



RESIDENTIAL ENVIRONMENTAL ASSESSMENT PROGRAM 3.1

Individual Project Information

Project Name	The Conservatory
Project address	5728 Berton Avenue, Vancouver, BC
Rental or Market	Market
Number of Storeys	20
Total Number of Units	211
Studio	0
1 Bed	108
2 Bed	94
3 Bed	9
4 Bed	0
Total Number of Bedrooms	323
Residential Parking (non visitor)	236

Project Team

	Company	Name	Contact
ARCH	DYS Architecture	Jennifer Boyle, Colin Shrubbs	jennifer.boyle@dysarchitecture.com ; colin.shrubbs@dysarchitecture.com
CIV			
DEV	Polygon	Hugh Kerr	hker@polyhomes.com
GC	Polygon	Matt Anderson	mattanderson@polyhomes.com
MECH	Williams Engineering	Edwin Zander	ezander@williamsengineering.com
ELEC	Nemetz	Bijan Valagohar	bijan@nemetz.com
LAND	PWL	Bruce Hemstock	bhemstock@pwlpartnership.com
EM	Morrison Hershfield	Alex Blue	ablue@morrisonhershfield.com
ENVL	-	-	
ID	Polygon	-	Just check with GC polygon

REAP 3.1 Certification Level

Target	Gold
Achieved	Gold

Sustainable Sites (SS)

		TOTAL	10	6	0				
		MAX	Y	M	Awarded	Role	Documentation	Phase	
SS M1	Storm Water Management Plan	M	M			CIV			BP
<p>Require all new construction projects detain the 10-year, 24-hour storm volume and discharge at the 2-year, 40-hour pre-development rate on site or at a designated centralized facility using low-impact development and green infrastructure strategies by 2018.</p>						<p>-Copy of Stormwater Management Plan -Letter by CIV requirements will be met</p>			
SS M2	Adapted and Ecologically Sound Planting	M	M			LAND			BP
<p>Demonstrate that landscape design has minimized the need for pesticides and irrigation through the selection of adaptive and drought-tolerant plants and consideration of the principles of Integrated Pest Management and xeriscaping.</p>						<p>-Narrative describing Planting design + letter confirming landscaping is low maintenance and resource efficient, and does not require use of pesticides (requirements will be met)</p>			
SS M3	Bicycle Storage	M	M			ARCH/LAND			BP
<p>Provide covered bicycle storage facilities including 1.5 parking spaces per dwelling unit or individual parking garages for Class I use, and 0.5 bicycle parking spaces per dwelling unit for Class II use in accordance with The UBC Development Handbook.</p>						<p>-Drawing showing number and location of bike storage facilities. -Letter by ARCH requirements will be met</p>			
		Required		Proposed					
CLASS I	305	305							
CLASS II	106	106							
SS M4	Contribution to Community Car Sharing	M	M			DEV			OP
<p>Contribute to the development of a community car-sharing network by funding the equivalent of one community vehicle per 100 residential units.</p>						<p>-Letter confirming number of residential units and amount contributed to car-sharing network. -Documentation confirming amount contributed</p>			
Amount to be Contributed	42,200	CAD	Confirm amount per unit with UBCPT						
SS M5	Electric Vehicle Charging- Resident (MANDATORY)	2	2			ELEC			BP
<p>Provide a minimum of one energized level 2 outlet per residential unit for non-rental developments or provide energized outlets for 50% of resident parking stalls for rental developments. Level 2 charging capacity that provides a minimum of 40A service and a minimum performance level of 12 kWh per stall, over an eight (8) hour period must be provided. Load sharing (up to four-way) and load management systems may be utilized. Exceptions may be granted in cases where utility mandated transformer upgrades are required.</p>						<p>-Drawing showing electrical service to stalls - Documentation of load sharing and load management systems - Letter by ELEC requirements will be met</p>			
		Required		Proposed					
Non-Rental	211								
Rental	118								
SS M6	Light Pollution Reduction	M	M			ELEC			BP
<p>Do not exceed the current Illuminating Engineering Society (IES) illuminance requirements as stated in Lighting for Exterior Environments.</p>						<p>-Description of lighting strategy employed to achieve IESNA illuminance requirements (in letter from ELEC requirements will be met) - Light fixtures' cut sheets showing illuminance meet requirements</p>			

SS M7 Recycling Collection	M	M		ARCH/DEV	BP & OP
Provide for collection of domestic paper, plastic, glass and metal recyclables by contracting with a waste management company for the service. Recycling storage space shall be designed in accordance with Metro Vancouver's Technical Specifications for Recycling Amenities.					- BP: location and size of recycling/organics storage area - OP: Letter by DEV/Owner requirement will be met including description of Waste Management contract in place
	Garbage+Recycling Room Min. Size	Mi. Recycling Space WITHIN room	Flex Space	Total Storage Space Required	Storage Space Provided
m ²	73.4	38.8	19.4	92.8	
SS M8 Compost Collection	M	M		ARCH/DEV	BP & OP
Provide a space in the building for the collection compost and provide for the compost collection through a contract with UBC Waste Management or another waste management service provider. Design the space in the building in accordance with Metro Vancouver's Technical Specifications for Recycling Amenities.					Same as SS M7
SS 1.1 In-Suite Recycling and Compost Separation	2	2		ARCH/DEV	BP
Provide a space and system for simplified separation and collection of recycling and compostables in each suite or unit.					-Letter by ARCH requirements will be met - Description of system implemented (cut sheet might be ok)
SS 2.1 Additional Bicycle Facilities	2	0		ARCH	BP
In addition to the requirements for bicycle parking in the UBC Development Handbook, provide an additional 0.25 Class I bicycle storage/bedroom and a bicycle repair station within the building, complete with a 120V electric outlet					
	Required	Proposed			
CLASS I	398	311			
SS 2.2 Electric Vehicle Charging – Visitor	2	2		ELEC	BP
Provide one dedicated parking spot per 100 residential units for visitors of residents/owners, fully equipped with Level 2 charging station.					- Letter signed by ARCH and ELEC declaring requirements will be met - Drawings showing location of parking spots with EV charging stations
	Required	Proposed			
EV Stations	3				
SS 2.3 Electric Vehicle Charging Stations - Resident	2	0		ELEC	BP
Install Level 2 charging stations for the following percentage of owners'/residents' parking. <input type="checkbox"/> 5% of owners'/residents' parking – 1 Points <input type="checkbox"/> 10% of owners'/residents' parking – 1 Points					- Letter signed by ARCH declaring requirements will be met - Drawings showing location of parking spots with EV charging stations -Cut sheet of charging stations
	5% Req.	10% Req.	Proposed	Pts	
EV Stations	12	24		0	

Water Efficiency (WE)

