Development Services
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Development Permit Area 13: Energy & Water Conservation; Greenhouse Gas Emissions Reduction Guideline Assessment

Application Information	
Owner(s)/Applicant(s):	
Subject Property Address:	

Directions:

1. The following DPA guidelines come from **Schedule C of the Official Community Plan** and are identified in teal below. Please read carefully.
2. The questions that follow are meant to prompt an answer to the guideline. Respond to all that apply to your development, and where they don't, tell us why not. Please be specific and detailed.
3. Once submitted, staff will use this form to confirm compliance with the goals of the DPA guidelines.

EW1 - Support sustainable energy and water management through site and landscape design.

1. How does your development support sustainable energy and water management? Please explain in the space provided below.

Staff Comments Only

EW2 - Opportunities for passive heating and cooling and natural lighting should be considered early in the planning and design process to create buildings that have energy savings and emit less greenhouse gas (GHG) emissions.

1. Has passive heating and cooling been incorporated in the design of your building(s)?
   ◯ Yes ◯ No

Staff Comments Only

EW3 - Buildings should be designed to maximize natural light and ventilation for all residential units while considering microclimates which may impact the building.

1. In what ways has the building(s) been designed to maximize natural light and ventilation? Please explain in the space provided below.

Staff Comments Only

EW4 - Develop landscape designs that support passive temperature regulation, for instance
a. by planting deciduous trees on the southern and western facing sides of a building to maximize the warming effect of solar radiation in winter months and the cooling effect of shade in the summer;
b. accommodating windbreaks (perpendicular to the direction of winter prevailing winds) to reduce heat loss in winter, for instance by locating evergreen trees so they block winter winds without blocking solar access; and
c. reducing wind impacts through the consideration of landscape retention for buffering and windbreaks.

1. In what ways does your landscape design support passive temperature regulation? Please explain in the space provided below.

Staff Comments Only

EW5 - On south-facing slopes, site buildings with the long axis running east to west, to provide maximum solar access and opportunities for planting vegetation to manage solar gain.

1. For all south facing slopes, have the building(s) been sited with the long axis running east to west? ◯ Yes ◯ No

Staff Comments Only

EW6 - Orient buildings to maximize passive ventilation and cooling from prevailing breezes.

1. Have the building(s) been oriented to maximize passive ventilation? ◯ Yes ◯ No

Staff Comments Only

EW7 - Integrate with the natural terrain and minimize cuts and fills, retaining walls, artificial embankment of grade or extensive regrading, to the greatest extent possible.

1. How does your design integrate with the natural terrain of the site? Please explain in the space provided below.

Staff Comments Only

EW8 - Consider local opportunities for alternative energy such as ground-source geothermal, solar heating and photovoltaic and wind power generation.

1. Does your development include opportunities for alternative energy? ◯ Yes ◯ No

Staff Comments Only

EW9 - Where opportunities exist, combine vehicle access driveways (e.g. shared access among multiple parcels) to minimize the extent of impervious surfaces and removal of natural vegetation.

1. Where possible, have vehicle access driveways been combined? ◯ Yes ◯ No
2. Please provide the proposed percentage of impervious surface coverage: _____

Staff Comments Only

EW10 - Enable opportunities for alternative transportation links such as pathways and trails.

1. In what ways has alternative transportation been considered in your design? Please explain in the space provided below.

Staff Comments Only

EW11 - Provide south-facing windows to maximize winter solar gain and natural light.

1. Does your building(s) maximize south-facing windows? ◯ Yes ◯ No

Staff Comments Only

EW12 - Maximize natural ventilation by locating window openings on opposing or adjacent walls.

1. Please indicate window openings on your site plan.

Staff Comments Only

EW13 - Use window overhangs and/or fixed operable shading devices to control solar gain by blocking high-angle summer sun and allowing entry of low-angle winter sun.

1. In what ways does your building control solar gain? Please explain in the space provided below.

Staff Comments Only

EW14 - Where feasible, minimize the use of low albedo (heat-absorbing) surfacing materials to reduce heat island effect (i.e., use lighter-coloured, more reflective materials).

1. Where possible, have heat absorbing materials been used? ◯ Yes ◯ No
2. Please provide details on your materials list.

Staff Comments Only

EW15 - Reduce the heat island effect of a building's roof and heat transfer into the building by using green roofs (which also buffer rainwater flows), Energy Star-rated or high albedo roofing material or other appropriate roofing treatments and materials.

1. In what ways does your roofing material contribute to the reduction of the heat island effect? Please explain in the space provided below.

Staff Comments Only

EW16 - Minimize greenhouse gas emissions by selecting low-carbon, durable building materials. Building detail, material and colour should support energy-efficient buildings with low GHGs.

