UBC Residential Environmental Assessment Program

REAP 3.0

Project Information

Developer:	Polygon
Architect:	
REAP consultant	E3 Eco Group Inc.
Project Name:	Eton
Neighbourhood:	Wesbrook Pla
Lot No.:	15
Street Address:	
Project Stage:	
UBC DP Reference No.:	
Date:	

CREDITS	Mandatory	Max	Score
Sustainable Sites (SS)	-	10	4
Water Efficiency (WE)	-	18	5
Energy & Atmosphere (EA)	-	52	6
Materials & Resources (MR)	-	18	6
Indoor Environmental Quality (IEQ)	-	8	5
Construction (CON)	-	4	8
Innovation & Design Process (ID)	-	24	11
Subtotal		**134**	**45**
TOTAL		**134**	**45**

REAP Rating:	**GOLD(45-60 pts)**

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: 4 -

SS		**MANDATORY**			
SS	**M1**	**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.	**M**	**Y**	same as REAP 2.0
SS	**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**	**Y**	same as REAP 2.0
SS	**M3**	**Bicycle Storage** Provide covered storage facilities for securing bicycles in accordance with the *UBC Development Handbook.*	**M**	**Y**	same as REAP 2.0
SS	**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**	**Y**	same as REAP 2.0
SS	**M5**	**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* .	**M**	**Y**	same as REAP 2.0
SS	**M6**	**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**	**Y**	same as REAP 2.0
SS	**M7**	**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 *Technical Specifications for Recycling Amenities* .	**M**	**Y**	optional in REAP 2.0
SS		**OPTIONAL**			

SS	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.	2	2	optional in REAP 2.0
SS	2	**ALTERNATIVE TRANSPORTATION**			
	2.1	**Additional Bicycle Facilities** 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.	2	2	higher requirement than REAP 2.0
Performance Category: Water Performance Category: Water Efficienc			**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:	5	-
WE		**MANDATORY**			
WE	M1	**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	M	Y	same as REAP 2.0
	M2	**Low-Flush Toilets** Specify and install high efficiency 4.8 L per flush (1.28 gal) single flush toilets or 3.4/6 L per flush (0.9gal/1.6gal) dual flush toilets for all water closets.	M	Y	same as REAP 2.0
	M3	**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	Y	same as REAP 2.0
	M4	**Low-Flow Showerheads** Specify and install water-saving showerheads with a maximum flow rate of 8.5 L per minute in each shower.	M	Y	same as REAP 2.0
	M5	**Energy Star Clothes Washers and Dishwashers** 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	Y	same as REAP 2.0
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	same as REAP 2.0
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	same as REAP 2.0

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: 6 -

EA		MANDATORY			
EA	M1	**Minimum Roof Insulation** Design the roof assembly with a minimum insulation value of R-40 h·ft²·°F/Btu (7.04 °K-m^2/W) for buildings with attic space and R-28 h·ft²·°F/Btu (4.93 °K-m^2/W) for cathedral ceilings/flat roofs. ***This is required even if the energy model exceeds the minimum requirement.***	M	Y	not listed in REAP 2.0
	M2	**Minimum Exterior Wall Insulation** Design the exterior insulated wall area with a minimum thermal resistance of effective (overall) R-15.6 h·ft²·°F/Btu (2.75 °K-m2/W) for above grade non-glazed wall areas, and R-7.5 h·ft²·°F/Btu (1.32 °K-m2/W) "continuous insulation" for below grade walls. ***This is required even if the energy model exceeds the minimum requirement.***	M	Y	not listed in REAP 2.0
	M3	**Minimum Floor Insulation** Design floors above non-heated parkade areas with a minimum insulation value of R-30 h·ft²·°F/Btu (5.28 °K-m2/W) for framed floors and R-15.6 h·ft²·°F/Btu (2.75 °K-m2/W) for slab floors. ***This is required even if the energy model exceeds the minimum requirement.***	M	Y	not listed in REAP 2.0
	M4	**Energy Efficient Windows** Specify and install Energy Star-rated windows or windows with a maximum overall U-value of 0.35 Btu/hr-ft2-°F (2.0 W/m2-°K for non-metal framed windows or a maximum overall U-value of 0.45 Btu/hr-ft2-°F (2.55 W/m2-°K) for metal framed windows. ***This is required even if the energy model exceeds the minimum requirement.***	M	Y	not listed in REAP 2.0
	M5	**Minimum Boiler Efficiency** Specify and install boilers with a minimum thermal efficiency of 84% /AFUE of minimum 90% or heat using District Energy.	M	Y	higher requirement than REAP 2.0
	M6	**Domestic Hot Water** Specify and install gas DHW boilers with a minimum efficiency of 84% (mid-efficiency boiler) or heat domestic hot water using District Energy.	M	Y	higher requirement than REAP 2.0
	M7	**Energy Star Dishwashers and Refrigerators** Specify and install Energy Star-labelled dishwashers and refrigerators in each unit.	M	Y	same as REAP 2.0

