



Backgrounder

Oval will showcase sustainability measures

The Richmond Olympic Oval won't just be a showcase for sports, it will also be a model for cutting-edge green design. The multi-purpose waterfront facility upholds rigorous standards for green building development and breaks new ground for sports and wellness facilities in the region and across the country.

At its onset, the Oval was designed with a vision for the future. The Oval's flexible design means that, while it will provide a first-class speed skating Oval for 2010 Olympic Games and beyond, it will also be able to be transformed into a multi-sport and wellness facility for servicing the needs of the local community for years to come. The high-profile facility also provides an excellent opportunity for increasing the visibility of green building value and demonstrating how green development practices make strong business sense and result in important community legacies.

The City is also building the Oval to meet leading edge high performance building standards. The structure itself is being designed to qualify for Silver certification on the Leadership in Energy and Environmental Design Scale (LEED®). The LEED® rating system emerged from the U.S. as a method to recognize leading edge buildings which use energy and other resources efficiently, minimize waste and result in high quality indoor environments. Typically, LEED® applies to residential or office developments and it's highly unusual for a facility of this type and size to meet its high standards.

"It was quite a bit harder for us than it would have been for a residential tower to qualify," explains Greg Scott, Richmond's Director of Major Projects. However, in addition to the direct environmental and social benefits, the City's upfront efforts are also expected to result in significant operational cost savings given the lifespan of the building.

One of the key elements that will help earn the Oval its silver status and reduce long-term maintenance costs are the energy efficiency measures being taken with its giant refrigeration plant. Scott points out that the plant has to be large because the Olympic speed-skating oval surface is roughly equivalent to six international hockey rinks. "To create ice you need to transfer heat energy out of the water. Typically, this energy is wasted. In the Richmond Oval, however, we are going to capture some of this extra heat energy and use it elsewhere in the building," explains Scott. The City is also exploring the possibility of creating an innovative thermal energy utility that will, in part, use waste energy from the Oval to provide low cost heating and cooling for the entire new 32-acre urban waterfront neighbourhood being created around the building.

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Outside the building, on the Oval's massive roof, all the rain water will also be collected and used to help address the project's water needs and reduce demands on centralized drinking water supplies. Much of the collected water will flow into the building's pipes to supplement toilet flushing. The rest will be directed into a picturesque pond being built in front of the Oval. The pond will provide an attractive community amenity and gathering space while also serving as a water supply for irrigating the surrounding trees and landscaping. A fountain designed as part the public-art program will re-oxygenate the pond.

The storm water collection system will also incorporate a dramatic public art project, created by internationally acclaimed Musqueam artist Susan Point; one of many ways the City is collaborating with First Nations on the project.

Another key element being incorporated into the Oval is the innovative use of salvaged pine-beetle-kill wood for its ceiling. British Columbia is currently experiencing a major mountain pine beetle epidemic and reports estimate that approximately one third of the entire BC pine forest has been lost to-date. With a size of about 100 metres by 200 metres, the roof is believed to be the largest surface ever covered in the once-discarded wood. "It's going to be a showcase for it – to demonstrate that it's a good material and can be attractive," says Scott. While it won't address the epidemic directly, showcasing the use of the wood will hopefully help encourage its use elsewhere and thereby, mitigate some of the economic impacts being felt by Northern BC communities.

Other timber used in the building's finishings will come from trees that had to be felled on the site to accommodate the building. Cuttings were also taken from the oak trees that were planted on site when the area was owned by Richmond Pioneer Samuel Brighthouse. After being propagated in City of Richmond nurseries, they will be planted along the site's picturesque new Samuel Brighthouse Heritage Boulevard.

Other economic and environmentally sensitive approaches include placing the building back from the Fraser River foreshore, preserving trees along Hollybridge Canal, diverting recyclable construction materials away from the landfill and incorporating the use of healthier building materials, such as wood laminants and sealants. The City has also developed a site-specific Construction Environmental Management plan which identifies best management practices to be used during construction.

However, while all these measures work to significantly reduce impacts, it is no longer enough to continue to solely conduct mitigation efforts. "Given the current state of our natural resources upon which we and future communities depend, we need to move in a direction which is restorative and replenishes ecological health" says Margot Daykin, the City's Assistant Manager for Environmental Programs.

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In this regard, the Oval project is also going to incorporate features which strive to improve existing environmental conditions. In particular, the City has committed to enhancing the intertidal marsh along the foreshore adjacent to the Oval site to strengthen the estuary that already exists.

The pond used to collect rainfall water will also be designed to include marsh plant material and connect with Hollybridge Canal to act as a natural purifier and improve existing water quality. The City also intends to incorporate interpretative trails along the foreshore adjacent to the Oval to highlight the area's natural assets and showcase sustainable development practices.

“By building on an area's natural assets and incorporating smart development practices, the City hopes to showcase how environmental sustainability helps to create projects which are unique and memorable”, Daykin says. “Ultimately, it is about creating a great place – a place which offers a legacy community amenity within a broader landscape that is enriching and inspiring for years to come.”

For More Information:
Ted Townsend, Senior Manager, Corporate Communications
City of Richmond
604-276-3299 ttownsend@richmond.ca
www.richmond.ca