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February 7, 2025

Nemo Savic
Operations Director
2296342 Ontario Inc.
367 Highland Road West
Kitchener, Ontario N2M 3C6

Re: Pedestrian Wind Assessment – Letter of Opinion
359-369 Erb Street West, Waterloo, Ontario
RWDI Project 2406431

Dear Nemo,

RWDI has prepared this letter to comment on the expected wind conditions around the proposed development at 359-369 Erb Street West in Waterloo, Ontario. This qualitative assessment is based on a review of the local wind climate, the design information received by RWDI on December 11, 2024, the existing surroundings and our engineering judgement and experience with wind tunnel testing of projects in Waterloo Region. The assessment has been completed to support formal Official Plan Amendment (OPA) and Zoning By-law Amendment (ZBA) Official applications of the project.

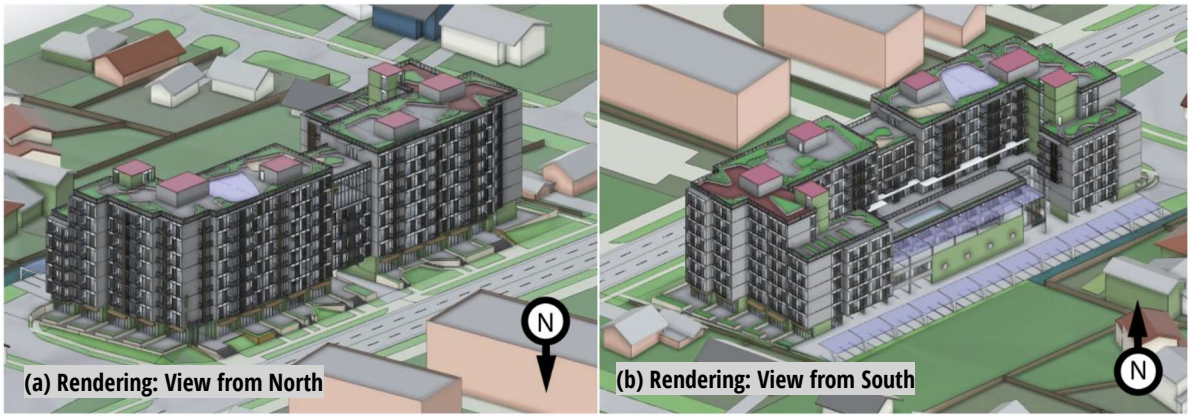
SITE AND BUILDING INFORMATION

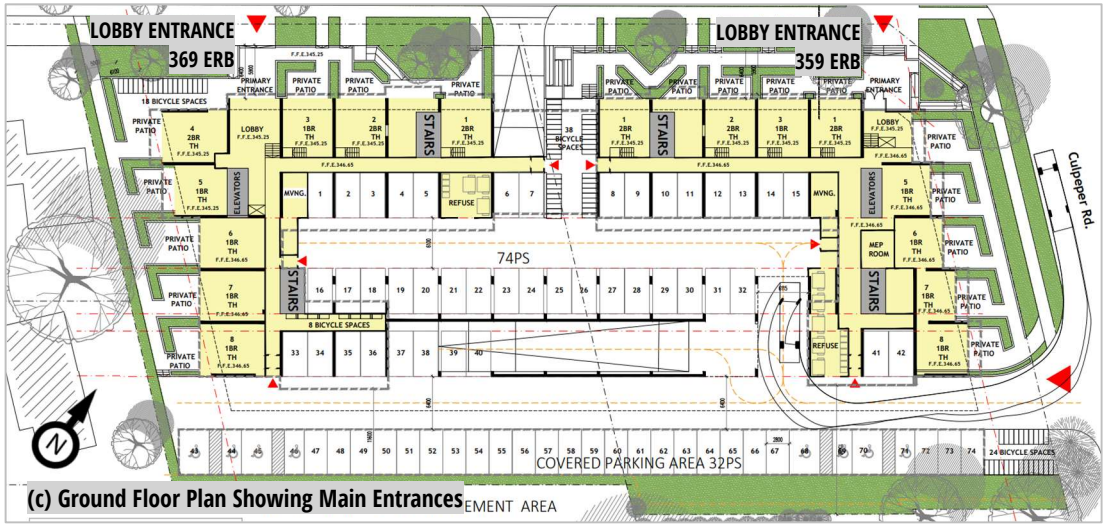
The proposed development site is located at the corner of Erb Street West and Culpepper Drive (Image 1). The site is currently occupied and surrounded by low-rise buildings (two-five storeys) in all directions. The proposed development consists of two connected eight-storey residential buildings fronting on Erb Street (north side) that step down to three stories at the rear (south side). The main entrances to the buildings will be on the north facade. The ground level is mostly open and planned for parking. The design proposes outdoor amenity areas on multiple roof levels and a pool deck on Level 4. The plans and elevations of the proposed development are in Image 2.



