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FLUSHED WITH SUCCESS

How local alumni are helping Edmonton turn sewage into a valuable soil supplement.



Where it all begins: Human waste is piped through the sewer system to the treatment plant.

FEW COMPANIES would be willing to tackle a project that was so clearly in the toilet from the outset. But ONEC, a local engineering and construction firm, was happy to work with the City of Edmonton to help it produce a marketable soil supplement from sewage sludge.

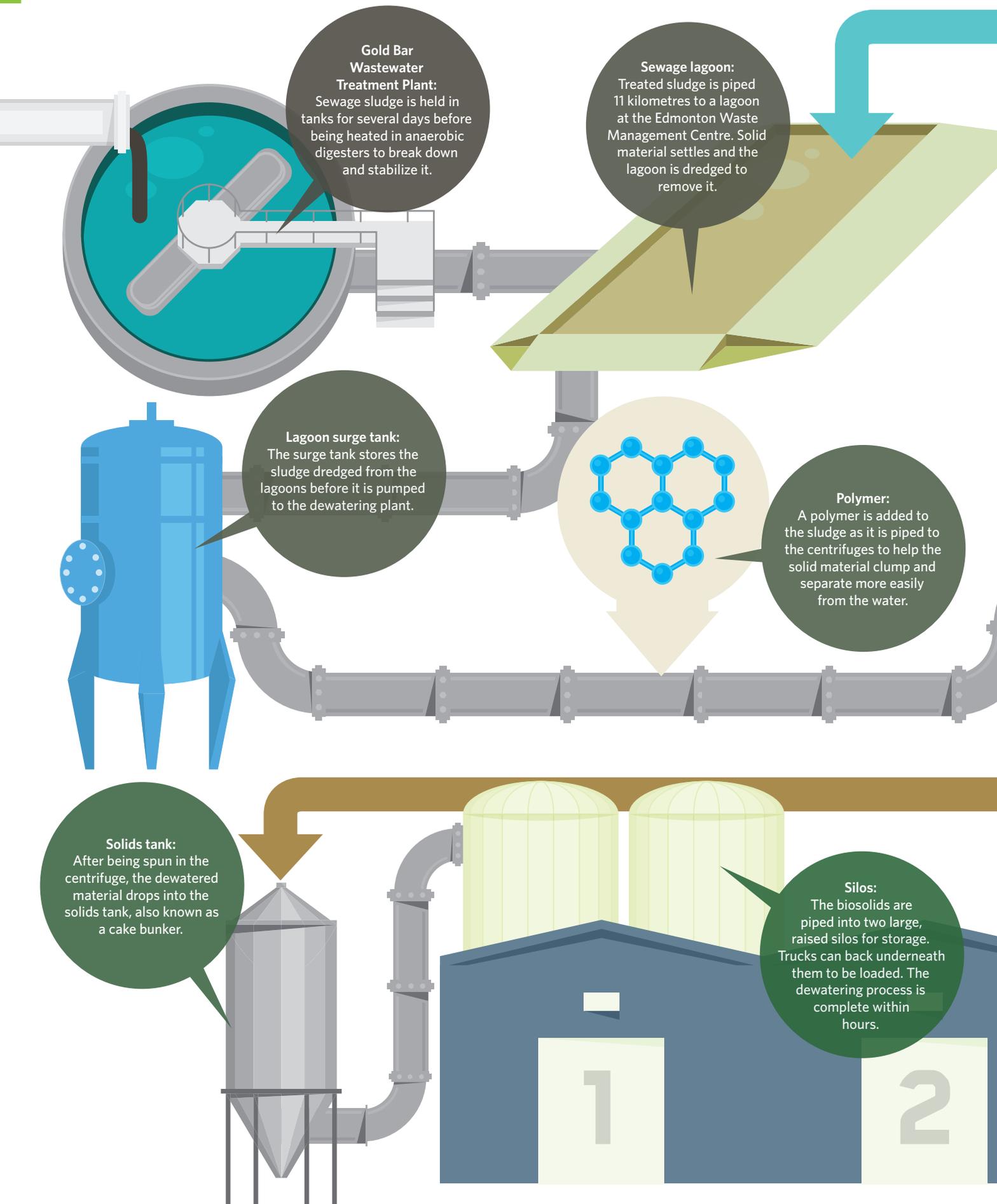
The \$15-million project at the Edmonton Waste Management Centre makes the city a leader in processing this kind of waste, thanks in part to the expertise of NAIT grads at the company.

