UBC Residential Environmental Assessment Program

Project Information

Developer:	**Polygon**
Architect:	**Francl Architecture**
Project Name:	The Laureates
Neighbourhood:	Wesbrook Village, South Campus
Lot No.:	LOT 13, DISTRICT LOT 6494, GROUP 1, NEW WESTMINSTER DISTRICT, PLAN BCP26848
Street Address:	5628 Birney Ave, 5638 Birney Ave
Project Stage:	Development Permit
UBC DP Reference No.:	
Date:	21-Apr-14

MANDATORY CREDITS	Max	Score	?
Sustainable Sites (SS M)	10	10	0
Water Efficiency (WE M)	6	6	0
Energy & Atmosphere (EA M)	19	19	0
Indoor Environmental Quality (IEQ M)	11	11	0
Construction (CON M)	8	8	0
Innovation & Design Process (ID M)	2	2	0
Subtotal	**56**	**56**	**0**

OPTIONAL CREDITS	Max	Score	?
Sustainable Sites (SS)	10	10	0
Water Efficiency (WE)	25	15	0
Energy & Atmosphere (EA)	50	27	0
Materials & Resources (MR)	27	11	0
Indoor Environmental Quality (IEQ)	7	7	0
Construction (CON)	4	2	0
Innovation & Design Process (ID)	21	18	0
Subtotal	**144**	**90**	**0**

TOTAL	**200**	**146**	**146**

REAP Rating: GOLD (140 – 169 pts)

66 – 79 pts	Basic Compliance
80 – 109 pts	Bronze
110 – 139 pts	Silver
140 – 169 pts	Gold
170 – 200 pts	Platinum

PART ONE: MANDATORY DESIGN CREDITS

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

Score: 10

SS	**M1**	**STORM WATER MANAGEMENT**			
	M1.1	**Storm Water Management Plan** Develop a plan that integrates the on-site stormwater management system with the neighbourhood-wide stormwater management principles and strategies, including controlling of rate and/or quantity of run-off as required.	**2**	**2**	
SS	**M2**	**NEW LANDSCAPING**			
	M2.1	**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.	**2**	**2**	
SS	**M3**	**ALTERNATIVE TRANSPORTATION**			
	M3.1	**Bicycle Storage** Provide covered storage facilities for securing bicycles in accordance with the *UBC Development Handbook.*	**2**	**2**	
	M3.2	**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.	**2**	**2**	
SS	**M4**	**LIGHT POLLUTION REDUCTION**			
	M4.1	**Light Pollution Reduction** Do not exceed Illuminating Engineering Society of North America (IESNA) illuminance requirements as stated in the *Recommended Practice Manual: Lighting for Exterior Environments.*	**2**	**2**	

Performance Category: Water Efficiency (WE) **6 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

WE	**M1**	**WATER EFFICIENT LANDSCAPING**			
	M1.1	**Efficient Irrigation Technology and Rainwater Use** 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.	**2**	**2**	
WE	**M2**	**WATER USE REDUCTION**			
	M2.1	**Low-Flush Toilets** Specify and install low-flush or ultra low-flush toilets (max. 6 L per flush) for all water closets.	**2**	**2**	
	M2.2	**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).	**2**	**2**	

