



Onni Group's Mike Mackay on Walmart's green roof in Port Coquitlam, B.C.

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Property Report

Easy to be green when your roof saves you money

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Mega-retailers are sprouting in Port Coquitlam, B.C. – literally.

Thousands of hand-planted sedums and succulents cover the roofs of Walmart and Canadian Tire, anchor tenants at the Onni Group's Fremont Village shopping centre.

The newly opened outlets bring to fruition the city's 2006 bylaw requiring buildings of more than 5,000 square metres (53,821 square feet) to use green-roof technology, the first regulation of its kind in

Canada.

Port Coquitlam mayor Greg Moore acknowledges that there was some initial resistance from developers to the new rules, which are part of the city's sustainability initiative. However, he says the shift to green roofs is a sign of things to come, with developers expressing interest in using the eco-friendly technology even in smaller structures that don't fall under the bylaw's mandate.

"At the time, there were few buildings around that had green roofs, but you don't have to look too far for examples; there are a lot of buildings in New York and Europe that have green roofs," Mr. Moore says. "Despite resistance, we've continued with it. We all have to work together – local governments with developers and the private sector – to figure out how we can make greener communities.

"It's much like any change," he adds. "When LEED standards came in, there was resistance because the capital cost [increases]. But the life-cycle cost [of a LEED-standard building] is less. The more that builders and building owners understand that, the more they want to get onboard."

There is indeed a cost to providing green cover. Onni development manager Mike Mackay says that the \$1-million Walmart green roof, at 151,290 square feet, cost three times more than a conventional roof. However, he says the company viewed the progressive plans as an opportunity.

"We saw it as a way to show that we're embracing more sustainable communities as well as wanting to leave a more efficient footprint as far as the environment goes," Mr. Mackay says. "We wanted to be the leader in responsible development.

"This type of mandate is becoming more and more prevalent on the municipal level," he adds. "At the end of the day, this type of measure has been proven to reduce energy consumption, and it's a science we're comfortable using."

Green roofs help intercept and reduce stormwater run off, resulting in decreased stress on sewer systems at peak flow periods. They also help offset the urban heat-island effect: Through daily dew and evaporation cycles, plants cool cities during hot weather, since sunlight absorbed by vegetation would otherwise be converted into heat energy.

And the greater insulation they offer can lower the amount of energy needed to moderate a building's temperature, since roofs are the site of the greatest heat loss in winter.

According to Mr. Moore, green roofs typically cost 10 per cent more to build than conventional roofs – costs that are usually recovered within the first two years of building operation.

The energy savings and stormwater reductions, meanwhile, continue for the life of the building. Green roofs are said to last about twice as long as traditional roofs. Plus, they offer more aesthetically pleasing views for surrounding residential or office spaces.

Besides Canadian Tire and Walmart, up to three more buildings in the 650,000-square-foot Fremont Village development could have green roofs, depending on tenant needs and store sizes.

Onni is also developing a high-rise apartment building in another area of Port Coquitlam. The tower will have a green roof on its parking podium – a landscaped, accessible area that will serve as an amenity for residents.

The green roofs at Walmart and Canadian Tire, by contrast, are not designed for public access. For both companies, being in a green-roofed building fits with their broader environmental goals. It also boosts their bottom line.

Walmart Canada pegs high-efficiency stores as requiring 30 per cent less energy than others. Last year, the corporation announced that its sustainability efforts will help it avoid an estimated \$140-million in costs between 2010 and 2015.

“Walmart is open to testing new green technology,” says public relations manager Rosalyn Carneiro. “Working with Onni has allowed us to test the benefits of green roofs in a real-world setting. We can then apply the best practices to new stores in the future, where it makes sense.”

According to Green Roofs for Healthy Cities, a Toronto-based industry association, the advantages of green roofs are poorly understood in North America, where the market remains immature. In Europe, on the other hand, green-roof technologies are increasingly common, largely due to legislative and financial support at national and municipal levels.

In addition to environmental benefits, Green Roofs for Healthy Cities argues that green roofs also increase a building’s marketability. As part of the larger green-building movement, sustainable roofs facilitate sales and leases, enhance property values because of increased efficiency, and lead to easier employee recruitment and lower employee and tenant turnover.

The goods on green roofs

- Among the drought-resistant plants that grow atop Port Coquitlam’s Fremont Village green roofs are sheep’s fescue, beach strawberry, Oregon stonecrop, California poppy, Arctic bluegrass, yarrow, dragon’s blood stonecrop and foothill feather grass.
- Green roofs can reduce the daily energy demand for air conditioning in the summer by more than 75 per cent.
- Green roofs can contribute to landfill diversion by prolonging the life of waterproofing membranes, thereby reducing associated waste, and extending the life of heating, ventilation, and HVAC systems through decreased use.
- By reducing the distribution of dust and particulate matter throughout a city, as well as the production of smog, green roofs can contribute to a lowering of greenhouse gas emissions.
- Plants on green roofs can filter noxious gases and capture airborne pollutants, improving air quality.