November 13, 2025

IMH 1970 & 1980 Fowler Drive Ltd
1400-3280 Bloor Street West, Centre Tower
Toronto, ON M8X 2X3

Re: Addendum to Pedestrian Level Wind Study
1970-1980 Fowler Drive, Mississauga
Gradient Wind File No.: 25-049 PLW Addendum

Gradient Wind Engineering Inc. (Gradient Wind) was retained by IMH 1970 & 1980 Fowler Drive Ltd to undertake a detailed pedestrian level wind (PLW) study for the proposed residential development to be located at 1970-1980 Fowler Drive in Mississauga, Ontario. This letter provides a summary of relevant architectural changes to the site which have been made since the study was issued and the impact of those changes on the predicted pedestrian wind conditions, as well as addresses comments from the City of Mississauga at the DARC meeting concerning the wind study. For a complete summary of the methodology and results pertaining to the original pedestrian wind study, please refer to Gradient Wind report #25-049-PLW, dated November 13, 2025.

Since completion of the pedestrian level wind study, the following architectural changes, considered relevant to the wind study, have been made:

- The tower has reduced from 29-storeys to 24-storeys, with an updated overall building height of 87.1 metres (to the top of the MPH).
- The tower floorplate has reduced in the east-west direction (relative to true north) and increased in the north-south direction.
- The primary lobby entrance is now on the east side of the inset northeast corner.
- Level 2 features slight setbacks from the north, east, and south, accommodating private terraces, with an additional setback from the southeast corner of Level 4.

- The 4-storey podium setback has reduced from the east and west, with increased outdoor amenity space on the north side of Level 5. The full podium amenity includes a 2.0-metre-tall perimeter wind barrier.

- At Level 6, the tower steps out on the north side to cantilever approximately 2.8 metres over the amenity terrace below towards the north, east and west directions.

- The mechanical penthouse has decreased in size at the northwest corner, increasing the size of the rooftop exterior amenity to the west. The full terrace also features a 2.0-metre-tall perimeter wind barrier.

All remaining architectural changes are considered minor from a wind perspective and are not expected to discernibly affect the previously measured wind conditions.

With regard to pedestrian level wind conditions, the decrease in tower height is expected to result in somewhat improved wind conditions across the site. The adjustments to the tower and podium floorplate, particularly the reduced setbacks along the east side of the building may cause increased down-washing at grade, but the primary entrance on this side remains sheltered by the overhang of the building above, therefore mitigation for this entrance is not necessary.

For the Level 5 and rooftop outdoor amenities, the inclusion of the 2.0-metre-tall wind screen along the full perimeter, and shade structures throughout the spaces, are expected to improve conditions over the amenities. It is notable that an overhead shade structure is planned for the northwest corner of the podium amenity, where dangerous conditions were previously measured in the wind study (Sensor 62). This overhead protection, in combination with the noted raised guards, is expected to alleviate the dangerous condition, and ensure safe wind conditions across the terrace. The adjustments to the floorplate at the podium level are not expected to discernibly effect wind conditions over the podium outdoor amenity, with calmer conditions expected below the new overhang of the tower at this level.

The rooftop outdoor amenity may experience increased wind speeds owing to the greater exposure to prominent westerly wind directions; however, the raised perimeter guards are expected to improve conditions to predominantly sitting during the summer.

Following the DARC meeting, the City of Mississauga also issued the following comments on the submitted wind study:

- *SUBMISSION REQUIREMENT: PEDESTRIAN WIND COMFORT AND SAFETY STUDY - A Quantitative Pedestrian Wind Comfort and Safety Study is required. The Quantitative Wind Study shall be done in accordance with Pedestrian Wind Comfort and Safety Studies available at the following link: https://www.mississauga.ca/publication/development-application-terms-of-reference/*

  Where mitigation is required to achieve acceptable pedestrian wind comfort and safety levels, the proposed configuration shall be evaluated and tested with all recommended mitigation measures in order to demonstrate the benefits of the recommended mitigation strategies. (See Section 3.3). The mitigation features shall be listed in a Mitigation Plan and reflected on the site plan, landscape plan, building elevations and all relevant drawings. The Quantitative Wind Study shall be signed and stamped by a Microclimate Specialist with a Professional Engineer designation.

The wind study performed in May 2025 was in accordance with the Pedestrian Wind Comfort and Safety Studies terms of reference issued by the City of Mississauga and was submitted as part of the OPA/ZBA application. Although mitigation testing was not tested in the study, due to the industry standard of omitting vegetation to provide a more conservative result, the existing and proposed vegetation throughout the landscape plan are expected to improve conditions over the site, particularly during the three warmer seasons. Additionally, other mitigation measures (i.e. new overhead protection and raised perimeter guards) were added to the architectural set after the testing had been completed, and thus were not tested. Overall, Gradient Wind has considerable experience in testing mitigation measures on similar developments, and the wind-calming effects of the noted raised guards and overhead protection can be confidently expected.

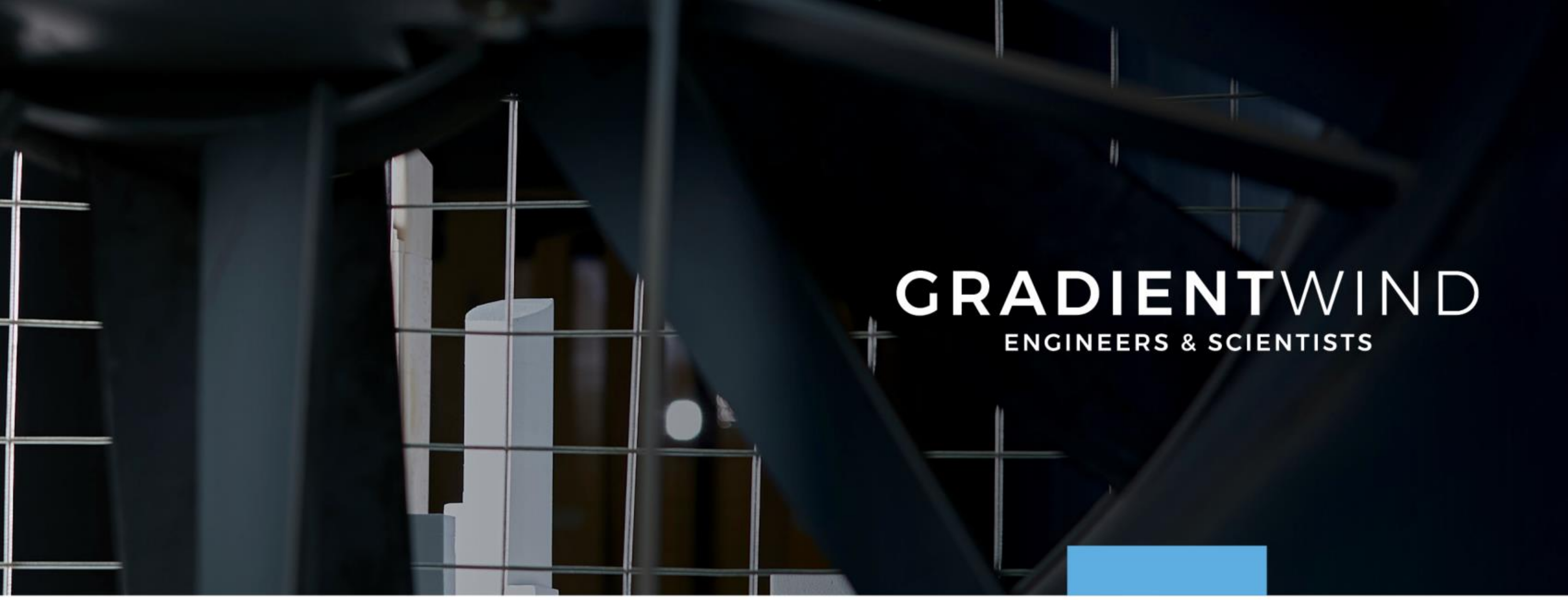
This concludes our review of the design changes for the planned development at 1970-1980 Fowler Drive in Mississauga, Ontario. Please advise the undersigned of any questions or concerns.

