October 14, 2021

Greenwin Corp.
19 Lesmill Road
Toronto, ON M3B 2T3

Re: Pedestrian Wind Comfort Opinion Letter
33 George St N & 24 Elizabeth St N, Brampton
Gradient Wind File # 20-276

Gradient Wind Engineering Inc. (GWE) was retained by Greenwin Corp. to undertake a pedestrian wind study for a proposed two-tower mixed-use development located at 33 George Street North & 24 Elizabeth Street North in Brampton, Ontario. In advance of the forthcoming detailed wind tunnel study, the intent of this letter is to provide a professional opinion regarding anticipated pedestrian wind conditions for the site. This initial commentary is based on architectural drawings prepared by Sweeny&Co Architects in October 2021.

The development site is located on an "L"-shaped parcel of land at the northwest side of a block bounded by Nelson Street West to the north (project north), George Street North the east, Queen Street West to the south, and Elizabeth Street North to the west. In the near-field, the site is surrounded in all directions by a mix of low-rise residential and commercial buildings, as well as surface parking. To the south of the site at 9 George Street North is the 26-storey Renaissance Condos. The far-field surroundings comprise primarily low-rise development in all directions, with several taller buildings within the downtown Brampton area. The site wind conditions are also influenced by the local wind climate, defined statistically in a figure following the main text.

The proposed development comprises two residential towers rising from the north and west sides of a shared 4-storey, primarily parking, "L"-shaped podium. At the north side of the site along Nelson Street, Residential Tower 1 (42-storeys) rises from the west side of an 11-storey hotel podium. At the southwest corner of the site, the 34-storey Residential Tower 2 rises from the west side of the four-storey podium. At the northwest corner of the site, an existing heritage building is adjacent to the study building. The

ground floor comprises retail space and a residential lobby along the north elevation, and a hotel lobby accessed from the east elevation. Residential units and a lobby are located along the south side of the west elevation, while loading areas, internal parking, and access the parking garage are accessed from the west elevation from a driveway connecting to Elizabeth Street North. On Level 5, an outdoor amenity area is located over the south side of the building surrounding Residential Tower 2. At Level 9, a green roof is located on a step back at the southwest corner of the building.

West view of study site

Pedestrian wind comfort is determined by three main factors, including (i) the geometry and orientation of the study building, (ii) shielding and channeling effects created by the massing and relative spacing of surrounding buildings, and (iii) the alignment of the study building with respect to statistically prominent wind directions. For Brampton, the most common winds occur for westerly wind directions clockwise to the north, as well as winds from the east. Summer months bring calmer wind conditions as compared to other seasons.

From an overall wind flow perspective, the height of the proposed buildings (both the podium and tower elements) will rise significantly above the low-rise surroundings, which will tend to capture and redirect higher-level wind flows towards grade. For prominent westerly and northerly wind directions, however, the podium setbacks will tend to reduce downwash flows at grade. At the base of the building, wind conditions along the Nelson Street and Elizabeth Street elevations are expected to be moderately windy during the colder months. For primary building entrances along these elevations, it may be necessary to either recess the doorways within the building façade or provide vertical wind barriers and canopies overhead. On the Level 5 amenity terrace, the portion of the podium roof to the east of Residential Tower 2 will be sheltered from prevailing winds and conditions are expected to be suitable for sitting without the need for mitigation. At the west side of the amenity terrace, windier conditions are expected due to the absence of upwind massing sheltering northwest quadrant winds. For this portion of the terrace, taller perimeter guards and/or canopies/pergolas overhead are likely to be required.