	Performance Category: Energy & Atmosphere (EA)		**19 Points**		
	The intent of the Energy & Atmosphere category are to reduce depletion of non-renewable energy resources and to reduce environmental impacts of their energy use, particularly emissions				
			Score:	**19**	
EA	**M1**	**MINIMUM ENERGY EFFICIENCY MEASURES**			
	M1.1	**Minimum Roof Insulation** Design the roof assembly with a minimum insulation value of R-40 for buildings with attic space and R-28 for cathedral ceilings/flat roofs.	**1**	**1**	
	M1.2	**Minimum Exterior Wall Insulation** Design the exterior building envelope with a minimum insulation value of R-22 for non-glazed areas.	**1**	**1**	
	M1.3	**Minimum Floor Insulation** Design floors above non-heated parkade areas with a minimum insulation value of R-30 for framed floors and R-14 for slab floors.	**1**	**1**	
	M1.4	**Energy Efficient Windows** Specify and install Energy Star-rated windows ***or*** windows with a maximum overall U-value of 0.35 for vinyl frames or 0.50 or less for aluminum frames.	**4**	**4**	
	M1.5	**Minimum Furnace or Make-up Air Unit Efficiency** Specify and install furnaces and make-up air units with a minimum efficiency of 80%.	**3**	**3**	
	M1.6	**Domestic Hot Water** Specify and install a gas DHW boiler with a minimum efficiency of 80% (mid-efficiency boiler) ***or***electric DHW heaters with an Energy Factor of 0.90 or higher.	**2**	**2**	
	M1.7	**Low-Flow Shower Heads** Specify and install water-saving showerheads with a maximum flow rate of 8.5 L per minute in each shower.	**1**	**1**	
	M1.8	**Energy Star Appliances** Specify and install Energy Star-labelled dishwashers and refrigerators in each unit.	**2**	**2**	
	M1.9	**Energy Star Clothes Washer** Specify and install Energy Star-labelled clothes washers for each unit ***or*** if clothes washers are provided only as an option, specify and offer only Energy Star models.	**1**	**1**	
	M1.10	**Programmable Thermostats** Specify and install Energy Star-labelled programmable thermostats for at least the largest heating zone in each unit.	**2**	**2**	
	M1.11	**Common Area Lighting** Specify and install only non-incandescent lighting, such as fluorescent, compact fluorescent or LED, in common areas.	**1**	**1**	

		Performance Category: Indoor Environmental Quality (IEQ)	**11**	**Points**	
		The intent of the Indoor Environmental Quality category is to provide guidance in achieving enhanced indoor environmental quality through early design integration, the thoughtful selection			
			Score:	11	
IEQ	**M1**	**LOW-EMITTING MATERIALS**			
	M1.1	**Adhesives and Sealants** Specify and use adhesives, sealants and sealant primers that do not exceed the VOC limits of the Canadian Environmental Choice/EcoLogo program ***or*** do not exceed the VOC limits specified in the State of California's South Coast Air Management District Rule #1168.	**3**	3	
	M1.2	**Paints** Specify and use paints and coatings that carry an EcoLogo label or those approved by the Master Painter's Institute as having a minimum of MPI Environmental Level 2.	**2**	2	
	M1.3	**Floor Coverings** Specify and install floor covering systems that do not exceed the Carpet and Rug Institute Green Label Indoor Air Quality Test Program ***or*** that carry the Canadian Environmental Choice/Ecologo certification.	**2**	2	
IEQ	**M2**	**INDOOR AIR QUALITY**			
	M2.1	**Ventilation Effectiveness** Prepare and implement an effective air management strategy that meets the requirements of CSA F326 or ASHRAE-62.	**4**	4	
		Performance Category: Construction (CON)	**8**	**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			
			Score:	8	
CON	**M1.0**	**REDUCE SITE DISTURBANCE**			
	M1.1	**Staging and Construction** Prepare and implement a staging and construction plan, including alternate detour information and signage for pedestrians and cyclists.	**1**	1	
	M1.2	**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.	**1**	1	
	M1.3	**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.*	**1**	1	
	M1.4	**Wheel Wash** Provide a wheel wash for vehicles leaving the site ***or*** a street cleaning program and catch basin protection.	**1**	1	
CON	**M2**	**EROSION AND SEDIMENTATION CONTROL**			
	M2.1	**Erosion and Sedimentation Control** Prepare and implement a site sediment and erosion control plan that conforms to *Best Management Practices Guide for Stormwater: Appendix H – Construction Site Erosion and Sediment Control Guide* (GVS&DD, October 1999).	**2**	2	