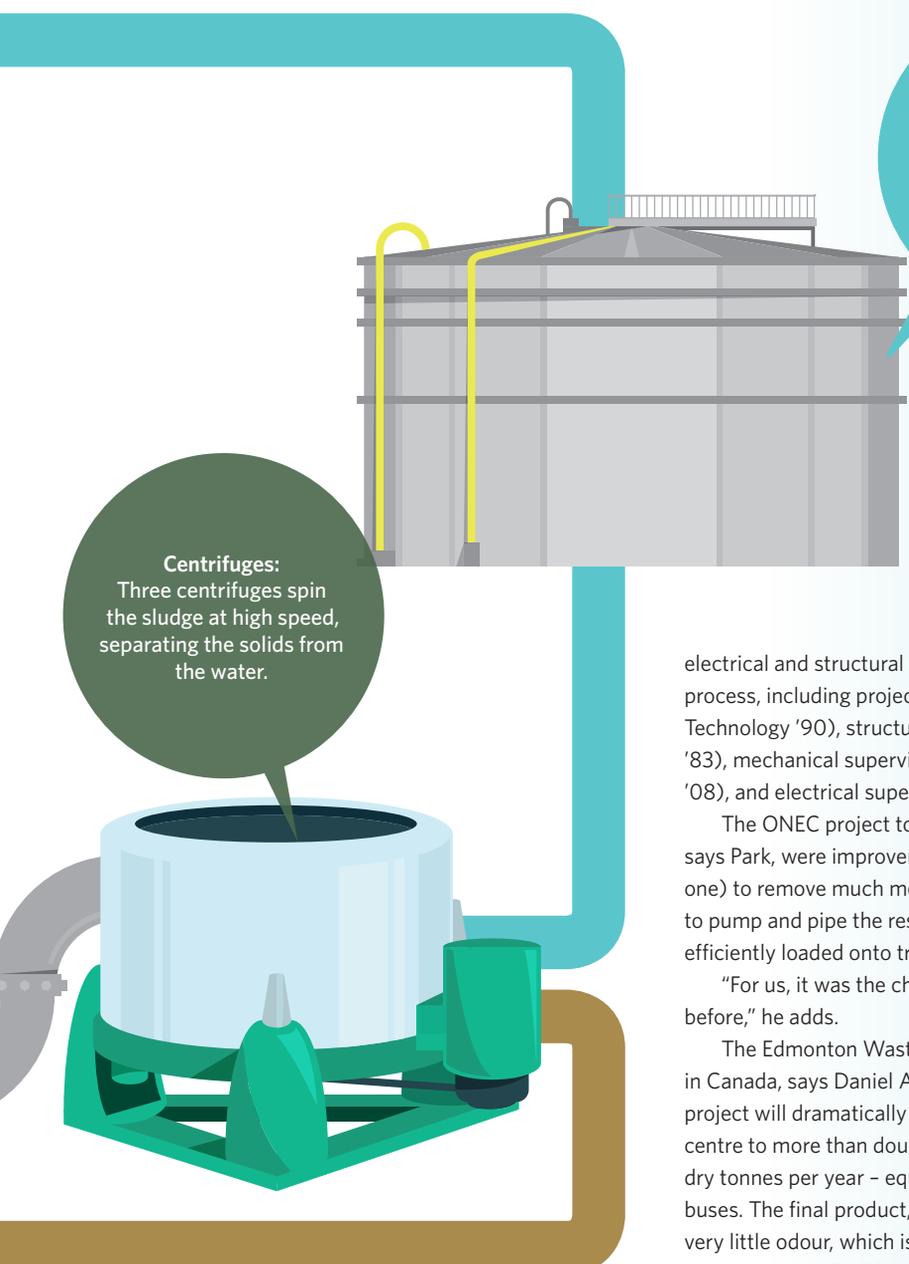
ONEC enhanced and expanded the system, making it more automated, faster and more efficient at removing much of the water from the massive amounts of sewage produced by close to a million people.

"It's a really good recycling story," says Denis Wiart, general manager of engineering and president of ONEC, which completed the work in December. "A lot of people think it just goes down the river and, in many cities, it does. But here, they're recycling; they're using it for other purposes."

The system processes sewage sludge that is treated at the Gold Bar Wastewater Treatment Plant and piped to a storage lagoon at the waste management centre. "I've been telling people, 'Everybody has input into this project in one way or another,'" Wiart adds with a laugh.

ONEC, recently named one of *Alberta Venture's* 50 fast-growing companies for 2015, had a team of about two dozen mechanical,





Centrifuges:
Three centrifuges spin the sludge at high speed, separating the solids from the water.

Centrate tank:
The water with about one per cent solid waste remaining goes into a centrate tank. From there it is piped back to the lagoon to maintain the water level.

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- DENIS WIART, GENERAL MANAGER OF ENGINEERING AND PRESIDENT, ONEC

electrical and structural engineers and tradespeople involved in the year-long process, including project manager **Richard Holley** (Construction Engineering Technology '90), structural engineer **Ian Park** (Materials Engineering Technology '83), mechanical supervisor **Robert Mrzljak** (Mechanical Engineering Technology '08), and electrical supervisor **Sean Epton** (Electrician '12).

The ONEC project touched upon many aspects of the system. Among them, says Park, were improvements to the centrifuges (including the addition of a new one) to remove much more water from the sludge. Also, they built a better system to pump and pipe the resulting material to a new facility where it can be easily and efficiently loaded onto trucks for delivery to agricultural and industrial users.

"For us, it was the challenge of putting together something that we hadn't done before," he adds.

The Edmonton Waste Management Centre is at the forefront of this technology in Canada, says Daniel Alberkant, project engineer for the city. The dewatering project will dramatically increase the efficiency of the operation and allow the centre to more than double its production of marketable biosolids to about 40,000 dry tonnes per year - equivalent to the weight of about 3,290 articulated transit buses. The final product, known as biosolids, resembles dry horse manure, with very little odour, which is sold for use in agriculture and land reclamation.

Wuart says ONEC has done other, smaller projects at the waste management centre but this was by far the biggest. "Edmonton leads the world in recycling," he says. "That whole site is just a technical marvel."



**Farmers' fields/
reclaimed land:**
The final product is trucked directly to farmers' fields or to land reclamation projects.