Sincerely,

Gradient Wind Engineering Inc.

Angelina Gomes, P.Eng.,
Wind Engineer

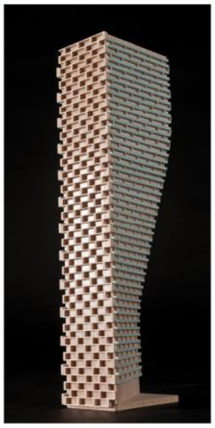
25-049 PLW Addendum

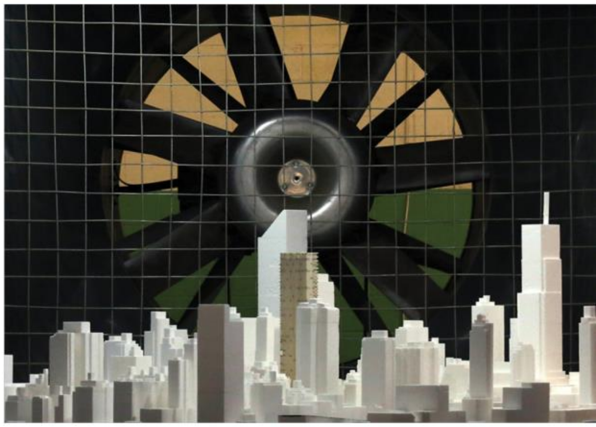


PEDESTRIAN LEVEL WIND STUDY

1970-1980 Fowler Drive
Mississauga, Ontario

REPORT: GW25-049-WTPLW





November 13, 2025

PREPARED FOR
IMH 1970 & 1980 Fowler Drive Ltd
1400-3280 Bloor Street West, Centre Tower,
Toronto, Ontario
M8X 2X3

PREPARED BY
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EXECUTIVE SUMMARY

This report describes a wind tunnel pedestrian level wind study undertaken to assess wind conditions for a proposed residential development located at 1970-1980 Fowler Drive in Mississauga, Ontario. Two configurations were studied: (i) *existing scenario*, including all approved, surrounding developments and without the proposed development, and (ii) *proposed scenario* with the proposed development in place. The study involves wind tunnel measurements of pedestrian wind speeds using a physical scale model, combined with meteorological data integration, to assess pedestrian comfort at key areas within and surrounding the study site. Grade-level areas investigated include sidewalks, walkways, laneways, landscaped areas, parking areas, children's playgrounds, the adjacent basketball court, and building access points. Wind comfort is also evaluated over the Level 5 and rooftop outdoor amenity terraces. The results and recommendations derived from these considerations are summarized in the following paragraphs and detailed in the subsequent report.

Our work is based on industry standard wind tunnel testing and data analysis procedures, architectural drawings prepared by Core Architects Inc. in April 2025, surrounding street layouts, as well as existing and approved future building massing information obtained from the City of Mississauga, and recent site imagery.

A complete summary of the predicted wind conditions is provided in Section 5 of this report and is also illustrated in Figures 2A through 4B, as well as Tables A1-A2 and B1-B2 in the appendices. Based on wind tunnel test results, meteorological data analysis, and experience with similar developments in Mississauga, we conclude that the future wind conditions over most grade-level pedestrian wind-sensitive areas within and surrounding the study site will be acceptable for the intended uses on a seasonal basis. Exceptions include an isolated area to the south, and the relocated playground to the southeast, for which mitigation is recommended as described in Section 5.2. To ensure that the Level 5 and rooftop outdoor amenity terraces will be comfortable for sitting or more sedentary activities throughout the warmer months, mitigation is recommended as described in Section 5.2.

Within the context of typical weather patterns, which exclude anomalous localized storm events such as tornadoes and downbursts, no areas over the study site, apart from the isolated northwest corner of the Level 5 terrace, were found to experience wind conditions that are considered unsafe.

TABLE OF CONTENTS

1. INTRODUCTION

This report describes a wind tunnel pedestrian level wind (PLW) study undertaken to assess wind conditions for a proposed residential development located at 1970-1980 Fowler Drive in Mississauga, Ontario. Two configurations were studied: (i) *existing scenario*, including all approved, surrounding developments and without the proposed development, and (ii) *proposed scenario* with the proposed development in place. The study was performed in accordance with industry standard wind tunnel testing techniques, architectural drawings provided by IMH 1970 & 1980 Fowler Drive Ltd in April 2025, surrounding street layouts and existing and approved future building massing information, as well as recent site imagery.

2. TERMS OF REFERENCE

The focus of this wind tunnel pedestrian wind study is the proposed residential development located at 1970-1980 Fowler Drive in Mississauga. The study site is situated approximately 200 metres southeast of the intersection of Fowler Drive and North Sheridan Way.

The study building comprises a residential 29-storey tower rising from a trapezoidal four-storey podium. A proposed private driveway connecting to North Sheridan Way along the north elevation (relative to project north) provides access to loading areas and the ramp to three underground parking levels, to the northeast. The ground floor consists of a central residential lobby fronting the proposed private driveway to the north, an indoor amenity to the west, and building support services elsewhere. A relocated playground is to the southeast of the site. At Level 5, the floorplate sets back from the north, west, and south, to the tower's typical residential floorplate, accommodating outdoor and indoor amenities to the north, and residential units elsewhere. The rectangular floorplate rises uniformly to full height, where a mechanical penthouse, green roof, and a rooftop outdoor amenity complete the tower.

Regarding wind exposures, the near-field surroundings of the development (defined as an area falling within a 200-metre radius of the site) are characterized by low-rise suburban buildings to the north (relative to true north) and open space with mid- and high-rise buildings in the remaining directions, such as the existing 1970 and 1980 Fowler Drive (14 storeys) to the southwest and west, respectively, and 2111 Roche Court (7 storeys) to the southeast. The far-field surroundings (defined as the area beyond the near field and within a two-kilometer radius) are characterized by low-rise exposure in all directions. The Queen Elizabeth Way is approximately 450 metres to the southeast.

Grade-level areas investigated include sidewalks, walkways, laneways, landscaped areas, parking areas, children's playgrounds, the adjacent basketball court, and building access points. Wind comfort is also evaluated over the Level 5 and rooftop outdoor amenity terraces. Figures 1A and 1B illustrate the *existing* and *proposed* study sites and surrounding context, respectively, and Photographs 1 through 6 depict the wind tunnel model used to conduct the study.

3. OBJECTIVES

The principal objectives of this study are to (i) determine pedestrian level wind comfort and safety conditions at key areas within and surrounding the development site; (ii) identify areas where wind conditions may interfere with the intended uses of outdoor spaces; (iii) recommend suitable mitigation measures, where required; and (iv) evaluate the influence of the proposed development on the existing wind conditions.

4. METHODOLOGY

The approach followed to quantify pedestrian wind conditions over the site is based on wind tunnel measurements of wind speeds at selected locations on a reduced-scale physical model, meteorological analysis of the Toronto area wind climate, and synthesis of wind tunnel data with industry-accepted guidelines[1]. The following sections describe the analysis procedures, including a discussion of the pedestrian comfort and safety guidelines.

4.1 Wind Tunnel Context Modelling

A detailed PLW study is performed to determine the influence of local winds at the pedestrian level for a proposed development. The physical model of the proposed development and relevant surroundings, illustrated in Photographs 1 through 6 following the main text, was constructed at a scale of 1:400. The wind tunnel model includes all existing buildings and approved future developments within a full-scale diameter of approximately 840 metres. The general concept and approach to wind tunnel modelling is to

[1] City of Mississauga Urban Design Terms of Reference, Wind Comfort and Safety Studies, July 2024

provide building and topographic detail in the immediate vicinity of the study site on the surrounding model, and to rely on a length of wind tunnel upwind of the model to develop wind properties consistent with known turbulent intensity profiles that represent the surrounding terrain.

An industry standard practice is to omit trees, vegetation, and other existing and planned landscape elements from the wind tunnel model due to the difficulty of providing an accurate seasonal representation of vegetation. The omission of trees and other landscaping elements produces slightly more conservative wind speed values.

