

Growing a green building

The walls of the Vancouver Aquarium's \$22-million Aquaquest – Marilyn Blusson Learning Centre may look beige, but the building's all green.

From the roof that harvests rainwater to low-flush toilets, to reduced chemical paints to an energy efficient elevator, the Aquarium has made every effort to make its newest building as environmentally sustainable as possible.

"It was our intention from the beginning to make sustainability the core of the new learning centre," says Aquarium President Dr. John Nightingale. "We're located in beautiful Stanley Park, where we teach people about conservation every day of the year. We need to demonstrate that commitment through more than just our words.

'Walking the talk' meant weaving sustainability into every aspect of the building with a carefully crafted design that ensures Aquaquest generates less waste and uses less energy than a conventional building.

The Canada Green Building Council promotes the construction of environmentally friendly buildings in Canada through a rating system called LEED (Leadership in Energy and Environmental Design). It rates those buildings by awarding points in the following categories: sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality.

There are 37 LEED-certified buildings in Canada, and 14 of those have achieved a Gold rating. Aquaquest is the first zoo or aquarium anywhere in the world aiming for a LEED Gold certification.

"This project is a flagship," says Max Richter, an intern architect at Stantec who consulted on the LEED aspects of Aquaquest. "The Aquarium has been very forward-looking and has taken a real leadership role in promoting green buildings in the city."

One of the green achievements that the Aquarium spearheaded was the use of rainwater to flush toilets. Though environmentally friendly, using rainwater in toilets is against city building codes. But the Aquarium pushed for this aspect in Aquaquest and was granted permission from the city to do so; because of the Aquarium's efforts, the city has now re-evaluated its codes to allow rainwater to be used in washrooms throughout Vancouver.

"There was an inherent respect and concern for the environment [at the Aquarium]," says Richter. "When we really wanted to push things on this job, the Aquarium was right there with us."

Aquaquest has numerous special environmental features that Aquarium staff hope will award it LEED Gold. Ninety percent of the Aquarium's old administration building's materials were reused or recycled (equivalent to more than 80 city buses in weight!), and the design incorporated the same small footprint construction to minimize environmental impact. A closed network of pipes carry hot and cold water through the ceilings to regulate temperature more efficiently, and an innovative ventilation system circulates air by convection.

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And don't expect that 'new building' smell: construction crews used low-VOC (volatile organic compound) paints, glues, carpets and sealants to maintain air quality, making Aquaquest a healthy place for both visitors and staff.

Aquaquest also features the city's first green wall. A living wall of native plants adorns an outside wall, which not only provides insulation to the building all year round, but also attracts and encourages insects and birds.

Even the furniture is green. Herman Miller, an environmentally responsible company that produces sustainable furniture products and is a founding member of the U.S Green Building Council, provided Aquaquest's office furniture made out of recycled materials.

"Green buildings are a great way for people to help sustain nature and the environment," says Dr. Nightingale. "By having a building that reduces waste and energy consumption, the Aquarium will have less impact on the natural world."

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