

## 2013 Wood Design Awards - Project Fact Sheet

### VanDusen Botanical Garden Visitor Centre

Location: Vancouver, BC

Height	Size		Completion	Construction Budget
1	18,998	1,765	2011-09	\$14,400,000
<i>Storeys</i>	<i>sq ft</i>	<i>sq M</i>	<i>Date</i>	<i>\$ Cdn</i>

#### Project Description:

Located in the heart of Vancouver, the VanDusen Botanical Garden's new Visitor Centre is designed to create a harmonious balance between architecture and landscape, from a visual and ecological perspective. Inspired by the organic forms of a native orchid, the Visitor Centre is organized into undulating green roof 'petals' that appear to float above curving rammed earth and concrete walls.

Situated on the Garden's prominent southeast corner, the dynamic single-storey structure transforms the site's entrance to heighten public awareness of the Garden and the importance of nature. With solid walls that protect visitors from the busy street and transparent walls that open the building toward the Garden, the 1,765 sm Visitor Centre houses a café, library, volunteer facilities, garden shop, offices, and flexible classroom/rental spaces.

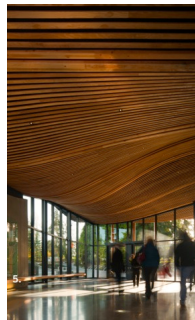
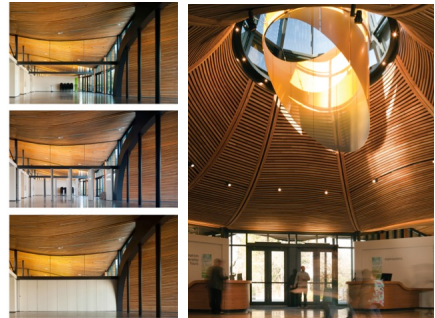
The Garden's mission is one of conservation, and the new building was designed with the same philosophy in mind. Designed to go beyond LEED Platinum status, the Visitor Centre is the first building in Canada to register for the Living Building Challenge (LBC), the most stringent measurement of sustainability in the built environment. Placing enormous constraints on projects, only three projects worldwide have earned full certification. The most difficult LBC requirement to achieve is the Materials Imperative, which calls for avoiding items on the Red List, such as PVC and many other common construction materials, as well as mandates the use of only FSC-certified wood products for any non-reclaimed wood, a very high minimum threshold for recycled content, and a series of proximity thresholds that require materials to be supplied locally/regionally, limiting long-distance transport. To this end, and to provide a beautiful and warm environment, the Visitor Centre uses wood products extensively, from the panelized roof structure to the cladding, furnishings, millwork and wall finishes.

Five types of wood were used in the project:

- FSC-certified wood was used as the main structural elements in addition to the structure of the internal walls;
- on-site salvaged wood, reclaimed from previous structures in the garden, was used for a variety of elements, including a prominent bridge that was made of recovered fir from a former covered walkway on the site;
- off-site salvaged wood was used for a variety of millwork items, including the interior doors and washroom partitions.
- reclaimed wood that was milled from trees cut down on site during the construction of the project was used for a variety of elements, including a 30-metre-long, curved wooden bench in the foyer;
- and fallen wood from YEW trees was found, collected and used in the feature door handles, by artist Brent Comber.

As the primary building material, the wood also provided an added environmental benefit: it sequesters enough carbon for the project to achieve carbon neutrality. Comprised entirely of FSC-certified Douglas fir, the panelized roof structure is composed of more than 71 different pre-fabricated roof panels, each made of over 100 unique curved glulam beams, that were pre-installed with thermal insulation, sprinkler pipes, lighting conduits, acoustic liner, and wood ceiling slats. The design team also collaborated to produce a novel, universal 'one-size-fits-all' panel-to-column connection to accommodate unique geometric conditions at every support location. Advancements in computer modeling, machine-factory production, and wood fasteners allowed for a project of this complexity to be built, particularly given its fast-tracked schedule.

#### Project Images



#### Where the Wood Was Used:

	Primary Structural System	
<b>Primary Structural System</b>	Columns, Beams & Braces	
	Floor Structure	
	Exterior Walls	
	Foundation	
	Shear Walls	
	Bearing Walls	y
	Fire Walls	
	Roof Structure (inc. columns and braces)	y
	Stairway & Elevator Shafts	
<b>Secondary Structure</b>	Convenience Stairs	
	Entrances & Canopies	y
	Fire Separations	
	Enclosures for Mechanical Equipment	

	Architectural	
<b>Architectural</b>	Partitions (interior)	y
	Exterior Curtain Walls	
	Ceilings	y
	Exterior Cladding	
	Parapets	
	Ceiling Bulkheads	
	Flooring	
	Doors	y
	Windows	
	Skylights	
	Trim, Paneling & Features	y
	Millwork	y
	Wall and Corner Guards	y
	Other Architectural Woodwork	
Hard Landscaping & Structures	y	
Perimeter Fencing		

**Building Project Team Members:**

Perkins+Will		
<b>Architect</b>	Peter Busby Jim Huffman	
Vancouver, BC	jim.huffman@perkinswill.com	604-684-5446

Fast + Epp		
<b>Structural Engineer</b>	Paul Fast	
Vancouver, BC	mail@fastepp.com	604-731-7412

Sharp & Diamond with Cornelia Hahn Oberlander		
<b>Landscape Architect</b>	Ken Larsson	
Vancouver, BC	ken@sharpdiamond.com	604-681-3303

Raincoast Applied Ecology		
<b>Other</b>	Nick Page	
Vancouver, BC		604-742-9890

Vancouver Board of Parks and Recreation		
<b>Owner Developer</b>	John Ross	
Vancouver, BC	john.ross@vancouver.ca	604-257-8676

Ledcor Construction		
<b>Contractor</b>	Kathryn Hellman	
Vancouver, BC	BuildingCA@ledcor.com	604-681-7500

Integral Group (Formerly Cobalt Engineering)		
<b>Other</b>	Goran Ostojic	
	gostojic@cobaltengineering.com	604-687-1800

Nic Lehoux Architectural Photography		
<b>Photographer</b>	Nic Lehoux	
Vancouver, BC	nic@niclehoux.com	604-805-1811