4.2 Wind Speed Measurements

The PLW study was performed by testing a total of 66 sensor locations on the scale model in Gradient Wind's wind tunnel, with 60 sensors located at grade and the remaining 6 sensors over the Level 5 and rooftop outdoor amenity terrace. Wind speed measurements were performed for each of the 66 sensors for 36 wind directions at 10° intervals. Figures 1A and 1B illustrate the *existing* and *proposed* study sites and surrounding context, respectively, while sensor locations used to investigate wind conditions are illustrated in Figures 2A through 4B.

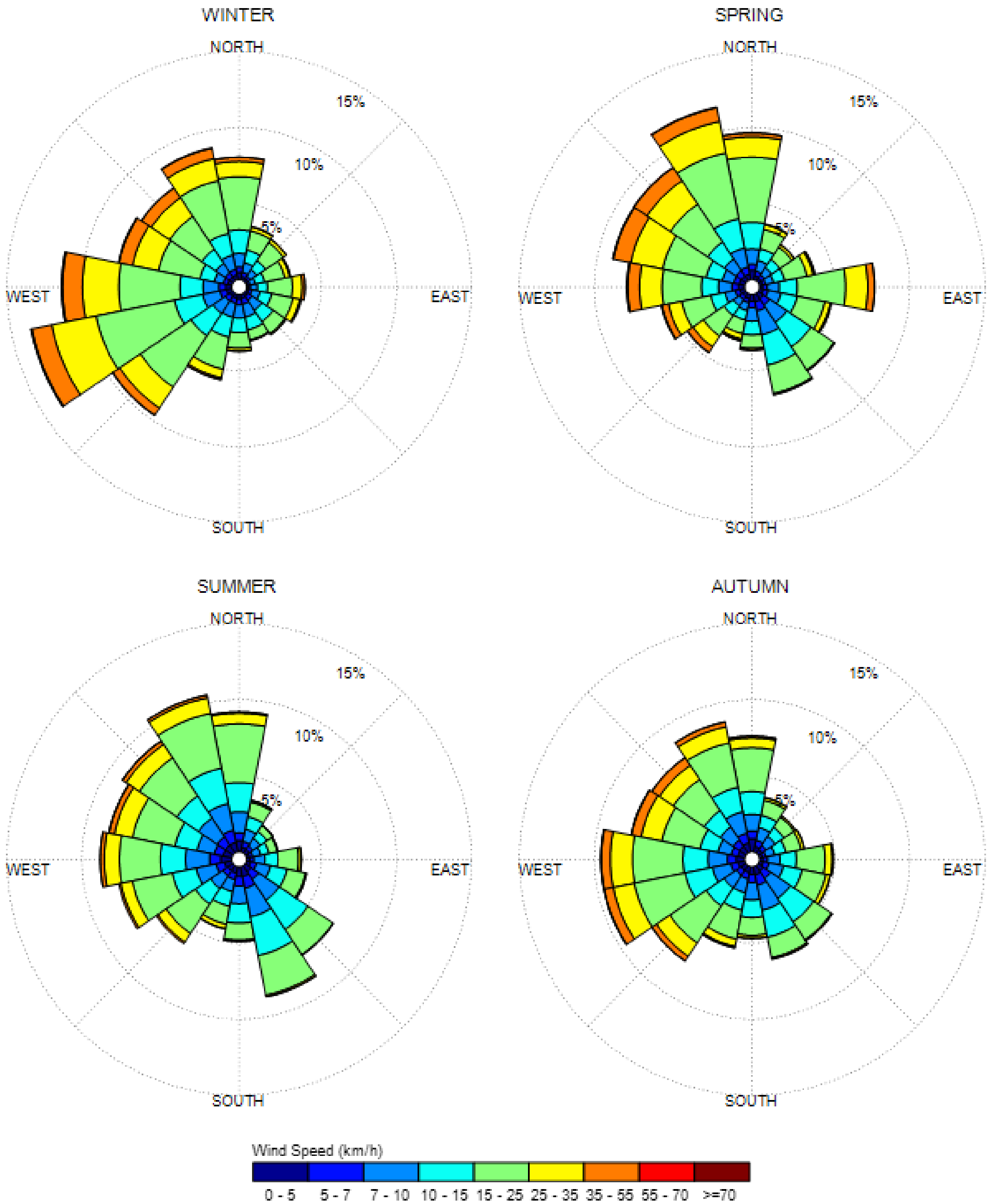
Mean and peak wind speed values for each location and wind direction were calculated from real-time pressure measurements, recorded at a sample rate of 500 samples per second, and taken over a 60-second time period. This period at model-scale corresponds approximately to one hour in full-scale, which matches the time frame of full-scale meteorological observations. Measured mean and gust wind speeds at grade were referenced to the wind speed measured near the ceiling of the wind tunnel to generate mean and peak wind speed ratios. Ceiling height in the wind tunnel represents the depth of the boundary layer of wind flowing over the earth's surface, referred to as the gradient height. Within this boundary layer, mean wind speed increases up to the gradient height and remains constant thereafter. Appendices C and D provide greater detail of the theory behind wind speed measurements. Wind tunnel measurements for this project, conducted in Gradient Wind's wind tunnel facility, meet or exceed guidelines found in the National Building Code of Canada 2015 and of 'Wind Tunnel Studies of Buildings and Structures', ASCE Manual 7 Reports on Engineering Practice No 67.

4.3 Meteorological Data Analysis - Pearson International Airport

A statistical model for winds in Toronto was developed from over 50 years of hourly meteorological wind data recorded at Pearson International Airport. Wind speed and direction data were analyzed for each month of the year in order to determine the statistically prominent wind directions and corresponding speeds, and to characterize similarities between monthly weather patterns. Based on this portion of the analysis, the four seasons are represented by grouping data from consecutive months based on similarity of weather patterns, and not according to the traditional calendar method.

The statistical model of the Toronto area wind climate, which indicates the directional character of local winds on a seasonal basis, is illustrated on the following page. The plots illustrate seasonal distribution of measured wind speeds and directions in km/h. Probabilities of occurrence of different wind speeds are represented as stacked polar bars in sixteen azimuth divisions. The radial direction represents the percentage of time for various wind speed ranges per wind direction during the measurement period. The preferred wind speeds and directions can be identified by the longer length of the bars. For Pearson International Airport, the most common winds concerning pedestrian comfort occur from the southwest clockwise to the north, as well as those from the east. The directional preference and relative magnitude of the wind speed varies somewhat from season to season, with the summer months displaying the calmest winds relative to the remaining seasonal periods.

SEASONAL DISTRIBUTION OF WINDS FOR VARIOUS PROBABILITIES
PEARSON INTERNATIONAL AIRPORT, TORONTO, ONTARIO



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.

4.4 Pedestrian Comfort and Safety Guidelines

Pedestrian comfort and safety guidelines are based on the mechanical effects of wind without consideration of other meteorological conditions (i.e. temperature, relative humidity). The comfort guidelines assume that pedestrians are appropriately dressed for a specified outdoor activity during any given season. Four pedestrian comfort classes are based on 80% non-exceedance Guest Equivalent Mean (GEM) wind speed ranges, which include (i) Sitting; (ii) Standing; (iii) Walking; and (iv) Uncomfortable. More specifically, the comfort classes and associated GEM wind speed ranges are summarized as follows:

(i) **Sitting** – A wind speed below 10 km/h (i.e. 0 – 10 km/h) would be considered acceptable for sedentary activities, including sitting.

(ii) **Standing** – A wind speed below 15 km/h (i.e. 10 km/h – 15 km/h) is acceptable for activities such as standing or leisurely strolling.

(iii) **Walking** – A wind speed below 20 km/h (i.e. 15 km/h – 20 km/h) is acceptable for walking or more vigorous activities.

(iv) **Uncomfortable** – A wind speed over 20 km/h is classified as uncomfortable from a pedestrian comfort standpoint. Brisk walking and exercise, such as jogging, would be acceptable for moderate excesses of this criterion.

