



The Richmond Olympic Oval isn't just a showcase for sports; it is also 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 provided a first-class speed skating Oval for the 2010 Winter Games, it has been transformed into a multi-sport and wellness facility to service 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 built the Oval to meet leading-edge high-performance building standards. The structure itself has been awarded 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 exacting 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 helped earn the Oval its LEED 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 Olympic Oval, however, we are capturing some of this extra heat energy and using it elsewhere in the building,” explains Scott.

Outside the building, on the Oval’s massive roof, rainwater is collected and used to help address the project’s water needs and reduce demands on centralized drinking water supplies. Much of the collected water flows into the building’s pipes to supplement toilet flushing. The rest is directed into a picturesque pond on the east side of the Oval. The pond provides an attractive community amenity and gathering space while also serving as a water supply for irrigating the surrounding trees and landscaping.

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

Another key element 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 B.C. 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 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 B.C. communities.

Other timber used in the building’s finishings came from trees that had to be felled on the site to accommodate the building. Cuttings were also taken from 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 also developed a site-specific Construction Environmental Management plan which identified best management practices 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 sustainability manager.

In this regard, the Oval project incorporates features that 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 was includes marsh plant material and connects 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.”

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