

Cambie & Marine Mixed-Use Development DRAFT LEED / Green Building Strategies

Per the City of Vancouver Green Rezoning Policy and required by the project's Rezoning Application, the Cambie & Marine Mixed-Use Development is pursuing LEED Canada-NC 2009 Gold certification, targeting an anticipated 63 points in the overall 110 point green building rating system. The following Green Building and Site Design Strategies will be developed and implemented during the Design and Construction Phases to ensure that an application to the Canada Green Building Council for LEED Gold certification at project completion can be achieved. With reference to the Cambie Corridor Plan, this project will employ the following green building and site design strategies which will contribute to the pursuit of the LEED-NC 2009 credits identified on the attached LEED Checklist.

ENERGY

Utilizing a high performance building envelope, an efficient mechanical energy system capable of being connected to the municipal district energy system, and highly efficient lighting and power distribution systems, the project is targeting LEED Energy & Atmosphere EA1 for 6 points. Building design and siting energy conservation measures are being addressed by the design team. An energy simulation model based on ASHRAE 90.1-2007 (the LEED reference standard) will be developed at the schematic design phase, to test optional mechanical and electrical systems in conjunction with project siting, massing and building envelope sub-systems to achieve a 22% cost savings in energy use compared to the base building.

Mechanical equipment will be designed and specified to eliminate Ozone depleting CFC and HCFC refrigerants used in cooling systems. These strategies combined with project's targeted energy performance criteria will help reduce GHG emissions. To ensure that these systems operate effectively and efficiently as designed, a Commissioning Authority will be retained to review the Developer's project requirements and the designer's basis of design, and will prepare a Commissioning Plan at project outset that will be used by both the design and construction teams throughout the project duration and covering the 1 year warranty period.

WATER

Potable water conservation measures will be implemented for both domestic use and for the site landscape and green roof irrigation. Plumbing fixtures for all occupancies will be specified to reduce water consumption utilizing products readily available in today's marketplace. Native planting and/or drought-tolerant plant species will be selected for the overall landscape design combined with the use of a high efficiency irrigation system, designed and specified by the landscape architect to reduce potable water use by at least 50% over a conventional system. To ensure that the City storm drainage system will not incur any pollutants during the construction period, a construction activity pollution prevention plan will be implemented by the general contractor and monitored by the civil engineer. The civil engineer will also design a stormwater management system for the proposed development to slow down the flow rates that occur in heavy rainfalls. This system will employ measures to be undertaken by the Developer to eliminate harmful pollutants migrating to downstream waterways.

MATERIALS & WASTE

Exterior and interior building systems, materials, and finishes will be specified to be durable, to contain high levels of recycled content, and where feasible, to be obtained either locally or regionally. These green design strategies help reduce environmental stresses caused by raw material extraction and manufacturing processes, while helping the local and regional economy. To reduce the burden on landfill sites, a comprehensive construction waste management plan will be implemented by the general contractor to divert a minimum of 75% construction waste from landfill.


INDOOR ENVIRONMENTAL QUALITY

The overall design of the development will enhance the livability of occupants and users alike, focusing on providing clean air, access to daylight and the provision of great views. Products, materials and finishes will be selected to reduce or eliminate harmful off-gassing elements. Manufacturers of commercial, institutional and residential building products have come a long way in recent years to ensure adherence to high levels of industry standards that promote healthy indoor environments.

Residents will benefit from access to outdoor air and daylight, while maintaining glare control within their suites. Visual access to extensive green roofs and direct access to intensive green roofs will enhance the livability of all project users. Chemical and pollutant source control measures will be implemented in the design of all project components.

During construction the general contractor will utilize a stringent indoor air quality management plan to ensure that construction activity pollutants do not linger in finished spaces nor embed themselves in the finishes. The LEED AP will be conducting LEED 101 for Contractors Educational Sessions on site at certain intervals to promote the IAQ management plan and to attest to the health benefits of their best practice methods in the delivery of good indoor air quality.

INDEPENDENT ASSESSMENT **LEED® Canada 2009 - NC**



Project: Cambie & Marine Mixed-Use Development
CaGBC No.: Number: xxxxxx
Date: 2013.05.23
Assessor: Jean-Pierre Mahé, Morrison Hershfield

63 Estimated Project Points *Rating Anticipated = GOLD* **Possible Points: 110**

Certified 40-49 points Silver 50-59 points Gold 60-79 points Platinum 80+ points

Points	Category	Points	Category	Points
23	Sustainable Sites	26	Materials and Resources	14
4	Water Efficiency	10	Energy and Atmosphere	35
6	MATERIALS & WASTE	13	INDOOR ENVIRONMENTAL QUALITY	15
6	Regional Priority	4	Innovation in Design	6
63	Total	143	Total	33