The pedestrian safety wind speed guideline is based on the approximate threshold that would cause a vulnerable member of the population to fall. A 0.1% exceedance gust wind speed of greater than 90 km/h is classified as dangerous.

Experience and research on people's perception of mechanical wind effects has shown that if the wind speed levels are exceeded for more than 20% of the time, the activity level would be judged to be uncomfortable by most people. For instance, if wind speeds of 10 km/h were exceeded for more than 20% of the time most pedestrians would judge that location to be too windy for sitting or more sedentary activities. Similarly, if 20 km/h at a location were exceeded for more than 20% of the time, walking or less vigorous activities would be considered uncomfortable. As most of these criteria are based on subjective reactions of a population to wind forces, their application is partly based on experience and judgment.

Once the pedestrian wind speed predictions have been established at tested locations, the assessment of pedestrian comfort involves determining the suitability of the predicted wind conditions for their associated spaces. This step involves comparing the predicted comfort class to the desired comfort class, which is dictated by the location type represented by the sensor (i.e. a sidewalk, building entrance, amenity space, or other). An overview of common pedestrian location types and their desired comfort classes are summarized below.

DESIRED PEDESTRIAN COMFORT CLASSES FOR VARIOUS LOCATION TYPES

Location Types	Desired Comfort Classes
Primary Building Entrance	Standing
Secondary Building Access Point	Walking
Public Sidewalks / Pedestrian Walkways	Walking
Outdoor Amenity Spaces	Sitting / Standing
Cafés / Patios / Benches / Gardens	Sitting / Standing
Plazas	Standing / Walking
Transit Stops	Standing
Public Parks	Sitting / Walking
Garage / Service Entrances	Walking
Vehicular Drop-Off Zones	Walking
Laneways / Loading Zones	Walking

5. RESULTS AND DISCUSSION

Tables A1 and A2 in Appendix A provide a summary of seasonal comfort predictions for each sensor location under the *existing* massing scenario. Similarly, Tables B1 and B2 in Appendix B provide the seasonal comfort predictions for under the *proposed* massing scenario. The tables indicate the 80% non-exceedance GEM wind speeds and corresponding comfort classifications as defined in Section 4.4. In other words, a wind speed threshold of 19.1 for the summer season indicates that 80% of the measured data falls at or below 19.1 km/h during the summer months and conditions are therefore suitable for walking, as the 80% threshold value falls within the exceedance range of 15-20 km/h for walking. The tables include the predicted threshold values for each sensor location during each season, accompanied by the corresponding predicted comfort class (i.e., sitting, standing, walking, etc.).

The most significant findings of the PLW study are summarized in Sections 5.1 and 5.2. To assist with understanding and interpretation, predicted conditions for the proposed development are also illustrated in colour-coded format in Figures 2A through 4B. Conditions suitable for sitting are represented by the colour blue, while standing is represented by green, and walking by yellow. Conditions considered uncomfortable for walking are represented by the colour orange. For locations where the wind safety criterion is exceeded, the sensor is highlighted in red.

5.1 Pedestrian Comfort Suitability – *Existing Scenario*

Based on the analysis of the measured data, consideration of local climate data, and the suitability descriptors provided in Tables A1 and A2 in Appendix A and illustrated in Figures 2A and 2B, this section summarizes the significant findings of the PLW study with respect to the *existing scenario*, as follows:

1. All public sidewalks, walkways, laneways, landscaped spaces, and parking areas within and surrounding the proposed development currently experience wind conditions suitable for walking or better throughout the year.
2. The children's playground to the northwest of the site (Sensor 28) currently experiences standing conditions year-round.
3. The existing playground towards the south end of the study site (Sensor 54) and the proposed relocated playground site (Sensor 41 & 42) are generally comfortable for standing throughout the year.
4. The nearby basketball court (Sensors 43 & 44) is suitable for standing during the summer and walking or better throughout the year.
5. Within the context of typical weather patterns, which exclude anomalous localized storm events such as tornadoes and downbursts, no areas over the study site were found to experience wind conditions that are considered unsafe.

5.2 Pedestrian Comfort Suitability – *Proposed Scenario*

Based on the analysis of the measured data, consideration of local climate data, and the suitability descriptors provided in Tables B1-B2 in Appendix B and illustrated in Figures 3A through 4B, this section summarizes the significant findings of the PLW study with respect to the *proposed scenario*, as follows:

1. Most public sidewalks, walkways, laneways, landscaped spaces, and parking areas within and surrounding the proposed development will experience wind conditions suitable for walking or better during each seasonal period, which is acceptable for the intended uses of spaces. Exceptions include isolated walkway/landscaped areas opposite the private driveway (Sensors 35 & 36) and to the south (Sensors 40 & 41, with respect to true north), which exceed the walking criterion during the winter months. Notably, all areas remain safe annually, as per the wind speed safety guideline denoted in Section 4.4.

   For the areas opposite the private driveway (Sensors 35 & 36), the existing tall plantings along the west elevation of 2111 Roche Court are expected to reduce the noted wind speeds, improving wind comfort. It may be necessary to provide additional tall plantings, preferably coniferous and rising at least 1.8-metres-tall, along the property line of the site, to ensure walking conditions during the winter. For the south area (Sensors 40 & 41), similarly tall, dense plantings, such as coniferous/marcescent tree species, are recommended along the property line to buffer salient winds. The exact composition and configuration of such mitigation can be coordinated at a later date as the landscape plan progresses.

2. The residential lobby entrance (Sensor 50) will experience sitting conditions throughout the year, which is appropriate for the intended use.

   All secondary building access points (including stairwell exits, loading areas, and vehicle entrances) throughout the proposed development will be comfortable for walking or better throughout the year, which is acceptable for the intended uses of spaces.

3. The existing children's playground to the northwest of the site (Sensor 28) will experience sitting conditions during the summer months and standing during the winter months, which is appropriate and represents an improvement over the existing conditions.

4. The relocated playground (Sensors 41 & 42) will generally be suitable for walking or better year-round, with the south portion (Sensor 41) becoming uncomfortable for walking during the winter months. To improve wind comfort, it is recommended to provide 2.0-metre-tall wind barriers along the perimeter of this playground, particularly towards the west and north ends to buffer prominent wind directions.

5. The nearby basketball court (Sensors 43 & 44) will be suitable for standing during the summer and walking during the winter, which is appropriate for the intended use and largely unchanged from existing conditions.

6. Without mitigation, the Level 5 (Sensors 61-64) outdoor amenity terrace will experience a mix of sitting, standing, and walking conditions during the summer months, with calmer conditions to the west and east (relative to true north) portions of the terrace (Sensors 61 and 64, respectively). Additionally, the northwest corner (Sensor 62) exceeds the annual safety criterion. To ensure the north portion of the terrace (Sensors 62 & 63) will be safe and comfortable for sitting or more sedentary activities throughout the warmer months, it is recommended to raise the north perimeter guard to at least 2.0 metres above the walking surface, and continue the raised perimeter around the northwest and northeast corners. Additionally, designated seating areas at the northwest area (Sensor 63) are recommended to be equipped with overhead canopy or pergola structures to deflect downwash flows, and targeted upwind barriers for central areas of the terrace. Such barriers should measure at least 1.8-metres-tall and may comprise high-solidity wind screens, raised planters with dense coniferous plantings, or a combination thereof. The exact configuration of such mitigation can be coordinated with the design team as the landscape plans develop.

7. The rooftop outdoor amenity terrace (Sensors 65 & 66) will be suitable for standing during the summer months. To improve conditions over the space, it is recommended to raise the full perimeter guard to 2.0 metres above the walking surface.

8. Within the context of typical weather patterns, which exclude anomalous localized storm events such as tornadoes and downbursts, no areas over the study site, apart from the noted northwest corner of the Level 5 terrace, were found to experience wind conditions that are considered unsafe.