	TOTAL	18	6	0				
	MAX	Y	M	Awarded	Role	Documentation	Phase	
WE M1 Efficient Irrigation Technology	M	M			LAND		BP	
Design and install a water-efficient irrigation system that includes an automated controller, rain or soil sensors and pressure regulator and for non-grass areas use a micro- or drip-feed irrigation or install a temporary irrigation system.						-Letter indicating requirements will be met including description of irrigation system by LAND		
WE M2 Low-Flow Faucet Aerators	M	M			GC		BP	
Specify and install low-flow faucets with aerators in all bathroom sinks (max. 3.8 L per minute) and in all kitchen sinks (max. 6.8 L per minute).						-Letter stating requirements will be met including specific fixtures used and flow rate - Cut sheets indicating flow rate		
WE M3 Low-Flow Showerheads	M	M			GC		BP	
Specify and install water-saving showerheads with a maximum flow rate of 8.5 L per minute in each shower.						-Letter stating requirements will be met including specific fixtures used and flow rate - Cut sheets indicating flow rate		
WE M4 Energy Star Clothes Washers	M	M			GC		OP	
Specify and install Energy Star-labelled clothes washers and dishwashers in each unit, or specify and offer only Energy Star models if these appliances are optional.						-Letter from DEV declaring requirements were met - Cut sheet from manufacturer ESTAR labelled or equivalent clothes washers (non labelled need supporting documentation showing they meet criteria)		
WE 1.1 Reduce Potable Water Use	3	3			LAND		BP	
Reduce potable water use for site irrigation needs by 50% from the calculated mid-summer baseline.						- Letter by LAND declaring requirements will be met and description of system - Calculation to verify the claim of ≥50% reduction in potable water irrigation		
WE 1.2 Eliminate Potable Water Use	3	0			LAND		BP	
Eliminate potable water use for site irrigation needs.						- Letter by LAND declaring requirements will be met and description of system - Calculation to verify the claim of 100% reduction in potable water irrigation		
WE 2.1 Low-Flow Showerheads	2	2			GC		BP	
Specify and install water-saving showerheads (maximum of 5.7 L per minute) in each shower						-Letter stating requirements will be met including specific fixtures used and flow rate - Cut sheets indicating flow rate		
WE 2.2 Water Efficient Dishwasher	1	1			GC		OP	
Specify and install water-efficient dishwashers that use ≤ 11 L (2.91 gal) per normal wash cycle or if dishwashers are available only as an option, specify and offer only models complying with this credit.						-Letter stating requirements will be met including specific fixtures used and flow rate - Cut sheets indicating dishwasher water use per cycle		

WE 2.3 Most Efficient Clothes Washers	2	0	GC	OP
Specify and install Energy Star clothes washers listed as "Most Efficient" (for the year in which the Building Permit is received), or if washers are available only as an option, specify and offer only models complying to this standard.				
WE 2.4 Water Use Reduction Package	2	0	LAND/ID	OP
Additional credit for achieving credits: WE 1.1, WE 2.1, WE 2.2 and WE 2.3.				
- Letter stating requirements for WE 2.1-2.3 have been met and respective documentation				
WE 3.1 Domestic Hot Water metering	3	0	MECH	BP
In units with central hot water, provide individual hot water metering.				
-Letter from MECH requirements will be met - Location and drescription of the metering system				
WE 3.2 Domestic Cold-Water metering	2	0	MECH	BP
Provide for individual cold water meters for all units.				
-Letter from MECH requirements will be met - Location and drescription of the metering system				

Energy & Atmosphere (EA)

	TOTAL	52	23	1				
	MAX	Y	M	Awarded	Role	Documentation	Phase	
EA M1 Minimum Roof Insulation	M	M			ARCH		BP	
Design the roof assembly with a minimum insulation value of R-40 h-ft ² ·°F/Btu (7.04 °K-m ² /W) for buildings with attic space and R-28 h-ft ² ·°F/Btu (4.93 °K-m ² /W) for cathedral ceilings/flat roofs.						-Letter signed by ARCH declaring requirements will be met -Description and overall R-value of the roof assembly used		
EA M2 Minimum Exterior Wall Insulation	M	M			ARCH		BP	
Design the exterior insulated wall area with a minimum thermal resistance of effective (overall) R-15.6 h-ft ² ·°F/Btu (2.75 °K-m ² /W) for above grade non-glazed wall areas, and R-7.5 h-ft ² ·°F/Btu (1.32 °K-m ² /W) "continuous insulation" for below grade walls.						-Letter signed by ARCH declaring requirements will be met -Description and overall R-value of the wall assembly used		
EA M3 Minimum Floor Insulation	M	M			ARCH		BP	
Design floors above non-heated parkade areas with a minimum insulation value of R-30 h-ft ² ·°F/Btu (5.28 °K-m ² /W) for framed floors and R-15.6 h-ft ² ·°F/Btu (2.75 °K-m ² /W) for slab floors.						-Letter signed by ARCH declaring requirements will be met -Description and overall R-value of the floor assembly used		
EA M4 Energy Efficient Windows	M	M			ARCH		BP	
Specify and install Energy Star-rated windows or windows with a maximum overall U-value of 0.35 Btu/hr-ft ² ·°F (2.0 W/m ² ·°K for non-metal framed windows or a maximum overall U-value of 0.45 Btu/hr-ft ² ·°F (2.55 W/m ² ·°K) for metal framed windows.						-Letter signed by ARCH declaring requirements will be met -Shop drawing from manufacturer showing glazing system U-value or ESTAR rating		
EA M5 Minimum Boiler Efficiency	M	M			MECH		BP	
Specify and install boilers with a minimum thermal efficiency of 84% /AFUE of minimum 90%.						-Letter by MECH requirement will be met - Manufacturer's spec sheet showing minimum efficiency of installed equipment		
EA M6 Domestic Hot Water	M	M			MECH		BP	
Specify and install gas DHW boilers with a minimum efficiency of 84% (mid-efficiency boiler).						-Letter by MECH requirement will be met - Manufacturer's spec sheet showing minimum efficiency of installed equipment		
EA M7 Energy Star Dishwashers and Refrigerators	M	M			ID		OP	
Specify and install Energy Star-labelled dishwashers and refrigerators in each unit.						-Letter indicating requirements have been met -Cut sheet showing ESTAR label or supporting documentation showing equivalent meet criteria		
EA M8 Programmable Thermostats	M	M			MECH		BP	
Specify and install programmable thermostats for at least the largest heating zone in each unit.						-Letter by ELEC indicating requirements will be met -Cutsheet of thermostats and description of locations		
EA M9 Common Area Lighting	M	M			ELEC		BP	
Specify and install only non-incandescent lighting, such as fluorescent, compact fluorescent or LED, in common areas.						-Letter by ELEC indicating requirements will be met -Description of common area lighting		
EA M10 Parkade and Corridor Lighting Controls	M	M			ELEC		BP	
Specify and install parkade and corridor lighting controls to automatically reduce the overall lighting level by at least 30% in a lighting zone when the zone is unoccupied.						-Letter signed by ELEC that requirements will be met -Indication of controlled and uncontrolled parkade lighting wattage		
EA M11 Energy Modeling Workshop (MANDATORY)	2	2			DEV/E3		BP	
Model the energy performance of the building and hold a workshop with the design team, a representative from UBC Sustainability and Engineering, Campus & Community Planning and contractor to evaluate the results and optimize the design of the building.						-Minutes and results of EM workshop		