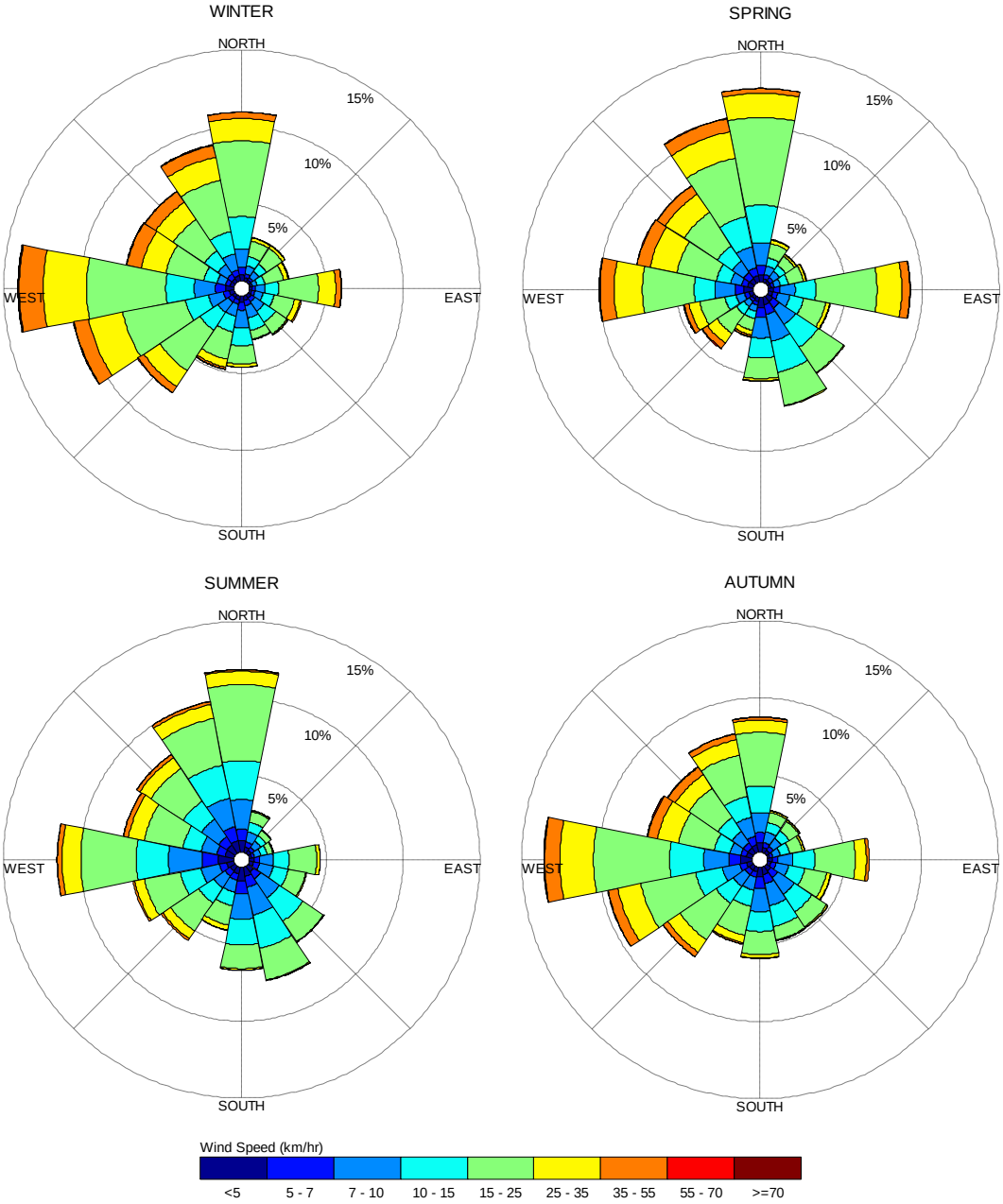
The foregoing opinions are based on knowledge and experience of wind flow patterns around buildings. While these statements are expected to be reliable for the site as a whole, the forthcoming detailed pedestrian level wind study will provide a detailed understanding of specific localized conditions. This concludes our preliminary assessment. Please advise the undersigned of any questions or comments.

Sincerely,

Gradient Wind Engineering Inc.

Andrew Sliasas, M.A.Sc., P.Eng.
Principal

SEASONAL DISTRIBUTION OF WINDS FOR VARIOUS PROBABILITIES
PEARSON INTERNATIONAL AIRPORT



Notes:

1. Radial distances indicate percentage of time of wind events.
2. Wind speeds are mean hourly in km/h measured at 10 m above the ground.