CON	M3	**CONSTRUCTION WASTE MANAGEMENT**			
	M3.1	**Waste Management Plan** Prepare and implement a waste management plan that diverts 75% (by weight) of construction, demolition and land clearing waste from landfill.	2	2	
		Performance Category: Innovation & Design Process (ID)	**2**	**Points**	
		The intent of Innovation & Design Process category is to provide incentive and credit for general design and other innovative practices that improve the overall sustainability and			
			Score:	2	
ID	M1	**INTEGRATED DESIGN PROCESS**			
	M1.1	**Goal-Setting Workshop** 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.	2	2	

PART TWO: OPTIONAL DESIGN CREDITS

		Performance Category: Sustainable Sites (SS)	**10**	**Points**	
		The intent of the Sustainable Site category is to reduce the negative impacts of development, maintain the natural landscape, vegetation and environmental attributes of the site and provide			
			Score:	10	
SS	1	**RECYCLING AND COMPOSTING**			
	1.1	**In-Suite Recycling and Compost Separation** Provide a space and system for simplified separation and collection of recycling and compostables in each suite or unit.	1	1	
	1.2	**On-Site Composting Facilities** Designate space for compost collection at the building level ***or*** identify an appropriate location on the Landscape Plan for future on-site composting.	1	1	
	1.3	**Recycling Collection** Provide for collection of domestic paper, plastic, glass and metal recyclables by contracting with a waste management company for the service.	3	3	
	1.4	**Off-Site Composting** Provide for collection of compost for delivery to a centralized composting facility.	2	2	
SS	2	**ALTERNATIVE TRANSPORTATION**			
	2.1	**Alternative Fuel Vehicles** For every eighty parking stalls, or fraction thereof, designate two parking stalls for use by alternatively-fuelled vehicles ***and*** provide electrical service suitable for a charging station for every two parking stalls designated for alternatively-fuelled vehicles.	1	1	
	2.2	**Community Car Sharing Vehicle** Provide a new vehicle and parking space to a community car-sharing network that is to be parked on-site. This is over and above the requirement of SS M3.2.	2	2	

		Performance Category: Water Efficiency (WE)	**25 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:	**15**	
WE	**1**	**WATER EFFICIENT LANDSCAPING**			
	1.1	**Reduce Potable Water Use** Reduce potable water use for site irrigation needs by 50%.	**3**	**3**	
	1.2	**Eliminate Potable Water Use** Eliminate potable water use for site irrigation needs.	**5**	**0**	
WE	**2**	**WATER USE REDUCTION**			
	2.1	**Dual-Flush Toilets** Specify and install ultra low-flow toilets (max. 4 L per flush) ***or*** dual-flush toilets (max. 6 L & 3 L per flush) for all water closets.	**3**	**3**	
	2.2	**Water Efficient Dishwasher** Specify and install water-efficient dishwashers that use less than 20 L per normal wash cycle.	**3**	**3**	
	2.3	**Water Efficient Clothes Washer** Specify and install water-saving clothes washers with a maximum water consumption of 62 L per standard cycle ***or*** if washers are available only as an option, offer only compliant water-saving models.	**3**	**3**	
	2.4	**Comprehensive Water Use Reduction Package** Additional credit for achieving all credits from WE 2.1 to WE 2.3.	**3**	**3**	
WE	**3**	**WATER METERING**			
	3.1	**Hot Water metering** In units with central hot water, provide individual hot water metering.	**3**	**0**	
	3.2	**Cold-Water metering** Provide for individual cold water meters for all units.	**2**	**0**	

