

# GREEN BUILD STRATEGY

## Energy

- Energy conservation measures include a very efficient envelope featuring a high performance glazing system and well insulated walls and roof.
- Energy efficient appliances including dishwasher, refrigerator and clothes washer will be provided in residential units.
- The plumbing system features a central manifold hot water distribution system to minimize heat loss and energy consumption.
- Energy efficiency measures will be evaluated via a full building energy simulation.

## Water

- The irrigation system will include a number of features to significantly reduce the amount of water consumed.
- Low flow/flush plumbing fixtures will be provided.

## Materials and Waste

- A construction waste management plan will be developed and implemented throughout construction with a goal of diverting over 75% of waste generated.
- Many of the building materials and components will be selected based on recycled content and local or regional production.

## Indoor Environmental Quality

- Low VOC finishes will be used including adhesives, sealants and paints.
- Low emitting carpet and composite wood will be installed.
- Best practices will be implemented during construction to optimize air quality and provide a clean and healthy building for the future residents.
- Operable windows will be incorporated throughout the buildings giving the

## Additional Measures

- An erosion and sedimentation control plan will be implemented to minimize erosion and sedimentation during demolition, site preparation and throughout construction.
- Landscaping will utilize natural and adaptive plants and is designed to reduce the development's heat island effect and minimize its impact on storm sewers while increasing local habitat.
- The development's location provides easy access to multiple transit routes. The project will incorporate significant bicycle storage to further strengthen the use of alternative methods of transportations.
- The development will feature charging stations to encourage the use of alternative-fuel vehicles.
- The building will be primarily composed of recyclable and reusable components.

# SUSTAINABLE FEATURES



9 May 2013

Project: The Langara, 6600 Cambie Street

Re: LEED® for Homes D Multifamily Mid-Rise

To Whom It May Concern:

I, Daniel Roberts, Partner at Kane Consulting, submit this letter in support of the 6600 Cambie Street project. As the Sustainability Consultant, we have been involved with this project from the beginning.

Our role includes:

- Help the Developer and Design Team set the Sustainability Goals for the development
- Advise on design features as it relates to the LEED® Rating System
- Verify credit compliance with input from the respective design team members
- Verify through calculations and previous project experience that the design meets the intent of the LEED® credits.
- Incorporate sustainability requirements into the specifications and working drawings.
- And during construction, we will work with the General Contractor to ensure the construction related activities are consistent with the LEED® requirements.

Regarding LEED® for Homes D Multifamily Mid-Rise:

This project has been registered under the LEED® for Homes D Multifamily Mid-Rise rating system. This new rating system has been developed to measure the sustainability of 4-6 storey tall residential projects more effectively than other LEED® Rating Systems. LEED® for Homes D Multifamily Mid-Rise measures the overall performance of a building in eight categories, each of which features a number of prerequisites and credits. Points are awarded when the criteria of each credit is satisfied. The project team has targeted 69 points, where 66 are required to earn LEED® Gold Certification\*. We have identified 8 additional points that potentially can be achieved or used as a substitute if one or more strategies are deemed unobtainable.



The LEED® for Homes D Multifamily Mid-Rise rating system has been approved by the City of Vancouver for use on a similar project currently under construction on Cambie Street.

It should be noted that the LEED® for Homes D Multifamily Mid-Rise simple checklist is a working document and is subject to change. As for any LEED® Registered project, the project team decides the path to which Gold Certification is achieved. We reserve the right to exchange any credit marked as a Yes: ~~Y~~ for an alternate strategy.

Please do not hesitate to contact me directly if you have any questions regarding our proposed strategies.

*\* From the USGBC: LEED® for Homes D Multifamily Mid-Rise utilizes a Home Size Adjuster. The Home Size Adjuster compensates for the overarching effect of home size on resource consumption by adjusting the award level point thresholds (for certified, silver, gold, and platinum) based on home size. The adjustments are based on material and energy impacts as described below under Rationale. The LEED for Homes Checklist automatically makes this adjustment when the home size and number of bedrooms are entered.*

*Rationale - All things being otherwise equal, a larger home consumes more materials and energy than a small home over its lifecycle (including pre-construction, construction, use, and demolition or deconstruction). The Threshold Adjuster compensates for these impacts by making it easier or harder to reach each LEED for homes award level. There is no impact on award thresholds for average-sized homes, whereas thresholds for smaller-than-average homes are reduced and thresholds for larger-than-average homes are raised.*

Thank you,

Daniel Roberts  
LEED AP BD+C, CaGBC Faculty  
Partner  
Kane Consulting Partnership

1353B Pemberton Avenue, North Vancouver, BC V7P 2R6  
604-924-0094

# LEED CHECKLIST

In addition to meeting the Sustainability Measures of the Cambie Corridor Plan, the project has been designed to meet the certification requirements of the LEED rating system. The numerous sustainable strategies that the project has incorporated would achieve 69 points under the LEED for Homes - Multifamily Mid-Rise rating system (66 points are required for Gold). Several more points are potentially available and will be confirmed as the design is refined.



