

October 2, 2024

**Queenscorp (Erin Mills) Inc.**  
2 Queen Elizabeth Boulevard  
Toronto, Ontario  
M8Z 1L8

Re: Addendum to Pedestrian Level Wind Study  
4099 Erin Mills Parkway Mississauga, ON  
GW File No.: 22-008-WTPLW – Addendum R1

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Gradient Wind Engineering Inc. previously completed a detailed pedestrian level wind study for the proposed mixed-use multi-building development located at 4099 Erin Mills Parkway in Mississauga, Ontario. This letter provides a summary of relevant architectural changes to the buildings design which have been made since the study was performed and the anticipated impact of those changes on the predicted pedestrian wind conditions, as well as responses to the Urban Design city staff comments in February 2023. For a complete summary of the methodology and results of the original pedestrian wind study, please refer to Gradient Wind report #22-008-WTPLW, dated August 30<sup>th</sup>, 2022.

Upon review of the updated drawings by Turner Fleischer Architects Inc. dated September 19<sup>th</sup>, 2024, the following significant changes to the design were noted:

1. *Various building heights have increased and decreased as follows (including mezzanines):*

- *Building A: 10 to 14 storeys*
- *Building B: 8 to 5 storeys*
- *Building C: 6 to 7 storeys*
- *Building D: 6 to 8 storeys*
- *Building E: 6 to 8 storeys*

In general, it has been observed in previous wind studies that a change in building height of less than 3-5 storeys does not significantly impact the wind comfort category at grade. While the most significant increase in height from Building A is expected to somewhat increase

windspeeds at the northwest corner of the site, overall adjacent sidewalk conditions are still expected to remain suitable for walking or better during the winter and standing or better during the summer, which is acceptable. The landscaping now proposed throughout the site will additionally provide an improvement in wind comfort presented in the original report.

- 2. The internal N-S laneway from Folkway Drive has shifted several metres to the east, modestly reshaping the adjacent Building A, B, and C grade-level floorplates.*

Although the floorplates of Buildings A, B, and C have marginally been reshaped with the eastward shifting of the laneway, the buildings and lane have generally remained in spatial proportion to each other, and therefore wind conditions surrounding these areas at grade are expected to remain similar to those observed in the original report.

- 3. The collection of townhouses wrapping around the southeast corner of the site have been reconfigured and reduced, accommodating an additional outdoor amenity at the east side of the site.*

Overall, the townhouse massing remains similar to the configuration in the original report and is not expected to significantly affect the surrounding wind conditions with the exception of where the new outdoor amenity is proposed. The new amenity will be sheltered from salient westerly winds by the study site itself and overall is expected to be comfortable for sitting during the summer and standing or better during the winter, which is appropriate without the need for mitigation. The proposed landscaping will further improve pedestrian comfort.

- 4. The Building B lobby entrance along Sawmill Valley Drive has shifted north to the now flattened northeast corner.*

The noted Building B lobby entrance has moved from the calmer east elevation to the windier northeast corner, and it is expected that the new location will intermittently exceed the standing criterion during the colder months. Thus, it is recommended to either recess the entrance within the study building façade or flank the entrance with vertical wind barriers and provide a canopy overhead.

5. *Building A has an additional setback from the east elevation at Floor 7, and no longer sets back from the south elevation at higher floors.*

While the reconfiguration of higher-level floorplate setbacks and mechanical penthouses on Building A, or other similar minor changes on Buildings B through E, may have some minimal influence on grade level wind speeds, the overall wind comfort categories are not expected to observe significant changes. All elevated private terraces are expected to continue to be comfortable for sitting throughout the warmer months.

Other minor variations in architectural drawings are not expected to significantly influence the results and recommendations of the original wind study.