EA M12 Commissioning (MANDATORY)	4	4		Unknown		BP/OP
Contract a third party Commissioning Authority to develop and implement a commissioning plan for all major building energy systems and verify they are installed, calibrated and perform according to design intent.						
-Commissioning Plan -Final commission report, detailing the final approvals and the project commissioning process						
EA ENERGY EFFICIENCY TARGETS	M					BP/OP
Building Envelop Airtightness Testing (MANDATORY)	2	2		Unknown		BP
An airtightness test meeting ASTM E779 or USACE Version 3 standard, as required by the Energy Step Code.						
Energy Step Code Step 2 (MANDATORY)	6	6		EM		OP
130 kWh/m2-yr (TEUI) and 45 kWh/ m2-yr (TEDI). This credit is mandatory.						
Energy Step Code Step 3	8	0		EM		OP
120 kWh/m2-yr (TEUI) and 30 kWh/ m2-yr (TEDI).						
Energy Step Code Step 4	15	0		EM		OP
100 kWh/m2-yr (TEUI) and 15 kWh/ m2-yr (TEDI). This credit is optional.						
Passive House Energy Performance	5	0		EM		OP
Design and construct the building to conform to the Passive House Planning Package, version 9 or newer, meeting the requirements of Section 10.2.3.3 (3) of the Energy Step Code Regulation. This credit is optional.						
EA 1.1 Thermal Energy Sub-Metering	1	1		MECH		BP
Provide separate metering in individual units for measuring thermal energy consumption used for space heating.						
Letter by MECH requirements will be met						
EA 2.1 Future Renewable Electricity	1	0	1	ELEC		BP
Pre-wire buildings and provide installation space for future use of photovoltaic technologies or other renewable electricity generation.						
-Letter by ELEC requirement will be met - Drawings showing wiring schematics						
EA 2.2 Renewable Electricity Utilization	3	3		ELEC		BP
Utilize photovoltaic technologies or other renewable electricity generation for a portion of the building's electrical supply						
-Letter by ELEC requirement will be met - Spec sheets of technologies that will be used						
EA 2.3 Low-Carbon District Energy Utilization	5	5		DEV		BP
Connect to the District Energy System for the building's thermal energy supply in preparation of transition to renewable energy in the future.						
-Letter by DEV requirement will be met						

Materials & Resources (MR)

	TOTAL	18	1	2				
	MAX	Y	M	Awarded	Role	Documentation	Phase	
MR 1.1 Reused Building Materials Use salvaged, refurbished, or reused materials for at least 5% of the total cost of building materials.	2	0			ARCH/GC	-Letter by ARCH requirements have been met - Total value of construction materials and total value of re-used building materials	OP	
MR 1.2 Reused Building Materials Use salvaged, refurbished, or reused materials for at least 10% of the total cost of building materials.	2	0			ARCH/GC	-Letter by ARCH requirements have been met - Total value of construction materials and total value of re-used building materials	OP	
MR 1.3 Recycled Content Materials Specify and use building materials with the following recycled content levels:	2	1			ARCH/GC	-Letter by ARCH requirements have been met - Manufacturer's cut sheets indicating recycled content	OP	
<i>4 Products = 1 point; 8 Products = 2 points</i>								
MR 2.1 Regionally Manufactured Building Materials Use a minimum of 20% (by value) of building materials and products that are manufactured within a radius of 800 km (500 miles).	1	0			ARCH/GC	-Letter by ARCH requirements have been met - Total value of construction materials and total value of regionally manufactured materials	OP	
MR 2.2 Regionally Sourced Building Materials Of the materials from Credit MR 2.1, use a minimum of 50% (by value) of building materials and products that are extracted, harvested or recovered (as well as manufactured) within a radius of 800 km (500 miles).	1	0			ARCH/GC	-Letter by ARCH requirements have been met - Total value of regionally manufactured materials and total value of those materials that are also extracted, harvested, or recovered regionally	OP	
MR 3.1 Dimensional Lumber and Plywood Demonstrate that a minimum of 50% of the total value of dimensional lumber and plywood is certified in accordance with either: CSA Z809 – 2 Points <input type="checkbox"/> Or Forest Stewardship Council (FSC) – 3 Points <input type="checkbox"/>	3	0	2		ARCH/GC	-Letter by ARCH requirements have been met - Total value of lumber plywood - Total value of certified lumber and plywood used in the project. For FSC provide CoC documentation for each.	OP	
MR 3.2 Hardwood Floors Specify and install bamboo floors or hardwood floors certified in accordance with the Forest Stewardship Council or CSA Z809. If floors are offered only as an option, specify and offer only bamboo or renewable products with third-party certification. CSA Z809 – 2 Points <input type="checkbox"/> Or Forest Stewardship Council (FSC) – 3 Points <input type="checkbox"/>	3	0			ARCH/GC	-Letter by ARCH requirements have been met - Manufacturer's cut sheet for each material selected indicating certification standard - For FSC provide CoC documentation for each product	OP	

<p>MR 4.1 Transparency of Ingredients</p> <p>Install ten different building products from three different manufacturers that evaluate and disclose the chemical inventory of the product to an accuracy of 0.1% for each product. For each product selected provide either:</p> <ul style="list-style-type: none"> • Health Product Declaration • Manufacturer Inventory of all ingredients by CAS number, of • Declare Label (Livng Building Institute) 	2	0	ARCH/GC	OP
<p>MR 4.2 Optimization of Ingredients</p> <p>Demonstrate that a minimum of 10% (by value) of building materials are optimized for ingredient content by demonstrating optimization in one of the following ways:</p> <ul style="list-style-type: none"> • GreenScreen v1.2 benchmark 4 minimum • Red List free • Free of ingredients listed on REACH Authorization and Candidate List 	2	0	ARCH/GC	OP

-Letter by ARCH requirements have been met including list of chosen products
 - Documentation for each product

-Letter signed by ARCH declaring requirements have been met
 - Documentaion of optimized ingredient for each product chosen
 - Total value of building materials and the total value of building materials optimized for ingredient content

Indoor Environmental Quality (IEQ)

		TOTAL	8	8	0			
		MAX	Y	M	Awarded	Role	Documentation	Phase
IEQ M1	Adhesives and Sealants	M	M			ARCH/GC		OP
Specify and use adhesives, sealants and sealant primers that are EcoLogo certified or do not exceed the VOC limits in the South Coast Air Quality Management District (SCAQMD) Rule #1168 on the interior of the building.							-Letter by ARCH requirements have been met - Manufacturer's cut sheet indication VOC content (adhesive, sealants and sealant primers)	
IEQ M2	Paints and Coatings	M	M			ARCH/GC		OP
Specify and use paints and coatings that carry an EcoLogo label or those rated at a minimum GPI-1 by the Master Painter's Institute on the interior of the building.							-Letter by ARCH requirements have been met - Manufacturer's cut sheet indicating VOC content of all paints and coatings in the interior of the building	
IEQ M3	Floor Coverings	M	M			ARCH/GC		OP
Specify and install carpet and carpet cushion that carry the following certifications: Carpet and Rug Institute Green Label Plus.							-Letter by ARCH requirements have been met -Certification documentation for products used	
IEQ M4	Ventilation Effectiveness	M	M			MECH		BP
Prepare and implement an effective air management strategy that meets the requirements of the current versions of CAN/CSA F326 or ASHRAE-62.1 or 62.2 as applicable to the building configuration.							-Letter by MECH requirements will be met - Description of ventilation system and fresh air management strategies employed	
IEQ 1.1	Low VOC Paints and Coatings	2	2			ARCH/GC		OP
Specify and use paints and coatings rated at a minimum GPS-2 by the Master Painter's Institute on the interior of the building.							-Letter by ARCH requirements have been met - Manufacturer's cut sheet indicating VOC content of all paints and coatings in the interior of the building - Calculations of VOC budget showing that the total average of VOC in all coating products based in litres applied meets the GPS-2 VOC limit of 50 g/L	
IEQ 1.2	Low-Emitting Composite Wood Products	2	2			ARCH/GC		OP
Specify and install interior composite wood products, such as flooring, doors, trim, etc., that are low emitting or have no added urea formaldehyde. Cabinetry is excluded from this credit.							-Letter by ARCH requirements have been met - Manufacturer's cut sheet indicating each interior composite wood product is NAUF	
IEQ 1.3	Low-Emitting Insulation	2	2			ARCH/GC		OP
Specify and install formaldehyde-free insulation on the interior of the building.							-Letter by ARCH requirements have been met - Manufacturer's cut sheet indicating each product selected is urea-formaldehyde free	
IEQ 1.4	Low -Emitting Cabinetry	2	2			ARCH/GC		OP
Specify and install interior cabinetry doors and boxes that are are low emitting or contain no added urea formaldehyde.							-Letter by ARCH requirements have been met - Manufacturer's cut sheet indicating each product selected is urea-formaldehyde free	

