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Centre Place Manitoba

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Centre Place Manitoba

Design of short lifespan building takes creative thinking

By George Cibinel

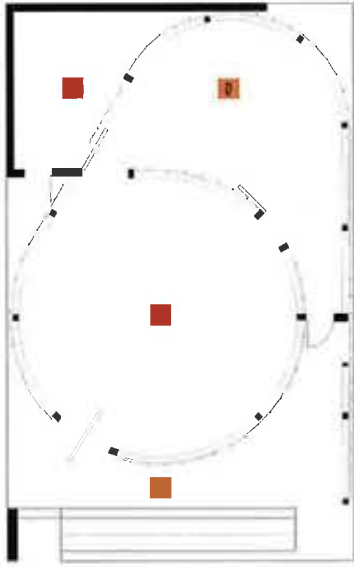
Commissioned by the Province of Manitoba, and designed for an initial five week service life as the provincial pavilion at the Vancouver 2010 Winter Olympic Games, Centre Place Manitoba has now been successfully relocated and re-erected on the outskirts of Winnipeg. The design team had three main objectives in designing the structure: to embody the energy of the Province and its people; to reinforce Manitoba's position as a centre for culture and trade; and demonstrate its commitment to sustainability. Given the temporary nature of the structure, the last of these objectives was the most challenging.

In response, the following strategies were explored:

- Prefabrication to meet the client's requirement for maximum use of Manitoba labour and materials
- Design to minimum possible footprint, creating a small building with a big presence that would transcend the typical 'white tent' typology
- Maximize the use of reclaimed and recycled materials to minimize the ecological footprint of the building
- Use passive design strategies for environmental control, rather than dedicated HVAC and lighting systems.

Centre Place Manitoba was one of six pavilions in Vancouver's downtown 'Live City' site, and occupied an existing parking





Floor plan

- A Queuing area
- B Exhibition area
- C Storage
- D Multi-purpose area

THE FLOOR AND CEILING BOARDS WERE MILLED FROM ELM TREES THAT HAD BEEN PREVIOUSLY FELLED IN WINNIPEG TO PREVENT THE SPREAD OF DUTCH ELM DISEASE [1]. AN ELLIPTICAL EXHIBITION AREA ARRANGED WITHIN A RECTANGULAR PLAN CREATES MULTIPLE SPACES OF DIFFERING SCALE AND CHARACTER [2]. LIGHT SPILLS FROM THE MULTIMEDIA DISPLAY WITHIN THE PAVILION, THROUGH THE TRANSLUCENT WALLS TO THE EXTERIOR, ELIMINATING THE NEED FOR SITE LIGHTING [3].



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lot understood to have contaminated soils beneath its blacktop surface. Accordingly, the pavilion was designed to be light in weight, and its structural loads widely distributed to minimize site disturbance.

Given the temporary nature of the pavilion, the careful selection of materials and construction techniques probably made the most significant contribution to the message of sustainability. The structure is almost entirely of wood, using locally fabricated glulam columns and beams, parallel strand lumber [PSL] fascias and wood joists. All glulam material was sourced from sustainably-managed forests.

The 54m³ of wood required for the flooring and soffits of the pavilion was milled from 100 elm trees previously felled in Winnipeg to prevent the spread of Dutch elm disease. The structure was designed as a kit of parts, prefabricated in Manitoba, then shipped to Vancouver on only three trucks.

Plywood strapping used to secure the structural components for shipping was reused as cladding for the pavilion, and steel cable cross bracing provided the required lateral stability.

The need for multi-media equipment meant

CLIENT Province of Manitoba **ARCHITECT** Cibinel Architects Ltd. **STRUCTURAL ENGINEER** Wolfrom Engineering Ltd. **MECHANICAL ENGINEER** Epp Siepman Engineering Inc. **ELECTRICAL ENGINEER** Sms Engineering Ltd. **LIGHTING ENGINEER** Bill Williams and Associates **GRAPHIC ENGINEER** Mckim, Cringan, George **EXHIBIT DESIGNER** Reich and Petch Design International **GENERAL CONTRACTOR** Dominion Construction Company Inc. **RECLAIMED WOOD** Wood Anchor **GLULAM FABRICATOR** Western Archrib **PHOTOS** Steve Li/Provoke Studios, except photo 6: Matt Cibinel



