Township of
ESQUIMALT

GREEN BUILDING CHECKLIST

The purpose of this Checklist is to make property owners and developers aware of specific green features that can be included in new developments to reduce their carbon footprints to help create a more sustainable community.

Creating walkable neighbourhoods, fostering green building technologies, making better use of our limited land base and ensuring that new development is located close to services, shops and transit are some of the means of achieving sustainability.

The Checklist which follows focuses on the use of **Green Technologies** in new buildings and major renovations. The Checklist is not a report card, it is a tool to help identify how your project can become 'greener' and to demonstrate to Council how your project will help the Township of Esquimalt meet its sustainability goals. It is not expected that each development will include all of the ideas set out in this list but Council is looking for a strong commitment to green development.

There are numerous green design standards, for example, Built Green BC; LEED ND; Living Building Challenge; Green Shores; Sustainable Sites Initiative. Esquimalt is not directing you to follow any particular standard, however, you are strongly encouraged to incorporate as many green features as possible into the design of your project .

As you review this checklist, if you have any questions please contact **Development Services at 250.414.7108** for clarification.

New development is essential to Esquimalt. We look forward to working with you to ensure that development is as green and sustainable as possible.

Other documents containing references to building and site design and sustainability, which you are advised to review, include:

- Esquimalt's Official Community Plan
- Development Protocol Policy
- Esquimalt's Pedestrian Charter
- Tree Protection Bylaw No. 2664
- A Sustainable Development Strategic Plan for the Township of Esquimalt

Adopted on January 10th, 2011

"One-third of Canada's energy use goes to running our homes, offices and other buildings. The federal government's Office of Energy Efficiency (Natural Resources Canada) reports that a corresponding one-third of our current greenhouse gas (GHG) emissions come from the built environment."
[Green Building and Development as a Public Good, Michael Buzzelli, CPRN Research Report June 2009]

Please answer the following questions and describe the green and innovative features of your proposed development. Depending on the size and scope of your project, some of the following points may not be applicable.

Green Building Standards

Both energy use and emissions can be reduced by changing or modifying the way we build and equip our buildings.

1	Are you building to a recognized green building standard? If yes, to what program and level? Expect to build to at least step code 2 or equivalent. See next q.	**Yes**	No
2	If not, have you consulted a Green Building or LEED consultant to discuss the inclusion of green features? I've had preliminary discussions with my architect and energy consultant about the systems needed to acheive higher step codes. We're considering a combination of heating, ventilation and insulation systems to meet higher steps.	**Yes**	No
3	Will you be using high-performance building envelope materials, rainscreen siding, durable interior finish materials or safe to re-use materials in this project? If so, please describe them. Yes, rainscreen and durable cement siding	**Yes**	No
4	What percentage of the existing building[s], if any, will be incorporated into the new building? We'll look to reuse fill, rock and landscaping materials as much as possible. We'll also look to find places for the appliances, furnace and some of the fixtures pre demolition.	0-10 %	
5	Are you using any locally manufactured wood or stone products to reduce energy used in the transportation of construction materials? Please list any that are being used in this project. Yes. Fill will come from on site, as well as local quarries, wood will be sourced through Slegg		
6	Have you considered advanced framing techniques to help reduce construction costs and increase energy savings? I'll work with my framer to take advantage of advanced framing techniques wherever it makes sense and to improve insulation.	**Yes**	No
7	Will any wood used in this project be eco-certified or produced from sustainably managed forests? If so, by which organization? Wherever possible. We will be most likely be sourcing wood locally through Slegg For which parts of the building (e.g. framing, roof, sheathing etc.)? _____		
8	Can alternatives to Chlorofluorocarbon's and Hydro-chlorofluorocarbons which are often used in air conditioning, packaging, insulation, or solvents] be used in this project? If so, please describe these. We are considering our heating sources and whether to use a heat pump to meet step code requirements. If we do use a heat pump with AC, we will look at alternatives.	Yes	No
9	List any products you are proposing that are produced using lower energy levels in manufacturing. Engineered wood flooring, ceramic tiles for backsplashes and bathrooms.		
10	Are you using materials which have a recycled content [e.g. roofing materials, interior doors, ceramic tiles or carpets]? Will look at using recycled materials wherever it makes sense.	Yes	No
11	Will any interior products [e.g. cabinets, insulation or floor sheathing] contain formaldehyde?	Yes	**No**

Water Management

The intent of the following features is to promote water conservation, re-use water on site, and reduce storm water run-off.