for Homes

## LEED for Homes Mid-rise Pilot Simplified Project Checklist

Builder Name:	Mosaic Avenue Construction Limited
Project Team Leader (if different):	Saul Schwabs, Kane Consulting
Home Address (Street/City/State):	6600 Cambie Street, Vancouver, British Columbia

<b>Project Description:</b>	<b>Adjusted Certification Thresholds</b>
Building type: <b>Mid-rise multi-family</b>	# of stories: <b>6</b> Certified: <b>36.0</b> Gold: <b>66.0</b>
# of units: <b>134</b>	Avg. Home Size Adjustment: <b>-9</b> Silver: <b>51.0</b> Platinum: <b>81.0</b>

<b>Project Point Total</b>	<b>Final Credit Category Total Points</b>				
Prelim: 69 + 8 maybe pts	Final: 2.5	ID: 0	SS: 0	EA: 0	EQ: 0
<b>Certification Level</b>	<b>Final: Not Certified</b>				
Prelim: Gold	Minimum Point Thresholds Not Met for Final Rating				

date last updated by:		Max Pts	Project Points			
last updated by:			Preliminary	Maybe	No	Final
<b>Innovation and Design Process (ID)</b> (No Minimum Points Required) OR						
<b>1. Integrated Project Planning</b>	1.1 Preliminary Rating	Prereq				
	1.2 Energy Expertise for MID-RISE	Prereq				
	1.3 Professional Credentialed with Respect to LEED for Homes	1	0	0	N	0
	1.4 Design Charrette	1	1	0		0
	1.5 Building Orientation for Solar Design	1	0	0	N	0
	1.6 Trades Training for MID-RISE	1	0	0		0
Sub-Total for ID Category: 11 6 0 0						
<b>Location and Linkages (LL)</b> (No Minimum Points Required) OR						
<b>1. LEED ND</b>	1 LEED for Neighborhood Development	LL2-6	10	0	0	N 0
<b>2. Site Selection</b>	2 Site Selection		2	2	0	0
<b>3. Preferred Locations</b>	3.1 Edge Development	LL 3.1	1	0	0	N 0
	3.2 Infill		2	2	0	0
	3.3 Brownfield Redevelopment for MID-RISE		1	0	0	N 0
<b>4. Infrastructure</b>	4 Existing Infrastructure		1	1	0	0
<b>5. Community Resources/ Transit</b>	5.1 Basic Community Resources for MID-RISE		1	0	1	0
	5.2 Extensive Community Resources for MID-RISE	LL 5.1, 5.3	2	0	0	0
	5.3 Outstanding Community Resources for MID-RISE	LL 5.1, 5.2	3	0	0	0
<b>6. Access to Open Space</b>	6 Access to Open Space		1	1	0	0
Sub-Total for LL Category: 10 6 1 0						
<b>Sustainable Sites (SS)</b> (Minimum of 5 SS Points Required) OR						
<b>1. Site Stewardship</b>	1.1 Erosion Controls During Construction	Prerequisite	1	1	0	0
	1.2 Minimize Disturbed Area of Site for MID-RISE					
<b>2. Landscaping</b>	2.1 No Invasive Plants	Prerequisite	1	1	0	0
	2.2 Basic Landscape Design	SS 2.5	1	2	0	0
	2.3 Limit Conventional Turf for MID-RISE	SS 2.5	1	1	0	0
	2.4 Drought Tolerant Plants for MID-RISE	SS 2.5	1	1	0	0
	2.5 Reduce Overall Irrigation Demand by at Least 20% for MID-RISE		3	0	0	N 0
<b>3. Local Heat Island Effects</b>	3.1 Reduce Site Heat Island Effects for MID-RISE		1	0	0	0
	3.2 Reduce Roof Heat Island Effects for MID-RISE		1	0	0	0
<b>4. Surface Water Management</b>	4.1 Permeable Lot for MID-RISE		2	0	0	N 0
	4.2 Permanent Erosion Controls		1	1	0	0
	4.3 Stormwater Quality Control for MID-RISE		2	0	0	N 0
<b>5. Nontoxic Pest Control</b>	5 Pest Control Alternatives		2	1.5	0	0
<b>6. Compact Development</b>	6.1 Moderate Density for MID-RISE	SS 6.1, 6.3	2	0	0	N 0
	6.2 High Density for MID-RISE	SS 6.1, 6.2	3	0	0	N 0
	6.3 Very High Density for MID-RISE		4	4	0	0
<b>7. Alternative Transportation</b>	7.1 Public Transit for MID-RISE		2	2	0	0
	7.2 Bicycle Storage for MID-RISE		1	1	0	0
	7.3 Parking Capacity/Low-Emitting Vehicles for MID-RISE		1	1	0	0
Sub-Total for SS Category: 22 15.5 0 0						

