

GRADIENTWIND

ENGINEERS & SCIENTISTS

February 6, 2024

Hennepin's View Inc.
6361 Fallsview Blvd
Niagara Falls, ON L2G 3V9

Attn: Frank Dicosimo, Owner
frank@niagarahri.com

Dear Mr. Dicosimo:

Re: Pedestrian Level Wind Study Addendum
Oakes Hotel Redevelopment, Niagara Falls
Gradient Wind File 22-366

Gradient Wind Engineering Inc. (Gradient Wind) completed a computational pedestrian level wind (PLW) study to satisfy a Zoning By-law Amendment application submission for the proposed hotel redevelopment, referred to as the "Oakes Hotel Redevelopment", located at 6546 Fallsview Boulevard and 6503-6519 Stanley Avenue in Niagara Falls, Ontario¹. The study was conducted based on architectural drawings of the proposed development provided by architects-Alliance in January 2023².

The current architectural drawings, which were distributed to the consultant team in February 2024³ in preparation for resubmission of the Zoning By-law Amendment application, include several changes to the building massing and architectural design. Along with internal programming changes within the upper ground floor, a residential main entrance has been added near the northeast corner and a hotel main entrance has been added at the southeast corner of the hotel building. The noted hotel entrance includes a drop-off area to its east and is served by a porte-cochère above. The central atrium between the podia serving each tower now only extends up to Level 4, and the podia are connected through a sky bridge at Level 5. Most notably, as the podium of the hotel building has been shortened by one storey, the terraces atop the podia have been relocated from Level 8 to Level 7. At Level 7, the north tower is now served by

¹ Gradient Wind Engineering Inc., 'Oakes Hotel – Pedestrian Level Wind Study', [May 2, 2023]

² architects-Alliance, 'Niagara Oakes Hotel Redevelopment', [Jan 31, 2023]

³ architects-Alliance, 'Oakes Hotel Redevelopment, Zoning By-Law Amendment Application – Final', [Feb 1, 2024]

a lookout terrace along the east elevation, a residential outdoor amenity terrace to the south, and an outdoor amenity space and a roof garden to the west, while the south tower is now served by a residential outdoor amenity terrace at the northwest corner, an outdoor amenity space and a roof garden to the east, and a lookout terrace at the southeast and southwest corners of the podium.

The original study concluded that most grade-level areas within and surrounding the subject site were predicted to experience conditions considered acceptable for the intended pedestrian uses throughout the year, inclusive of the nearby public sidewalks, surface parking, laneways, walkways, transit stops, drop-off areas, and in the vicinity of building access points. Regarding the Level 8 terrace event space serving the south tower to the east, conditions were predicted to be suitable for sitting during the summer, which is considered acceptable.

Following the proposed development, limited areas of uncomfortable conditions were predicted during the winter at the southeast corner the proposed development over the sidewalk along Portage Road and at the southwest corner of the existing surface parking to the immediate east of the proposed development, exceeding the walking threshold for 3% of the time during the winter season. Notably, windy conditions along Portage Road were also predicted with the existing massing.

Regarding the terrace event space serving the north tower at Level 8, the original study concluded that conditions were predicted to be suitable for a mix of sitting and standing during the summer season. For wind mitigation, tall perimeter wind screens were recommended in place of standard height guards along the perimeter of the terrace, in combination with inboard wind barriers and canopies around sensitive areas.

The differences in the 2023 and the 2024 massing designs are considered modest from a wind engineering perspective. Conditions at grade within and surrounding the subject site are expected to be similar under the current massing and the conclusions and mitigation recommendations for the windiest areas at grade as detailed in the original study are expected to remain representative of the current site massing.

Regarding the outdoor amenity spaces atop the podia to the east of the two towers, wind conditions are expected to be similar to the previously predicted conditions for the eastern terrace event space. Specifically, conditions are expected to be suitable for mostly sitting during the summer.



Regarding the outdoor amenity spaces atop the podia to the west of the two towers, owing to the exposure of these terrace areas to prominent winds and the expected downwash effects of prevailing westerly and southwesterly winds to the western terraces, conditions to the west of both towers atop the podia are expected to remain mixed between sitting and standing during the summer season. As such, the recommendations regarding mitigation as detailed in the original study remain applicable to these spaces. Specifically, mitigation in the form of tall perimeter guards, in combination with inboard wind barriers and canopies around sensitive areas, would be expected to improve comfort levels within the western terrace areas, with the extent of mitigation dependent on the programming of the spaces.

The extent of wind mitigation for the western terrace areas is dependent on their programming. An appropriate mitigation strategy will be developed in collaboration with the building and landscape architects as the design progresses towards the future Site Plan Control application.

Sincerely,

Gradient Wind Engineering Inc.



Justin Ferraro, P.Eng.
Principal