Strategy for Sustainable Design

Overview

This socially, economically and environmentally sustainable project is owned by Westbank/Peterson, an award-winning, Vancouver-based development partnership. The project consists of a 42 storey mixed-use residential and commercial retail building located at 1550 Alberni Street in Vancouver, BC. The project building is targeting Gold certification with 63 points under LEED Canada NC 2009 and compliance with VBBL 2012. The 1550 Alberni Street building is targeting 6 energy points, 2 stormwater management points and 3 water efficiency points.

Environmental Sustainability

Site Planning

This urban infill development is located in a neighbourhood with a high level of walkability, proximity to rapid transit, traffic-calmed bike routes and significant amenities. The development is located within walking distance of numerous frequent service bus routes:

- 160m of bus stops served by:
    - #240 15th Street/Vancouver
    - #241 Upper Lonsdale/Vancouver
    - #242 Upper Lonsdale/Vancouver
    - #246 Lonsdale Quay/Highland/Vancouver
    - #247 Upper Capilano /Grouse/Vancouver
    - #250 Horseshoe Bay/Dundarave/Vancouver
    - #253 Caulfeild/Vancouver/Park Royal
    - #254 British Properties/Park Royal/Van
    - #257 Horseshoe Bay/Vancouver Express
    - #19 Metrotown Stn/Stanley Park
    - #N24 Downtown/ Lynn Valley Nightbus
- 290m of bus stops served by the #5 Robson/Downtown and #N6 Downtown/West End Nightbus.
- 1km from Burrard Skytrain station.

The development encourages alternative transportation by providing interior (236) and exterior (12) bicycle parking spaces, and connecting with existing bikeways on Cardero, Nicola, Alberni and West Pender streets, as well as Stanley Park's extraordinary bike network. All 271 parking spaces are located underground, to reduce heat island effect, and 49 lockable 240V electric vehicle charging parking spaces have been provided.

In order to manage stormwater flows and re-use rainwater, the site will include at-grade native/adaptive landscaping and permeable paving will be incorporated to encourage infiltration.

Efficient irrigation system as drip, efficient sprinkles heads, controllers and rain sensors are incorporated into the design.

Construction Practices

The development will utilize a pollution prevention plan which meets 2003 US EPA Construction General Permit requirements, implementing a combination of the following best practices: silt fencing, inlet protection for storm drains, stabilized construction entrance or mudmat, temporary seeding for stockpiled soil. During construction, sub-contractors will adhere to Waste Management and Indoor Air Quality Plans which target at minimum 75% construction waste diversion, and compliance with Sheet Metal and Air Conditioning Contractors' Association (SMACNA)'s requirements for HVAC protection, pathway interruption, source control, scheduling and housekeeping. Prior to occupancy, interior spaces will be tested for carbon monoxide, formaldehyde, particulates (PM10) and total volatile organic compounds (TVOC).

Construction materials will be sourced for recycled and regional content, Forest Stewardship Council (FSC)-certification and low-emitting adhesives, paints, sealants, coatings and flooring systems.

Energy Efficiency

This project is targeting 6 points for the residential buildings under Energy & Atmosphere Credit 1: Optimize Energy Performance, and will meet City of Vancouver building code requirements of 22% improvement over ASHRAE 90.1-2010. The project team is proposing the following energy efficiency and design measures:

Envelope

- Use low-e double-glazed window systems.
- Wall build-up with R-value between 6 - 15.
- Roof build-up with R-value of 20.
- Residential units will have operable windows and programmable thermostats.
- Architectural overhangs on the south façade provide significant south and west shading to reduce passive solar heat gain.
- All units will have interior shading devices to minimize glare and offset passive solar gain.
- Significant daylight penetration into each unit, providing access to views and reducing reliance on artificial lighting.

Mechanical

- Ventilation is provided to residential units via washroom heat recovery ventilators (HRVs) connected to in-slab ducts drawing outside air from the façade.
- Residential suites will be heated and cooled via a 4 pipe fan coil unit located in the ceiling.
- Every commercial retail unit (CRU) will have intake and exhaust air louvers.
- CRU space heating and cooling will be provided via a 4 pipe fancoil located in the ceiling.
- The Swimming Pool will be provided with supply air via floor mounted grilles to direct warm conditioned air up to reduce accumulated moisture on glazing.
- Corridors will be served by a Makeup Air Unit (MUA) and Chiller located on parking levels.
- The building will be connected to the Creative Energy district energy system, which provides heated and cooled water loops in 4 pipe fan coil units, and accommodate domestic hot water requirements.
- Low-flow plumbing fixtures.
- Energy Star rated residential appliances.

Electrical

- A combination of high-efficiency fluorescent and LED lamps for all exterior and interior fixtures. Occupancy sensors for amenity spaces, stairwells, storage and parkade areas. Daylight sensors will be specified, where possible, for sidelight and toplighted areas.

Innovative Design

- Site density is more than double the requirements of SSc2: Development Density & Community Connectivity at 142,574 m²/ha. Site proximity to the number of frequent service bus or light rail lines required under SSc4.1: Alternative Transportation: Public Transit Access is more than double. 100% of site parking is located underground, thus meeting exemplary performance requirements under SSc7.1: Heat Island Effect: Non-Roof. This project is implementing a green cleaning policy for building common areas, retail and office spaces. Green cleaning requirements will be included in retail & office lease agreements and residential units will receive green cleaning products and recipes upon move-in. Interior and exterior lamps will be chosen for their low-mercury properties.