6. CONCLUSIONS AND RECOMMENDATIONS

This report summarizes the methodology, results, and recommendations related to a pedestrian level wind study for a proposed residential development located at 1970-1980 Fowler Drive in Mississauga, Ontario. The study was performed in accordance with industry standard wind tunnel testing and data analysis procedures.

A complete summary of the predicted wind conditions is provided in Section 5 of this report and is also illustrated in Figures 2A through 4B, as well as Tables A1-A2 and B1-B2 in the appendices. Based on wind tunnel test results, meteorological data analysis, and experience with similar developments in Mississauga, we conclude that the future wind conditions over most grade-level pedestrian wind-sensitive areas within and surrounding the study site will be acceptable for the intended uses on a seasonal basis. Exceptions include an isolated area to the south and the relocated playground to the southeast, for which mitigation is recommended as described in Section 5.2. To ensure that the Level 5 and rooftop outdoor amenity terraces will be comfortable for sitting or more sedentary activities throughout the warmer months, mitigation is recommended as described in Section 5.2.

Within the context of typical weather patterns, which exclude anomalous localized storm events such as tornadoes and downbursts, no areas over the study site, apart from the isolated northwest corner of the Level 5 terrace, were found to experience wind conditions that are considered unsafe.

This concludes our pedestrian level wind study and report. Please advise the undersigned of any questions or comments.

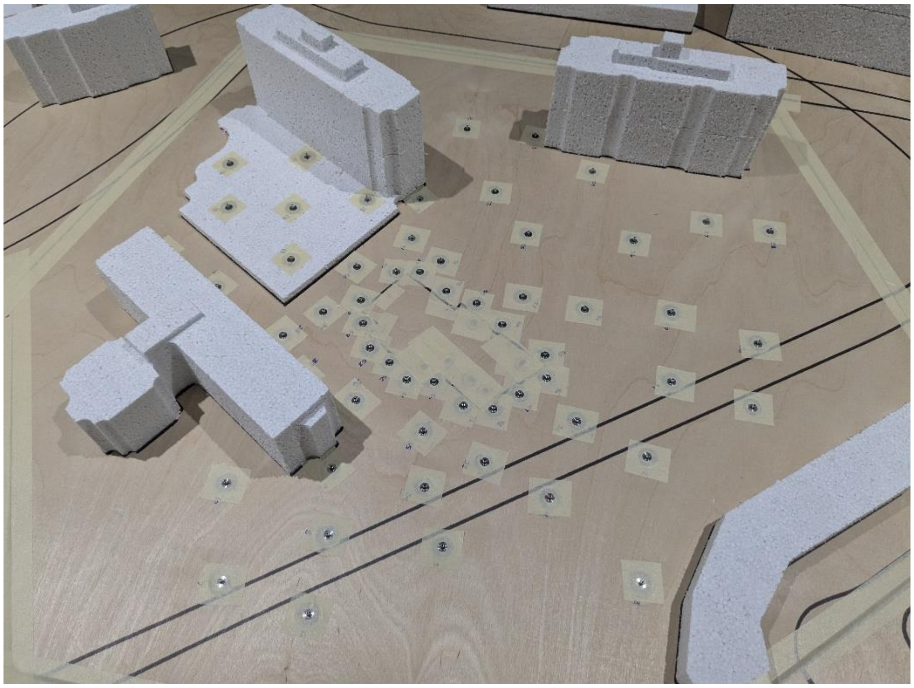
Sincerely,

Gradient Wind Engineering Inc.

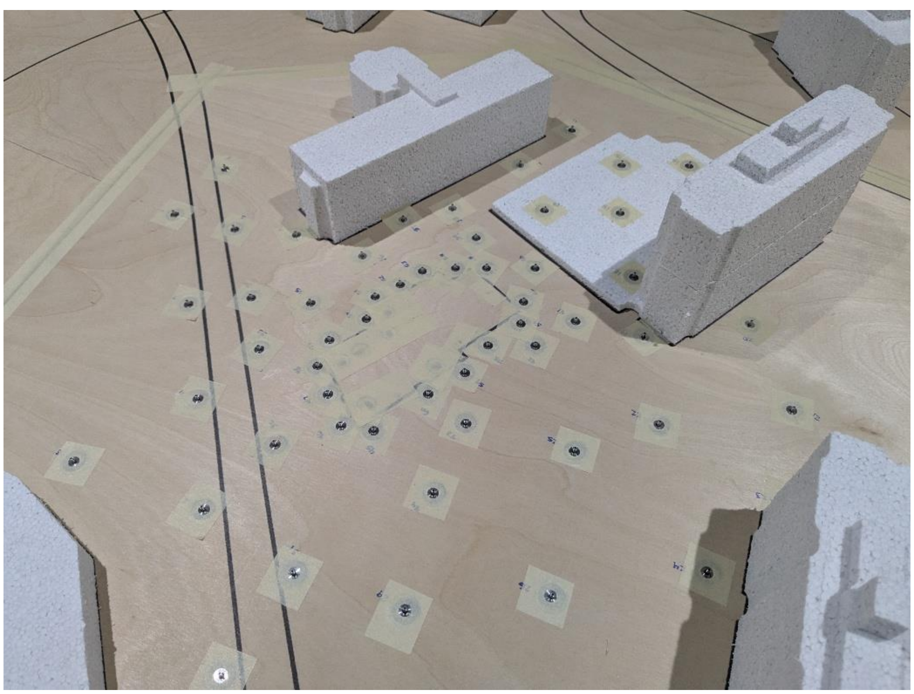
Cristiano Kondo, MESc.,
Junior Wind Scientist