Indoor Water Fixtures

12	Does your project exceed the BC Building Code requirements for public lavatory faucets and have automatic shut offs?	Yes	**No**
13	For commercial buildings, do flushes for urinals exceed BC Building Code requirements?	Yes	No
14	Does your project use dual flush toilets and do these exceed the BC Building Code requirements? We have not yet chosen toilets, but they will be low-flow.	Yes	**No**
15	Does your project exceed the BC Building Code requirements for maximum flow rates for private showers? We will likley use low flow showers but will determine in pre-construction phase	**Yes**	No
16	Does your project exceed the BC Building Code requirements for flow rates for kitchen and bathroom faucets? We will use low flow faucets and try to exceed the code.	**Yes**	No

Storm Water

17	If your property has water frontage, are you planning to protect trees and vegetation within 60 metres of the high water mark? [Note: For properties located on the Gorge Waterway, please consult Sections 7.1.2.1 and 9.6 of the Esquimalt Official Community Plan.]	Yes	No	**N/A**
18	Will this project eliminate or reduce inflow and infiltration between storm water and sewer pipes from this property? See proposed rain garden/swale in landscaping plan	**Yes**	No	N/A
19	Will storm water run-off be collected and managed on site (rain gardens, wetlands, or ponds) or used for irrigation or re-circulating outdoor water features? If so, please describe. Storm water will be collected in rain garden, which will reduce impact on storm system.	**Yes**	No	N/A
20	Have you considered storing rain water on site (rain barrels or cisterns) for future irrigation uses? We are considering it for the southeast corner of the building, but it would be a challenge due to layout.	**Yes**	No	N/A
21	Will surface pollution into storm drains will be mitigated (oil interceptors, bio-swales)? If so, please describe. Yes, through the rain garden	**Yes**	No	N/A
22	Will this project have an engineered green roof system or has the structure been designed for a future green roof installation?	Yes	**No**	N/A
23	What percentage of the site will be maintained as naturally permeable surfaces?	15-20 %		

Waste water

24	For larger projects, has Integrated Resource Management (IRM) been considered (e.g. heat recovery from waste water or onsite waste water treatment)? If so, please describe these.	Yes	No	**N/A**

Natural Features/Landscaping

The way we manage the landscape can reduce water use, protect our urban forest, restore natural vegetation and help to protect the watershed and receiving bodies of water.

25	Are any healthy trees being removed? If so, how many and what species? Could your site design be altered to save these trees? Have you consulted with our Parks Department regarding their removal?	Yes	**No**	N/A

26	Will this project add new trees to the site and increase our urban forest? If so, how many and what species? Yes. We will propose a number of new trees for the site. Currently working with my landscaping designer on detailed plan	**Yes**	No	N/A
27	Are trees [existing or new] being used to provide shade in summer or to buffer winds? They will, both from the neighbouring new development, as well as trees planted on this lot.	Yes	No	N/A
28	Will any existing native vegetation on this site be protected? If so, please describe where and how.	Yes	No	**N/A**
29	Will new landscaped areas incorporate any plant species native to southern Vancouver Island? We will look to incroprate native plants, mixed in with non-native to provide visual interest	**Yes**	No	N/A
30	Will xeriscaping (i.e. the use of drought tolerant plants) be utilized in dry areas?	Yes	No	**N/A**
31	Will high efficiency irrigation systems be installed (e.g. drip irrigation; 'smart' controls)?	**Yes**	No	N/A
32	Have you planned to control invasive species such as Scotch broom, English ivy, Himalayan and evergreen blackberry growing on the property?	**Yes**	No	N/A
33	Will topsoil will be protected and reused on the site?	**Yes**	No	N/A

Energy Efficiency

Improvements in building technology will reduce energy consumption and in turn lower greenhouse gas [GHG] emissions. These improvements will also reduce future operating costs for building occupants.