	M8	**Programmable Thermostats** Specify and install programmable thermostats for at least the largest heating zone in each unit.	M	Y	same as REAP 2.0
	M9	**Common Area Lighting** Specify and install only non-incandescent lighting, such as fluorescent, compact fluorescent or LED, in common areas.	M	Y	same as REAP 2.0
	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	Y	not listed in REAP 2.0
EA		**MANDATORY**			
		ENERGY EFFICIENCY TARGETS			
		EA GOLD-Mandatory Design the building to meet a maximum EUI of 160 kwh/m2/yr, demonstrated using the UBC Energy Modeling Guidelines. This credit is mandatory and required for achievement of REAP Gold.	6	6	not listed in REAP 2.0; prelim model completed and on file (DP submission)
		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:	5	
MR		**OPTIONAL**			
MR	1	**RECYCLED CONTENT AND REUSED MATERIALS**			
	1.3	**Recycled Content Materials** Specify and use building materials with the following recycled content levels:	2	1	
		Common area carpet with minimum 25% recycled content		Y	same as REAP 2.0
		Drywall with minimum 15% recycled content		Y	same as REAP 2.0
		Batt insulation with minimum 40% recycled content		Y	same as REAP 2.0
		MDF products with minimum 50% recycled content		Y	same as REAP 2.0
		Minimum four recycled content items on list above 1 point All eight recycled content items on list above 2 points			
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 and plywood is certified in accordance with either: CSA Z809 – 2 Points Or Forest Stewardship Council (FSC) – 3 Points	3	2	same as REAP 2.0

	3.2	**Or Forest Stewardship Council (FSC) 3 points** 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	2	same as REAP 2.0
		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	-
IEQ		**MANDATORY**			
	M1	**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.	M	Y	same as REAP 2.0
	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	Y	same as REAP 2.0
	M3	**Floor Coverings** Specify and install carpet and carpet cushion that carry the following certifications: Carpet and Rug Institute Green Label Plus ***or*** the Ecologo.	M	Y	same as REAP 2.0
	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	Y	same as REAP 2.0
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	same as REAP 2.0

	1.2	**Low-Emitting Composite Wood Products** Specify and install interior composite wood products, such as flooring, doors, trim, etc., that have no added urea formaldehyde. Cabinetry is excluded from this credit.	2	2	same as REAP 2.0
	1.3	**Low-Emitting Insulation** Specify and install formaldehyde-free insulation on the interior of the building.	2	2	not listed in REAP 2.0
	1.4	**Low -Emitting Cabinetry** Specify and install interior cabinetry doors and boxes that are urea formaldehyde-free.	2	2	same as REAP 2.0
		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	-

CON		**MANDATORY**			
	M1	**Staging and Construction** Prepare and implement a staging and construction plan, including alternate detour information and signage for pedestrians and cyclists.	**M**	**Y**	same as REAP 2.0
	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**	**Y**	same as REAP 2.0
	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**	**Y**	same as REAP 2.0
	M4	**Wheel Wash** Provide a wheel wash for vehicles leaving the site ***or*** a street cleaning program and catch basin protection.	**M**	**Y**	same as REAP 2.0
	M5	**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).	**M**	**Y**	same as REAP 2.0

	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	Y	same as REAP 2.0
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	same as REAP 2.0
		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	-
ID		**MANDATORY**			
	M1	**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.	M	Y	optional in REAP 2.0
	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	Y	optional in REAP 2.0;
ID		**OPTIONAL**			
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	same as REAP 2.0
	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 .	2	2	same as REAP 2.0 but wasn't targeted previously
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	same as REAP 2.0

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**	same as REAP 2.0
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**	**0**	**DEU DESIGN** same as REAP 2.0 - to be confirmed by UBC if acceptable
	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**	**100% CERTIFIED WOOD** same as REAP 2.0 - to be confirmed by UBC if acceptable