

WOODLAND PARK REDEVELOPMENT

Sustainability Vision

Prepared for:

[Acton Ostry Architects Inc.](#)

111 E 8th Avenue
Vancouver, BC V5T 1R8

Developed by:

[Integral Group](#)

Suite 180 - 200 Granville Street
Vancouver, BC V6C 1S4

December 2019

Given the unique opportunity presented by the Woodland Park site, the ownership and design team recognizes “that developers, builders, designers, and others proposing changes to the built environment have an important role in creating a sustainable community”, City of Port Moody Sustainability Report Card. We share in the City of Port Moody’s vision for sustainability as it involves stewardship of land and environmental resources. As a development focused increasing the built environment in the area, the project team will focus on design elements that bring people together and help communities flourish economically, socially, and culturally.

Following dialogues with both the design and ownership team and the City of Port Moody, the project’s sustainability strategy has been crafted to meet key priorities under two central themes:

Community Integration: Ensuring that the project will acknowledge and improve the surrounding community, while creating a vibrant space for future residents.

Resilience: Designing the project in such a way that it will reduce our impact on the climate while maintaining occupant comfort and efficient operations in the face of increasing climate impacts.

The project team is dedicated to identifying and implementing well-measured and thoughtful initiatives that respond to the themes outlined above throughout the project’s preliminary design. Details on how these themes may be addressed are presented below.

Community Integration

A primary objective of the design team is to establish a means of identifying and enhancing established community amenities while creating a new community space for new and existing residents. This strategy will consider both the human and non-human (i.e. ecological) communities that call the area home. The following represents the key components to the project’s Community Integration strategy:

Enhancing Diversity in Housing Income and Type

The project will help to diversify the community by providing a variety of housing types dedicated to a broader range of incomes. This includes a commitment to non-market rental residential housing to help guide unit mix which can host a broad spectrum of occupant types. The project will also contain a variety of housing types including ground-oriented townhome and 2-bedroom units in each building to support seniors and families. Ground-level units also support tenants with accessibility concerns.

Protecting Ecologically Sensitive Areas

As a major component of the project’s form and massing, the project team has sought to identify and enhance the many areas surrounding the site with established ecologies. As a site with multiple areas identified on map 13 of the City of Port Moody’s Official Community Plan, the site contains three unique areas of high and low Environmentally Sensitive Areas (ESAs).

As identified on the site map, opportunities for the project include the protection of an established forest area, maintenance of an existing wetland, and the opportunity to enhance an emergent wetland. To further improve the ecological health of the area, vegetation will be selected to support local pollinators and bird species. The exact means of protecting these spaces will be explored in cooperation with the City of Port Moody.

Beyond the scope of the ESAs, the project’s landscaping will be designed to serve the project’s rainwater management objectives, community engagement initiatives, and implement best practice around bird friendly design.

Pedestrian Connectivity

The site's design is intended to maintain an openness and accessibility to the public. The goal is to maximize support for pedestrians and cyclists as a means of providing alternate transportation around the site. At present, the project intends on providing a 50,000sf park space as well as an additional 50,000sf of trail space to provide an interconnected 100,000sf of active open space for the community. Within that space, the landscape team has proposed several opportunities for pedestrians and cyclists to circulate through the site and engage with different programming. These strategies will include:

- Educational signage and art installations to support the City of Port Moody's desire to be a "City of the Arts"
- Park space programmed for a variety of age groups
- Walking paths that permeate all phases of the site and that connect buildings away from the roads and optimize the project's *beautification*

Light Pollution Management

The project's landscape lighting will be designed in such a way to offer the community a sense of engagement at night. It is the goal of the team to meet these safety and community enhancement requirements while also limiting the impacts of the lighting on the adjacent properties and the neighboring ecology.

In line with the City of Port Moody objectives, the project will consider the following actions specifically:

- Only light at night when needed
- Only light the area that needs it
- Illuminate no brighter than necessary
- Fully shield exterior lighting (pointing downward)

Transportation Demand Management

To help support the future integration of low emission vehicles and improve and expand opportunities for carless commuters, the project team has proposed the following strategies:

- Level 1 Electric vehicle charging infrastructure for 100% of new residential parking, 20% of the proposed non-residential parking will be provided with Level 2 charging infrastructure
- Enhanced cycling facilities, including increased storage areas for trailers, electric outlets for e-bike charging, and accessories and maintenance areas. 50% of bicycle storage will have a 120v outlet for electric bicycles.
- Spaces for carshare programs to provide opportunities for ownership-free vehicle use
- Drop-off areas for carpooling, delivery services, and ridesharing facilitation
- Enhancement of the trail system including benches, waste bins, and points of interest in line with the City of Port moody Subdivision and Development Servicing Bylaw No. 2831
- Consideration for transitional areas in the parkade when vehicle parking demand may warrant the adaptation of the space for alternate uses

Waste Management

The project will employ several ideas for improving the management of waste on site to reduce waste hauler trips and increase diversion from the landfill. These strategies include the following:

- Construction waste management with a minimum 80% diversion in construction waste from the landfill with the mission of exceeding this target
- Enhanced waste diversion areas with vibrant signage and separation areas to make the separation of waste and recyclables easier, safer and more enjoyable
- A community re-use center for high-quality used items

Resilience

The second objective of the design team is the resilience of the project as it pertains to the project's demand for resources and the project's functionality under future climate change scenarios. As a driver of the design, the project team is seeking a high level of performance in the building envelope, mechanical systems, and rainwater infrastructure that will maintain safe and comfortable spaces in the face of the increasing impacts of climate change. These strategies will help safeguard piece of mind in the event of energy and water scarcity, as buildings that lose less energy through their envelope and consume less water typically endure energy and water shortages more comfortably. The sections below present the key components to the project's resilience strategy.