Image 1: Aerial View of the Project Site and Surroundings
(Source: Google™ Earth)

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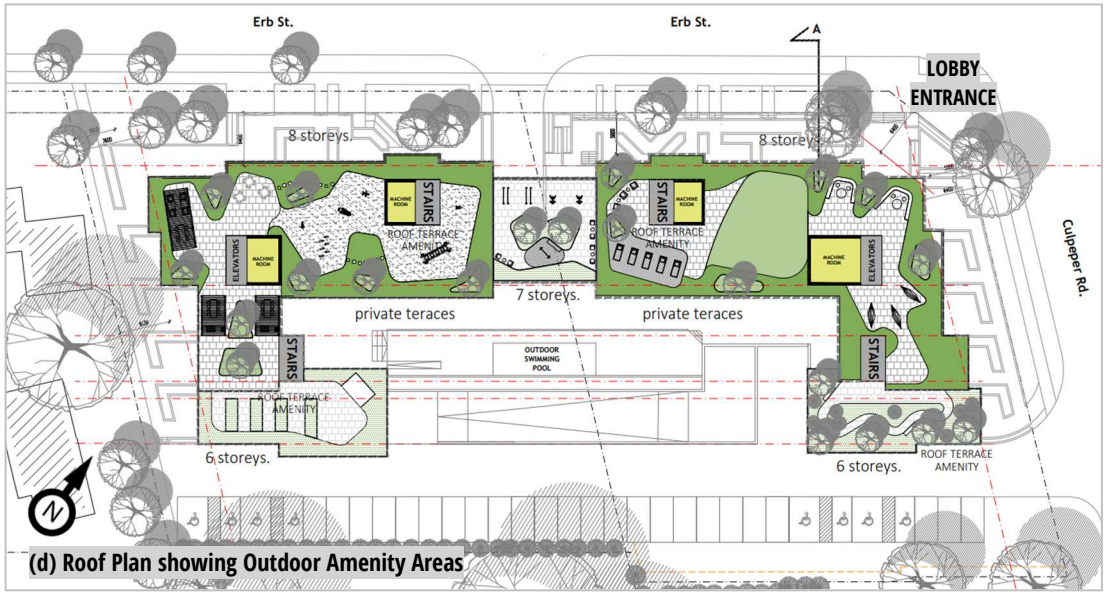


Image 2: Plans and Renderings of the Proposed Project

METEOROLOGICAL DATA

Wind statistics recorded at Waterloo-Wellington International Airport between 1991 and 2021, inclusive, were analyzed. Image 3 graphically depicts the directional distribution of wind frequency and speeds for the summer (May-October) and winter (November-April). When all winds are considered, those blowing from the east and southwest through northwest are predominant during both seasons. Strong winds of a mean speed greater than 30 km/h measured at the airport (red and yellow bands in the wind roses) are more frequent during the winter. These winds are primarily from the westerly and east directions.

