

## LIVING GREEN

## Whistler homes earn energy-efficiency medals

Two of them are from a local builder; the third, a 'passive house,' is from Austria



BY KIM DAVIS

World-class athletes? Check. A dizzying array of cultural events? Check. Ultra energy-efficient homes to tour? Check.

While that last one may not be on the official calendar of Winter Games events, those who are Whistler-bound will have the opportunity to see star performers that include the built environment. Between Whistler's first rammed-earth home, B.C.'s first net-zero energy home and Canada's first certified Passive House, the slopes will not be the only place to witness impressive performances.

Canadian Legacy

Proving that a country's Olympic pavilion can — and arguably should — offer a legacy, Austria House is an ultralow-energy building designed to heat, cool and ventilate itself with nominal amounts of energy.

Using a combination of super insulation, thick walls, triple-paned glazing, solar orientation and an advanced heat-recovery system, Austria House anticipates using one-tenth of the energy required by a similar-sized, conventionally built structure. If that figure is not impressive enough, consider that this translates to less than half the energy consumption expected from a LEED-Platinum home — one of Canada's highest standards for "green" building.

The RDC Fine Homes innovations are, left, B.C.'s first net-zero home and, right, Whistler's first rammed-earth home.

"Buildings are our third skin," says Guido Wimmers of Wimmers Design, one of the project's consultants and a specialist in passive house design. "There is our skin, our clothing, and then our buildings, in which we spend roughly 23 hours of a day," he says. "Canadians are so great in their outdoor clothing, Gortex and multi-functional membranes. When we go for a mountain hike we have beautifully performing stuff — airtight, watertight, and well-insulated.

"But we just don't design our houses

that way. So a Passive House is more or less like a Gortex jacket. No matter what climate you have or how cold it gets in the winter, you feel comfortable in your house."

While the current incarnation of Passive-House design began in Germany around 1991, the concept hails from Regina, where one of the first conservation demonstration houses in North America was constructed in 1977, says Wimmers.

Unlike the temporary Olympic "houses," designed to showcase participating nations, the Austria House will be given to Whistler for community use after the Games. It is envisioned as a rental shop for cross-country ski gear in the winter and bicycles

in summer, as well as a public indoor gathering space and club space for the Whistler Off Road Cycling Association and the Whistler Nordics ski club.

Located near the main entrance to Lost Lake Park, people can tour the house nearly every day during the Games from 10 a.m. to 4 p.m.

Firmly Grounded

With a history that rivals that of the ancient Greeks, rammed earth is a building system with one of the lowest environmental impacts commercially available today. Eighteen-inch-thick exterior walls are formed like conventional concrete, but use locally sourced sand and gravel, a small percentage of Portland cement and naturally sourced colouring agents.

Mixing ancient knowledge with the

latest in construction technology — including double and triple glazing, non-VOC finishes and a hospital-quality air filtration system — Whistler's first rammed-earth home is positioned as not only one of the healthiest in Canada, but as one of the most efficient. The home, built by RDC Fine Homes, uses 80 per cent less energy than a conventionally constructed counterpart.

Bob Deeks, owner of RDC Fine Homes, describes how an innovative "house-source" heat recovery system, which recaptures heat from practically everything — appliances, kitchen and bathroom fans, even the water that goes down the drains — helps reduce heating and cooling costs dramatically.

The home is also one of the first in Canada to include an extensive system for monitoring energy efficiency and indoor air quality. "It is about knowing how your house performs," says Deeks. "For example, there is all this talk about air quality, and yet no one is measuring it."

The home is on the high end even of Whistler's exclusive market, but Deeks feels it demonstrates how luxury, health, and a reduced carbon footprint need not be mutually exclusive.

Those interested in viewing the home, located in Whistler Cay Estates, just a short walk from the Whistler Village, can e-mail Deeks at [info@rdcfinehomes.com](mailto:info@rdcfinehomes.com).

## Zero Scores

Aside from the solar panels on its roof, B.C.'s first net-zero energy home looks fairly similar to all the other houses going up in the neighbourhood. When it comes to performance, however, it is in a completely different league.

Combining energy-efficient design with high-tech construction and commercially available renewable energy systems, net-zero homes are defined by their ability to achieve net-zero energy consumption (energy neutral) on an annual basis. This means that over the period of one year the amount of energy the buildings use is equal to what they generate.

Deeks says every aspect of the building, another RDC Fine Homes' project, was designed to reduce energy use. Natural light reduces the need for artificial light during the day. Overhangs shade the windows while the sun is high in the summer months, eliminating the need for cooling systems. All windows are triple-paned, low-E gas filled, and both the foundation and walls use systems designed to create highly insulated interior spaces with minimal amounts of construction waste.

In addition to having a heat recovery system similar to that used in the rammed-earth house, an array of solar panels helps the building meet its energy demands. Since there's the anticipation that the house will at times create more energy than it needs, it has been connected to another home in the neighbourhood to which the surplus can be exported.

Made possible through the generous contributions of a number of providers, local talent included Alpine West systems, Living Edge Design and Red Mechanical.

Located at 8377 Ski Jump Rise, the home will be open to the public Feb. 17 and 24, and March 19 and 28, from 1 p.m. to 5 p.m.