Construction (CON)

	TOTAL	4	2	0				
	MAX	Y	M	Awarded	Role	Documentation	Phase	
CON M1 Staging and Construction Prepare and implement a staging and construction plan, including alternate detour information and signage for pedestrians and cyclists.	M	M			GC/DEV	-Letter signed by DEV requirements have been met - Copy of Staging and Construction Plan	OP	
CON M2 Vegetation Safeguards and Land-Clearing Debris Prepare a site plan showing the sizes and locations of vegetation to be removed, retained and salvaged, including plants located on adjacent public rights-of-way (see reference guide) and develop a plan to effectively handle debris from land clearing and divert it from landfill disposal.	M	M			GC/DEV	-Letter signed by DEV requirements have been met - Copy of Vegetation Site Plan - Copy of Debris and Land clearing management plan	OP	
CON M3 Truck Management Plan Prepare and implement a comprehensive truck management plan for the project that conforms to the UBC Strategic Transportation Plan and the Neighbourhood Plan Development Guidelines.	M	M			GC/DEV	-Letter signed by DEV requirements have been met - Copy of Truck Management Plan	OP	
CON M4 Wheel Wash Provide a wheel wash for vehicles leaving the site or a street cleaning program and catch basin protection.	M	M			GC/DEV	-Letter signed by DEV requirements have been met	OP	
CON M5 Erosion and Sedimentation Control Prepare and implement a Sediment and Erosion Control Plan that conforms to the City of Vancouver Bulletin 2002-003-EV dated March 1, 2017.	M	M			CIV	-Letter signed by CIV or responsible party requirements have been met - Copy of ESC plan	OP	
CON M6 Waste Management Plan Prepare and implement a waste management plan that diverts 75% (by weight) of construction, demolition and land clearing waste from landfill.	M	M			GC	-Letter by GC requirements have been met - Copy of CWMP and hauling summary demonstrating 75% or more diversion	OP	
CON 1.1 Indoor Air Quality Management Plan Prepare and implement an Indoor Air Quality (IAQ) Management Plan for the construction and pre-occupancy phases of the building.	2	2			GC	-Letter by GC requirements have been met - Copy of IAQ management plan	OP	
CON 1.2 Flushout / IAQ Test After construction ends and prior to occupancy conduct a minimum two-week continuous building flushout with new filtration media at 100% outside air or conduct a Baseline Indoor Air Quality Test.	2	0			GC	-Letter by GC requirements have been met including copy of specifications showing requirement for flushout or results of IAQ testing	OP	

Innovation & Design Process (ID)

	TOTAL	24	11	4				
	MAX	Y	M	Awarded	Role	Documentation	Phase	
ID M1 Goal-Setting Workshop	M	M			E3		BP	
Hold a goal setting workshop including the developer, design consultants and contractor to review the Residential Environmental Assessment Program, set goals for the project and assign responsibilities.						-Copy of meeting minutes or report from the Goal Setting Workshop clearly outlining REAP priorities and goals		
ID M2 Educate the Homeowner	M	M			DEV		OP	
Develop a homeowner's manual that promotes sustainable behavior and describes all of the sustainable features of the project instructing the homeowner on their proper use. This manual should be included in record drawings or some form that will be accessible beyond the first generation of owner/resident.						- Letter signed by DEV certifying the requirements have been met - Copy of homeowner's manual highlighting sustainable features of the project		
ID 1.1 Life-Cycle Assessment	4	0			DEV		OP	
Perform a Life-Cycle Assessment of the project's structure and enclosure and demonstrate a minimum of 5% improvement from a reasonable baseline building for three environmental categories.						-Lifecycle assessment report, showing the results of the life-cycle assessment and confirmation that the credit criteria have been met		
ID 2.1 Green Building Specialist	1	1			DEV/E3		BP	
Engage an expert in green buildings and sustainable construction practices to provide advice on effective green building strategies to the design team.						- Letter signed by DEV identifying an expert in green buildings and construction practices has been engaged for the project - Explanation of expert's combination of experience and education that demonstrate ability to provide advice		
ID 2.2 Design for Safety and Accessibility	1	0			ARCH		BP	
Demonstrate that at least 25% of the units in the building have been designed to meet the SAFERhome standards (http://www.saferhomesociety.com/), which address issues of accessibility, children's safety, seniors and aging in place.						-Letter signed by ARCH requirements have been met -Description of how the criteria have been addressed in the design		
ID 2.3 Design for Security and Crime Prevention	2	2			ARCH		BP	
Demonstrate that the design has been reviewed by an accredited Crime Prevention Through Environmental Design (CPTED) practitioner .						-Letter signed by ARCH declaring that the requirements have been met		
ID 3.1 Educate the Sales Staff	1	1			DEV		OP	
Develop marketing materials based on the environmental performance of the project and ensure the sales staff is aware of and knowledgeable about the green building features.						-Letter signed by DEV declaring that the requirements have been met - Copy of marketing material highlighting sustainable features of the project		
ID 4.1 Enhance Research or Further Student Development	5	5			E3/DEV		BP/OP	
Collaborate with UBC students and/or faculty on a research project or other opportunities to enhance the academic mission of the University and integrate it with the community. The research project should be concurrent with, and applicable to, the current project.						BP: Letter signed by DEV requirements will be met OP: Copy of research project or description of project opportunity		

ID 4.2 Energy Data Sharing	4	0	DEV/OTHER	BP/OP	
<p>Incorporate a data sharing agreement into the sales contracts or strata constitution that allows building aggregate energy data to be collected for use by the UBC Sustainability and Engineering, Campus & Community Planning.</p>				<p>BP: Letter signed by DEV requirements will be met and highlighted copies of sales, lease and/or strata documentat that detaul this agreement - For purpose-build rental apartment buildings and strata owned buidlings see REAP 3.1 Guide for details (OP)</p>	
ID 5.1 Innovative Design or Exemplary Achievement	2	2	0	MECH/E3	OP
<p>Demonstrate exceptional performance above the requirements set by one of the existing credits or the implementation of an innovative design strategy not specifically addressed by any of the existing credits.</p>					<p>- Description of exceptional performance or innovative design strategy - include a description of the requirement, the intent, a rationale, stratiefies used and documentation that will be submitted to support the credit and achievement</p>
<p><i>EV Bike chargers in Class I storage. ELEC to confirm.</i></p>					
ID 5.2 Innovative Design or Exemplary Achievement	2	0	2	ARCH/E3	OP
<p>Demonstrate exceptional performance above the requirements set by one of the existing credits or the implementation of an innovative design strategy not specifically addressed by any of the existing credits.</p>					<p>- Description of exceptional performance or innovative design strategy - include a description of the requirement, the intent, a rationale, stratiefies used and documentation that will be submitted to support the credit and achievement</p>
<p><i>Want to come up with something to ged GOLD PLUS</i></p>					
ID 5.3 Innovative Design or Exemplary Achievement	2	0	2	MECH/E3	OP
<p>Demonstrate exceptional performance above the requirements set by one of the existing credits or the implementation of an innovative design strategy not specifically addressed by any of the existing credits.</p>					<p>- Description of exceptional performance or innovative design strategy - include a description of the requirement, the intent, a rationale, stratiefies used and documentation that will be submitted to support the credit and achievement</p>



