

Official Community Plan

DPA No. 7 Energy Conservation & Greenhouse Gas Reduction

Area

Land within the municipal boundaries of the Corporation of the Township of Esquimalt

Designation

Development Permit Area No. 7 is designated for:

- Section 488 (1)(h)- Energy Conservation; and
- Section 488 (1)(j)- GHG emissions reduction. *Note: For DPA justification and exemptions please refer to the Official Community Plan, pages 95-96.*

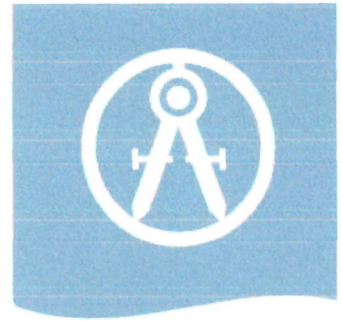
If you are proposing a development within this DPA, please provide your application details in Section A. In Section B, please comment on how you propose to meet the DPA guidelines.

Section A

Application No.	Project Address	Applicant Name
DP	900 Carlton Terrace & 900 Head Street	Richard Gill, Development Manager GMC Projects Inc.

Section B

No.	Guideline-	Comments
24.5.1	Siting of buildings and structures	
1	Orient buildings to take advantage of site specific climate conditions, in terms of solar access and wind flow; design massing and solar orientation for optimum passive performance.	The site is located close to the top of a rise of land with sweeping, south facing views to the harbour, the sooke hills, and sunsets. The tower is oriented with a 10° skew to provide sunlight, air, and views to the maximum number of suites. All suites have access to generous open outdoor spaces and activity areas.
2	Build new developments compactly, considering the solar penetration and passive performance provided for neighbouring sites, and avoid shading adjacent to usable outdoor open spaces.	Density has been distributed compactly on site as a combination mid-rise (6 storeys residential) with 16 suites per floor and narrow tower (24 storeys residential) with typically 8 suites per floor. This design maximizes light penetration to adjacent properties.
3	In commercial, residential or commercial mixed-use designated areas with taller developments, vary building heights to strategically reduce the shading on to adjacent buildings.	The tower is located as far away from adjacent properties and is as narrow a footprint as possible to minimize the impact of shadowing on neighborhood properties. The larger footprint mid-rise component is limited to six storeys.



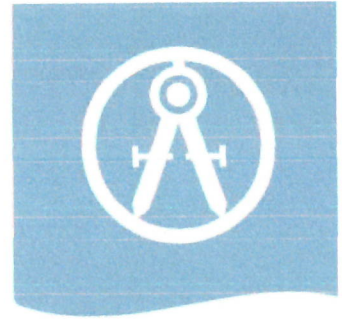
DPA No. 7 Energy Conservation & Greenhouse Gas Reduction

4	Provide space for pleasant pedestrian pathways between buildings.	There is only one building, however much thought and attention was given to creating an inviting pedestrian experience along the Esquimalt frontage, including boulevard trees, planting beds and public benches and a large water feature.
5	Strategically site buildings to sustain and increase the community's urban forest tree canopy cover.	There were 19 trees on this site and 1 will be retained. 19 new trees will be added to the site in this proposed design. Net positive tree count of 1 tree.
6	Provide space for significant landscaping including varying heights of trees, shrubs and ground covers.	There is a large variety of trees, shrubs and plantings in the various garden spaces on the ground plan including a large Dog Park area and also the rooftop amenity space and in general on the rooftop area in the form of green roofs.
7	Provide intuitive pedestrian access to storefronts and businesses with site connectivity to nearby amenities and services to help promote walking and the use of other active transportation modes.	Pedestrian access to the storefronts and business along the building frontage was of utmost consideration in the placement of street trees, benches and planting beds. The site also accommodates a buss stop central to the site as well as laybys on both Carlton and Head St. There is a large bicycle shelter and bike racks to promote this mode of transportation.
8	Provide usable outdoor amenities such as seating, food gardens, mini-libraries, and play spaces in semi-public areas to enhance the experience of walking and recreating in the neighbourhood.	Amenities included in this design are: public benches, a large water feature in the main plaza, large boulders used for informal seating, one or two anchor commercial spaces with outdoor seating, a large dog park open to the public and a mini library outside of the dog park.
9	In residential neighbourhoods, provide space for larger trees and a second row of street trees as this will enhance the pedestrian experience by lowering wind velocity at street level, reducing excessive heating at ground level and absorbing vehicle and other urban noises.	NA



