

2013 Wood Design Awards - Project Fact Sheet

Monad

Location: Lions Bay B.C.

Height	Size		Completion	Construction Budget
4.5	4,440	412	2012-09	\$1,234,567
<i>Storeys</i>	<i>sq ft</i>	<i>sq M</i>	<i>Date</i>	<i>\$ Cdn</i>

Project Description:

A prototype for the sustainable METROPOLIS OF CHANGE, The Monad project has been designed and developed to serve as an urban infill prototype. It addresses the inherent contradiction of our time: The need for broad sustainability, or to endure and evolve in an ecological and meaningful way, in a world of rapid change and tremendous urban growth and transformation.

The M33_Monad project is part of the M-model family that result from a highly systematic and integrated research > idea > design > development > fabrication > construction process that develops synergies and potentials beyond the traditional limitations and contradictions in architecture by linking art and business, standardization and customization, sustainability and feasibility, choice/flexibility and affordability, quality and resourcefulness, and the short-long term perspectives of our ever changing urban landscape.

The built project is in many ways a first of its kind and demonstrates innovative spatial logics and construction systems that create a highly sustainable and adaptable urban infill solutions in order to make city living a more desirable alternative to commuting and unsustainably large single family homes. The project presents innovation by creating: Multi-story prefabricated engineered wood frame modules and building systems for parallel construction and resource management for mixed use residential buildings. A first in Vancouver.

The modules have been designed to be most flexible and adaptable and to allow for living outside or beyond the box. The modules can be combined, used and adapted to respond to a multiplicity of site conditions, demographics and lifestyles. The wood frame module design also addresses engineering issues such as moisture/shrinkage control and stackability to allow for up to 10 story construction (an 8 story Monad 2 is currently in process).

The true innovation is in the C-shape design (3 sides open and flexible, and three simple consistent scalable planes for floor, ceiling and perimeter/party shear wall). The perpendicular shear walls double up as highly organized shafts for all services. Prior to development and construction the design for units, structural and mechanical has been designed and tested to be directly applicable for 33', 50', 66', 75' 99' wide Urban infill lots, 3-10 stories or 30'-100' high, and to work on hundreds of available lots along the commercial arteries, C districts and centres throughout the Metro Vancouver area and Pacific North. A first systematic attempt of this kind:

- * Super Energy Efficiency with no on site CO2 emissions, combining best practices from Passive Design, LEED and Living Building Challenge with Ground-source and Solar Geothermal Heating and Domestic Hot-water, user adaptable solar shading, thermal mass floors
- * Flexible Sky-homes with double-side orientation, owner/tenant configurable to suit and developer adaptable to markets and affordability
- * 33' window front for all units on a 33' site
- * Courtyard typology with extensive triple glazing, virtually eliminating need for artificial lighting during daytime
- * Not Condos but Sky-houses with defined unit entry 'front-yard', extensive deck 'back yards' and green roofs.
- * Built in secondary suite option
- * Compact Car Elevator that liberates basement for storage transfer from valuable living space and reduces costly excavation and shoring
- * Artery Response to typical road noise at infill sites through air/light-wells and courtyard, allowing for natural cross-ventilation without noise infiltration.

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	

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

Building Project Team Members:

Rol Fieldwalker Architect		
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Horizon Engineering Inc.		
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