Residential Environmental Assessment Program (3.1)

Project Checklist

Project Name: **The Conservatory**

Date 07-M11-2019

Y	M	Sustainable Sites (SS)		6 of 10
M		Prereq	SS M1 Storm Water Management Plan	M
M		Prereq	SS M2 Adapted and Ecologically Sound Planting	M
M		Prereq	SS M3 Bicycle Storage	M
M		Prereq	SS M4 Contribution to Community Car Sharing	M
2		Prereq	SS M5 Electric Vehicle Charging- Resident	2
M		Prereq	SS M6 Light Pollution Reduction	M
M		Prereq	SS M7 Recycling Collection	M
M		Prereq	SS M8 Compost Collection	M
2	0	Credit	SS 1.1 In-Suite Recycling and Compost Separation	2
0	0	Credit	SS 2.1 Additional Bicycle Facilities	2
2	0	Credit	SS 2.2 Electric Vehicle Charging – Visitor	2
0	0	Credit	SS 2.3 Electric Vehicle Charging Stations - Resident	2

Y	M	Water Efficiency (WE)		6 of 18
M		Prereq	WE M1 Efficient Irrigation Technology	M
M		Prereq	WE M2 Low-Flow Faucet Aerators	M
M		Prereq	WE M3 Low-Flow Showerheads	M
M		Prereq	WE M4 Energy Star Clothes Washers	M
3	0	Credit	WE 1.1 Reduce Potable Water Use	3
0	0	Credit	WE 1.2 Eliminate Potable Water Use	3
2	0	Credit	WE 2.1 Low-Flow Showerheads	2
1	0	Credit	WE 2.2 Water Efficient Dishwasher	1
0	0	Credit	WE 2.3 Most Efficient Clothes Washers	2
0	0	Credit	WE 2.4 Water Use Reduction Package	2
0	0	Credit	WE 3.1 Domestic Hot Water metering	3
0	0	Credit	WE 3.2 Domestic Cold-Water metering	2

Y	M	Materials and Resources (MR)		1 of 18
0	0	Credit	MR 1.1 Reused Building Materials	2
0	0	Credit	MR 1.2 Reused Building Materials	2
1	0	Credit	MR 1.3 Recycled Content Materials	2
0	0	Credit	MR 2.1 Regionally Manufactured Building Materials	1
0	0	Credit	MR 2.2 Regionally Sourced Building Materials	1
0	2	Credit	MR 3.1 Dimensional Lumber and Plywood	3
0	0	Credit	MR 3.2 Hardwood Floors	3
0	0	Credit	MR 4.1 Transparency of Ingredients	2
0	0	Credit	MR 4.2 Optimization of Ingredients	2

Y	M	Construction (CON)		2 of 4
M		Prereq	CON M1 Staging and Construction	M
M		Prereq	CON M2 Vegetation Safeguards and Land-Clearing Debris	M
M		Prereq	CON M3 Truck Management Plan	M
M		Prereq	CON M4 Wheel Wash	M
M		Prereq	CON M5 Erosion and Sedimentation Control	M
M		Prereq	CON M6 Waste Management Plan	M
2	0	Credit	CON 1.1 Indoor Air Quality Management Plan	2
0	0	Credit	CON 1.2 Flushout / IAQ Test	2

Y	M	Energy & Atmosphere (EA)		23 of 52
M		Prereq	EA M1 Minimum Roof Insulation	M
M		Prereq	EA M2 Minimum Exterior Wall Insulation	M
M		Prereq	EA M3 Minimum Floor Insulation	M
M		Prereq	EA M4 Energy Efficient Windows	M
M		Prereq	EA M5 Minimum Boiler Efficiency	M
M		Prereq	EA M6 Domestic Hot Water	M
M		Prereq	EA M7 Energy Star Dishwashers and Refrigerators	M
M		Prereq	EA M8 Programmable Thermostats	M
M		Prereq	EA M9 Common Area Lighting	M
M		Prereq	EA M10 Parkade and Corridor Lighting Controls	M
2		Prereq	EA M11 Energy Modeling Workshop	2
4		Prereq	EA M12 Commissioning	4
2		Prereq	EA Building Envelop Airtightness Testing	2
6		Prereq	EA Energy Step Code Step 2	6
0		Prereq	EA Energy Step Code Step 3	8
0	0	Credit	EA Energy Step Code Step 4	15
0	0	Credit	EA Passive House Energy Performance	5
1	0	Credit	EA 1.1 Thermal Energy Sub-Metering	1
0	1	Credit	EA 2.1 Future Renewable Electricity	1
3	0	Credit	EA 2.2 Renewable Electricity Utilization	3
5	0	Credit	EA 2.3 Low-Carbon District Energy Utilization	5

Y	M	Indoor Environmental Quality (IEQ)		8 of 8
M		Prereq	IEQ M1 Adhesives and Sealants	M
M		Prereq	IEQ M2 Paints and Coatings	M
M		Prereq	IEQ M3 Floor Coverings	M
M		Prereq	IEQ M4 Ventilation Effectiveness	M
2	0		IEQ 1.1 Low VOC Paints and Coatings	2
2	0	Credit	IEQ 1.2 Low-Emitting Composite Wood Products	2
2	0	Credit	IEQ 1.3 Low-Emitting Insulation	2
2	0	Credit	IEQ 1.4 Low -Emitting Cabinetry	2

Y	M	Innovation and Design Process (ID)		11 of 24
M		Prereq	ID M1 Goal-Setting Workshop	M
M		Prereq	ID M2 Educate the Homeowner	M
0	0	Credit	ID 1.1 Life-Cycle Assessment	4
1	0	Credit	ID 2.1 Green Building Specialist	1
0	0	Credit	ID 2.2 Design for Safety and Accessibility	1
2	0	Credit	ID 2.3 Design for Security and Crime Prevention	2
1	0	Credit	ID 3.1 Educate the Sales Staff	1
5	0	Credit	ID 4.1 Enhance Research or Further Student Development	5
0	0	Credit	ID 4.2 Energy Data Sharing	4
2	0	Credit	ID 5.1 Innovative Design or Exemplary Achievement	2
0	2	Credit	ID 5.2 Innovative Design or Exemplary Achievement	2
0	2	Credit	ID 5.3 Innovative Design or Exemplary Achievement	2

57	7	TOTALS	Possible Points: 134
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Gold: 45 to 60 points, Gold Plus: 61 to 75 points, Platinum: 76 to 100 points, Platinum Plus: 101 to 134 points

