UBC Residential Environmental Assessment Program

Project Information

Developer:	Wall Financial
Architect:	IBI / HB Architects
Project Name:	Lot 6, Plan BCP 26848, South Campus, UBC
Neighbourhood:	Wesbrook
Lot No.:	Lot 6
Street Address:	No Street Adress Assigned
Project Stage:	DP
UBC DP Reference No.:	
Date:	31-Jan-13

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	8	0
Water Efficiency (WE)	25	15	0
Energy & Atmosphere (EA)	50	22	0
Materials & Resources (MR)	27	18	0
Indoor Environmental Quality (IEQ)	7	7	0
Construction (CON)	4	4	0
Innovation & Design Process (ID)	21	10	0
Subtotal	144	84	0

TOTAL	200	140	140

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 provide new landscaping that enhances the microclimate.			
				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 of local, regional and global air pollutants and greenhouse gases.			
				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 of materials and effective ventilation strategies.			
			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 followed best practice.			
			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 environmental performance of the project.			
			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 new landscaping that enhances the microclimate.				
			Score:	8	
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	0	
	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 emissions of local, regional and global air pollutants and greenhouse gases.				
			Score:	22	
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	0	
	1.2	Exterior Wall Insulation Design exterior building envelope with a minimum insulation value of R-28 for non-glazed areas.	1	0	
	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	
	1.1	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	0	
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	0	
EA	4	ENERGY METERING			
	4.1	Gas Sub-Metering Provide separate metering for measuring natural gas consumption in individual units.	2	0	
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	0	
	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 that are environmentally preferable.				
			Score:	18	
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	2	
	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	6	
		☐ Common area carpet with minimum 25% recycled content	Y/N	y	
		☐ Dimensional wall lumber with minimum 75% recycled content	Y/N		
		☐ Drywall with minimum 15% recycled content	Y/N	y	
		☐ Batt insulation with minimum 40% recycled content	Y/N	y	
		☐ Doors contain minimum 15% recycled material	Y/N	y	
		☐ Concrete with min. 20% fly ash content, excluding suspended slabs	Y/N		
		☐ Concrete with min. 40% fly ash content, excluding suspended slabs	Y/N		
		☐ Cabinetry with minimum 20% recycled content	Y/N	y	
		☐ MDF products with minimum 50% recycled content	Y/N	y	
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	2	
	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	3	
	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 ventilation strategies.				
			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 followed best practices.				
			Score:	4	
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	2	
	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 environmental performance of the project.				
			Score:	10	
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	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	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	
	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	0	
	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	0	