Angelina Gomes, P.Eng.,
Wind Engineer

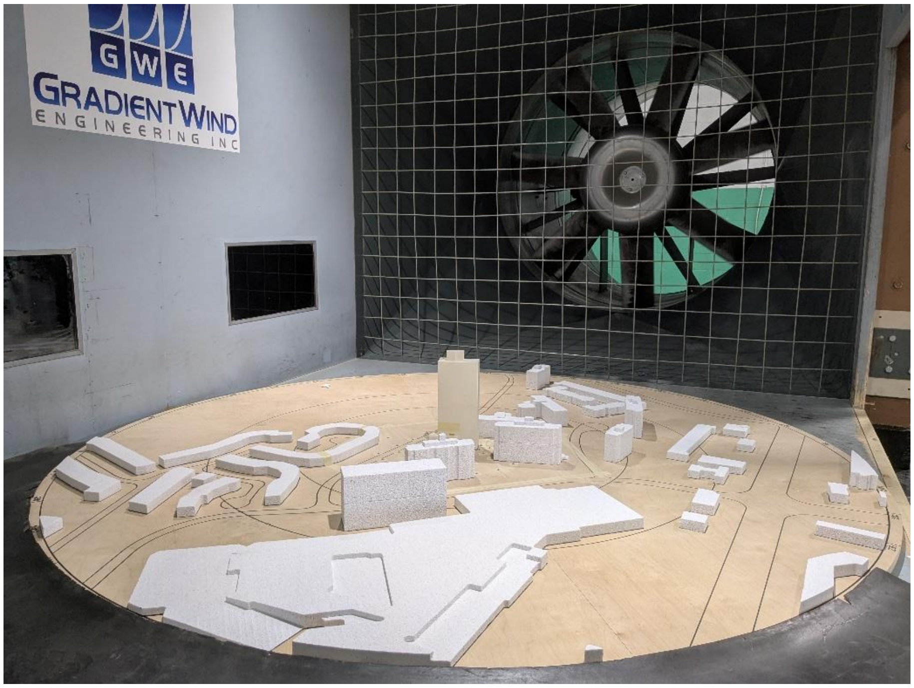
GW25-049-WTPLW



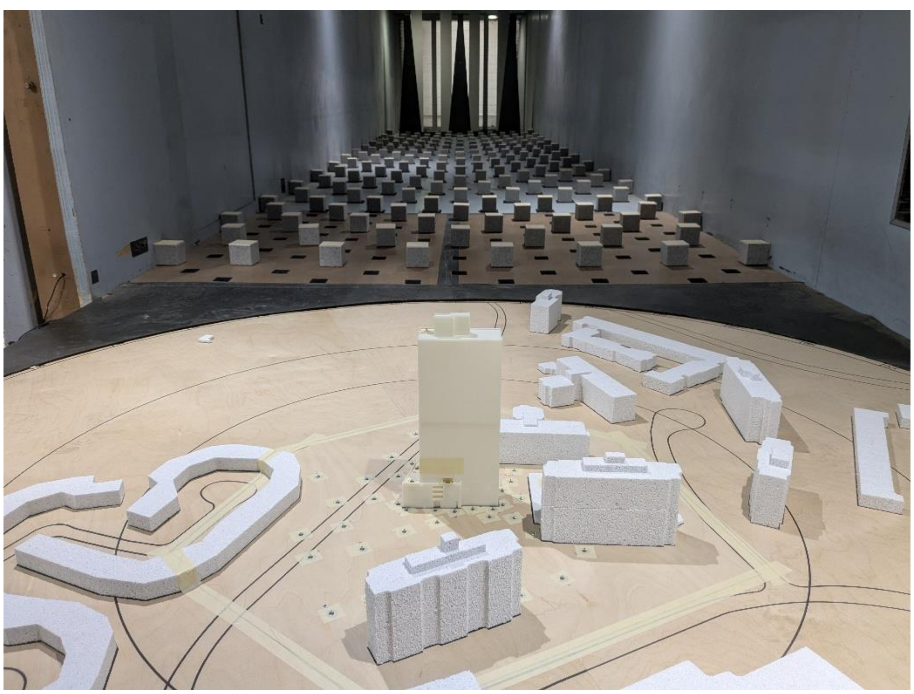
PHOTOGRAPH 1: CLOSE-UP VIEW OF EXISTING CONTEXT MODEL LOOKING SOUTHWEST



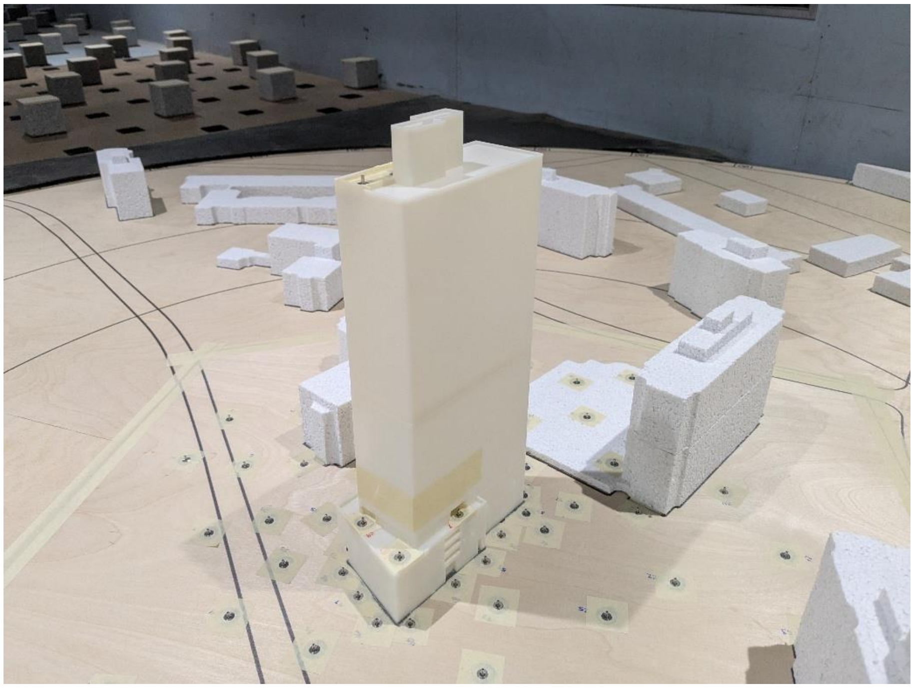
PHOTOGRAPH 2: CLOSE-UP VIEW OF EXISTING CONTEXT MODEL LOOKING SOUTH



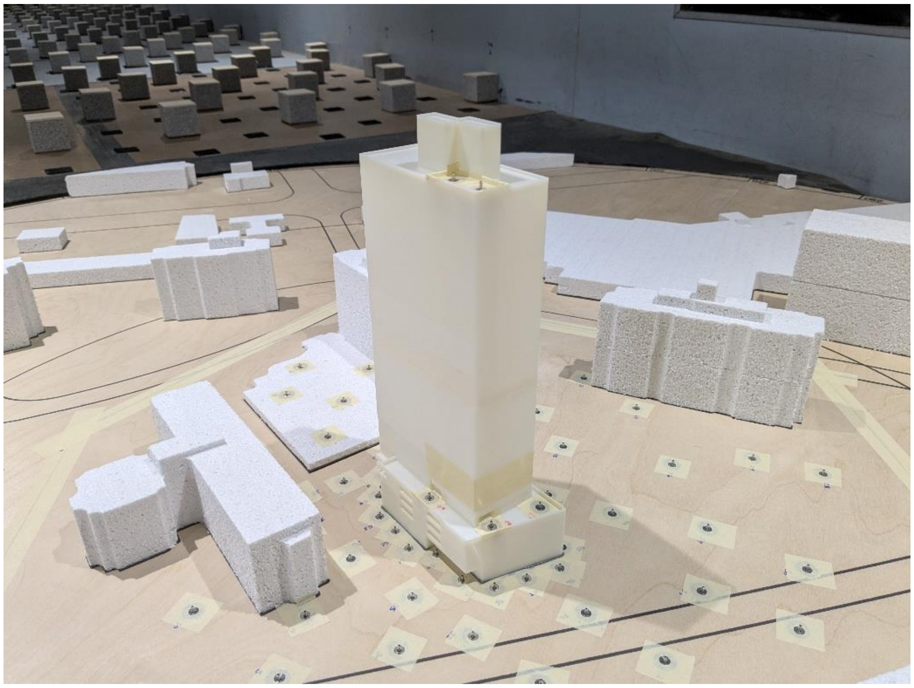
PHOTOGRAPH 3: <u>PROPOSED</u> STUDY MODEL INSIDE THE GWE WIND TUNNEL LOOKING DOWNWIND



