

ReNew

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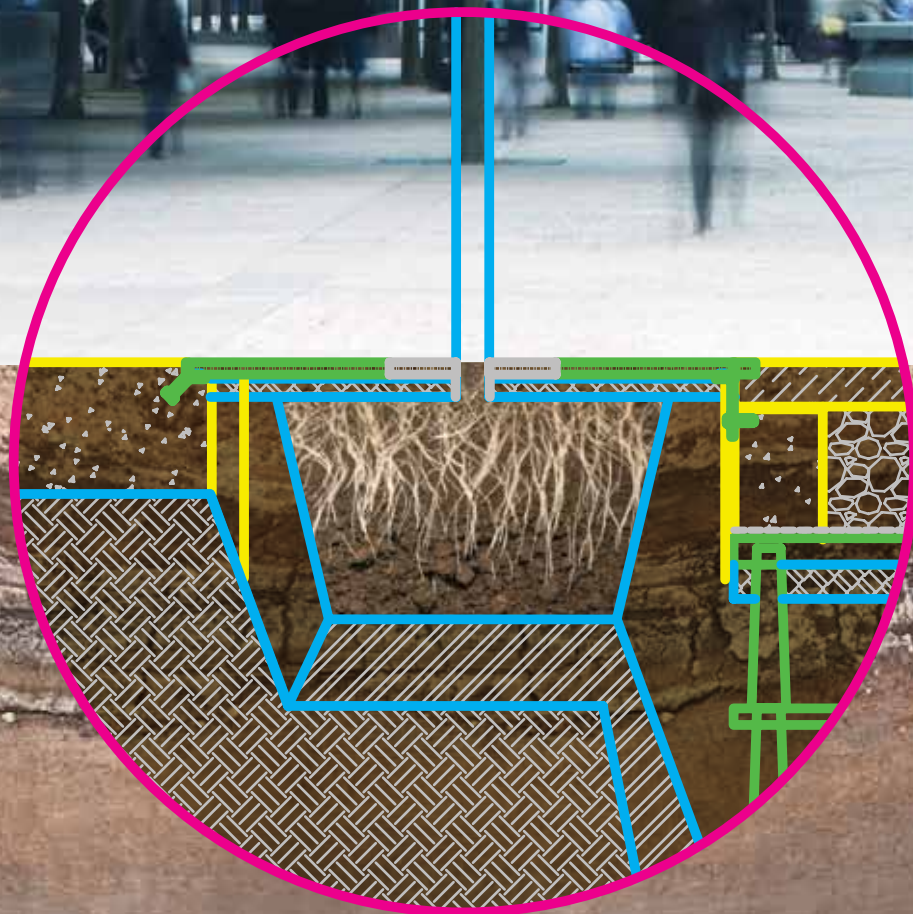
C A N A D A
The Infrastructure Magazine

+ Why Politics and Transit Don't Mix

+ The Struggle to Fund Rural Airports

UNSEEN IN THE EVERYDAY

Hybrid Water and Root Systems Rule Our Underground





All credits: DeepRoot Canada

This Collingwood, Ontario community made room below the sidewalks for healthy, mature trees to spread their roots.

BACK TO NATURE

With tight budgets and stringent regulation, communities are getting creative in bringing infrastructure up to par with modern-day solutions. *By Julie Metea*

Canadian communities faced with weakening pipelines and utilities that were installed five or six decades ago are struggling to renew their aging stock of infrastructure. By approaching the challenge as an opportunity, cities are retrofitting infrastructure as a reinvention of urban space. The trend involves urban density planning and urban forestry using green utilities, such as trees and soil, alongside man-made underground systems.

Urban density projects around Metro Vancouver are underway, as neighborhoods build economic centres that include more integrated residential, retail, and public transportation. The effort extends to its suburbs where infrastructure renewal is a focal point.

In Toronto, urban forest planning is underway, with green utilities as part of the

infrastructure retrofitting. Even to the north, municipal trees and soil are viewed and valued comparably to man-made structures, because they provide environmental and economical solutions to shade, stormwater

management, and water purification. “When you add more people, you must consider how utilities will handle that growth. Facilities have to support people with active lifestyles. Green space and

strong urban design become very important; they need trees and parks, not just concrete jungles,” says Michael James with DeepRoot Canada, a sustainable urban products company.

With these approaches, communities also qualify for incentive funds from non-profit organizations and governments, especially where sustainable and eco-friendly utilities are emphasized.

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Maple Ridge aims for smart urban density

By 2020, Vancouver aims to be the greenest city in the nation, and the community is focusing heavily on implementing sustainable development plans. Urban density projects have become hyper local, as developers figure out how to create mini-city centres with ecological landscapes, walkable business districts, and mass transportation.

One mini-city centre is the suburban City of Maple Ridge, which hosted events and extra parking during the 2010 Winter Olympics. Following the games, the city gained grant money from the Building Canada Fund to extend a central streetscape two blocks for an outside mall.

“We had a streetscape built in early 1980s. After 30 years, it was time to renew things and make an area for walking and movement,” said Bruce McLeod, manager of parks and open space for Maple Ridge.

Project managers changed the pattern of the road and worked around narrow utility passages to install an underground suspended pavement system (Silva Cells) that provided sufficient soil volume for mature urban trees while supporting the sidewalks. They integrated modern materials, including permeable pavers (Eco-Priora), for stormwater management.

Completed in June 2011, the community put finishing touches of seating, bicycle rocks, and mosaic art in the sidewalk to represent their community.

Collingwood restores Victorian charm

North of Toronto on Georgian Bay, the resort community of Collingwood invested in a two-year project to revitalize its downtown streetscape and install new utilities without altering the Victorian style.

The \$7.5-million project included an upgraded eight-block pedestrian environment that promotes walking, bicycling, and calmer traffic flow. The Town received federal stimulus funding, and matched it with local municipal funds. The community also received a small grant through a bank for urban forest improvement.

With icy winters and droughts in the summer, the city paid special attention to urban trees and their use in the streetscape. The existing trees were failing and buckling sidewalks. Newly planted trees were dying due to urban stress and salting of roads and sidewalks. After five years of planting, many had to be cut down. The downtown also had older trees

that needed recharged soil.

The Silva Cells support the sidewalk while providing plenty of space for non-compacted planting soil to support the growth of mature healthy trees. In addition to electrical and lighting systems, the Town installed underground irrigation piping in the Silva Cells to allow water to reach trees during the dry summer. This system also allows a truck to water each Silva Cell grouping from one port during the dry spells and provide soil nutrients through a compost tea mixture.

“Trees are essential to the comfort and well-being of an urban environment and like

sewers, water mains and electrical structures, installing the appropriate infrastructure to support them is critical,” said David Wood, general manager of Envision-Tatham.

“Everyone plants a tree hoping it will survive. It can be a significant cost to plant them for longevity. However, the investment is rewarded through long-term environmental and social benefits.” ✪

Julie Metea is a freelance writer on sustainable and business topics.

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