

# Green construction means 'good business' for new downtown Vancouver office tower

## Environmental certification signals a healthier, more energy-efficient building

BY BILL METCALFE, VANCOUVER SUN MAY 2, 2014



Credit Suisse will build The Exchange, a 30-storey office tower at the corner of Pender and Howe. It will have the LEED Platinum rating for environmental sustainability.

VANCOUVER — Rooftop solar energy panels will heat the water at The Exchange, the new office tower going up at Howe and Pender. Storm water will be retained and reused. Heat will come from deep in the earth. Every office will have fresh air and will be heated and cooled by advanced radiant technology.

The expected results: a 35-per-cent reduction in energy costs, a 50-per-cent reduction in energy consumption, higher employee satisfaction, and an 85-per-cent decrease in greenhouse gas emissions compared with conventional buildings.

"We are long-term investors and we believe that everybody has to go this way. We can no longer waste energy and water as we have done in the past," says Franz Gehriger, the CEO of SwissReal Group, which is developing the building along with Credit Suisse.

"In Europe, this is normal," Gehriger says. "They are ahead of us because their energy consciousness is better than ours. But we will get there."

Vancouver Mayor Gregor Robertson broke ground in January for the innovative \$200-million tower that is set to open in 2016. It will convert and extend the old Vancouver Stock Exchange building and will have the highest green rating: LEED Platinum.

LEED stands for Leadership in Energy and Environmental Design. It uses a detailed rating system for buildings of all types, using four levels: certified, silver, gold and platinum.

It is the most recognized brand in the trend toward measuring building sustainability, but there are others. BOMA BEST,

for example, is a national measuring system run by the Building Owners and Managers Association.

"LEED certification is now the de facto standard for new commercial construction, and soon will be for existing buildings as well," says Thomas Mueller. He heads the Canada Green Building Council, which administers LEED in this country.

"Buildings generate about 35 per cent of all greenhouse gases and 35 per cent of landfill waste from construction and demolition, and 70 per cent of all municipal water is consumed in and around buildings," Mueller says.

The number of LEED-certified commercial buildings has soared across North America in the past few years.

"This is the fastest rate of change I have ever seen in the real-estate industry, and I have been in it 40 years. It has grown exponentially," says Andrew McAllan of Oxford Properties, which is building four LEED-certified office buildings across the country, including the MNP tower in downtown Vancouver, scheduled for completion in August.

Why such a fast increase? Office building tenants demand it, McAllan says.

"Ask any senior executive in any firm," he says. "They need to recruit and retain top talent, and that is increasingly competitive. Talk to Gen-Xers and Millennials — they all have social consciousness, they want to work in a building that is not undermining the environmental fabric, buildings that have natural light, good air, showers, recycling programs, bike parking, low water-volume fixtures, energy-efficient lighting."

The sense of well-being reported by workers in green office buildings is increasingly corroborated by scientific evidence, says Vivian Loftness, who teaches environmental design and sustainability at Carnegie Mellon University in Pittsburgh.

She says an important feature of LEED is indoor materials — flooring, carpets, paint, ceiling tile, furniture — that don't "off-gas."

"When you take toxicity out of the indoor environment there are direct connections to respiratory health," she says.

Traditional air conditioning and heating systems also contribute to unhealthy air in large buildings. Many green buildings, including The Exchange, are replacing those with under-floor air systems. "They bring in air at your feet and extract it through the ceiling," says Loftness. "That means that my cold is being extracted in a plume around me to the ceiling and not being blown to my neighbour. This is a significant value to human health."

New approaches to air conditioning will affect the outside environment as well. Gehriger says The Exchange will avoid the use of Freon gas, "one of the most poisonous substances that our buildings emit."

"It turns out there is very strong research on the importance of daylight and view to productivity," continues Loftness. "It is not clear whether it is the daylight or the view component, but when they have good light and views of green spaces, they stay longer at their work station and they outperform their peers."

Loftness says LEED is now beginning to offer credits for building designs that make people more physically active, including bright, inviting stairs that are easier to get to than the elevator, and easy access to transit and bike lanes.

One of the most innovative green commercial buildings in Vancouver will be the \$750-million Telus Garden, set to open in 2015. Tenants will include Telus' national head office, as well as 1,000 Amazon employees, and there also will be a residential component.

The building is rated LEED Platinum and boasts an array of innovative design features and green space.

Another driver on the environmental front, according to Mueller, is that many large companies have corporate social responsibility policies, and a green building helps to satisfy those.

The increased construction cost of a green building is around two per cent, according to Mueller and McAllan, although

Gehriger says it's higher than that. In any event, tenants appear willing to cover that premium by paying higher rents.

Mueller says occupancy rates prove this.

"The occupancy in those is very high compared to conventional. There are many examples of conventional buildings that are 75 per cent occupied, versus green at 90 to 95 per cent."

Gehriger agrees and says this is especially true in Europe.

Other than the health and indoor-environment benefits, energy costs are the main driver of the green commercial building boom. The savings depend on the level of LEED certification and other factors, but Mueller says they can run up to 40 per cent.

"There is no doubt," he says, "that over the life of a building the initial investment will be made up many, many times, just from the energy side, not even talking about water or solid waste yet."

"It's good business to save energy," McAllan says.

### **What makes a building green?**

Sustainable site development:

e.g. stormwater recycling, increased density, access to public transportation, bicycle storage

Water efficiency:

e.g. water use reduction fixtures, reuse of stormwater

Energy efficiency:

e.g. efficient lighting, efficient heating and ventilation such as in-floor air, on-site power generation

Materials selection:

e.g. storage and collection of recyclables, construction waste management, certified wood

Indoor environmental quality:

e.g. low emitting materials (paints, carpets, adhesives, furniture), controllability of lighting and temperature, increased ventilation, daylight

Innovation in design:

e.g. designs that encourage any of the above Source: SwissReal Group Canada

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