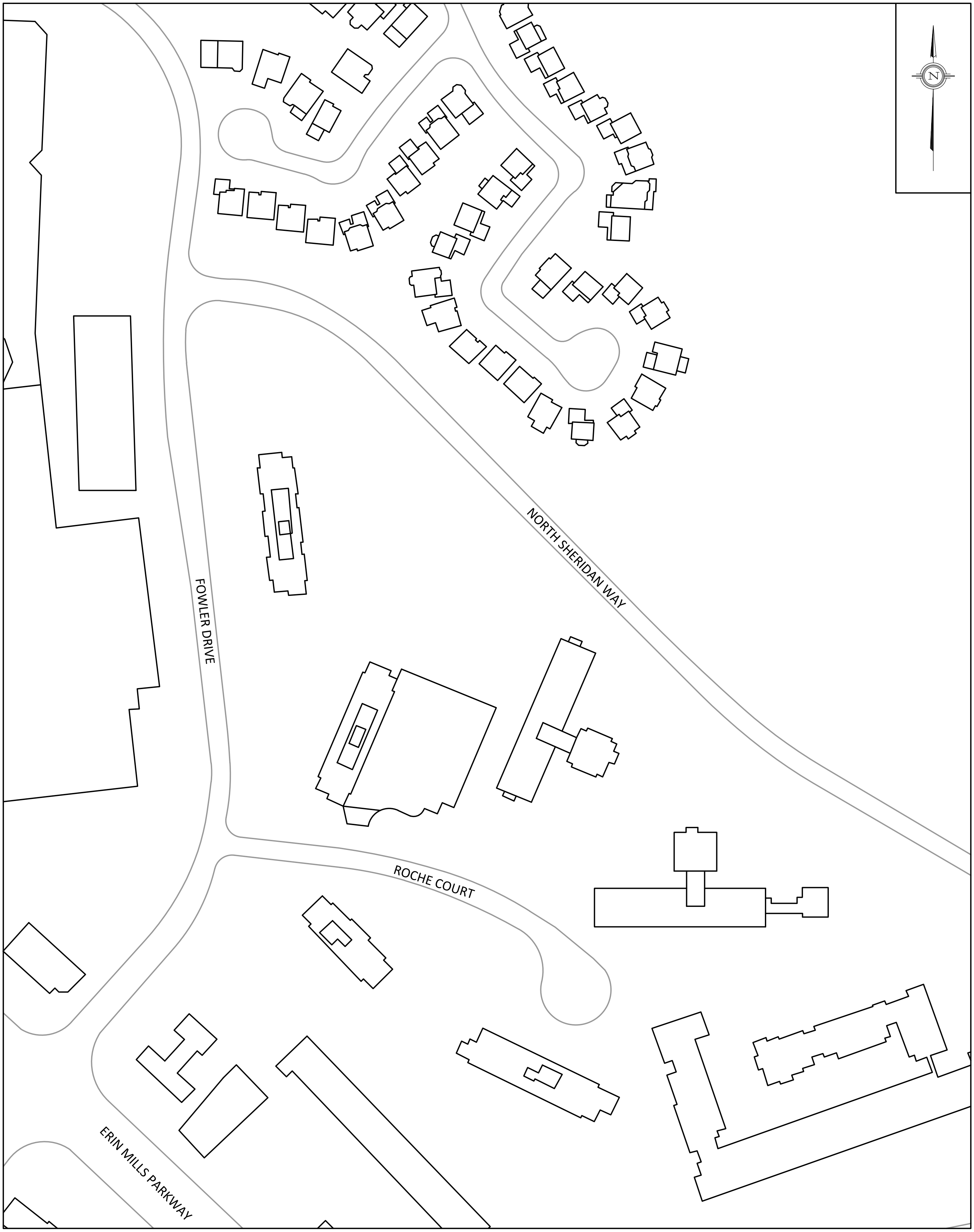
PHOTOGRAPH 4: <u>PROPOSED</u> STUDY MODEL INSIDE THE GWE WIND TUNNEL LOOKING UPWIND



PHOTOGRAPH 5: CLOSE-UP VIEW OF PROPOSED STUDY MODEL LOOKING SOUTH



PHOTOGRAPH 6: CLOSE-UP VIEW OF PROPOSED STUDY MODEL LOOKING SOUTHWEST



GRADIENTWIND
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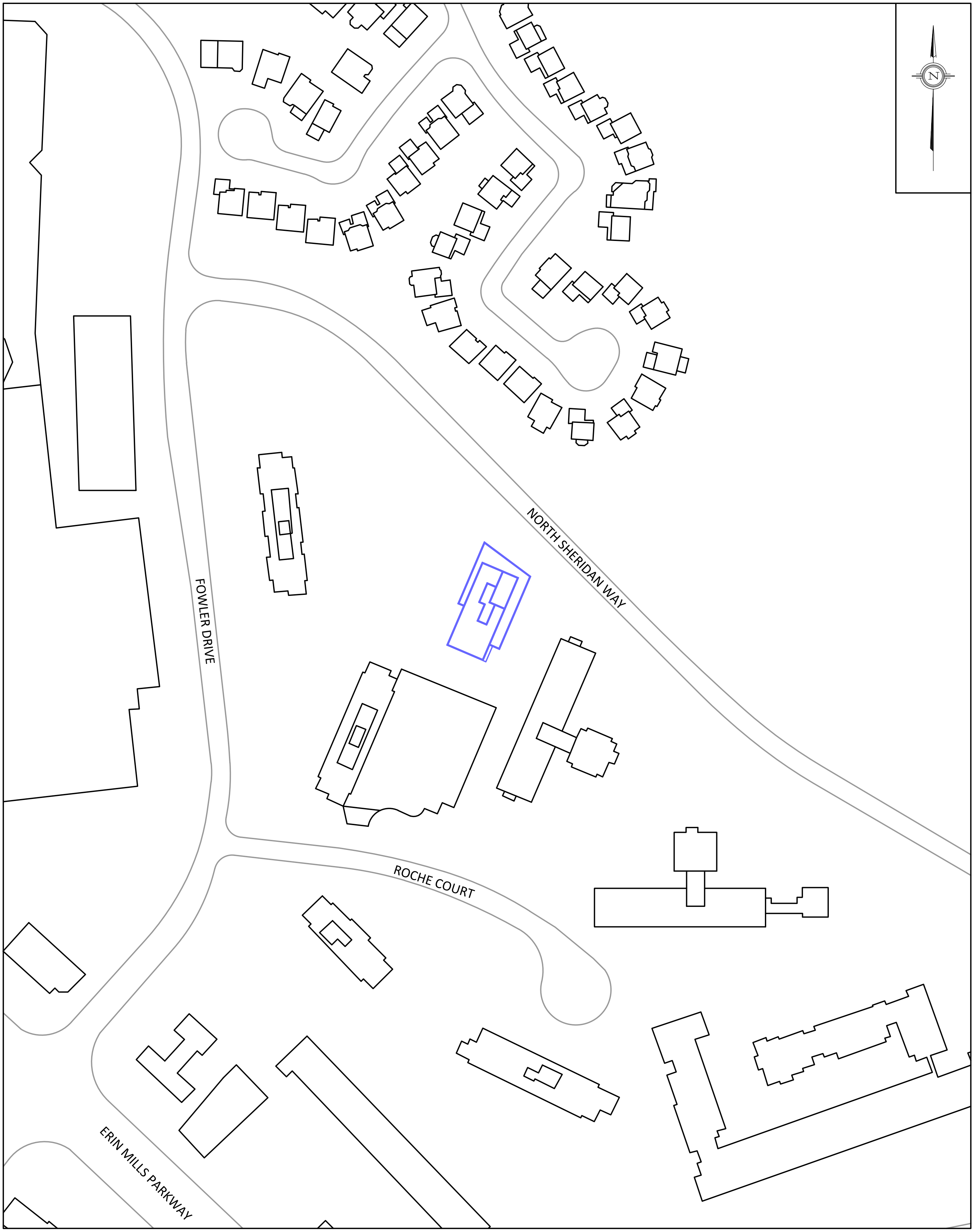
PROJECT	1970-1980 FOWLER DRIVE, MISSISSAUGA PEDESTRIAN LEVEL WIND STUDY
SCALE	1:2500 (APPROX.)
DRAWING NO.	GW25-049-PLW-1A
DATE	MAY 13, 2025
DRAWN BY	K.A.
DESCRIPTION	FIGURE 1A: EXISTING SCENARIO AND SURROUNDING CONTEXT



