

THE RICHMOND OVAL

LOCATION
Richmond, British Columbia

SIZE
33,750 m²

COMPLETION
2008

ARCHITECT
CannonDesign

STRUCTURAL ENGINEER
Fast+Epp

CONSTRUCTION MANAGER
Dominion Fairmile Construction Ltd.

PROJECT MANAGEMENT
MHPM Project Managers Inc.

PROJECT OWNER
City of Richmond

PROJECT OVERVIEW

The Richmond Oval was built for the Vancouver 2010 Olympic and Paralympic Winter Games. It is a precedent-setting example of advanced wood engineering and design. Covering 3.38 hectares, or nearly the size of six football fields, the structure showcases British Columbia's wood design and fabrication industry to the world.

The building is arranged on three levels: an underground parking garage; a ground-oriented entry, circulation, service and amenity level; and the vaulted sports hall on the top level. Made of prefabricated WoodWave panels and hybrid

glue-laminated (glulam) timber-steel arches, the roof has one of the world's largest clear spans. The roof WoodWave panel system was conceived and engineered by B.C.-based StructureCraft Builders. The name WoodWave is fitting, as it is built completely of lumber and plywood fastened together in a wave-like form.

During the Games, the Oval housed a 400-metre speed skating track, with room for 8,000 spectators. After the Games, it was converted to use for numerous sports—on ice, court and track and field. The Oval is certified at LEED® Silver status.



“The architectural design of the Richmond Olympic Oval emanates from several poetic images based in the cultural history of the site and the surrounding geography. The articulation of the Oval roof evolved from the image of the heron, being a native bird in that community. The roof has a gentle curve that peels off on the north side of the facility, emulating the wing of a heron with its individual feather tips extending beyond the base wood truss structure.”

Larry Podhora, CannonDesign

WOOD USE

The Oval’s roof is fabricated from one million board feet of 2x4 spruce-pine-fir (SPF) dimension lumber and 19,000 sheets of plywood. An additional one million board feet of Douglas- fir lumber was used in the glulam beams.

The structure comprises composite wood-steel arches, which span about 100 metres. Spanning the 12.8 metres between arches are prefabricated WoodWave structural panels, consisting of lumber arranged geometrically to optimize both structural and acoustic efficiency.

The design is not only economical, but it provides a memorable aesthetic for the high-profile facility.

To be spanning such an enormous distance with panels using standard 2x4s, is a feat of modern wood design. The roof uses materials supplied directly from B.C. mills, including lumber from forests affected by the mountain pine beetle.

In addition to using lumber obtained from B.C. forests, wood ceilings and panelling were milled from trees felled on the site.



Photos courtesy of naturally:wood

FOR MORE INFORMATION

This profile is published by Forestry Innovation Investment, the Government of British Columbia’s market development agency for forest products.

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