

GRADIENTWIND

ENGINEERS & SCIENTISTS

August 29, 2022

Branthaven Development
720 Oval Court
Burlington, ON L7L 6A9

Attn: Clayton D'Souza, EIT, Project Manager
cdsouza@branthaven.com

Dear Mr. D'Souza:

Re: Pedestrian Level Wind Study Addendum
5160-5170 Ninth Line, Mississauga, ON
Gradient Wind File 21-336

Following the completion of a pedestrian level wind (PLW) study¹ undertaken to satisfy Zoning By-law Amendment application requirements for the proposed residential development located at 5160-5170 Ninth Line in Mississauga, Ontario, Gradient Wind Engineering Inc. (Gradient Wind) received the following comments from the City of Mississauga²:

“Based on the proposed building height and site context, including the presence of an existing low-rise residential neighbourhood to the east, the Planning & Building Department will require a Quantitative Wind Study for review in support of the Zoning By-law Amendment application. Please note where extreme wind conditions are anticipated, Development & Design does not support the use of plant material as a form of wind mitigation. The integration of hard landscaping (e.g. architectural features, screens, etc.) is strongly recommended over soft landscaping (e.g. trees, shrubs, etc.), as trees are often not able to thrive / survive in extreme wind events, which impacts the ability to rely on soft landscaping as a reliable wind mitigation technique. Revise the submitted Pedestrian Level Wind Study accordingly with the next formal submission.”

¹ Gradient Wind Engineering Inc., '5160-5170 Ninth Line, Mississauga – Pedestrian Level Wind Study', [Nov 2, 2021]

² Maybee, Cameron. Landscape Architect, Urban Design, Planning & Building Department, Development & Design Division, City of Mississauga, Project Number OZ 22-4 W10, [May 27, 2022]

The PLW study was performed using the computational fluid dynamics (CFD) technique, which represents a quantitative study of wind conditions within and surrounding the subject site. The PLW study concluded that all grade level areas within and surrounding the subject site are predicted to be acceptable for the intended pedestrian uses throughout the year. Specifically, wind conditions over surrounding sidewalks, walkways, transit stops, the outdoor amenity area at grade, and in the vicinity of building access points, are considered acceptable. Additionally, wind conditions over the common amenity terrace serving the proposed development at the mechanical penthouse (MPH) floor are also predicted to be acceptable during the summer months without mitigation.

A similar version of the above paragraph was provided to the City of Mississauga in July 2022. The response was accepted by the City of Mississauga, Planning & Building Department, with the caveat that Gradient Wind provides *"...an addendum letter to the submitted Pedestrian Level Wind Study that confirms any revisions based on comments provided by the Urban Design Section related to the building massing and site layout / organization maintain or do not cause undesirable wind conditions on either the subject site or on adjacent lands³".*

For the purpose of the PLW study, the current architectural drawings⁴ illustrate a similar design as the drawings that were referenced to complete the original detailed study. In the original architectural design, outdoor amenities were provided at the ground floor, within a protected courtyard, as well as atop the building at the MPH floor. The current architectural drawings include outdoor amenities at the ground floor, in the same location as the original architectural drawings, as well as at Level 6 at the north corner of the proposed development.

For the current architectural design, all grade level areas within and surrounding the subject site are expected to be acceptable for the intended pedestrian uses throughout the year. Specifically, the outdoor amenity at the ground floor is expected to experience calm wind conditions suitable for sitting throughout the year. For the amenity terrace at Level 6, calm wind conditions suitable for sitting are expected within the full area during the summer months, while conditions during the winter months are expected to be

³ Maybee, Cameron. "5160 Ninth Line, 0 Ninth Line and 5170 Ninth Line - Project Number OZ 22-4 W10 - WIND STUDY COMMENT." Received by Andrew Sliasis (Gradient Wind Engineering Inc.), July 29, 2022.

⁴ ZO1 Architects, 'Proposed Residential Development - 5160-5170 Ninth Line, Mississauga', [Aug 16, 2022]



suitable mostly for standing. The noted conditions are considered acceptable according to the City of Mississauga Urban Design Terms of Reference, Pedestrian Wind Comfort and Safety Studies (June 2014).

The foregoing statements and conclusions apply to common weather systems, during which no dangerous wind conditions, as defined in Section 4.4, are expected anywhere over the subject site. During extreme weather events, (e.g., thunderstorms, tornadoes, and downbursts), pedestrian safety is the main concern. However, these events are generally short-lived and infrequent and there is often sufficient warning for pedestrians to take appropriate cover.

Sincerely,

Gradient Wind Engineering Inc.



Justin Ferraro, P.Eng.
Principal