



Trout Lake Arena Vancouver, BC

The first phase in the replacement of an aging community centre, Trout Lake Arena was to serve as a practice facility for 2010 Olympic Winter Games.

Fast + Epp's challenge was to create a 40m clear-span structure that would reconcile the clients' wish to use wood and the architect's desire for a mid-span clerestory window along the length of the roof – on a tight budget. The solution was counterintuitive, yet in the circumstances quite rational – a Vierendeel arch truss to run north-south along the length of the building that would use its depth to form the clerestory.

The steel truss divided the building's width into two spans of 14m and 26m respectively, making glue-laminated beams an economical proposition. The main arch was fabricated using welded wide flange steel and spanned two cast-in-place concrete buttress walls. The top chord of the arch supported the high roof glulams and the bottom chord supports low roof glulams. The result: shorter spans facilitate glulam beams as primary support elements, allowing natural daylight to stream into the building through the open panels in the steel truss.

Fast + Epp

Status
Completed 2009

Project Cost
\$12 million

Area
43,000 ft² (3,994 m²)

Architect
Francl Architecture

Client
City of Vancouver

