



Sanofi Pasteur Toronto Water & Wastewater Management Facility



2021

ABOUT THIS PROJECT:

Market Segment:
Wastewater Collection
& Treatment

Location:
Toronto, Canada

Engineers:
Dillon Consulting
Engineers

General Contractor:
Bird Construction Engineering

Products Used:
Xypex Admix C-500
Bio-San C500

PROBLEM

Industry standards dictate that all wastewater generated during the manufacturing process of pharmaceutical products must be treated and disposed of in an environmentally safe manner.

When Sanofi Canada decided to build a new state-of-the-art wastewater treatment facility in Toronto, Canada, this also called for waterproof and chemical-resistant concrete.



THE XYPEX SOLUTION

The original specification for the project was designed with a traditional protective coating to be applied to the concrete after curing.

Dillon Consulting Engineers and Bird Construction Engineering, the engineers and general contractor behind this project, were concerned about the coating's ability to offer 10+ years of protection.



Consulting with the Xypex team, the engineers and contractors determined that using a Xypex system would be the ideal solution to protect and waterproof the new concrete structures.

To achieve this, Xypex Admix C500 and Xypex Bio-San C500 replaced the traditional coating specified for this job.

Both Xypex Admix C-500 and Bio-San C500 are added to the concrete mix at the time of batching, eliminating the need to apply a coating at a later date.

These Xypex products react with cement and the byproducts of cement hydration to fill the capillaries in the internal structure of the concrete, creating a non-soluble crystalline matrix to waterproof the concrete and protect it from chemical attack throughout its useful life.

In addition to its waterproofing properties, Xypex Bio-San C500 also contains bioactive mineral solids that become permanently fixed within the concrete matrix. These active ingredients impair bio-film formation, thus inhibiting the growth of acid-causing

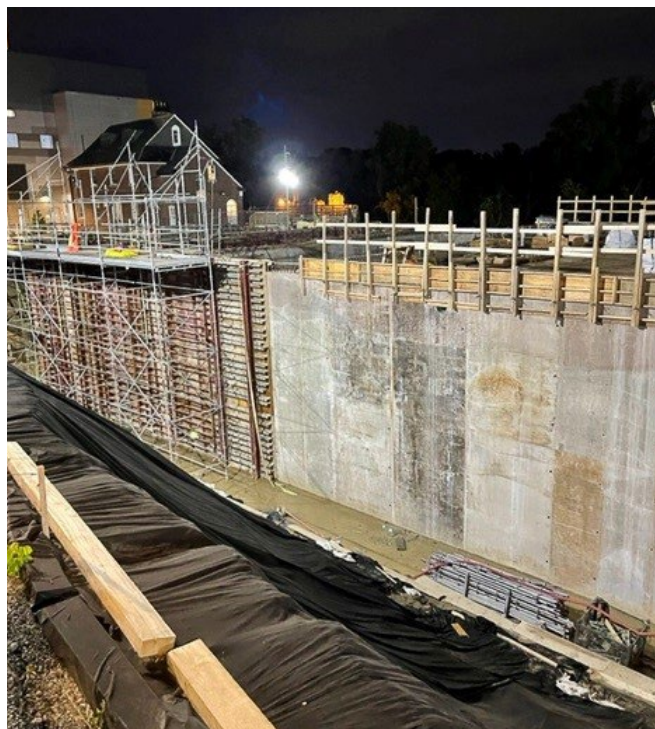
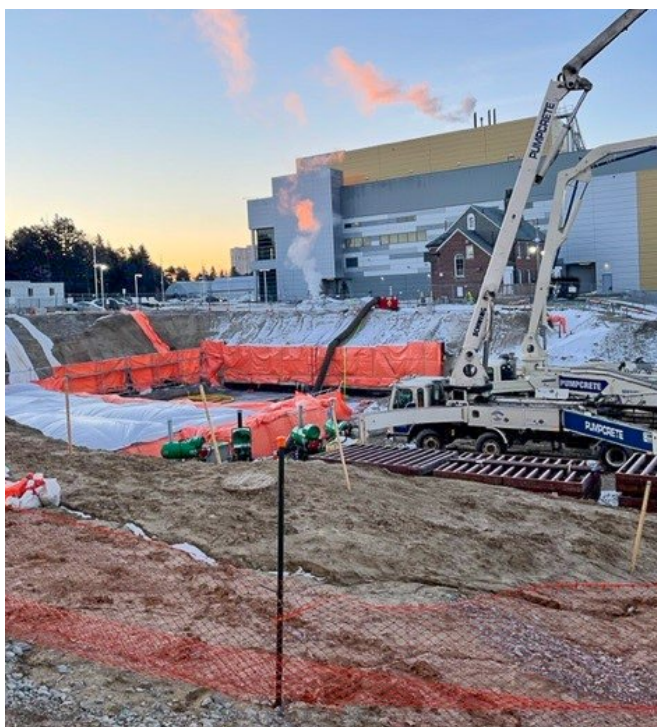
sewer bacteria, including Thiobacillus. This antimicrobial protection initiates a two-stage kill mechanism that stops the Thiobacillus bacteria from developing, thereby preventing the formation of sulfuric acid which damages and erodes concrete.

This project was value engineered to use the right product for the right application. Xypex Admix was added to the concrete below the waterline to provide waterproofing and chemical protection. The concrete from 1 meter below the waterline and above is prone to microbial-induced corrosion (MIC), so Xypex Bio-San was used in this area. The walls containing both products were poured monolithically to improve the quality of the structure and ease constructability.

The end result is a waterproof and protected structure with minimal future maintenance downtime that was achieved with savings on labor, scheduling and material costs compared to the original specification.

PROJECT BIO

Sanofi Pasteur, a division of the multi-national pharmaceutical company Sanofi, is the largest company in the world devoted entirely to vaccines.



The wastewater treatment facility is designed to meet Toronto's sewer standards while also helping the company to meet its goal of reducing its environmental impact by reusing 25% of the wastewater generated in the Sanofi Pasteur Toronto site.