UBC Residential Environmental Assessment Program

REAP 3.1

Project Information

Developer: Polygon Homes
 Architect: DYS Architecture
 REAP Consultant: E3 Eco Group Inc.
 Project Name: The Conservatory
 Neighbourhood:
 Lot No.: UBC Lot 5
 Street Address: 5728 Berton Avenue, Vancouver, BC
 Project Stage: DP
 UBC DP Reference No.:
 Date of Review:
 Date of Submission:
 Date of Complete Submission:

CREDITS	Mandatory	Max	Score
Sustainable Sites (SS)	complete	10	6
Water Efficiency (WE)	-	18	6
Energy & Atmosphere (EA)	-	52	23
Materials & Resources (MR)	-	18	1
Indoor Environmental Quality (IEQ)	-	8	8
Construction (CON)	-	4	2
Innovation & Design Process (ID)	-	24	11
Subtotal		134	57
TOTAL		134	57

REAP Rating:	57 GOLD(45-60 pts)
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45-60 pts	Gold
61-75 pts	Gold Plus
76-100pts	Platinum
101-134 pts	Platinum Plus

Performance Category: Sustainable Sites (SS)		10 Points			
The intent of the Sustainable Sites category is to reduce the negative impacts of development, maintain the natural landscape, vegetation and environmental attributes of the site and provide new landscaping that enhances the microclimate.					
		Score: 6		Mandatory points achieved	
SS	MANDATORY	Points	Submission		
SS	M1 Storm Water Management Plan Require all new construction projects detain the 10-year, 24-hour storm volume and discharge at the 2-year, 40-hour pre-development rate on site or at a designated centralized facility using low-impact development and green infrastructure strategies.	M	M	BP	
	M2 Adapted and Ecologically Sound Planting Demonstrate that landscape design has minimized the need for pesticides and irrigation through the selection of adaptive and drought-tolerant plants and consideration of the principles of Integrated Pest Management and xeriscaping.	M	M	BP	
	M3 Bicycle Storage Provide covered bicycle storage facilities including 1.5 parking spaces per dwelling unit or individual parking garages for Class I use, and 0.5 bicycle parking spaces per dwelling unit for Class II use in accordance with The UBC Development Handbook.	M	M	BP	
	M4 Contribution to Community Car Sharing Contribute to the development of a community car-sharing network by funding the equivalent of one community vehicle per 100 residential units.	M	M	OP	
	M5 Electric Vehicle Charging- Resident Provide a minimum of one energized level 2 outlet per residential unit for non-rental developments or provide energized outlets for 50% of resident parking stalls for rental developments. Level 2 charging capacity that provides a minimum of 40A service and a minimum performance level of 12 kWh per stall, over an eight (8) hour period must be provided. Load sharing (up to four-way) and load management systems may be utilized. Exceptions may be granted in cases where utility mandated transformer upgrades are required.	2	2	BP	
	M6 Light Pollution Reduction Do not exceed the current Illuminating Engineering Society (IES) illuminance requirements as stated in Lighting for Exterior Environments.	M	M	BP	
	M7 Recycling Collection Provide for collection of domestic paper, plastic, glass and metal recyclables by contracting with a waste management company for the service. Recycling storage space shall be designed in accordance with Metro Vancouver's Technical Specifications for Recycling Amenities.	M	M	BP	OP
	M8 Compost Collection Provide a space in the building for the collection compost and provide for the compost collection through a contract with UBC Waste Management or another waste management service provider. Design the space in the building in accordance with Metro Vancouver's <i>Technical Specifications for Recycling Amenities</i> .	M	M	BP	OP
SS	OPTIONAL				
SS	1.1 In-Suite Recycling and Compost Separation Provide a space <i>and</i> system for simplified separation and collection of recycling and compostables in each suite or unit.	2	2	BP	
SS	2 ALTERNATIVE TRANSPORTATION				
	2.1 Additional Bicycle Facilities In addition to the requirements for bicycle parking in the <i>UBC Development Handbook</i> , provide an additional 0.25 Class I bicycle storage/bedroom and a bicycle repair station within the building.	2	X	BP	
	2.2 Electric Vehicle Charging – Visitor Provide one dedicated parking spot per 100 residential units for visitors of residents/owners, fully equipped with Level 2 charging station.	2	2	BP	
	2.3 Electric Vehicle Charging Stations - Resident Install Level 2 charging stations for the following percentage of owners'/residents' parking. 5% of owners'/residents' parking – 1 Points 10% of owners'/residents' parking – 1 Points	2	X	BP	
Performance Category: Water Performance Category: Water Efficiency (WE)		18 Points			
The intent of the Water Efficiency category is to encourage strategies that reduce the amount of potable water used for landscape irrigation and building operations.					
		Score: 6		Mandatory points achieved	
WE	MANDATORY	Points	Submission		
WE	M1 Efficient Irrigation Technology Design and install a water-efficient irrigation system that includes an automated controller, rain or soil sensors and pressure regulator and for non-grass areas use a micro- or drip-feed irrigation or install a temporary irrigation system.	M	M	BP	
	M2 Low-Flow Faucet Aerators Specify and install low-flow faucets with aerators in all bathroom sinks (max. 3.8 L per minute) and in all kitchen sinks (max. 6.8 L per minute).	M	M	BP	
	M3 Low-Flow Showerheads Specify and install water-saving showerheads with a maximum flow rate of 8.5 L per minute in each shower.	M	M	BP	
	M4 Energy Star Clothes Washers Specify and install Energy Star-labelled clothes washers and dishwashers in each unit, or specify and offer only Energy Star models if these appliances are optional.	M	M	OP	