DPA No. 7 Energy Conservation & Greenhouse Gas Reduction

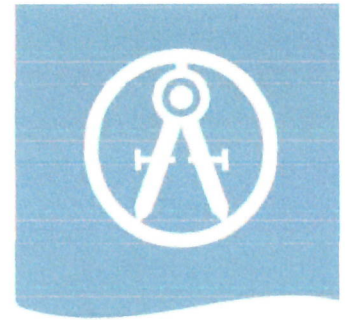
24.5.2 Form and exterior design of buildings and structures		
1	Orient larger roof surfaces to the south for potential use of solar panels or photo-voltaic roofing.	The tower roof is designed to be solar panel ready.
2	Use roof designs that reduce heat transfer into neighbouring buildings, helping reduce the local heat island effect and the need for cooling of buildings in warmer months.	The building design includes green roofs and a well planted rooftop amenity space which will reduce local heat island affect and assist with building cooling.
3	Place more windows on the south side of buildings to increase solar gain, and fewer/ smaller windows on the north side to minimize heat loss.	Greater glazed area is located on the south side of the building to increase solar gain in the cooler months and less glazed area is located on the north side of the building to minimize heat loss.
4	Use roof over-hangs, fixed-fins or other solar shading devices on south and west facing windows to reduce peak summer heat gain while enabling sunlight penetration in winter months.	High performance glazing, deep balconies, and blinds are proposed on all south and west facing windows to reduce peak summer heat gain while enabling sunlight penetration in winter months. Canopies are provided on upper level suites for shading and weather protection.
5	Install adjustable overhangs above windows that can help control the amount of sun exposure in warmer months thereby reducing need for cooling.	Adjustable overhangs above windows are not proposed to reduce long term maintenance costs.
6	Provide building occupants with control of ventilation; i.e. windows that open.	All suites are provided with generous operable windows on at least two sides for cross ventilation where possible.
7	Skylights are discouraged as they decrease insulating values and can interfere with solar panel installation.	No skylights are proposed.
8	Add rooftop patios and gardens, particularly food producing gardens, as they can contribute to local resilience, livability, and reduction in greenhouse gas production by reducing food transportation costs.	This project includes a large roof amenity space which also includes a large productive garden area for the use of the residents as well as patio spaces and a games area surrounded by gardens.
9	Install greenhouses for growing food on rooftops where neighbourhood privacy and light intrusion concerns are mitigated.	NA
10	Avoid heavily tinted windows or reflective glass which will diminish the natural daylighting of interior spaces, thereby requiring increased energy requirements for interior lighting.	Neither heavily tinted windows nor reflective glass is proposed for this development.



DPA No. 7 Energy Conservation & Greenhouse Gas Reduction

11	In exposed marine locations select durable materials that will withstand weather and sea spray, to ensure low maintenance costs and infrequent replacement needs.	Durability of the underfoot materials and all built components of the landscape of this project had been considered and will to be continue to be refined as the project progresses.
----	---	--

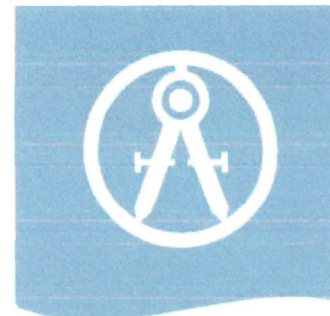
24.5.3	Landscaping	
1	Develop a front yard landscape design that is natural and delightful so residents do not need to leave the neighbourhood to experience nature.	We feel that the at grade landscape as designed is indeed delightful and will greatly enhance the local streetscape and amenities.
2	Choose open space and landscaping over dedicating space to the parking and maneuvering of private motor vehicles.	The parking on this project is underground for the most part except for lay-bys, allowing for green space, seating areas and a dog park amenity space to be created at the ground plane.
3	Conserve native trees, shrubs and soils, thereby saving the cost of importing materials and preserving already sequestered carbon dioxide.	We have saved as many trees as was possible given the project constraints.
4	Use deciduous trees for landscaping along southern exposures, as they provide shade in the summer and allow more sunlight through in the winter.	All of the trees we have selected are deciduous as they are the most drought tolerant, provide seasonal interest and also allow for more winter light.
5	Strategically place taller trees and vegetation on the south and west sides of buildings where there is more direct sun exposure.	On the South East aspect is the large existing Garry Oak tree where we have have also created our largest planting bed which is densely planted. On the South West the dog park also is densely planted with trees and shrubs.
6	Strategically place coniferous trees such that they can buffer winter winds.	We did not find suitable locations for evergreen trees on this site due to site and BC hydro constraints.
7	As context and space allow, plant trees that will attain a greater mature size, for greater carbon storage; removal of healthy trees is discouraged as the loss of the ecosystem services provided by larger trees will take many years to recover.	We have selected tree species that will get as large as the space where they are located and that BC hydro will allow for and what will be able to thrive with the sufficient soil volume. We have retained trees where possible.
8	Plant trees with a larger canopy cover along roadways and sidewalks, thereby providing shading of paved areas, lowering the heating of paved surfaces and reducing the wind velocities in these pedestrian areas.	We were limited by the existing BC hydro lines as to the size of the trees we could plant, however in the garden beds where this restraint does not exist we selected trees that where as large as possible given the available soil volume.