	Performance Category: Energy & Atmosphere (EA)		**50 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				
			Score:	27	
EA	**1**	**BASIC ENERGY EFFICIENCY MEASURES**			
	1.1	**Roof Insulation** Design the roof assembly with a minimum insulation value of R-60 for buildings with attic space and R-40 for cathedral ceilings/flat roofs.	**1**	**1**	
	1.2	**Exterior Wall Insulation** Design exterior building envelope with a minimum insulation value of R-28 for non-glazed areas.	**1**	**1**	
	1.3	**Energy Star Windows** Specify and install Energy Star-rated windows with a maximum overall U-value of 0.31 for vinyl frames or 0.46 for aluminum frames.	**2**	**2**	
	1.4	**Furnace or Make-Up Air Unit Efficiency** Specify and install furnaces and make-up air units with a minimum efficiency of 85%.	**2**	**2**	
	1.5	**Domestic Hot Water** Specify and install a modulating DHW gas boiler with a minimum efficiency of 85% (mid-efficiency boiler) ***or*** electric DHW heaters with an Energy Factor of 0.94 or higher.	**2**	**2**	
	1.6	**Boiler Management System** Install and implement a boiler management system to match the boiler operation to the building loads and optimize the boiler controls for maximum energy savings ***or*** specify electric DHW heaters with an Energy Factor of 0.96 or higher.	**2**	**2**	
	1.7	**Low-Flow Shower Heads** Specify and install low-flow showerheads (max. 5.7 L per minute) in each unit.	**2**	**2**	
	1.8	**Compact Fluorescent Lights** Specify and install compact fluorescent lamps for lighting of in-suite circulation areas such as corridors, entries, landings, etc.	**2**	**2**	
	1.9	**Occupancy Sensors for Parkade Lighting** Install occupancy sensors for lighting over parking areas of the parkade. Lighting over the drive-aisle and exits, as well as other emergency or security lighting should remain unswitched.	**2**	**2**	
	1.10	**Bundle Bonus (25% < MNECB)** Achieve credits EA 1.1 to EA 1.9, which is roughly equivalent to reducing energy use by 25% below the *Model National Energy Code for Buildings* ***or*** demonstrate equivalent achievement with energy modeling (see ***Note*** on page 44 of the REAP Reference Guide).	**3**	**3**	
EA	**2**	**ADDITIONAL ENERGY EFFICIENCY MEASURES**			
	2.1	**Minimum Floor Insulation** Design floors above non-heated parkade areas with a minimum insulation value of R-42 for framed floors and R-20 for slab floors.	**1**	**1**	

	2.2	**High-Performance Energy Star Windows** Specify and install Energy Star-rated windows with a maximum overall U-value of 0.26 for vinyl frames or 0.42 for aluminum frames.	2	2	
	2.3	**Heat Recovery System** Design and install a heat recovery system with a minimum 50% overall effectiveness.	2	0	
	2.4	**Geoexchange DHW Heating System** Design and install a geoexchange DHW heating system to supply a minimum of 25% of the peak DHW heating load and 70% of the total DHW energy load.	5	0	
	2.5	**Bundle Bonus (40% < MNECB)** If Credit EA 1.10 (25% < MNECB) has been achieved, this credit is available for also achieving credits EA 2.1 to EA 2.4, which is roughly equivalent to reducing energy use by 40% below the *Model National Energy Code for Buildings* ***or*** demonstrate equivalent performance with energy modeling (see ***Note*** on page 44 of the REAP Reference Guide).	3	0	
EA	**3**	**ADVANCED ENERGY EFFICIENCY MEASURES**			
	3.1	**Domestic Hot Water** Specify and install a condensing DHW gas boiler with a minimum efficiency of 92% (high-efficiency boiler) ***or*** electric DHW heaters with an Energy Factor of 1.00 or higher.	2	2	
	3.2	**Advanced Energy Performance (50% < MNECB)** Demonstrate that energy use is 50% below the *Model National Energy Code for Buildings*.	5		
EA	**4**	**ENERGY METERING**			
	4.1	**Gas Sub-Metering** Provide separate metering for measuring natural gas consumption in individual units.	2		
EA	**5**	**RENEWABLE ENERGY**			
	5.1	**Solar Access Study** Undertake shading and solar access studies to evaluate the potential for the installation or retrofit of solar energy collection systems.	1	1	
	5.2	**Future Solar Technologies** Pre-plumb buildings for future adoption of solar hot water or photovoltaic technologies.	2	2	
	5.3	**Install Solar Technologies** Utilize solar technologies such as photovoltaic panels or solar domestic hot water heating systems.	3		
	5.4	**Green Power Certificates** Contract with BC Hydro to purchase Green Power Certificates equivalent to the electricity use of the building for the first two years following occupancy.	3	0	