Economic Sustainability

The intensification of residents in this area will increase the City of Vancouver's tax base, stimulate economic development and increase utilization of public transit and road infrastructure. The large influx of permanent residents will increase existing business activity, encourage new business development, and generate permanent building maintenance jobs. As residents are drawn to walkable urban neighbourhoods with concentrations of amenities, the building's construction will contribute to future densification, expansion of public services and economic development. In the short term, the project will generate hundreds of sub-contractor, consulting and local supplier jobs during its construction.

Social Sustainability

High density residential projects benefit local neighbourhoods as they attract residents of diverse socio-economic backgrounds and are often multi-generational: professionals, couples with small children and retirees. Diverse urban neighbourhoods in close proximity to rapid transit and bike routes encourage healthier lifestyles, and maintain their attractiveness to residents over the long term.

The project provides residents with several valuable amenities, including a swimming pool with views to the exterior and access to a public plaza with retail and restaurant tenants. The extensive public vegetated plaza integrates into existing pedestrian paths and provides high quality resting and meeting spaces for the community.

LEED Gold

LEED Canada-NC 2009 Project Checklist

Last Updated: July 9, 2015

Yes	?	No	
63	8	39	Gold: 60 - 79 Points

Yes	?	No		Sustainable Sites (SS)	26 Points
✓			SSp1	Construction Activity Pollution Prevention	Required
1			SSc1	Site Selection	1
5			SSc2	Development Density and Community Connectivity	3 - 5
		1	SSc3	Brownfield Redevelopment	1
6			SSc4.1	Alternative Transportation: Public Transportation Access	3 - 6
1			SSc4.2	Alternative Transportation: Bicycle Storage & Changing Rooms	1
3			SSc4.3	Alternative Transportation: Low-Emitting & Fuel-Efficient Vehicles	3
		2	SSc4.4	Alternative Transportation: Parking Capacity	2
		1	SSc5.1	Site Development: Protect and Restore Habitat	1
1			SSc5.2	Site Development: Maximize Open Space	1
1			SSc6.1	Stormwater Design: Quantity Control	1
1			SSc6.2	Stormwater Design: Quality Control	1
1			SSc7.1	Heat Island Effect: Non-Roof	1
1			SSc7.2	Heat Island Effect: Roof	1
	1		SSc8	Light Pollution Reduction	1

Yes	?	No		Water Efficiency (WE)	10 Points
✓			WEp1	Water Use Reduction	Required
2		2	WEc1	Water Efficient Landscaping	2 - 4
		2	WEc2	Innovative Wastewater Technologies	2
3	1		WEc3	Water Use Reduction	2 - 4

Yes	?	No		Energy & Atmosphere (EA)	35 Points
✓			EAp1	Fundamental Commissioning of Building Energy Systems	Required
✓			EAp2	Minimum Energy Performance	Required
✓			EAp3	Fundamental Refrigerant Management	Required
7	1	11	EAc1	Optimize Energy Performance	1 - 19
		7	EAc2	On-Site Renewable Energy	1 - 7
2			EAc3	Enhanced Commissioning	2
2			EAc4	Enhanced Refrigerant Management	2
		3	EAc5	Measurement and Verification	3
2			EAc6	Green Power	2

Yes	?	No		Materials & Resources (MR)	14 Points
✓			MRp1	Storage and Collection of Recyclables	Required
		3	MRc1.1	Building Reuse: Maintain Existing Walls, Floors, and Roof	1 - 3
		1	MRc1.2	Building Reuse: Maintain Interior Non-Structural Elements	1
2			MRc2	Construction Waste Management	1 - 2
		2	MRc3	Materials Reuse	1 - 2
2			MRc4	Recycled Content	1 - 2
1	1		MRc5	Regional Materials	1 - 2
	1		MRc6	Rapidly Renewable Materials	1
		1	MRc7	Certified Wood	1

9	3	3		Indoor Environmental Quality (EQ)	15 Points
✓			EQp1	Minimum Indoor Air Quality Performance	Required
✓			EQp2	Environmental Tobacco Smoke (ETS) Control	Required
	1		EQc1	Outdoor Air Delivery Monitoring	1
		1	EQc2	Increased Ventilation	1
1			EQc3.1	Construction IAQ Management Plan: During Construction	1
1			EQc3.2	Construction IAQ Management Plan: Before Occupancy	1
1			EQc4.1	Low-Emitting Materials: Adhesives and Sealants	1
1			EQc4.2	Low-Emitting Materials: Paints and Coatings	1
1			EQc4.3	Low-Emitting Materials: Flooring Systems	1
	1		EQc4.4	Low-Emitting Materials: Composite Wood and Agrifibre Products	1
1			EQc5	Indoor Chemical and Pollutant Source Control	1
1			EQc6.1	Controllability of System: Lighting	1
1			EQc6.2	Controllability of System: Thermal Comfort	1
		1	EQc7.1	Thermal Comfort: Design	1
		1	EQc7.2	Thermal Comfort: Verification	1
	1		EQc8.1	Daylight and Views: Daylight	1
1			EQc8.2	Daylight and Views: Views	1

6	0	0		Innovation in Design (ID)	6 Points
1			IDc1.1	Innovation in Design: SSc2 Exemplary	1
1			IDc1.2	Innovation in Design: SSc4.1 Exemplary	1
1			IDc1.3	Innovation in Design: SSc7.1 Exemplary	1
1			IDc1.4	Innovation in Design: Green Housekeeping	1
1			IDc1.5	Innovation in Design: Reduced Mercury in Lamps	1
1			IDc2	LEED® Accredited Professional	1

4	0	0		Regional Priority (RP)	4 Points
1			RPc1	Durable Building	1
1			RPc2.1	Regional Priority Credit: SSc2	1
1			RPc2.2	Regional Priority Credit: MRc2	1
1			RPc2.3	Regional Priority Credit: RPc1	1