

## Look, up in the sky, it's green

By Lara Gerrits The Tri-City News  
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Port Coquitlam council is looking to inject some green into the grey concrete of new development.

At tomorrow (Monday) night's meeting, PoCo council is expected to give final approval to a first-of-its-kind bylaw mandating that all new commercial and industrial buildings with a footprint larger than 5,000 square metres (or 53,821 square feet) have a "green roof."

The green roof - a system in which vegetation replaces gravel and other common commercial roofing materials - has long been popular in Europe. During the last decade or so, the practice has made its way into the minds of North American city planners, who recognize not only its environmental benefits but, also, its social and economic ones.

According to the Greater Vancouver Regional District, there are more than 600 green roof installations in the Lower Mainland, making it one of the "green roof capitals" of the world.

Some well-known ones include those atop the Vancouver Public Library's main branch, Vancouver Art Gallery and the Cobb House in Stanley Park, although several hundred other residential and commercial ones are listed on a GVRD online inventory, including 13 in Coquitlam (more are planned for highrise projects including those on Pinetree Street and Glen Avenues). Port Moody currently has no green roofs listed but one is slated to be atop its new recreation centre, set to open next year, as well as the Promenade condo development near Rocky Point Park. In PoCo, Onni is designing one for the parkade of a proposed 26-storey highrise on Shaughnessy Street near the underpass and, if the new bylaw is passed by council Monday, two big-box stores slated for the Dominion Triangle will have them, too.

Green roofs, whether intensive (which have a greater soil depth and can accommodate more diverse utilization) or extensive (which have a three- to six-inch depth, leaving them largely inaccessible to people), are touted as having an array of benefits: better storm water management (approximately a 28% reduction in runoff for an extensive roof), reduced "urban heat island" effect, increased health and quality of life for those occupying the building below and more diverse habitat for birds, insects and micro-organisms.



Craig Hodge/The Tri-City News

**Kim Fowler, Port Coquitlam's director of development, is part of the city planning team that drew up the first-of-its-kind green roof bylaw, set to go before council for final reading Monday. The proposed bylaw would mean new commercial and industrial buildings with a footprint larger than 5,000 square metres ? including the big box stores slated for the Dominion Triangle ? would be required to have green roofs.**

"I think they're a great idea," said environmentalist Elaine Golds of the Burke Mountain Naturalists. "Roofs shouldn't be thought of as just being umbrellas. We need to use them appropriately."

Birds who typically nest on the ground for camouflage, including killdeer (which nests in gravel) and nighthawks, can do so more safely atop such a roof, she added.

But perhaps one of the most marketable traits of a green roof is its role in reducing heating costs in the winter and air conditioning costs in the summer by acting as an added layer of insulation. According to a BC Institute of Technology year-long analysis at its green roof test site in Vancouver, daily energy demand due to heat flow can be reduced by as much as 66%, thereby reducing greenhouse gas emissions.

"When you change the energy design of a building, it has quite a long impact over time," said PoCo's director of development, Kim Fowler.

"Green" buildings have long been on the mind of planners, she said, but since the Kyoto Protocol came into force in 2005, the general population has twigged to the need to reduce greenhouse gas emissions.

"Canadians are energy pigs, we are the worst in the world [per capita]," she said.

Although a green roof typically costs 10% more than a traditional roof, that money is usually recovered within the first two years of a building's operation, she said. And to developers who say they won't benefit from cost reductions after a building's sale, Fowler says they'll probably sell them for more in the first place because accessible green space is a rarity for those living in a highrise.

"You've got this large area, it's sitting there and you want to make use of it," said Jim McIntyre, Coquitlam's general manager of planning and development.

Although the city doesn't have plans to draw up a bylaw similar to PoCo's, it does encourage developers to explore the idea of green roofs in their proposals.

"It makes good sense for them," he said, noting it's also a "visual amenity" for people looking down at the roofs who might see a garden instead of asphalt. "I think the market is moving that way."

Despite public perception that green roofs and a West Coast climate might not mix, research indicates the contrary. Because of the reduction in daily temperature changes of the roof membrane, green roofs are found to last twice as long as traditional ones.

Fowler said she's unaware of any documented leakage problems from her research and Lesli Boldt, Vancouver Public Library spokesperson, confirmed VPL's green roof hasn't leaked since its construction in 1995.

But the Urban Development Institute (UDI), which represents the development industry, says it's too soon to rely on research focused on Canadian green roofs.

UDI canvassed its members after PoCo's bylaw was proposed and raised the following concerns with council: the need for additional experience and research; industry capability; liability/costs; a voluntary approach with incentives, flexibility and more.

Jeff Fisher, UDI director of municipal affairs and research, said in a letter to the city that the "regulatory approach" involves many components that could pose challenges to the industry.

"The imposition of a regulation mandating green roofs on industrial and commercial buildings exceeding 5,000 square metres is seen as premature and absent of strong support from our industry," he wrote. "Moving too quickly may artificially accelerate the incubation of new technologies and prematurely introduce untested methods into a market-driven environment, with unforeseen effects."

Green roofs in Canada are still in the early stages of research and testing, he said, noting there is still much to be learned.

"Even with current research underway, there continues to be modifications to 'new' technologies on a continual basis - far more frequently than would be prudent under a regulatory regime."

#### **MORE INFO**

Want to learn more? Check out BCIT's Centre for the Advancement of Green Roof Technology at <http://commons/bcit.ca/greenroof>. Tours of its research facility at 555 Great Northern Way in Vancouver happen the third Thursday of each month.

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