Pierre Street South. Soleno supported its clients in the design, procurement, delivery and implementation of this project with a dedicated technical team and a constant presence on the site.



This project was made possible thanks to the [Sintra inc.](#) enterprise, the [Parallele 54](#) engineering firm and the [City of Joliette](#).

For more information and to learn more about our services and products, please visit soleno.com. Other case studies are also available.