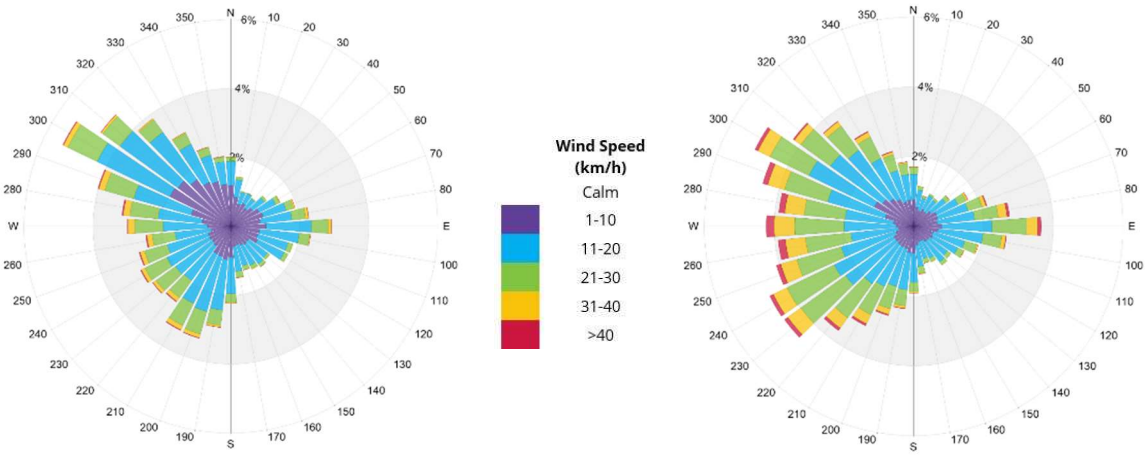


Image 3: Direction Distribution of Winds Recorded at Waterloo-Wellington International Airport (1991 to 2021)

PEDESTRIAN WIND ASSESSMENT

Existing Scenario

Buildings that are currently on the site and in the immediate surrounding areas are low-rise. As such, they are not expected to redirect winds and cause adverse effects at ground level. Therefore, wind conditions on and around the existing site are considered suitable for pedestrian use throughout the year.

Proposed Scenario

Pedestrian areas of interest on and around the site include the main lobby entrances, secondary entrances from the ground-level parking area, public sidewalks surrounding the site and upper-level outdoor amenity areas. The following is our assessment of the potential wind conditions around the proposed project.

- The proposed development, at 8 storeys, will be taller than the existing buildings on the site and in the surrounding areas; but the height is considered moderate in terms of the potential for wind impacts. The building massing would intercept the prevailing winds and redirect them to ground level. The wind downdrafts stemming from the predominant westerly and northwesterly winds would accelerate around the building and create relatively high wind activity at the windward (northern and western) building corners. The stepped levels as well as the projecting and stepped massing profile in plan are favourable features that will help disrupt the wind flows near the building to an extent.

- The wind impacts are not predicted to be significant due to the project's moderate height, and wind conditions in the extended surrounding areas are not expected to be affected substantially by the construction of the new building.

- Wind speeds are expected to meet the pedestrian wind safety criterion at all areas around the site.

- The predicted wind speeds would be suitable for the intended use of sidewalks and the surface parking lot during both the summer and winter months.

- The main lobby entrances are located near the building corners facing Erb street. The recessed design of the entrances and stepped/projecting massing details around the area would help moderate the wind activity at the doorways. The area larger area outside the doorways may be subject to higher speeds than ideal on particularly windy days in the winter. Additional wind protection may be provided by means of a tall windscreen immediately to the west or east of the entrances.

- The secondary entrances and parking area within the footprint of the building at ground level are expected to be appropriate for the intended use.

- The proposed pool deck on Level 4 would be well protected from the prevailing winds by the taller building massing surrounding the area on three sides. Wind conditions on the pool deck are expected to be appropriate for relaxed uses.

- The rooftop amenity areas over the six-, seven- and eight-storey portions of the project would be exposed to the prevailing winds owing to the elevation of these areas above ground. While conditions in the summer may be appropriate for general patron use, periods of low speeds may be less frequent than desirable for prolonged use for relaxed uses (i.e., outdoor dining, lounging, etc.). Consideration should be given to adding localized wind protection in the form of taller vertical screens and/or planters installed to the west and northwest of passive use areas. Image 4 offers some examples of design strategies for wind control.



Image 4: Examples of Wind Control Strategies – Screens near doors (left) and Landscaping and Tall Railings on Rooftops

CLOSING

We trust the enclosed meets your present requirements. Should you have any questions or require additional information, please do not hesitate to contact us.

Yours very truly,

RWDI

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Senior Specialist

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