

2013 Wood Design Awards - Project Fact Sheet

Solar Crest

Location: Sidney Island

Height	Size		Completion	Construction Budget
1	2,800	260	2010-06	\$2,250,000
Storeys	sq ft	sq M	Date	\$ Cdn

Project Description:

Embracing a rugged rocky ridge on a remote island in Juan de Fuca Strait, Solar Crest is a completely off-grid home and garden.

In section and plan, it combines a studied geometric formality with organic and sensuous elements that merge with its surrounding landscape of rounded glaciated granite. The plan of the house is an arc following the sun and the hill's crest opening to southern light and views across the Strait to the Olympic Mountains in Washington State. In section, the roof undulates, a living sculpture responding to the hierarchy of spatial use, the opportunities of sun, air, views and the shape of the land itself. On the entrance garden side, lower arched roofs maximize light penetration into the house's center and assist the natural ventilation throughout.

Wood is the main construction material in the building. The Laminated Douglas Fir timber frame creates a warm and sensuous form that is durable and connected to the site. Curved glulam beams sweep through the main space following the dynamic lines of the architecture. Wood windows, doors and floors frame long distant and close views with a warmth and colour palette that matches the landscape. The remote island has only private boat access and no local services, so all construction materials had to be moved by small barge with all attendant difficulties of weather, tides, and off-loading onto a small ramp. Being a relatively light weight, wood is an easy to move and easy to use material.

Most of the fir and cedar used in the house is local, harvested and milled on nearby Vancouver Island. Because of a large introduced deer population on this island, all gardens need high fencing to protect them. Various, this fencing is designed to be either visually non-obtrusive or a contrasting horizontal cedar screen landscape feature. The simplicity of building with wood building products make it an appropriate material for this remote site. The boundary between nature and the home is creatively blurred by the use of local wood and the architecture that makes connections, both natural and human.



The building is off all energy grids and is oriented to maximize solar gain. Its central spaces are transparent so that the southern sun penetrates deeply into interior spaces, warming floors and walls. Ocean views to the south and west are open to all spaces including the south-facing outdoor room and terraces.

The only level, outdoor spaces on the site are the terraces that had to be constructed. These cover five cisterns holding 168000 L (44,000 gallons) of rainwater collected from roof surfaces, and used for all domestic and landscape uses and available for fire-fighting.

To power the home, twenty-six solar photovoltaic panels are located out of sight from inside the house, leaning against the terrace's curving south wall. When the electrical battery storage is low, a back-up diesel generator takes over.

Other sustainable features are a wind turbine, on-demand hot water, radiant in-floor heating, LED lighting, energy efficient appliances, low-flush toilets and on-site vegetable gardens. The inclusion of alternative energy systems enable the home to be situated in a stunningly beautiful, remote landscape completely free of organized energy grids and dependent only on the natural cycles surrounding it.

Project Images



Where the Wood Was Used:

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

Building Project Team Members:

Helliwell + Smith Blue Sky Architecture		
Architect	Kimberley Smith	
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Chiu Hippmann Engineering Ltd.		
Architect	Carlos Chiu	
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Allan Cockell		
Owner Developer	Allan Cockell	
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Architectural	Partitions (interior)	y
	Exterior Curtain Walls	y
	Ceilings	y
	Exterior Cladding	y
	Parapets	
	Ceiling Bulkheads	
	Flooring	y
	Doors	y
	Windows	y
	Skylights	
	Trim, Paneling & Features	y
	Millwork	y
	Wall and Corner Guards	y
	Other Architectural Woodwork	y
	Hard Landscaping & Structures	y
	Perimeter Fencing	y

Helliwell + Smith Blue Sky Architecture		
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