DPA No. 7 Energy Conservation & Greenhouse Gas Reduction

9	Plant shorter and sturdier vegetation closer to buildings and other structures, and taller vegetation further away to avoid potential damage from strong winds blowing vegetation against buildings.	Shorter and sturdier vegetation has been located closer to buildings and taller vegetation has been located further away.
10	For commercial areas, strategically increase green space between buildings, allowing room for landscaped pathways to improve the pedestrian experience, promote walking, and provide for improved light penetration on to sidewalks.	NA
11	For parking areas and along boulevard/ sidewalk edges; plant trees to provide shade, store carbon and reduce the heat island effect.	Several trees are proposed along the street frontage of Esquimalt Road.

24.5.4 Machinery, equipment and systems external to buildings and other structures		
1	<p>For external lighting:</p> <ul style="list-style-type: none"> • Choose efficient low-energy and long life technologies; • Design lighting to reinforce and compliment existing street lighting; • Use motion-sensitive or solar-powered lights whenever possible; • Layer lighting for varying outdoor needs; and • Provide lighting systems that are easily controlled by building occupants. 	All external lighting to be efficient, low-energy and durable, complementing existing street lighting. Motion sensitive and/or solar powered lights will be specified where appropriate. Lighting will be layered and designed for a variety of outdoor needs and easily controlled by building occupants.
2	Use heat pumps, solar panels, green (living) roofing or an innovative system to improve a building's energy performance.	Innovative residential heat pumps are proposed for efficient mechanical cooling for every suite. The building will be solar panel ready when cost-performance becomes practicable. Green roofs are proposed for the podium and mid-rise roofs.
3	Use durable, vandalism and graffiti resistant materials where neighbourhood surveillance may be limited.	Durable, vandal and graffiti resistant surfaces are proposed for all buiding materials at ground level.
4	Design for on-site heat recovery and re-use of water.	HRV is proposed for all suites. Storm water is retained, slowed, and utilized in the roof gardens and ground plane landscape



DPA No. 7 Energy Conservation & Greenhouse Gas Reduction

5	In commercial and industrial areas: design bicycle parking facilities to be inviting for cyclists. Locate bike racks near the main building entrance, with adequate lighting and weather protection.	A large bicycle pavilion with a bicycle repair facility is proposed at the corner of Esquimalt Road and Carlton Terrace to visibly celebrate the use of bicycles at this location. Extensive bicycle storage is also provided at all levels within the parkade. Bike racks are located at each building entrance and at the bus shelter with appropriate lighting and weather protection.
6	In commercial areas, provide fast charge electric vehicle charging stations near locations that have quick customer turnover, and ensure the station is easily accessible, well lit, and visible from the public street.	Two designated commercial stalls located under-building close to the Head Street parkade access will be equipped with fast charge electric vehicle charging stations.
7	Provide car sharing facilities that are well lit, available for residents, and easily accessed from the public street.	One car-share stall is proposed on the street along Carlton Terrace which will be well-lit, available for residents and readily visible and easily accessible.

24.5.5 Special Features		
1	Select building materials that have been shown to have a high level of durability for the use intended.	One car-share stall is proposed on the street along Carlton Terrace which will be well-lit, available for residents and easily visible and accessible.
2	Use wood for construction as a means to sequester carbon dioxide - North American grown and sustainably harvested wood is preferable for building construction.	Heavy timber construction is proposed for the bicycle pavilion. As a high building, non-combustible construction is required for the commercial, tower and mid-rise components.
3	Select local and regionally manufactured building products whenever possible to reduce transportation energy costs.	Local and regionally manufactured building products will be specified whenever possible.
4	Reuse of existing buildings and building materials is encouraged.	Re-use of material from the deconstruction of the existing buildings will be coordinated wherever possible. The use of re-cycled material will be explored at every step in design development.
5	Choose materials that have a high likelihood of reuse or recycling at end of life.	Wherever possible materials will be selected and installed in a way that increases the likelihood of reuse or recycling at end of building life.