	Performance Category: Materials & Resources (MR)		**27 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				
			Score:	**11**	
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**	**0**	
	1.2	**Reused Building Materials** Use salvaged, refurbished, or reused materials for at least 10% of the total cost of building materials.	**3**	**0**	
	1.3	**Recycled Content Materials** Specify and use building materials with the following recycled content levels (one point per recycled material, with a bonus 10th point for including all nine materials).	**10**	**0**	
		☐ Common area carpet with minimum 25% recycled content	Y/N	1	
		☐ Dimensional wall lumber with minimum 75% recycled content	Y/N	0	
		☐ Drywall with minimum 15% recycled content	Y/N	1	
		☐ Batt insulation with minimum 40% recycled content	Y/N	1	
		☐ Doors contain minimum 15% recycled material	Y/N	1	
		☐ Concrete with min. 20% fly ash content, excluding suspended slabs	Y/N	0	
		☐ Concrete with min. 40% fly ash content, excluding suspended slabs	Y/N	0	
		☐ Cabinetry with minimum 20% recycled content	Y/N	1	
		☐ MDF products with minimum 50% recycled content	Y/N	1	
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).	**2**	**0**	
	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).	**2**	**0**	
MR	**3**	**CERTIFIED AND NON-ENDANGERED FOREST PRODUCTS**			
	3.1	**Dimensional Lumber** Demonstrate that a minimum of 50% of the total value of dimensional lumber is certified in accordance with either the *Forest Stewardship Council (FSC)* or the *Canadian Standards Association Z809 (CSA)*.	**3**	**3**	
	3.2	**Plywood** Demonstrate that a minimum of 50% of the total value of plywood used is certified in accordance with either the *Forest Stewardship Council (FSC)* or the *Canadian Standards Association Z809 (CSA)*.	**2**	**2**	
	3.3	**Renewable 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.	**3**	**0**	

		Performance Category: Indoor Environmental Quality (IEQ)	**7**	**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			
			Score:	**7**	
IEQ	**1**	**LOW-EMITTING MATERIALS**			
	1.1	**Low VOC Paints** Specify and use paints approved by the Master Painter's Institute as having a minimum of MPI Environmental Level 3.	**3**	**3**	
	1.2	**Urea Formaldehyde-Free Cabinetry** Specify and install interior cabinetry doors and boxes that are urea formaldehyde-free.	**2**	**2**	
	1.3	**Urea Formaldehyde-Free Composite Wood Products** Specify and install interior composite wood products, such as flooring, doors, trim, etc., that are urea formaldehyde-free.	**2**	**2**	
		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			
			Score:	**2**	
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**	
	1.2	**Flushout** Conduct a minimum two-week continuous building flushout with new filtration media at 100% outside air after construction ends and prior to occupancy ***or*** conduct a baseline indoor air quality test.	**2**	**0**	
		Performance Category: Innovation & Design Process (ID)	**21**	**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			
			Score:	**18**	
ID	**1**	**INTEGRATED DESIGN**			
	1.1	**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.	**2**	**2**	
	1.2	**Energy Performance Screening** Utilize Natural Resource Canada's online CBIP screening tool (http://cbipscreen.nrcan.gc.ca/) to determine the general energy performance of the building design.	**1**	**1**	
	1.3	**Energy Modeling Workshop** Model the energy performance of the building and hold a workshop with the design team and contractor to evaluate the results and optimize the design of the building.	**2**	**2**	
ID	**2**	**UNIVERSAL DESIGN**			
	2.1	**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**		

	2.2	**Design for Security and Crime Prevention** Demonstrate that the design has been reviewed by an accredited Crime Prevention Through Environmental Design (CPTED) practitioner (http://www.designcentreforcpted.org/).	2	2	
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	
	3.2	**Educate the Homeowner** Develop a homeowner's manual that describes all of the sustainable features of the project.	1	1	
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.	5	5	
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	
	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	2	
	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		