1. In what ways does your building(s) minimize greenhouse gas emissions? Please explain in the space provided below.

Staff Comments Only

EW17 - If practical, use onsite renewable energy generation to supply electricity, heating and cooling to buildings and other structures, water pumps, sewage pumps and/or electric vehicle charging stations. Possible sources include geothermal energy, wind turbines, tidal energy, air-source (heat pumps), biomass, bio-gas, wastewater effluent and solar energy (collectors and/or photovoltaic [PV] panels).

1. Where possible, has onsite renewable energy generation been included in your development?
   ◯ Yes ◯ No

Staff Comments Only

EW18 - Install energy-efficient (i.e. solar powered, timer or sensor controlled) exterior lighting systems.

1. Is your exterior lighting energy-efficient? ◯ Yes ◯ No

Staff Comments Only

EW19 - Install on-site electrical vehicle-charging stations, preferably using on-site energy generation.

1. Does your development include on-site electrical vehicle-charging stations? ◯ Yes ◯ No

Staff Comments Only

EW20 - Minimize the use of impervious surfaces and/or incorporate rainwater management strategies where surface runoff is captured. Where feasible, use pervious surfaces for landscaping, driveways and parking areas.

1. Where possible, have pervious surfaces been incorporated in your design? ◯ Yes ◯ No

Staff Comments Only

EW21 - Install rainwater management measures:

a. to prevent impacts of runoff from development into riparian areas, roadways and adjacent areas using onsite low-impact development techniques. Examples include landscaping measures, rain gardens, rainwater collection systems, naturalized ponds, “grass-crete” and bioswales;
b. to retain natural drainage features;
c. to maintain the site’s discharge hydrography from a five-year peak flow event;
d. to maintain or improve water quality from the development site;
e. to mimic natural rates in the storage and release of larger rainfall events (30 to 60 mm);
f. to include alternative overflow escape routes; and
g. to restore hydrological cycle and drainage features previously impacted by development

1. Please confirm compliance with guidelines A to G on your rainwater management plan.

Staff Comments Only

EW22 - Design rainwater management infrastructure, such as infiltration systems and constructed wetlands, with species that require minimal irrigation and/or enhance natural habitat.

1. Does your rainwater management plan include plant species that require minimal irrigation?
   ◯ Yes ◯ No
2. If not, why? Please explain in the space provided below.

Staff Comments Only

EW23 - Angle driveways across a slope's gradient to reduce runoff.

1. Have driveways been located in a way that reduces runoff? ◯ Yes ◯ No

Staff Comments Only

EW24 - Design slopes of cut and fill banks to withstand erosion and allow for revegetation, with slopes not exceeding 1:2. At property edges, slopes should not exceed 1:3.

1. Have slopes been designed to withstand erosion and allow for revegetation? ◯ Yes ◯ No

Staff Comments Only

EW25 - Implement measures to manage erosion and sedimentation during site preparation and construction; minimize soil disturbance and replant disturbed areas with native plants upon completion of activities.

1. Please indicate measures on your sediment and erosion control plan.

Staff Comments Only

EW26 - Retain existing native vegetation and mature trees and implement measures such as protective fencing to protect those features during site preparation and construction.

1. Are existing native vegetation and mature trees being retained? ◯ Yes ◯ No
2. If not, why? Please explain is the space provided below.
3. If yes, what sort of measures are being implemented to protect these features?

Staff Comments Only

EW27 - When trees must be removed, leave stumps in place to stabilize soil until alternative vegetation is established.

1. Are you removing any trees on the property? ◯ Yes ◯ No
2. If yes, are stumps being left in place? ◯ Yes ◯ No

Staff Comments Only

EW28 - Remove and/or manage invasive plants during site preparation and construction.

1. Please identify on your landscape plan measures for invasive species management.

Staff Comments Only

EW29 - Preserve native vegetation using measures such as

a. planting only non-invasive plant species suited to the local climate and that require minimal irrigation;
b. using techniques such as xeriscaping; and
c. eradicating invasive plant species.

1. In what ways are you preserving native vegetation on the property? Please explain in the space provided below.

Staff Comments Only

EW30 - Provide all landscaping with a method of irrigation suitable to the continued maintenance of planted materials. Use or manage stormwater and building water discharge on site for irrigation, using measures such as

a. maximizing pervious surfaces;
b. incorporating bioswales, rain gardens and naturalized ponds; and
c. maximizing the use of topsoil or composted waste for finish grading increase infiltration and water holding capacity.

1. What methods of sustainable irrigation are you using on the property? Please describe in the space provided below.

Staff Comments Only

EW31 - Install an automated irrigation system that conserves water by using the minimum amount needed for the species planted.

1. Do the methods described above use the minimum amount of water needed for the species you are proposing to plant? ◯ Yes ◯ No

Staff Comments Only