34	Will the building design be certified by an independent energy auditor/analyst? If so, what will the rating be? Step 2 of the step code at minimum. We consult to reach step 3.	**Yes**	No	N/A
35	Have you considered passive solar design principles for space heating and cooling or planned for natural day lighting? Yes, and we will consider this with our energy advisor. We are restricted by the site size and layout, however.	**Yes**	No	N/A
36	Does the design and siting of buildings maximize exposure to natural light? What percentage of interior spaces will be illuminated by sunlight? 50-70 % Units are smaller and will have plenty of windows in living areas to maximize natural light.	**Yes**	No	N/A
37	Will heating and cooling systems be of enhanced energy efficiency (ie. geothermal, air source heat pump, solar hot water, solar air exchange, etc.). If so, please describe. We will likley use a heat pump. This will be determined during step code analysis. But at minimum, we will reach step code 2. If you are considering a heat pump, what measures will you take to mitigate any noise associated with the pump? Pump will likely be placed in insulated bike lock-up or hung from insulated rafters	**Yes**	No	N/A
38	Has the building been designed to be solar ready?	**Yes**	No	N/A
39	Have you considered using roof mounted photovoltaic panels to convert solar energy to electricity? Not cost effective at this time. But will be convertible as price of solar panels come down.	**Yes**	No	N/A
40	Do windows exceed the BC Building Code heat transfer coefficient standards? Will determine exact windows as part of our step code analysis. Likely to be higher end double pane windows.	**Yes**	No	N/A
41	Are energy efficient appliances being installed in this project? If so, please describe. We will likely install some or all energy star appliances within budget.			
42	Will high efficiency light fixtures be used in this project? If so, please describe.	**Yes**	No	N/A
43	Will building occupants have control over thermal, ventilation and light levels?	**Yes**	No	N/A
44	Will outdoor areas have automatic lighting [i.e. motion sensors or time set]?	**Yes**	No	N/A
45	Will underground parking areas have automatic lighting?	Yes	No	**N/A**

Air Quality

The following items are intended to ensure optimal air quality for building occupants by reducing the use of products which give off gases and odours and allowing occupants control over ventilation.

46	Will ventilation systems be protected from contamination during construction and certified clean post construction?	[Yes]	No	N/A
47	Are you using any natural, non-toxic, water soluble or low-VOC [volatile organic compound] paints, finishes or other products? If so, please describe. Paints and adhesives.	[Yes]	No	N/A
48	Will the building have windows that occupants can open?	[Yes]	No	N/A
49	Will hard floor surface materials cover more than 75% of the liveable floor area? This is possible, but we will likely go with carpet on bedroom floors to reduce noise and sound transfer.	Yes	[No]	N/A
50	Will fresh air intakes be located away from air pollution sources?	[Yes]	No	N/A

Solid Waste

Reuse and recycling of material reduces the impact on our landfills, lowers transportation costs, extends the life-cycle of products, and reduces the amount of natural resources used to manufacture new products.

51	Will materials be recycled during demolition of existing buildings and structures? If so, please describe. We will use as much of the rock, fill and leave retaining walls where possible. We will also look to hold a demo sale or contract a salvager to remove reusable materials.	[Yes]	No	N/A
52	Will materials be recycled during the construction phase? If so, please describe. Framing wood will be reused for building, as well as rock and fill from site.	[Yes]	No	N/A
53	Does your project provide enhanced waste diversion facilities i.e. on-site recycling for cardboard, bottles, cans and or recyclables or on-site composting?	Yes	No	[N/A]
54	For new commercial development, are you providing waste and recycling receptacles for customers?	Yes	No	[N/A]

Green Mobility

The intent is to encourage the use of sustainable transportation modes and walking to reduce our reliance on personal vehicles that burn fossil fuels which contributes to poor air quality.

55	Is pedestrian lighting provided in the pathways through parking and landscaped areas and at the entrances to your building[s]?	[Yes]	No	N/A
56	For commercial developments, are pedestrians provided with a safe path[s] through the parking areas and across vehicles accesses?	Yes	No	[N/A]
57	Is access provided for those with assisted mobility devices? We'll have a ramp coming down from the front of the building to the first floor for both mobility devices and bicycles.	[Yes]	No	N/A
58	Are accessible bike racks provided for visitors?	[Yes]	No	N/A
59	Are secure covered bicycle parking and dedicated lockers provided for residents or employees? YES! We'll have excellent secured covered parking for bicycles.	[Yes]	No	N/A

60 Does your development provide residents or employees with any of the following features to reduce personal automobile use [check all that apply]:

- ☒ transit passes — We'll provide one-year transit passes for two units without park spots.
- ☒ car share memberships — Car share will be located next door (pending approval of our proposal for 825 Lampson/939 Colville.
- ☒ shared bicycles for short term use — I have reached out to U-bike about potentially locating a neighbourhood bike-share bike on site.
- ☐ weather protected bus shelters
- ☒ plug-ins for electric vehicles

Is there something unique or innovative about your project that has not been addressed by this Checklist? If so, please add extra pages to describe it.