## LEED for Homes Mid-rise Pilot Simplified Project Checklist (continued)

		Max Pts	Project Points			
			Preliminary	Maybe	No	Final
<b>Water Efficiency (WE)</b> (Minimum of 3 WE Points Required) OR						
<b>1. Water Reuse</b>	1 Water Reuse for MID-RISE	5	0	0	N	0
<b>2. Irrigation System</b>	2.1 High Efficiency Irrigation System for MID-RISE	WE 2.2	2	2	0	0
	2.2 Reduce Overall Irrigation Demand by at Least 45% for MID-RISE		2	0	0	0
<b>3. Indoor Water Use</b>	3.1 High-Efficiency Fixtures and Fittings		3	1	0	0
	3.2 Very High Efficiency Fixtures and Fittings		6	4	0	0
	3.3 Water Efficient Appliances for MID-RISE		2	1	0	0
Sub-Total for WE Category: 15 8 0 0						
<b>Energy and Atmosphere (EA)</b> (Minimum of 0 EA Points Required) OR						
<b>1. Optimize Energy Performance</b>	1.1 Minimum Energy Performance for MID-RISE	Prereq				
	1.2 Testing and Verification for MID-RISE	Prereq				
	1.3 Optimize Energy Performance for MID-RISE		34	10	3	0
<b>7. Water Heating</b>	7.1 Efficient Hot Water Distribution		2	0	2	0
	7.2 Pipe Insulation		1	0	0	N 0
<b>11. Residential Refrigerant Management</b>	11.1 Refrigerant Charge Test	Prereq	1	1	0	0
	11.2 Appropriate HVAC Refrigerants					
Sub-Total for EA Category: 38 11 5 0						
<b>Materials and Resources (MR)</b> (Minimum of 2 MR Points Required) OR						
<b>1. Material-Efficient Framing</b>	1.1 Framing Order Waste Factor Limit	Prereq	1	0	0	N 0
	1.2 Detailed Framing Documents	MR 1.5	1	0	0	N 0
	1.3 Detailed Cut List and Lumber Order	MR 1.5	3	1	0	0
	1.4 Framing Efficiencies	MR 1.5	4	0	0	N 0
	1.5 Off-site Fabrication					
<b>2. Environmentally Preferable Products</b>	2.1 FSC Certified Tropical Wood	Prereq	8	5	0	0
	2.2 Environmentally Preferable Products					
<b>3. Waste Management</b>	3.1 Construction Waste Management Planning	Prereq	3	2.5	0	2.5
	3.2 Construction Waste Reduction					
Sub-Total for MR Category: 16 6.5 0 2.5						
<b>Indoor Environmental Quality (EQ)</b> (Minimum of 6 EQ Points Required) OR						
<b>2. Combustion Venting</b>	2 Basic Combustion Venting Measures	Prereq				
<b>3. Moisture Control</b>	3 Moisture Load Control		1	0	0	N 0
<b>4. Outdoor Air Ventilation</b>	4.1 Basic Outdoor Air Ventilation for MID-RISE	Prereq				
	4.2 Enhanced Outdoor Air Ventilation for MID-RISE		2	2	0	0
	4.3 Third-Party Performance Testing for MID-RISE		1	1	0	0
<b>5. Local Exhaust</b>	5.1 Basic Local Exhaust	Prerequisite	1	1	0	0
	5.2 Enhanced Local Exhaust		1	1	0	0
	5.3 Third-Party Performance Testing					
<b>6. Distribution of Space Heating and Cooling</b>	6.1 Room-by-Room Load Calculations	Prereq	1	1	0	0
	6.2 Return Air Flow / Room by Room Controls		2	2	0	0
	6.3 Third-Party Performance Test / Multiple Zones					
<b>7. Air Filtering</b>	7.1 Good Filters	Prereq	1	0	0	0
	7.2 Better Filters	EQ 7.3	2	0	2	0
	7.3 Best Filters					
<b>8. Contaminant Control</b>	8.1 Indoor Contaminant Control during Construction		1	1	0	0
	8.2 Indoor Contaminant Control for MID-RISE		2	0	0	N 0
	8.3 Preoccupancy Flush		1	1	0	0
<b>9. Radon Protection</b>	9.1 Radon-Resistant Construction in High-Risk Areas	Prereq	1	0	0	N 0
	9.2 Radon-Resistant Construction in Moderate-Risk Areas					
<b>10. Garage Pollutant Protection</b>	10.1 No HVAC in Garage for MID-RISE	Prereq	1	2	0	0
	10.2 Minimize Pollutants from Garage for MID-RISE	EQ 10.3	2	2	0	0
	10.3 Detached Garage or No Garage for MID-RISE		3	0	0	N 0
<b>11. ETS Control</b>	11 Environmental Tobacco Smoke Reduction for MID-RISE		1	0	0	0
<b>12. Compartmentalization of Units</b>	12.1 Compartmentalization of Units	Prereq	1	1	0	0
	12.2 Enhanced Compartmentalization of Units					
Sub-Total for EQ Category: 21 13 2 0						
<b>Awareness and Education (AE)</b> (Minimum of 0 AE Points Required)						
<b>1. Education of the Homeowner or Tenant</b>	1.1 Basic Operations Training	Prereq	1	0	0	N 0
	1.2 Enhanced Training		1	0	0	N 0
	1.3 Public Awareness					
<b>2. Education of Building Manager</b>	2 Education of Building Manager		1	1	0	0
Sub-Total for AE Category: 3 1 0 0						