

Campus homes pioneer green heating

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'Buildings are a key part of the solution to climate change.' So says developer and builder Heather Tremain, whose most recent assignment is a pioneering exercise in reducing household energy use and greenhouse gas creation.

By either American government or U.S. Green Building Council estimates, buildings consume more than one-third of all energy used in a year down there and, further, they consume almost two-thirds of all electricity used in a year. They create almost 40 per cent of all greenhouse gas emissions.

Tremain is a partner in reSource Rethinking Buildings, a Vancouver development and construction management company.

This month, the first families began moving into the Verdant at UniverCity townhouses atop Burnaby Mountain, built by reSource Rethinking Buildings on behalf of the Vancity credit union and bought exclusively by Simon Fraser University employees.

Verdant boasts a number of green features: healthy, low-VOC interior paints, adhesives and carpets; energy and water-efficient appliances and fixtures; and on-site stormwater detention.

ENERGY USE WILL BE CUT 60 PER CENT A YEAR

Its heating system, however, is drawing the most attention. Using geoexchange and solar to provide residents with in-floor radiant heating and hot water, the 60-townhouse Verdant is a leading Canadian energy-efficient, multi-family residential building.

Tremain expects the heating system to reduce energy consumption about 60 per cent annually. She also expects the Verdant households will emit 374 fewer tonnes of greenhouse gases annually -- the equivalent to taking 72 cars off the road permanently.

While geoexchange and solar are well known technologies, few developers install them due to their expense.

This, of course, leaves the homeowner saddled with higher monthly energy fees in perpetuity.

"Right now the developer would have to take the additional cost of an energy-efficient system off their bottom line," Tremain says.

"Developers don't see the [financial] benefit," Derek Gent of Vancity Capital Corp. comments.

Further, their buyers, who are the beneficiaries of capital investments that

generate lower operating expenses, "will pay for healthy and granite, but they are not quite there for large capital expenditures."

As Verdant's development manager, reSource proposed to Verdant's developer, Vancity Capital, that the added expense of the home-heating innovations at Verdant be covered through a separate "green" loan.

Vancity Capital was receptive: Set up to finance things that don't really fit in the box -- green, sustainable, ethical -- Vancity Capital did not consider the firm's proposal particularly risky.

"Geoexchange and solar are pretty straight forward. We looked at the extra costs for adding these systems, and the modelled-out incremental savings, and put together a financial package," Gent reports.

ENERGY SAVINGS PAY OFF LOAN

The result was an innovative loan that made installation cost neutral to both developer and future owners.

The loan started with the developer, capitalized during construction, and has since been transferred to the strata council which will liquidate the debt monthly through strata fees.

"We ensured that the loan repayments were at a level which could be repaid from the energy savings," Tremain says. "In this way, the owners get more comfortable and cost-effective systems at the same cost as a conventional system."

While Verdant owners will enjoy a drop in monthly expenses once the loan is paid off, they will be saving money from the first day they occupy their new homes: During the loan, their energy expenses won't rise as quickly as those for conventional homes.

THE 'IMPOSSIBLE' ISN'T

"Sustainability isn't about one Verdant," Tremain says. "It's about being replicable. Our goal with the project was to ensure that what we did could be taken up by others."

"Verdant proves that what seems impossible, is actually possible."

"This was not about being charitable," Gent of Vancity Capital says of his employer's involvement. "We saw it as a viable business opportunity."

While Tremain feels any developer could do what Verdant has done, she is the first to admit that the seemingly simple and elegant solution for the heating system did require a lot of work.

"Being able to bring together specialized knowledge is critical to integrated design," she says. "One can't do green building if everyone is in their silos."

It is a collaborative approach that has served Tremain well. For Tremain, and reSource, it is about looking ahead and tackling the next roadblock.

"As developers, we have to adopt a consistent mindset about building green -- a comprehensive focus on finding ways to make it happen now, instead of defaulting to the way we've always done things."

"We have some key answers to global warming today--we just need to put

them together in innovative ways, and implement them."

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