Energy Performance

The ownership and design team recognizes the City of Port Moody's adopted timeline for Step-code implementation. In preparation of these requirements the project has adopted a minimum energy target of either Step 2 or Step 3 of the BC Energy Step Code. Where Step 2 is pursued, a Low Carbon Energy System will be implemented to maintain a continued reduction in building Greenhouse Gas emissions. BC Energy Step Code establishes a minimum target for the building's Total Energy Use Intensity (TEUI) and Thermal Demand Energy Intensity (TEDI). These two values represent both the project's total demand for energy (TEUI) and the amount of energy expected to be lost through the building envelope (TEDI).

To help in meeting the BC Energy Step-Code the project team will consider passive design best practice including the following:

- Site design and building massing minimizes east and west exposures to avoid unwanted solar gains
- Limit windows to 50% of any façade, taking into account other livability and aesthetic criteria.
- Use heat-recovery ventilation during heating season only, and design for natural ventilation and cooling by natural ventilation throughout the rest of the year

Low-Carbon Energy Systems

Taking inspiration from the City of Vancouver's rezoning policy, the project will consider the use of a Low-Carbon Energy System (LCES) especially in the taller concrete buildings. This will allow the use of low-carbon electricity as a primary means of meeting those building's heating, cooling and domestic hot water needs. The system will be evaluated in greater detail as part of a more comprehensive energy analysis, but is likely to include the following technologies and strategies:

- A decentralized system of small but Interconnected plants to support an alliance between multiple co-located uses in the theme of eco-industrial networking
- Heat pump technologies to allow for maximum flexibility and the opportunity to capture heat from a variety of sources where feasible (e.g. sewer heat recovery, ground and air sources)
- Third-party management to ensure that equipment performance is not left in the hands of the strata, but maintained professionally to help maintain performance and longevity

Reductions in energy demand as a result of building to Step 2 of the Step Code, combined with the use of low-carbon energy sources, will ensure the project is flexible and capable of maintaining typical operations in the event of power outages, heat waves, and other climate-related events.

Future Energy Production

To additionally prepare for a future of uncertainty, the project will ensure that future on-site energy production can be accommodated. This entails allocating space for electrical conduit leading from the roof to the parkade where battery systems may be located. Though battery storage and on-site solar are not proposed for the project at the outset, this consideration of future infrastructure will allow for the smooth integration of a rooftop solar PV and battery system at a later date.

Water Management

To help manage the strain on the City of Port Moody's stormwater infrastructure, the project intends to implement a comprehensive rainwater management plan. It will combine best practices around rainwater infiltration, detention and reuse to offer a means of managing water on-site and supporting the increase in severity and magnitude of stormwater events expected in the future. The project will also be designed to reduce dependence on municipal potable water by combining best practices in water conservation with strategies for non-potable reuse. This will include the following considerations:

- Enhanced rainwater management through landscape design and infiltration will allow water to flow organically across the site (wherever feasible). The objectives of the rainwater management plan are to meet and exceed all of the City of Port Moody site stormwater management targets including the following:
 - Stormwater retention on-site to the same level of annual volume allowable under pre-development conditions
 - Maximum allowable annual run-off volume is no more than 50% of the total average annual rainfall depth
 - Remove 80% of total suspended solids based on the post-development imperviousness

This will minimize the project's dependence on constructed rainwater management infrastructure at the project and city level. As currently proposed the intention is to manage water according to three tiers of effectiveness. These strategies have been mapped through the provided IRMP drawing and compliance memo.

Tier 1- These areas represent the areas where rainwater is encouraged to flow and infiltrate into the ground in line with the natural hydrological process. In this way it bears no load on the City infrastructure and reduced the projects overall dependence on engineered systems altogether.

Tier 2- These areas represent the areas where soils exist but are limited in depth and does not have the same connection to the natural hydrological cycle. In this scenario water is retained within the soils to be used by plants and reduced in volume through evapotranspiration. Soil infiltration also slows water volumes down before reaching engineered infrastructure.

Tier 3- These areas represent the collection points for larger rainwater detention and reuse systems proposed for the project. Tier 3 collection will be positioned in such a way that it will only be contributed to when the Tier1 and Tier 2 strategies cannot manage any additional rainwater.

- Where detention is necessary, the project team will investigate opportunities to provide a source of non-potable water for both irrigation and toilet flushing. The system could be phased but interconnected between each phase to provide maximum impact for the collection and utilization of non-potable water across the site.
- Potable water savings will be targeted where non-potable water is not a viable option. At a project scale, the team is targeting a 50% reduction in potable water demand for irrigation and a 40% reduction in indoor potable water consumption as compared to the LEED v4 baselines.

Food Assets

To provide community members with the opportunity to connect and organize around food independence, the project is also proposing a combination of community garden plots and edible landscaping elements (e.g. fruit bearing trees) to provide an opportunity to produce food locally. As a resilience initiative, this will empower residents to develop their own source of nourishment and reduce reliance on global networks of food production. The final strategy around food access will be defined according to best practice around bear management in line with bear friendly best practice.