MEMO

DATE:	December 6, 2024
TO:	John Marotta, QuadReal, john.marotta@quadreal.com
FROM:	Matthew Hirsch, Purpose Building, Matthew@PurposeBuilding.ca
SUBJECT:	12489 and 12861 Dixie Road – Sustainability Narrative for Official Plan Amendment/Zoning By-Law Amendment
PROJECT NO:	22131A
CC:	Vincent Raso, QuadReal, vincent.raso@quadreal.com Cesare Pittelli, Armstrong Plan, cesare@armstrongplan.ca

Purpose Building was retained by QuadReal Property Group to provide sustainable design and energy performance services for the proposed new industrial development at 12489 and 12861 Dixie Road, Caledon.

This memo summarizes the sustainability strategy for the development, for consideration by the Town of Caledon as part of the development's Official Plan Amendment/Zoning By-Law Amendment.

1. COMMUNITY DESIGN AND MOBILITY

a) The development will provide pathways and tenant gathering spaces with shade trees adjacent to the natural heritage areas. Connections will be provided between the pathways and sidewalks (2m in width). Interior crosswalks and mid-block crossing designed for AODA compliance will provide safe and direct pedestrian routes.

b) To encourage active mobility, a bike repair station will be located along the pathway.

c) Continuous pedestrian scale lighting that is dark sky compliant will be provide onto sidewalks, pathways, entrances, outdoor waiting areas, and gathering spaces. All lighting fixtures will have photosensors or astronomic time-clock operation to limit lighting when there is adequate daylight.

d) The development will provide EV charging stations for the site – approximately 4 stations per office node. Conduits will be provided to allow for future expansion of EV chargers, primarily in parking spaces adjacent to soft landscaping to minimize site distribution.

2. GREEN INFRASTRUCTURE

a) The development will control for the 90th percentile rainfall event. using roof control, underground stormwater tanks providing infiltration and quantity storage, and stormwater managements pond providing erosion control and quantity storage. Stormwater quality control will be provided to achieve 80% Total Suspended Solids (TSS) removal from all runoff leaving the site on an annual loading basis.

b) Landscaping is designed to minimize water needs on site by prioritizing the use of native and drought tolerant species. Native species will be used for 50% of landscaping, 25% of which will be pollinator-friendly species. The site is being designed so that a permanent irrigation system is not required. A watering program will be in place for the site for the first three years to support landscaping establishment.

c) To protect the Natural Heritage Area adjacent to the site, a vegetated buffer will be maintained between the site and the Natural Heritage Area.

d) Hardscape areas will be treated to minimize urban heat island effect. High-albedo concrete paving materials (initial SRI of 29) will be used for approximately 25% of the hardscape area.

e) The development will treat 85% of all exterior glazing within the first 16m of the building with visual markers applied to the glass to prevent bird collisions. Visual markers will have a maximum spacing of 50mm x 50mm. No ground level ventilation grates are anticipated.

3. BUILDINGS AND ENERGY

a) The development will be pursuing LEED Certified certification.

b) The development will be designed with a high-performance building envelope including insulated metal panel and precast wall assemblies, double-glazed, low-e windows in thermally broken frames, high-efficiency roof-top units for ventilation air heating, windows in warehouse areas to support daylighting, LED fixtures for interior and exterior lighting, and a light coloured “cool roof”.

c) Based on energy modelling completed for similar building developments in QuadReal’s portfolio, the proposed project is anticipated to meet the minimum performance targets from Caledon’s Green Development Standard:

   i. Green House Gas Emissions Intensity less than 15kg CO2e/m2/yr

   ii. Energy Use Intensity Less than 130 kWh/m2/yr

   iii. Thermal Energy Demand Intensity less than 60 kWh/m2/yr

d) QuadReal has committed to a 50% reduction in carbon emissions by 2030 and net zero carbon by 2050 across its global portfolio. These targets support Caledon’s carbon emission reduction goals (36% reduction by 2030, net zero by 2050). To meet this goal for their industrial assets, QuadReal will transition from fossil-fuel-based space heating equipment to low-carbon, electric air-source heat pumps. This transition will occur over time, likely at the first renewal of the gas fired units. Heat pumps also support resilience for a future, warmer climate with the ability to provide some cooling to warehouse spaces.

e) The development will be "solar ready" with structural capacity, electrical infrastructure, and space provision on the roof to allow for the installation of roof-top solar PV in the future to meet the full electrical consumption of the development on a net-metered basis. This is part of QuadReal's baseline design specification for new industrial buildings to support their net zero commitment.

f) A life-cycle assessment of the building's structure and envelope will be conducted as part of the development's LEED strategy. This analysis will occur post tender once all material selections and quantities are known. To reduce embodied carbon QuadReal intends to procure lower carbon options for key materials (e.g., concrete and steel).

g) To minimize water needs on site, the landscape is being designed with native and drought tolerant species so that a permanent irrigation systems is not required. A watering program will be in place for the site for the first three years to support landscaping establishment.

h) QuadReal is committed to reducing waste during construction and will develop a Construction and Demolition Waste Management Plan that targets 75% diversion of total construction and demolition waste from landfill using at least three material streams. Material waste will be weighed, tracked and reported throughout the course of construction. This supports the development's LEED certification and will be verified by the LEED Reviewer.

i) All waste and recyclable materials generated on site will be collected privately. Storage will be provided for all waste streams, including garbage, recycling, and other streams as applicable. During operations, compost collection and disposal will be managed by building tenants.

j) To educate tenants on the building's sustainability features and to support the projects LEED certification the development will prepare a Green Building Education program including a:

   i. Comprehensive signage program built into the building's spaces to education occupants and visitors of the benefits of green buildings.

   ii. Manual to inform the design of other buildings based on the successes of this project.