



May 25, 2020

**City of Guelph – Zoning Bylaw and Official Plan Amendment for 1250 Gordon Street. Community Energy Initiative.**

Please find this letter outlining Tricar Properties commitment to the City’s Community Energy Initiative for the 1250 Gordon Street project.

**SITE SUSTAINABILITY OVERVIEW**

<b>Urban Development</b>	A dense and well utilized site serviced by vehicular and active transportation to the downtown core, Clair-Gordon Node and GO Transit options. Integrates an active pedestrian connection between new and existing development. Maximizes the usable land area, while preserving, enhancing, and adding new naturalized lands.
<b>Existing and Proposed Trees</b>	New trees on site and in the public right of way will contribute to the urban canopy, and new growth will add to the overall rejuvenation of the urban forest. Protection of the existing woodlot as well as addition to the woodlot through tree compensation. Additional land/tree planting to be provided to the existing naturalized area.
<b>Site Lighting</b>	Site lighting will be designed to direct to the ground and not to the sky.
<b>Alternative Transportation</b>	The site is adjacent to public transportation routes, pedestrian and cycling networks and has on-site bicycle storage. Future residents will have many active transportation choices, and the site is served by nearby retail and commercial uses within walking distance. The active pedestrian connection provides residents ease of access to the commercial/retail core.
<b>Reduce Energy Use</b>	The design and construction of the building will take into consideration the electrical and natural gas consumption for each major plant and electrical systems. Design will be balanced to provide more efficient equipment. Part of the design exercise will be to target larger electrical loads and the selection of the most efficient solutions. The building envelope construction is

	<p>the best way to target reduced energy consumption through applying a balanced design of materials. The design is intended to have a mix of large punched windows in the precast concrete clad exterior. Select locations of window wall have been added to reduce massing. Avoiding significant amounts of window wall/curtain wall increase the thermal resistance and transmission allowing the building HVAC system to be reduced in size compared to other more glass prominent buildings. The proposed HVAC system as noted below in more detail provides for 12% lower energy consumption than a typical heat pump system.</p>
<p><b>Landscape and Exterior Design</b></p>	<p>The landscaped areas will provide for an aesthetically enhanced streetscape, façade, and entrance design to the building. A public park is part of the application in addition to the preservation and enhancement of the natural heritage land area.</p>
<p><b>Heat Island</b></p>	<p>The building proposes light-colored building materials which have proven effective in reflecting more light. The roof will use lighter-coloured surfaces compared to a typical asphalt roof, which does not reflect a lot of solar radiation. Green roof considerations were not available as the roof is being utilized to store and manage storm water.</p>
<p><b>Building Sustainability and Service Life Cycle.</b></p>	<p>The building design, materials, and equipment have been selected and will be incorporated such that the building is sustainable in the long term. Reduction in window walls and increase of punched windows allows for significantly higher thermal building resistance and leakage protection. The use of precast exterior wall panels and coating provides improved life cycle for the façade and increased thermal resistance with minimal fading or delamination as found in other materials. Exterior wall insulation will be polyurethane insulation, with framing offset to decrease thermal bridging and increase overall wall assembly resistance. Selection of longer service life</p>

	<p>equipment, waterproofing membranes/caulking and other building material increase the service and replacement life, reducing longer term impacts of maintenance/ replacement. Building exterior wall panels, parking garage beams, floors, columns and selected walls are constructed with precast elements. Selection of precast elements significantly increase the protection of the concrete frame service life, thus reducing required repair/maintenance when compared to typical cast in place elements</p>
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**WATER EFFICIENCY**

<b>Water Efficient Landscaping</b>	<p>Drought resistant landscape material will be specified as much as possible.</p>
<b>Reduced Water Consumption - Domestic Use</b>	<p>Low-flow faucets, toilets, and showerheads will be incorporated throughout the units to reduce water consumption. The intent is for hot water domestic supply to come via non-condensing boiler systems. Heated storage tanks will be utilized to reduce fluctuations in the requirement for hot water under peak demand. Allowing for on-site storage reduces the amount of time required by residents to wait for hot water to come from centralized systems. Variable frequency speed pumps will be utilized to minimize electrical consumption as demand fluctuates.</p>
<b>Reduced water consumption during construction.</b>	<p>Precast concrete elements are manufactured in a climate-controlled environment, utilizing significantly less water than cast in place concrete. The manufacturing process also minimizes material waste compared to cast in place production.</p>
<b>Reduced Water Consumption - Heating &amp; Cooling</b>	<p>Through the integration of a chiller and boilers, the heating and cooling systems will be completely closed looped systems. The evaporation losses and energy efficiencies will be minimal, in fact will be even less than a conventional heating and cooling system.</p>