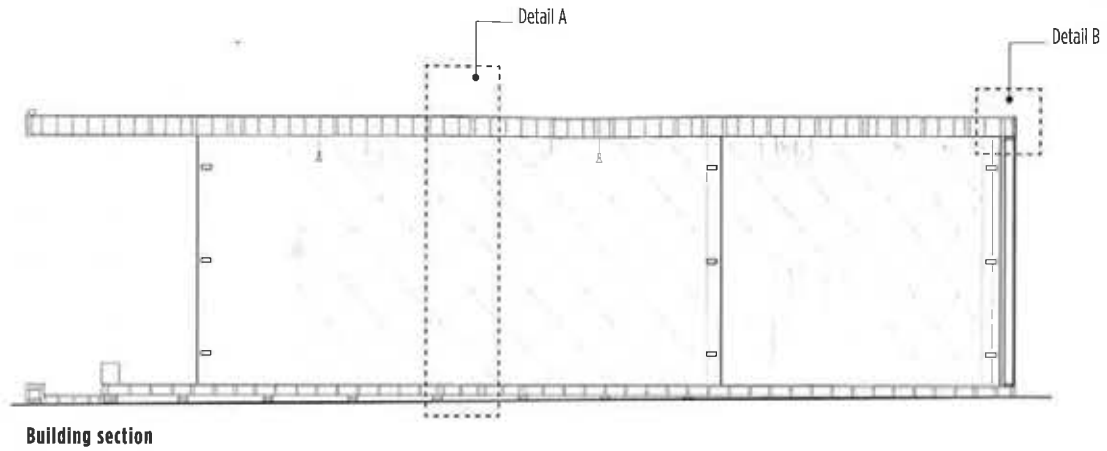
SPACED BOARDS ON THE FLOOR AND CEILING, TOGETHER WITH AN OVERSIZED PIVOTING DOOR ENABLED THE PAVILION TO BE NATURALLY VENTILATED [4]. THE PAVILION GLOWS LIKE A WELCOMING LANTERN ON ITS PARKING LOT SITE IN DOWNTOWN VANCOUVER [5].

heavy consumption of electrical power. To compensate for this energy use the remainder of the building was designed to use as little power as possible. The use of translucent polycarbonate cladding panels allowed exhibition designers to project onto the surface giving the pavilion a glowing presence at night while allowing diffused natural light into the space during the day.

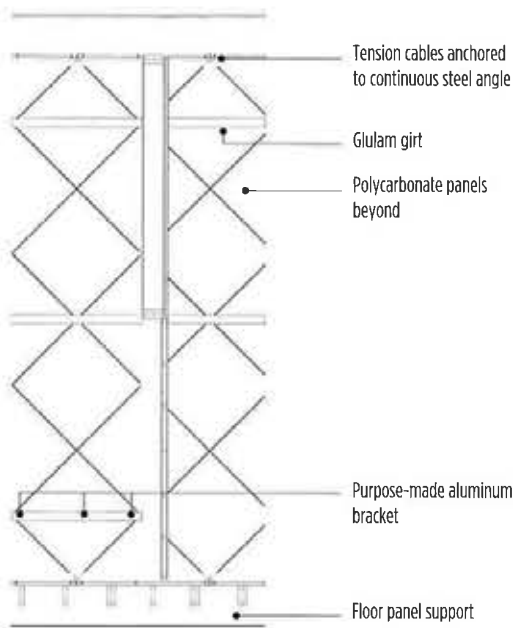
Above and beyond these benefits, the panels were fabricated from 10% post-industrial material.

Aluminum brackets with 50% recycled material content were used to support the polycarbonate panels. The choice of brackets as opposed to a supporting structure of continuous channel sections saved approximately 90% in material volume.

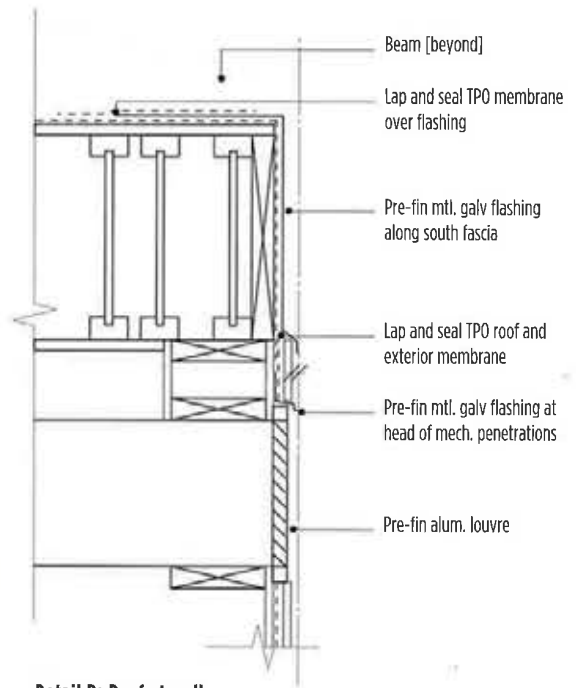
The pavilion relied on the use of passive systems to mitigate and control over-heating as a result of electrical equipment and potentially large occupant loads. The translucent panels maximized natural lighting while reducing solar glare. Floor and soffit board spacing and an oversized pivoting door allowed the project to draw in outside air, providing natural ventila-



Building section



Detail A: Wall section



Detail B: Roof at wall

tion while helping maintain a sensory connection with the outdoors.

The extensive multimedia display provided sufficient exterior light that additional dedicated lighting systems were not required. Modest mechanical systems were in-place but due to favourable weather conditions these were used minimally.

CentrePlace Manitoba was awarded the Sustainability Star by The Vancouver Organizing Committee [VANOC]. After the games, the building was dismantled and shipped back to Manitoba, where it was recently re-erected at the Red River Exhibition Grounds in Winnipeg. ◀

GEORGE CIBINEL IS PRINCIPAL OF CIBINEL ARCHITECTS LTD IN WINNIPEG.



DISMANTLED AFTER THE OLYMPICS, CENTRE PLACE HAS NOW BEEN RELOCATED TO THE RED RIVER EXHIBITION GROUNDS IN WINNIPEG [6].



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