

Lafèche Environmental's BioReactor transforms waste disposal problems into valuable assets

Lafèche Environmental provides innovative waste disposal solutions today and is building a sustainable legacy for tomorrow with its objective of 60% waste diversion from landfills

Fast facts

Corporate profile

In 1987, André Lafèche, founder of Lafèche Environmental, bought 500 acres of land in Moose Creek, Ontario – 46 minutes from downtown Ottawa – the site of his future waste diversion facility. By 1997, with the expertise of a qualified team, he established Lafèche Environmental. The company received a provincial certificate of approval in 1999, construction began in 2000 and the Lafèche Environmental BioReactor received its first shipment of waste in January 2001.

Why Ottawa

The City of Ottawa collects 319,000 tonnes of residential waste each year, diverts 34% of it and dumps the rest in landfills, but there's huge opposition to expanding existing landfills. The Lafèche Environmental BioReactor has no foreseen maximum capacity and plans to serve eastern Ottawa for a hundred years or more. When André Lafèche chose his site at Moose Creek, he knew it was the perfect location to handle waste – close to Highway 417 (the arterial road that runs east-west across Ottawa).

Business advantage

Organizations spend millions each month trying to find new waste-handling solutions for the province of Ontario. The Lafèche BioReactor accelerates the decomposition of waste – breaking down waste nearly three times as quickly than in a traditional landfill, where decomposition takes an average of 50 years.

Lafèche Environmental is one of Eastern Ontario's most innovative waste management companies. The Lafèche Environmental BioReactor is a cleantech landfill site that converts wastes to energy and re-usable organic material in a series of in-ground cells. The BioReactor is expected to help serve the ever-growing demand in Eastern Ontario for waste diversion over the next 100 years or more.



Canada's Creative Economy Capital

In 1987, André Lafèche, founder of Lafèche Environmental, bought 500 acres of land in Moose Creek, Ontario – 46 minutes from downtown Ottawa – the site of his future waste diversion facility. By 1997, with the vital expertise of a qualified team, he established Lafèche Environmental.

Municipalities and companies spend millions of dollars to start new landfill sites that often don't make it past the study stage. Yet Lafèche Environmental received its provincial certificate of approval in 1999, construction began in 2000 and the Lafèche Environmental BioReactor received its first shipment of waste in January 2001. The BioReactor is one of only a few landfills in the Ottawa area.

The inspired 25-person team at Lafèche Environmental believes that new technologies, including soil recycling and composting, allow for less negative environmental impact than existing waste disposal systems. Soil Recycling, for example, generates up to 150,000 tonnes of clean and nutrient rich soil for reuse on agricultural, residential and industrial properties, eliminating hydrocarbon contaminants.

Another Lafèche innovation, created in cooperation with Moose Creek Tire Recycling and Eco-Tire Recovery, is the use of recycled tires in the construction of the BioReactor leachate drainage system, allowing Lafèche Environmental to reduce by 50% the use of aggregate. Lafèche Environmental is committed to better pollution management, recycling methods and a cleaner environment.

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The Laflèche Environmental BioReactor will produce enough methane to power 1000 homes for more than 50 years. In addition to environmental benefits, the BioReactor is a huge economic asset for the Ottawa region.

Why Ottawa

André Laflèche is convinced that Ontario's demography and consumer habits require an innovative waste diversion facility – one that employs environmentally sustainable and economically durable waste management practices from around the world. The City of Ottawa collects 319,000 tonnes of residential waste each year, diverts 34% of it and dumps the rest in landfills, but there's huge opposition to expanding existing landfill sites. The Laflèche BioReactor has no foreseen maximum capacity and expects to serve eastern Ottawa for a hundred years or more. When André Laflèche chose his site, he knew it was the perfect location – close to Highway 417 (the arterial road running east-west across Ottawa).

The company believes economic development and community development go hand in hand. Laflèche contributes \$1 per tonne of waste accepted at its site to the Township of North Stormont, at the edge of Ottawa. This money becomes part of the township's general revenue, to be spent at its discretion.

Business advantage

Organizations spend millions each month trying to find new waste-handling solutions for the province of Ontario. André Laflèche's suggested solution, in addition to soil recycling and composting, is to bring some of Ontario's trash to his site. The methane gas produced at his landfill can run a turbine and generate power to sell on the Ontario grid. After a cell or section of the Laflèche

BioReactor is filled with waste, it is covered with a soil cap. Methane gas collects under this cap as the waste decomposes. The Laflèche BioReactor speeds up the process of garbage decomposition into methane gas by circulating leachate water through its cells. In this way, the BioReactor accelerates decomposition of waste – breaking down waste nearly three times as quickly than in a traditional landfill.

Over its lifetime, the Laflèche BioReactor will produce 10 MGW, enough methane to power 1000 homes for more than 50 years. In addition to its environmental value, the Laflèche BioReactor is a huge economic asset for the Ottawa region.

Laflèche Environmental works in association with Moose Creek Tire Recycling and Eco-Tire Recovery. Moose Creek Tire Recycling recycles scrap tires and produces shredded rubber chips for civil engineering applications. Licensed by the Ministry of the Environment, Laflèche processes 3.5 million tires annually – more than one quarter of all scrap tires generated in Ontario each year. Laflèche Environmental is approved to use scrap tires as an alternative to traditional stone in the leachate drainage system design at the Laflèche Environmental BioReactor. Together with dealers, haulers, and municipalities, Laflèche strives to provide cost-effective alternatives to illegal dumping, stock-piling, and the trans-border disposal of tires.

Future growth plans

Laflèche Environmental's vision for a cleaner future includes building a Mass Composting Facility, expected to be completed summer 2008. In addition, Laflèche Environmental will be building special digesters to transform farm and septic waste into fertilizer. The company plans to increase heat and carbon dioxide capture at the Laflèche BioReactor and generate electricity from the methane gas produced at the site. The long-term plan includes erecting energy efficient greenhouses and growing food on-site. Managing the cycle of waste diversion and decomposition will put waste to work for a hundred years or more.

The Laflèche Environmental Trust, with a planned \$1.5 million, will be a key contributor to the acquisition for conservation of Wetlands, such as the Alfred Bog, the highest-quality bog ecosystem in south Ontario.

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