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Industry digs in U.K. for soil management and remediation solutions for Ontario

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contributing columnist

In late September a small delegation from Canada was warmly welcomed by those involved in soil management and remediation in the United Kingdom.

This fact-finding mission was a way to determine best practices used in the U.K. for reusing excess construction soils. We were given the strong sense that there is an overarching mission with respect to the sustainable development of land and that organizational structures are put in place to help achieve these aims.

For instance, SuRF UK, or the Sustainable Remediation Forum, has made progress in the use of advanced decision support frameworks and tools to plan redevelopment of brownfield and other development projects.

Our first meeting was convened with those who are addressing soil management for the 118-km Crossrail project. A 21-km tunnelled section connecting central London with Canary Wharf will generate 6.0 million tonnes of earth, of which, 4.5 million tonnes will be taken off-site via trains and ships to create a new nature reserve at Wallasea Island.

By way of comparison, the 19 km Eglinton Crosstown LRT project, which will be underground for 10 km, will generate nearly 3.0 million tonnes of clean excess soil.

For centuries, Wallasea Island served as farmland but these flat lands have experienced erosion from rising sea levels along the east coast of England.

In addition, there have been both natural and intentional breaches of the island's seawalls. So, the goal of this project is not only to raise the level of the land to above sea level (it is currently 2m below sea level) but also to create Europe's largest engineered nature reserve using high quality London clay that is 55 million years old.

Earth from the Crossrail project will be used to form mud flats and lagoons which will attract rare species such as spoonbill and Kentish plover to this tidal habitat. A BBC News item quotes Paul Forecast, a director for the Royal Society for the Protection of Birds, as saying "The Wallasea Island Wild Coast Project is a landmark engineering and conservation project for the 21st century."

Although soil management is an important component of this project, Mike de Silva, Crossrail's Sustainability Manager advised us of other initiatives that he is spearheading such as recycling of construction waste. Contractors have been exceeding the targets as more than 92 per cent of demolition and construction waste has been beneficially reused. Including Wallasea Island, more than 98 per cent of excavated material has been recycled to date.

Ontario's current Best Management Practices approach being developed by the Ministry of the Environment is focusing on land-oriented solutions for reuse, including the application of temporary soil banks whereby "clean" soils are held until there is a way to reuse the soils at a later date.

RCCAO has been supportive of this concept as a way to move from the common practice of 'dig and dump' but we think that consideration should be given to water-based options.

Good environmental projects such as Wallasea and Toronto's own experience with the creation of the Tommy Thompson urban wilderness park show that value can be created through the strategic reuse of clean soils.

In the spring of 2012, a couple of stories appeared in the media about using earth from Eglinton's Crosstown LRT project to make islands in Humber Bay. Lou Di Gironimo, General Manager of Toronto Water says that his organization hopes to initiate two environmental assessment studies to create landforms in Lake Ontario: one would be a stormwater wetland south of the Ashbridges Bay Wastewater Treatment Plant while the other would be in Humber Bay. The latter project would help to improve water quality at Sunnyside Beach and protect the shoreline from erosion.

If the EAs are approved, clean fill generated from transit and other projects would "reduce overall construction costs for the disposal of excavation material by an estimated ten to twenty per cent, depending on the in-lake geometry of the landform," according to Mr. Di Gironimo.

Crossrail's 2012 Sustainability Report demonstrates that a range of indicators and metrics are employed to assess whether objectives are being met.

The report can be accessed at: [www.crossrail.co.uk/sustainability](http://www.crossrail.co.uk/sustainability) (scroll to the link at the bottom of that page).

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