1.10 Sustainability Statement

This development has been designed with great care paid to sustainability, including environmentally friendly design principles. The project has implemented a passive-first strategy. This approach focuses on envelope optimization to reduce the reliance on mechanical heating and cooling. The main loads in this facility will be ventilation air, skin (envelope) losses, and domestic hot water. The domestic hot water load is significantly reduced with the use of low flow fixtures and a high-efficiency heating system. The ventilation air load is significantly reduced by a heat recovery system. Finally, the envelope load is dramatically reduced due to enhanced insulation and triple-pane glazing. These measures will minimize heat loss, reducing the load to be offset through the electric baseboard heating system and significantly decreasing both operating costs and environmental impact.

The Society is dedicated to achieving green sustainability objectives within its means, and has retained a green sustainability consultant, a building energy science consultant and an energy management consultant to this end. With their feedback, in combination with the expertise of the Society's architect, mechanical engineer, electrical engineer, landscape architect, and building envelope professional, the design team has committed to incorporating the following elements in order to promote the economic, social, and environmental sustainability of the site:

KEY STRATEGIES:

1. Economic

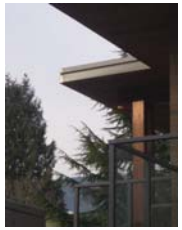
- Provide amenities to encourage socialization and congregation on site, translating into lower monthly living costs
- Maximize density without sacrificing livability with well-planned, compact, accessible units
- Employ highly durable building materials, requiring low maintenance
  -The main building material will be wood, which is durable, cost-effective, renewable and climate-change neutral. The use of wood also contributes to the local economy and supports the Province of BC's Wood First Initiative
  -Exterior finishes will be brick and Hardie board, with cedar soffits.
- Employ techniques, equipment, and materials which are energy-sustainable and/or which minimize the use of greenhouse gasses, including:
  -Enhanced building envelope insulation
  -Triple pane low-e windows
  -Electric baseboard heaters
  -Exhaust air heat recovery
  -Make-up air-to-air units with heat pumps
  -Low flow water fixtures, dual flush design toilets
  -Insulation of hot water tanks, pipes
  -Energy-efficient light fixtures
  -Reduced lighting loads in suites and building corridors
  -Parkade lighting occupancy sensors
- Reduce loads on mechanical and electrical systems
  -Use passive heating, cooling and daylighting strategies to optimize comfort and avoid overheating suites
  -Employ daylighting benefits through larger windows, full-wall-glazed amenity rooms, and effective building positioning, reducing the need for electric lighting and the attendant energy costs while creating a visually stimulating environment
  -Use sunshades to mitigate solar penetration on south-facing units
  -Make use of trellises to admit more daylight on north-facing facades
  -Employ substantial roof overhangs to provide weather protective for community amenity areas and upper-floor units
- Provide infrastructure for future retrofit of green energy technology.
  -Enerpro Systems Corp. has been engaged to analyze and monitor the mechanical systems of both existing and proposed Kiwanis buildings for the purposes of achieving long-term, coordinated conservation. Using technology that helps balance resource use across a source and consumption network, Enerpro implements intelligent solutions that integrate the supply, distribution, consumption and recovery of resources, with an eye to maximizing conservation potential. This conservation starts with the initial design, but continues post-construction with ongoing facility management and system verification. Through measurement, systems management, and hands-on human interaction, Enerpro sustains the design intent and provides post-construction benefits such as measurable consumption targets and better air quality.

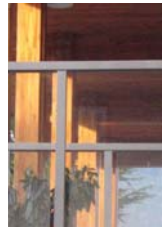
2. Community Connection

- Design with urban habitat in mind
- Design early with CPTED and accessibility principles for social sustainability
- Provide and locate communal gathering areas oriented to the views and southern exposure
- Design terraced community gardens for resident access
- Design pathway connections within the Kiwanis Garden Village site, to the other Kiwanis Garden Village developments and to the street for access to local transit
- Smart location with easy access to multiple transit routes.

3. Environmental (see the **1. Economic** section in this Sustainability section for the Society's other "to be applied" environmental measures)

- Construction Waste Management
  -A plan will be developed and implemented with the goal of diverting recyclable materials away from disposal sites
- Sensitive Site Development
  -A stormwater management plan will be put into place
  -Plantings to be increased to help manage rain runoff and to reduce local 'heat island effect' by providing shading for hard surfaces nearby
  -Selection of native and adaptive plantings to significantly reduce the reliance on irrigation





  -Minimize site disturbance through introducing non-invasive plant species
  -Install light coloured materials in targeted areas to reduce heat absorption.
- Indoor Air Quality
  -Low VOC (volatile organic compound) finishes including adhesives, sealants and paints
  -Low emitting carpets
  -Best practices will be implemented during construction to optimize air quality and provide a clean and healthy building for the residents at time of occupancy and onwards
- Geo exchange system
  -Plan for the possibility of connecting to municipal geo exchange system by using mechanical systems that can be retrofitted in the future.