23 3 Sustainable Sites Points 26

INCOMPLETE	CE Prereq 1	Construction Pollution Prevention	Required
1	OW Credit 1	Site Selection	1
5	LC Credit 2	Development Density	5
1	OW Credit 3	Brownfield Redevelopment	1
6	LC Credit 4.1	AT: Public Transportation Access	6
1	AR Credit 4.2	AT: Bicycle Storage & Changing Rooms	1
3	AR Credit 4.3	AT: Low-Emitting & Efficient Vehicles	3
2	AR Credit 4.4	AT: Parking Capacity	2
1	LC Credit 5.1	Site Development: Protect & Restore	1
1	OW Credit 5.2	Site Development: Maximize Open Space	1
1	CE Credit 6.1	Stormwater Design: Quantity Control	1
1	CE Credit 6.2	Stormwater Design: Quality Control	1
1	AR Credit 7.1	Heat Island Effect: Non-Roof	1
1	AR Credit 7.2	Heat Island Effect: Roof	1
1	EE Credit 8	Light Pollution Reduction	1

4 3 3 Water Efficiency Points 10

INCOMPLETE	ME Prereq 1	Water Use Reduction	Required
2	LA Credit 1	Water Efficient Landscaping	4
2	ME Credit 2	Innovative Wastewater Technologies	2
2	ME Credit 3	Water Use Reduction	4

8 7 20 Energy and Atmosphere Points 35

INCOMPLETE	CA Prereq 1	Fundamental Commissioning	Required
INCOMPLETE	EM Prereq 2	Minimum Energy Performance	Required
INCOMPLETE	ME Prereq 3	Refrigerant Management	Required
6	EM Credit 1	Optimize Energy Performance	19
7	EE Credit 2	On-Site Renewable Energy	7
2	CA Credit 3	Enhanced Commissioning	2
2	ME Credit 4	Enhanced Refrigerant Management	2
3	ME Credit 5	Measurement and Verification	3
2	OW Credit 6	Green Power	2

6 1 7 Materials and Resources Points 14

INCOMPLETE	AR Prereq 1	Storage & Collection of Recyclables	Required
3	AR Credit 1.1	Maintain Existing Walls, Floors & Roof	3
1	AR Credit 1.2	Maintain Interior Non-Structural Elements	1
2	CO Credit 2	Construction Waste Management	2
2	CO Credit 3	Materials Reuse	2
2	CO Credit 4	Recycled Content	2
2	CO Credit 5	Regional Materials	2
1	AR Credit 6	Rapidly Renewable Materials	1
1	LC Credit 7	Certified Wood	1

12 3 Indoor Environmental Quality Points 15

INCOMPLETE	ME Prereq 1	Indoor Air Quality Performance	Required
INCOMPLETE	OW Prereq 2	Tobacco Smoke (ETS) Control	Required
1	ME Credit 1	Outdoor Air Delivery Monitoring	1
1	ME Credit 2	Increased Ventilation	1
1	CO Credit 3.1	IAQ Plan: During Construction	1
1	CO Credit 3.2	IAQ Plan: Before Occupancy	1
1	CO Credit 4.1	Adhesives and Sealants	1
1	CO Credit 4.2	Paints and Coatings	1
1	CO Credit 4.3	Flooring Systems	1
1	CO Credit 4.4	Composite Wood & Agrifiber Products	1
1	ME Credit 5	Chemical & Pollutant Source Control	1
1	EE Credit 6.1	Controllability: Lighting	1
1	ME Credit 6.2	Controllability: Thermal Comfort	1
1	ME Credit 7.1	Thermal Comfort: Design	1
1	ME Credit 7.2	Thermal Comfort: Verification	1
1	AR Credit 8.1	Daylight and Views: Daylight	1
1	AR Credit 8.2	Daylight and Views: Views	1

6 Innovation in Design Points 6

1	CO Credit 1.1	ID: SSc7.1 Exemplary	1
1	ID Credit 1.2	ID: MRc [TBC]	1
1	EE Credit 1.3	ID: LEED EB: O&M - Sustainable Purchasing	1
1	OW Credit 1.4	ID: LEED EB: O&M - Green Cleaning	1
1	OW Credit 1.5	ID: Green Education Programme	1
1	LC Credit 2	LEED® Accredited Professional	1

4 Regional Priority Points 4

1	Credit 1	Durable Building	1
1	LC Credit 2.1	Regional Priority Credit: RPr1	1
1	LC Credit 2.2	Regional Priority Credit: SSc2	1
1	LC Credit 2.3	Regional Priority Credit: MRc2 > 75%	1

Responsibility Legend:

LC = LEED Consultant	LA = Landscape Architect
OW = Owner	EM = Energy Modeller
AR = Architect	ID = Interior Designer
ME = Mechanical Engineer	CA = Comm. Authority
EE = Electrical Engineer	CO = Contractor
SE = Structural Engineer	TE = Tenant
CE = Civil Engineer	MU = Multiple
	BE = Building Envelope Engineer

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