

Dearly departed rest in (green) peace

Bio-cremation Instead of dust to dust, liquefied body returns water to water

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Canadians are generally known as big consumers of energy, a reputation we unwittingly take to our graves.

More than half the population now chooses to be cremated when they die, up from just 3 per cent 50 years ago, even though the amount of natural gas and electricity required to incinerate a body is equivalent to driving a gasoline-powered vehicle from St. John's, Nfld., to Tofino, B.C.

Not only do crematoriums release greenhouse gases, they also emit smog-causing pollutants, particulates, dioxins and – for those with old tooth fillings or pacemakers – mercury vapour.

It's an environmental footprint that a group of Toronto investors, operating under the name Transition Science Inc., are hoping to shrink.

The company has licensed a technology that dissolves the body into a soapy organic soup that is later drained into the municipal waste water system.

Park Lawn Income Trust, which owns six cemeteries and four crematorium units in the GTA, has signed on to become the first Canadian user of the new system, developed by Resomation Ltd. of Glasgow, Scotland.

The first commercial system was shipped to the United States in August.

Park Lawn hopes to be one of the first crematorium operators in the world to deploy the system.

No doubt, some of Toronto's most eco-conscious citizens are dying to test it.

"We call it bio-cremation," said Allen Bessel, president of Transition Science and one of its 30 investors; they include investment bankers, wind-energy executives and funeral professionals.

Bessel, a financial industry executive who spent much of the 1980s and '90s in management roles at TD Financial Group, was recruited last December to head the new company.

"I was looking for my next gig and liked very much what I had heard, so I signed on," he said, adding there is a need for innovation in Canada's \$1.5 billion funeral industry.

A conventional crematorium typically operates above 1,000 degrees Celsius for two to four hours, after which leftover bones are ground into ashes and returned to the grieving family.

Citing industry studies, Bessel said 92 cubic metres of natural gas and 29 kilowatt-hours of electricity are used to cremate the average body.

This releases 400 kilos of carbon dioxide into the atmosphere.

Bio-cremation, because it relies on a chemical process, uses dramatically less energy – less than a tenth the amount of natural gas and a third of the electricity.

The body is loaded into a metal chamber that is filled with water. Potassium hydroxide is then added to the unit and the water is heated under pressure to about 180 C.

"The fluid slowly circulates over the body to dissolve protein matter and soft body tissue. At the end of the process, all of that is cooled down and sent to the drain. What you're left with is a clean, white skeleton," Bessel explained.

The skeleton, as with cremation, is ground down into a white dust.

No emissions are released from a smokestack, and any left-over metals – mercury fillings, titanium knees, metal hip replacements and other devices – are removed and, where possible, recycled.

Park Lawn Income trust hopes to have its system up and running next spring, assuming it can get all the approvals it needs from the city and province, said Larry Boland, the company's chief financial officer.



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Boland said cremations have gone mainstream in Toronto, with half of the population choosing that route to dispose of the bodies of loved ones.

Park Lawn currently does about 4,000 cremations a year at a cost of about \$450 per incineration.

"We expect bio-cremation will be the same price," said Boland, adding that he expects the process will become more popular over time.

"If we can find something that's better for the environment and that the public accepts, then we're happy to shift in that direction."

Transition Science plans to expand the technology across Canada.

Some countries, however, are choosing a different approach.

Several towns in Denmark and Sweden are capturing the waste heat from crematoriums and using that energy to supplement district heating systems for the municipalities.

The Danish District Heating Association estimates that all crematoriums in Denmark could provide enough surplus energy every year to heat 600 households.

thamilton@thestar.ca