WE		OPTIONAL					
WE		1 WATER EFFICIENT LANDSCAPING					
	1.1	Reduce Potable Water Use Reduce potable water use for site irrigation needs by 50% from the calculated mid-summer baseline.	3	3	BP		
	1.2	Eliminate Potable Water Use Eliminate potable water use for site irrigation needs.	3	X	BP		
WE		2 WATER USE REDUCTION					
	2.1	Low-Flow Showerheads Specify and install water-saving showerheads (maximum of 5.7 L per minute) in each shower	2	2	BP		
	2.2	Water Efficient Dishwasher Specify and install water-efficient dishwashers that use ≤ 11 L (2.91 gal) per normal wash cycle or if dishwashers are available only as an option, specify and offer only models complying with this credit.	1	1		OP	
	2.3	Most Efficient Clothes Washers Specify and install Energy Star clothes washers listed as "Most Efficient" (for the year in which the Building Permit is received), or if washers are available only as an option, specify and offer only models complying to this standard.	2	X		OP	
	2.4	Water Use Reduction Package Additional credit for achieving credits: WE 1.1, WE 2.1, WE 2.2 and WE 2.3.	2	X		OP	
WE		3 WATER METERING					
	3.1	Domestic Hot Water metering In units with central hot water, provide individual hot water metering.	3	X	BP		
	3.2	Domestic Cold-Water metering Provide for individual cold water meters for all units.	2	X	BP		
Performance Category: Energy & Atmosphere (EA)			52 Points				
The intention of the energy and atmosphere category are to reduce depletion of non-renewable energy resources and to reduce the environmental impacts of energy use, particularly emissions of local, regional and global air pollutants and greenhouse gases.							
			Score: 23		Mandatory points achieved		
EA		MANDATORY			Points	Submission	
EA	M1	Minimum Roof Insulation Design the roof assembly with a minimum insulation value of R-40 h-ft ² ·°F/Btu (7.04 °K-m ² /W) for buildings with attic space and R-28 h-ft ² ·°F/Btu (4.93 °K-m ² /W) for cathedral ceilings/flat roofs.	M	M	BP		
	M2	Minimum Exterior Wall Insulation Design the exterior insulated wall area with a minimum thermal resistance of effective (overall) R-15.6 h-ft ² ·°F/Btu (2.75 °K-m ² /W) for above grade non-glazed wall areas, and R-7.5 h-ft ² ·°F/Btu (1.32 °K-m ² /W) "continuous insulation" for below grade walls.	M	M	BP		
	M3	Minimum Floor Insulation Design floors above non-heated parkade areas with a minimum insulation value of R-30 h-ft ² ·°F/Btu (5.28 °K-m ² /W) for framed floors and R-15.6 h-ft ² ·°F/Btu (2.75 °K-m ² /W) for slab floors.	M	M	BP		
	M4	Energy Efficient Windows Specify and install Energy Star-rated windows or windows with a maximum overall U-value of 0.35 Btu/hr-ft ² ·°F (2.0 W/m ² ·K) for non-metal framed windows or a maximum overall U-value of 0.45 Btu/hr-ft ² ·°F (2.55 W/m ² ·K) for metal framed windows.	M	M	BP		
	M5	Minimum Boiler Efficiency Specify and install boilers with a minimum thermal efficiency of 84% /AFUE of minimum 90%.	M	M	BP		
	M6	Domestic Hot Water Specify and install gas DHW boilers with a minimum efficiency of 84% (mid-efficiency boiler).	M	M	BP		
	M7	Energy Star Dishwashers and Refrigerators Specify and install Energy Star-labelled dishwashers and refrigerators in each unit.	M	M		OP	
	M8	Programmable Thermostats Specify and install programmable thermostats for at least the largest heating zone in each unit.	M	M	BP		
	M9	Common Area Lighting Specify and install only non-incandescent lighting, such as fluorescent, compact fluorescent or LED, in common areas.	M	M	BP		
	M10	Parkade and Corridor Lighting Controls Specify and install parkade and corridor lighting controls to automatically reduce the overall lighting level by at least 30% in a lighting zone when the zone is unoccupied.	M	M	BP		
	M11	Energy Modeling Workshop Model the energy performance of the building and hold a workshop with the design team, a representative from UBC Sustainability and Engineering, Campus & Community Planning and contractor to evaluate the results and optimize the design of the building.	2	2	BP		
	M12	Commissioning Contract a third party Commissioning Authority to develop and implement a commissioning plan for all major building energy systems and verify they are installed, calibrated and perform according to design intent.	4	4	BP	OP	

EA		ENERGY STEP CODE					
		Design and construct the building to meet BC Energy Step Code (ESC). The building design must meet mandatory or optional ESC Step targets, below, and meet the requirements of Section 10.2.3 of the BC Energy Step Code Regulation. The Energy Step Code includes energy targets and an air tightness testing requirement.					
		Building Envelop Airtightness Testing An airtightness test meeting ASTM E779 or USACE Version 3 standard, as required by the Energy Step Code.	2	2	BP	OP	
		Energy Step Code Step 2 130 kWh/m ² -yr (TEU) and 45 kWh/ m ² -yr (TEDI). This credit is mandatory.	6	6	BP	OP	
EA		OPTIONAL					
		Energy Step Code Step 3 120 kWh/m ² -yr (TEU) and 30 kWh/ m ² -yr (TEDI).	8	X	BP	OP	
		Energy Step Code Step 4 100 kWh/m ² -yr (TEU) and 15 kWh/ m ² -yr (TEDI). This credit is optional.	15	X	BP	OP	
		Passive House Energy Performance Design and construct the building to conform to the Passive House Planning Package, version 9 or newer, meeting the requirements of Section 10.2.3.3 (3) of the Energy Step Code Regulation. This credit is optional.	5	X	BP	OP	
EA	1	ENERGY METERING					
	1.1	Thermal Energy Sub-Metering Provide separate metering in individual units for measuring thermal energy consumption used for space heating.	1	1	BP		
EA	2	RENEWABLE ENERGY					
	2.1	Future Renewable Electricity Pre-wire buildings and provide installation space for future use of photovoltaic technologies or other renewable electricity generation.	1	?	BP		
	2.2	Renewable Electricity Utilization Utilize photovoltaic technologies or other renewable electricity generation for a portion of the building's electrical supply	3	3	BP		
	2.3	Low-Carbon District Energy Utilization Connect to the District Energy System for the building's thermal energy supply in preparation of transition to renewable energy in the future.	5	5	BP		
Performance Category: Materials & Resources (MR)			18 Points				
The intent of the Materials & Resources category is to encourage design strategies that reduce and reuse material resources, reduce construction waste, and to select building materials that are environmentally preferable.							
			Score: 1				
MR		OPTIONAL		Points	Submission		
MR	1	RECYCLED CONTENT AND REUSED MATERIALS					
	1.1	Reused Building Materials Use salvaged, refurbished, or reused materials for at least 5% of the total cost of building materials.	2	X		OP	
	1.2	Reused Building Materials Use salvaged, refurbished, or reused materials for at least 10% of the total cost of building materials.	2	X		OP	
	1.3	Recycled Content Materials Specify and use building materials with the following recycled content levels: Common area carpet with minimum 25% recycled content Drywall with minimum 15% recycled content Batt insulation with minimum 40% recycled content Doors contain minimum 15% recycled material Concrete with min. 20% fly ash content, excluding suspended slabs Concrete with min. 40% fly ash content, excluding suspended slabs Cabinetry with minimum 20% recycled content MDF products with minimum 50% recycled content • Minimum four recycled content items on list above 1 point • All eight recycled content items on list above 2 points	2	1		OP	
MR	2	REGIONAL MATERIALS					
	2.1	Regionally Manufactured Building Materials Use a minimum of 20% (by value) of building materials and products that are manufactured within a radius of 800 km (500 miles).	1	X		OP	
	2.2	Regionally Sourced Building Materials Of the materials from Credit MR 2.1, use a minimum of 50% (by value) of building materials and	1	X		OP	