Regarding the Urban Design city stall comments from February 2023:

1. *"URBAN DESIGNER / Erinma Chibututu / 2-9-23 2:00 PM"*

*QUANTITATIVE WIND STUDY1) Please update the Quantitative Wind Study with an illustration of the Wind Safety Conditions at the Sensor Locations to demonstrate the written text of the document that states that Safety Criterion is achieved throughout the year. 2) Please update the Quantitative Wind Study with Sensor Locations at the backyards of the existing residences on the north side of Folkway Drive. 3) In accordance with the City of Mississauga Terms of Reference for Wind Studies, where mitigation is required to achieve acceptable pedestrian wind comfort levels, the proposed configuration shall be tested with all recommended mitigation measures in order to demonstrate the benefits of the mitigation strategies under the proposed configuration. 4) Please apply and test the recommended mitigation measures that will change the winter wind comfort conditions at Sensor locations 140 and 55 at the northwest corner entrance area of Building A from Walking to Standing or better. Please note the UD comments regarding the design and building setbacks in this area. 5) Please apply and test the mitigation features that will be necessary to change the winter wind comfort conditions at the north entrance area of TH-1 at Sensor Location 70, from Walking to Standing or better and the winter wind comfort conditions at Sensor location 88, the at grade outdoor amenity space on the west side of Building B from Walking to Standing or better. 6) Please apply and test the recommended mitigation measures that will change the winter wind comfort conditions at Sensor locations 85, 129 and 130 in the "breezeway"/outdoor amenity area associated with Building C, from Walking to Standing or better. 7) Please apply and test the recommended mitigation measures that will change the winter wind comfort conditions at Sensor locations 74 and 96, between Buildings A and D from Walking to Standing or better. Please note the UD comments regarding the design and use of this space."*

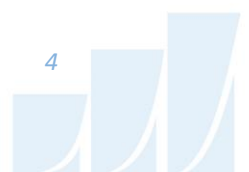
- 1) Wind safety conditions at each sensor location are listed in Tables A1-A5 in Appendix A following the main report. In the legend of Figures 2A-3B in the original wind study the wind safety criterion is illustrated by the colour of the sensor numbering. All locations meet the safety criterion, and further, no location was even found to be uncomfortable for walking.

2) The tested sidewalk along Folkway Drive (Sensors 9-13), which is adjacent to the noted backyards, is suitable for standing or better throughout the year, which is considered acceptable for private yards. As the backyards are also surrounded by tall solid fences and extensive plantings, the seasonal comfort will with near certainty be suitable for sitting.

3-7) *Section 4.1 Wind Control Mitigation Strategies of the Mississauga February 2023 T.O.R. states “In areas where wind conditions are considered to be unacceptable for the intended pedestrian use or unsafe (as defined in Table 1) and will be accessible to pedestrians, wind control mitigation strategies shall be developed and tested to demonstrate their efficacy.”*

The wind control mitigation strategies recommended with experience and judgment at the noted primary entrances in the original report, and otherwise, have been studied and tested on many previous similar developments and proven to be effective. In extreme cases where unsafe or highly uncomfortable wind conditions are observed, mitigation testing of a novel strategy may be appropriate, but in the case of this site, no sensor location was found to be unsafe or even uncomfortable for walking. Regarding outdoor amenity areas, these spaces generally observe greatly reduced pedestrian traffic during the winter months and thus windier conditions are considered acceptable. Over this site, the bulk of amenity areas are suitable for sitting throughout the 6 warmer months of the year, which is ideal. It is notable that the latest landscaping plans include comprehensive landscaping of planters and plantings throughout the site, which were not included in the wind tunnel test to ensure conservative results. The landscaping plan as currently shown will result in a significant improvement in wind comfort throughout the site, and overall, no areas outside of the noted primary access points, were found to require mitigation to ensure suitable pedestrian comfort.

**Overall, wind comfort at the 4099 Erin Mills Parkway development is relatively calm compared to many other development sites tested in the surrounding Mississauga area with no uncomfortable or dangerous conditions observed. Wind speeds across the proposed development site will generally decrease with the introductions of the proposed massing. While a second wind tunnel study may be appropriate at the SPA stage when all other aspects of the design are finalized, an additional study at this time is not considered necessary to ensure suitable wind comfort will be achieved.**



Please advise the undersigned of any questions or concerns.

Sincerely,

***Gradient Wind Engineering Inc.***



Nick Petersen, P.Eng.,  
Wind Engineer