

GRADIENTWIND

ENGINEERS & SCIENTISTS

December 7, 2022

Theberge Developments Ltd.
1600 Laperriere Avenue, Suite 205
Ottawa, ON K1Z 8P5

Attn: Joey Theberge
joeytheberge@thebergehomes.com

Dear Mr. Theberge:

Re: Pedestrian Level Wind Study, Addendum
780 Baseline Road, Ottawa
Gradient Wind File 20-062-PLW Addendum Dec 2022

Gradient Wind Engineering Inc. (Gradient Wind) was retained by Theberge Developments Ltd. to perform a pedestrian level wind (PLW) study for the proposed multi-building development located 780 Baseline Road in Ottawa, Ontario. A PLW study based on computer simulations using the computational fluid dynamics (CFD) technique was completed for the original architectural design and initial Zoning By-law Amendment (ZBLA) application submission in May 2022^{1,2}. The architectural design has been updated³ to address comments on the initial ZBLA application.

The current proposal comprises three buildings in three separate phases: “Tower A”, a rectangular shaped 28-storey apartment building served by a 4-storey podium situated to the southeast; “Tower B”, a rectangular shaped 28-storey apartment building served by a 4-storey podium situated to the northwest; and “Tower C”, a rectangular shaped 32-storey apartment building served by 4-storey podia situated to the northeast. The proposal also includes a park to the south of Tower A.

The original proposal included a 25-storey Tower A served by podia of varying heights situated to the southeast, a 29-storey Tower B served by a 5-storey podium situated to the northeast, and a 25-storey

¹ Roderick Lahey Architect Inc., ‘2131-site-20220317.skp’, [Mar 17, 2022]

² Gradient Wind Engineering Inc., ‘Pedestrian Level Wind Study – 780 Baseline Road’, [May 9, 2022]

³ Roderick Lahey Architect Inc., ‘780 Baseline Road – Revised as per Round 1 ZA Comments’, [Sep 29, 2022]

Tower C served by podia of varying heights situated to the northwest. The original proposal included a plaza adjacent to Fisher Avenue and flanked by Tower A to the south and Tower B to the north.

While the general massing of the current architectural design of the proposed development is similar to the original architectural design that was referenced to complete the PLW study, the current design has rotated Tower C (previously identified as Tower B) to align the long axis of its typical floorplate parallel with Baseline Road. Previously, the building at the northeast corner of the site had the long axis of its typical floorplate parallel with Fisher Avenue. Similarly, the current design of Tower A, at the southeast corner of the site, includes a rotated building that aligns the long axis of its typical floorplate parallel with Fisher Avenue.

In the original PLW study, the windiest conditions at grade were predicted to occur within the plaza, situated to the immediate south of Tower C (previously identified as Tower B). The windy conditions were attributed to downwash incident on the broad west elevation of the building, as well as from vortices shed from the southwest corner of the building. While the current proposal has rotated the building, as described above, it also includes a 4-storey podium along Fisher Avenue. The current proposal has replaced the plaza with the noted podium. Conditions at grade between Towers A and C are expected to be greatly improved as compared to those in the original study.

Wind conditions within the proposed park, which was not included in the original proposal, are not expected to be adversely influenced by Towers A, B, and C. Rather, the proposed buildings and podia are expected to partially shelter the proposed park from prominent northwesterly winds.

We recommend that a PLW study based on the same methodology as the original study be completed for an advanced future design of the proposed development. The updated study would be expected to support the project as it progresses towards Site Plan Control approval.

Sincerely,

Gradient Wind Engineering Inc.

Justin Ferraro, P.Eng.
Principal