MR	3	CERTIFIED AND NON-ENDANGERED FOREST PRODUCTS			
	3.1	Dimensional Lumber and Plywood Demonstrate that a minimum of 50% of the total value of dimensional lumber and plywood is certified in accordance with either: CSA Z809 – 2 Points Or Forest Stewardship Council (FSC) – 3 Points	3	?	OP
	3.2	Hardwood Floors Specify and install bamboo floors or hardwood floors certified in accordance with the Forest Stewardship Council or CSA Z809. If floors are offered only as an option, specify and offer only bamboo or renewable products with third-party certification. CSA Z809 – 2 Points Or Forest Stewardship Council (FSC) – 3 Points	3	X	OP
MR	4	BUILDING PRODUCT INGREDIENTS			
	4.1	Transparency of Ingredients Install ten different building products from three different manufacturers that evaluate and disclose the chemical inventory of the product to an accuracy of 0.1% for each product. For each product selected provide either: • Health Product Declaration • Manufacturer Inventory of all ingredients by CAS number, of • Declare Label (Living Building Institute)	2	X	OP
	4.2	Optimization of Ingredients Demonstrate that a minimum of 10% (by value) of building materials are optimized for ingredient content by demonstrating optimization in one of the following ways: • GreenScreen v1.2 benchmark 4 minimum • Red List free • Free of ingredients listed on REACH Authorization and Candidate List	2	X	OP
Performance Category: Indoor Environmental Quality (IEQ)			8 Points		
The intent of the Indoor Environmental Quality category is to achieve enhanced indoor environmental quality through the thoughtful selection and application of materials and effective ventilation strategies.					
Score: 8			Mandatory points achieved		
IEQ	MANDATORY		Points	Submission	
IEQ	M1	Adhesives and Sealants Specify and use adhesives, sealants and sealant primers that are EcoLogo certified or do not exceed the VOC limits in the South Coast Air Quality Management District (SCAQMD) Rule #1168 on the interior of the building.	M	M	OP
	M2	Paints and Coatings Specify and use paints and coatings that carry an EcoLogo label or those rated at a minimum GPI-1 by the Master Painter's Institute on the interior of the building.	M	M	OP
	M3	Floor Coverings Specify and install carpet and carpet cushion that carry the following certifications: Carpet and Rug Institute Green Label Plus.	M	M	OP
	M4	Ventilation Effectiveness Prepare and implement an effective air management strategy that meets the requirements of the current versions of CAN/CSA F326 or ASHRAE-62.1 or 62.2 as applicable to the building configuration.	M	M	BP
IEQ	OPTIONAL				
IEQ	1	LOW-EMITTING MATERIALS			
	1.1	Low VOC Paints and Coatings Specify and use paints and coatings rated at a minimum GPS-2 by the Master Painter's Institute on the interior of the building.	2	2	OP
	1.2	Low-Emitting Composite Wood Products Specify and install interior composite wood products, such as flooring, doors, trim, etc., that are low emitting or have no added urea formaldehyde. Cabinetry is excluded from this credit.	2	2	OP
	1.3	Low-Emitting Insulation Specify and install formaldehyde-free insulation on the interior of the building.	2	2	OP
	1.4	Low-Emitting Cabinetry Specify and install interior cabinetry doors and boxes that are low emitting or contain no added urea formaldehyde.	2	2	OP
Performance Category: Construction (CON)			4 Points		
The construction process can impose significant and lasting impact on the ecology of both the site and beyond. The Construction credits acknowledge and reward contractors who have followed best practices.					
Score: 2			Mandatory points achieved		
CON	MANDATORY		Points	Submission	
	M1	Staging and Construction Prepare and implement a staging and construction plan, including alternate detour information and signage for pedestrians and cyclists.	M	M	OP
	M2	Vegetation Safeguards and Land-Clearing Debris Prepare a site plan showing the sizes and locations of vegetation to be removed, retained and salvaged, including plants located on adjacent public rights-of-way (see reference guide) and develop a plan to effectively handle debris from land clearing and divert it from landfill disposal.	M	M	OP
	M3	Truck Management Plan Prepare and implement a comprehensive truck management plan for the project that conforms to the <i>UBC Strategic Transportation Plan</i> and the <i>Neighbourhood Plan Development Guidelines</i> .	M	M	OP
	M4	Wheel Wash Provide a wheel wash for vehicles leaving the site or a street cleaning program and catch basin protection.	M	M	OP

	M5	Erosion and Sedimentation Control Prepare and implement a Sediment and Erosion Control Plan that conforms to the City of Vancouver Bulletin 2002-003-EV dated March 1, 2017.	M	M		OP	
	M6	Waste Management Plan Prepare and implement a waste management plan that diverts 75% (by weight) of construction, demolition and land clearing waste from landfill.	M	M		OP	
CON		OPTIONAL					
CON		1 CONSTRUCTION IAQ MANAGEMENT PLAN					
	1.1	Indoor Air Quality Management Plan Prepare and implement an Indoor Air Quality (IAQ) Management Plan for the construction and pre-occupancy phases of the building.	2	2		OP	
	1.2	Flushout / IAQ Test After construction ends and prior to occupancy conduct a minimum two-week continuous building flushout with new filtration media at 100% outside air or conduct a Baseline Indoor Air Quality Test.	2	X		OP	
Performance Category: Innovation & Design Process (ID)			24		Points		
The intent of the Innovation & Design Process category is to provide incentive and credit for general design and other innovative practices that improve the overall sustainability and environmental performance of the project.							
			Score: 11		Mandatory points achieved		
ID		MANDATORY		Points	Submission		
	M1	Goal-Setting Workshop Hold a goal setting workshop including the developer, design consultants and contractor to review the <i>Residential Environmental Assessment Program</i> , set goals for the project and assign responsibilities.	M	M	BP		
	M2	Educate the Homeowner Develop a homeowner's manual that promotes sustainable behavior and describes all of the sustainable features of the project instructing the homeowner on their proper use. This manual should be included in record drawings or some form that will be accessible beyond the first generation of owner/resident.	M	M		OP	
ID		OPTIONAL					
ID		1 INNOVATION IN MATERIALS					
	1.1	Life-Cycle Assessment Perform a Life-Cycle Assessment of the project's structure and enclosure and demonstrate a minimum of 5% improvement from a reasonable baseline building for three environmental categories.	4	X		OP	
ID		2 INTEGRATIVE AND UNIVERSAL DESIGN					
	2.1	Green Building Specialist Engage an expert in green buildings and sustainable construction practices to provide advice on effective green building strategies to the design team.	1	1	BP		
	2.2	Design for Safety and Accessibility Demonstrate that at least 25% of the units in the building have been designed to meet the SAFERhome standards (http://www.saferhomesociety.com/), which address issues of accessibility, children's safety, seniors and aging in place.	1	X	BP		
	2.3	Design for Security and Crime Prevention Demonstrate that the design has been reviewed by an accredited Crime Prevention Through Environmental Design (CPTED) practitioner.	2	2	BP		
ID		3 MARKET TRANSFORMATION					
	3.1	Educate the Sales Staff Develop marketing materials based on the environmental performance of the project and ensure the sales staff is aware of and knowledgeable about the green building features.	1	1		OP	
ID		4 ACADEMIC LINKS					
	4.1	Enhance Research or Further Student Development Collaborate with UBC students and/or faculty on a research project or other opportunities to enhance the academic mission of the University and integrate it with the community. The research project should be concurrent with, and applicable to, the current project.	5	5	BP	OP	
	4.2	Energy Data Sharing Incorporate a data sharing agreement into the sales contracts or strata constitution that allows building aggregate energy data to be collected for use by the UBC Sustainability and Engineering, Campus & Community Planning.	4	X	BP	OP	
ID		5 INNOVATIVE DESIGN					
	5.1	Innovative Design or Exemplary Achievement Demonstrate exceptional performance above the requirements set by one of the existing credits or the implementation of an innovative design strategy not specifically addressed by any of the existing credits.	2	2		OP	
	5.2	Innovative Design or Exemplary Achievement Demonstrate exceptional performance above the requirements set by one of the existing credits or the implementation of an innovative design strategy not specifically addressed by any of the existing credits.	2	?		OP	
	5.3	Innovative Design or Exemplary Achievement Demonstrate exceptional performance above the requirements set by one of the existing credits or the implementation of an innovative design strategy not specifically addressed by any of the existing credits.	2	?		OP	