**ENERGY & ATMOSPHERE**

<p><b>Design Features – Mechanical Systems</b></p>	<p>Key elements of the building design will be:</p> <ul style="list-style-type: none"> <li>• 4 Pipe fan coil heating and cooling HVAC equipment individually controlled for each suite with centralized heating and cooling plant. Fan coils will be equipped with ERVs to further reduce system heating/cooling demands as well as to provide fresh air.</li> <li>• Centralized high efficiency non-condensing boilers will provide hot water heating and domestic hot water. Centralized chiller and cooling tower will provide cold water through a closed cooling loop.</li> <li>• Variable speed pumps will be utilized to circulate the heating and cooling water, reducing the electrical demand requirements.</li> </ul> <p>The Mechanical Engineers for this project have energy modeled the above noted system and compared the proposed system to a typical heat pump system for high-rise buildings. From the Mechanical Engineers analysis, they have confirmed there is a 12% decrease in energy consumption of the proposed system versus a heat pump system. See Callidus Engineering Letter dated May 15, 2020.</p>
<p><b>Design Features – Electrical</b></p>	<p>Energy efficient lighting will be utilized throughout the building. LED will be utilized in most common areas which require 100% illumination at all time (parking garage, corridors, and stairs), and motion detection devices will be utilized as well in common areas where 100% illumination is not required. Natural light is accommodated in all units and common areas to reduce the need for electrical consumption. Energy efficient appliances and LED lighting will be the standard inclusion for all units.</p>
<p><b>Electrical Metering and Controls</b></p>	<p>Utilities will be separately metered for individual units making residents aware of energy consumption. The building manager and property manager will be responsible for common areas and to monitor and reduce energy consumption.</p>

**MATERIALS & RESOURCES**

<b>Regional Materials</b>	The vast majority of materials are available locally (800km radius as defined in LEED standard), limiting environmental impact of source supply transportation.
<b>Low Emitting Materials</b>	Low VOC materials will be used where possible, including, membranes, soy based polyurethane insulation, paints, carpeting, etc.
<b>Collection of Recyclables</b>	Collection of recyclables will be in accordance with City by-laws. A collection room will be located in the base of the building with ample room for additional bins.
<b>Building Materials</b>	High recycled content material to be specified where possible.
<b>Construction Waste Management</b>	A construction waste diversion program will be in effect during the construction period. On-site concrete washing out will not be done on-site, back washing of the concrete truck will be done at the batching plant.
<b>Existing Buildings</b>	The combined properties contained 4 single family homes on the property, the homes were in very poor shape prior to purchasing the property, two of the homes had been abandoned and the two remaining homes rental agreement expired. The four houses unfortunately were not maintained and do not offer any reasonable materials that could be provided to other housing donation opportunities. At the time of the application 2 houses were demolished with the remaining two houses submitted for demolition permit due to safety concerns. The demolition and future demolition waste is being taken to a sorting facility to provide recycling of the materials removed. Concrete foundations were/ will be also sent for crushing and recycling.

**INDOOR ENVIRONMENT QUALITY**

<b>System Controllability</b>	Each unit will have access to individual controls for heating, cooling, lighting, and ventilation.
<b>Natural Ventilation</b>	Operable windows are provided for every unit and individual balcony.
<b>Low VOC emitting Materials</b>	Low VOC materials will be utilized where possible.
<b>Natural Light</b>	The building provides natural light to all regularly utilized spaces, other than the below grade parking garage.

**INNOVATION & DESIGN PROCESS**

<b>Sustainable Consultants / Green Building Initiatives</b>	This project has been enrolled in the EnerQuality Energy Star Multi-family program. EnerQuality expanded their field of energy efficiency in 2018 in Ontario to include highrise projects while working with the Canadian Government. Similar to other recognized Sustainability Programs, EnerQuality provides a detailed review of project design, project construction, project commissioning and project and future utility review to ensure Energy reduction levels are achieved to meet the program requirements. Additional details are provided on the April 30, 2020 letter provided from Enerquality.
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The above measures demonstrates Tricar’s commitment to developing, designing, building and maintaining energy efficient homes.

Regards,



**Chris Leigh**  
Director of Construction and Development