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ENGINEERS & SCIENTISTS

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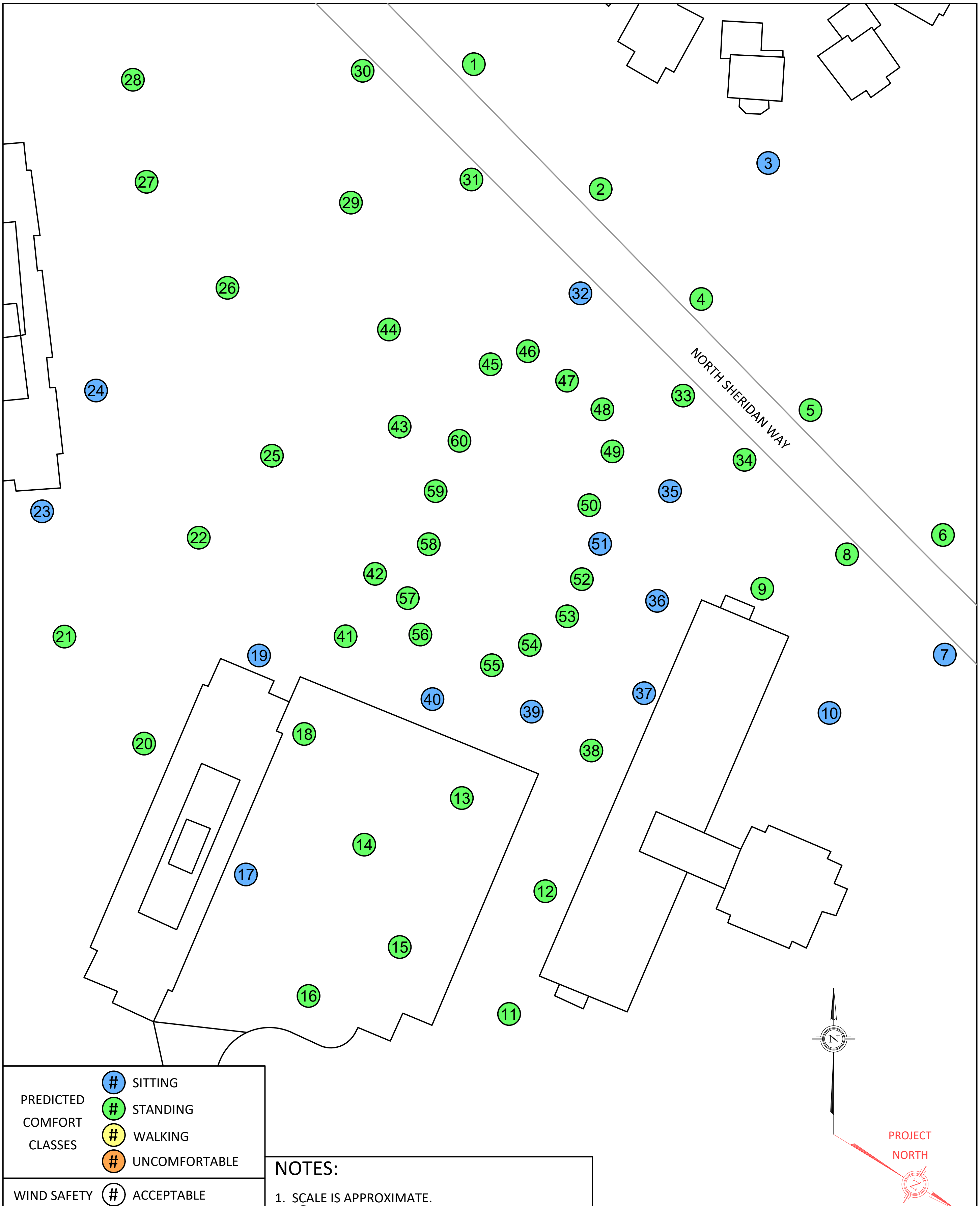
PROJECT	1970-1980 FOWLER DRIVE, MISSISSAUGA PEDESTRIAN LEVEL WIND STUDY
SCALE	1:2500 (APPROX.)
DRAWING NO.	GW25-049-PLW-1B
DATE	MAY 13, 2025
DRAWN BY	K.A.
DESCRIPTION	FIGURE 1B: FUTURE SCENARIO AND SURROUNDING CONTEXT



PREDICTED COMFORT CLASSES
- # SITTING
- # STANDING
- # WALKING
- # UNCOMFORTABLE

WIND SAFETY CRITERION
- # ACCEPTABLE
- # EXCEEDED

NOTES:

1. SCALE IS APPROXIMATE.
2. # PEDESTRIAN LEVEL WIND SENSOR LOCATION.

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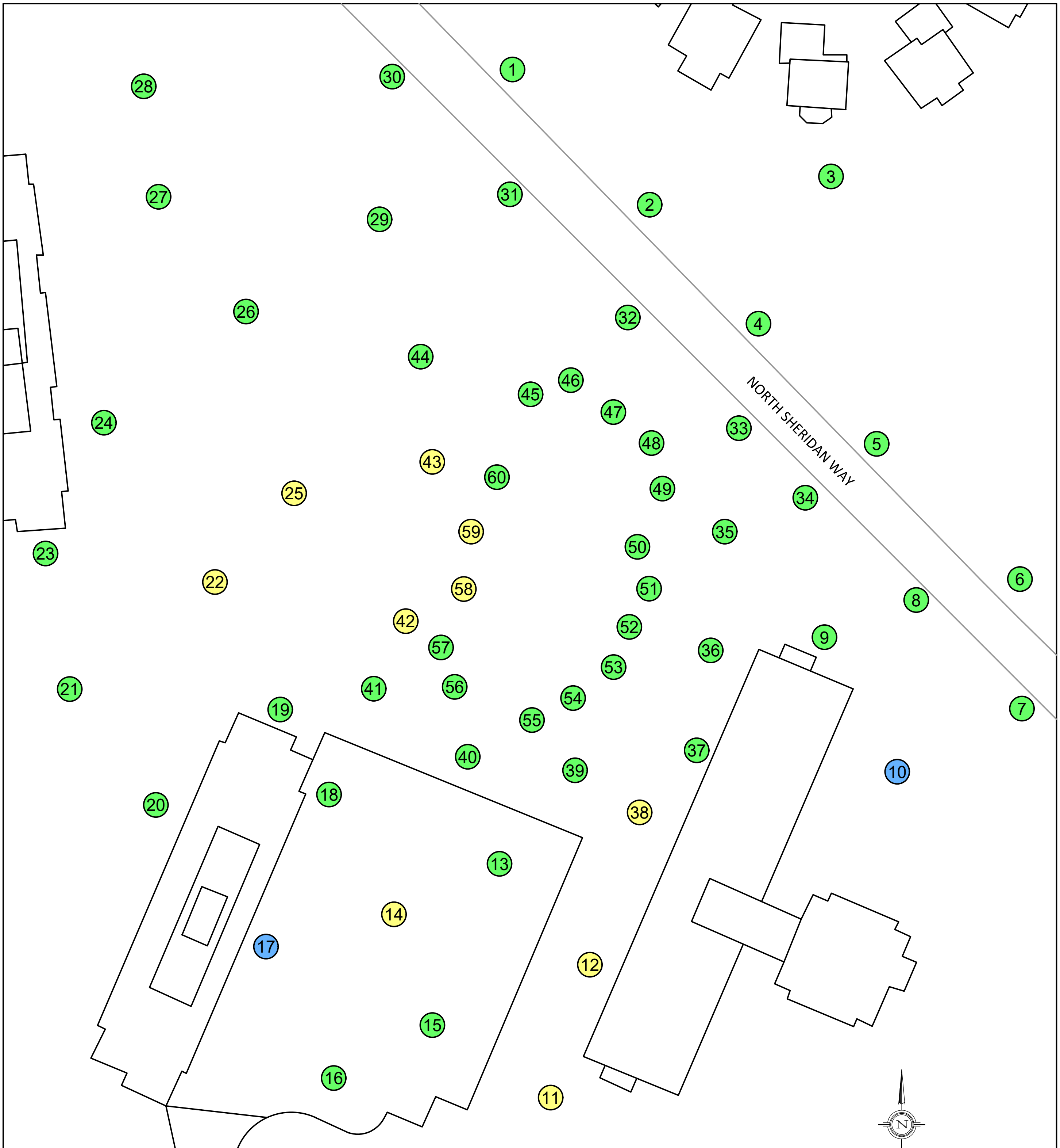
PROJECT	1970-1980 FOWLER DRIVE, MISSISSAUGA PEDESTRIAN LEVEL WIND STUDY	
SCALE	1:1000 (APPROX.)	DRAWING NO. GW25-049-PLW-2A
DATE	MAY 13, 2025	DRAWN BY K.A.

DESCRIPTION

FIGURE 2A: SUMMER
EXISTING GRADE LEVEL PLW SENSOR LAYOUT
PEDESTRIAN COMFORT PREDICTIONS



PREDICTED COMFORT CLASSES

- # SITTING
- # STANDING
- # WALKING
- # UNCOMFORTABLE

WIND SAFETY CRITERION

- # ACCEPTABLE
- # EXCEEDED

NOTES:

1. SCALE IS APPROXIMATE.
2. # PEDESTRIAN LEVEL WIND SENSOR LOCATION.

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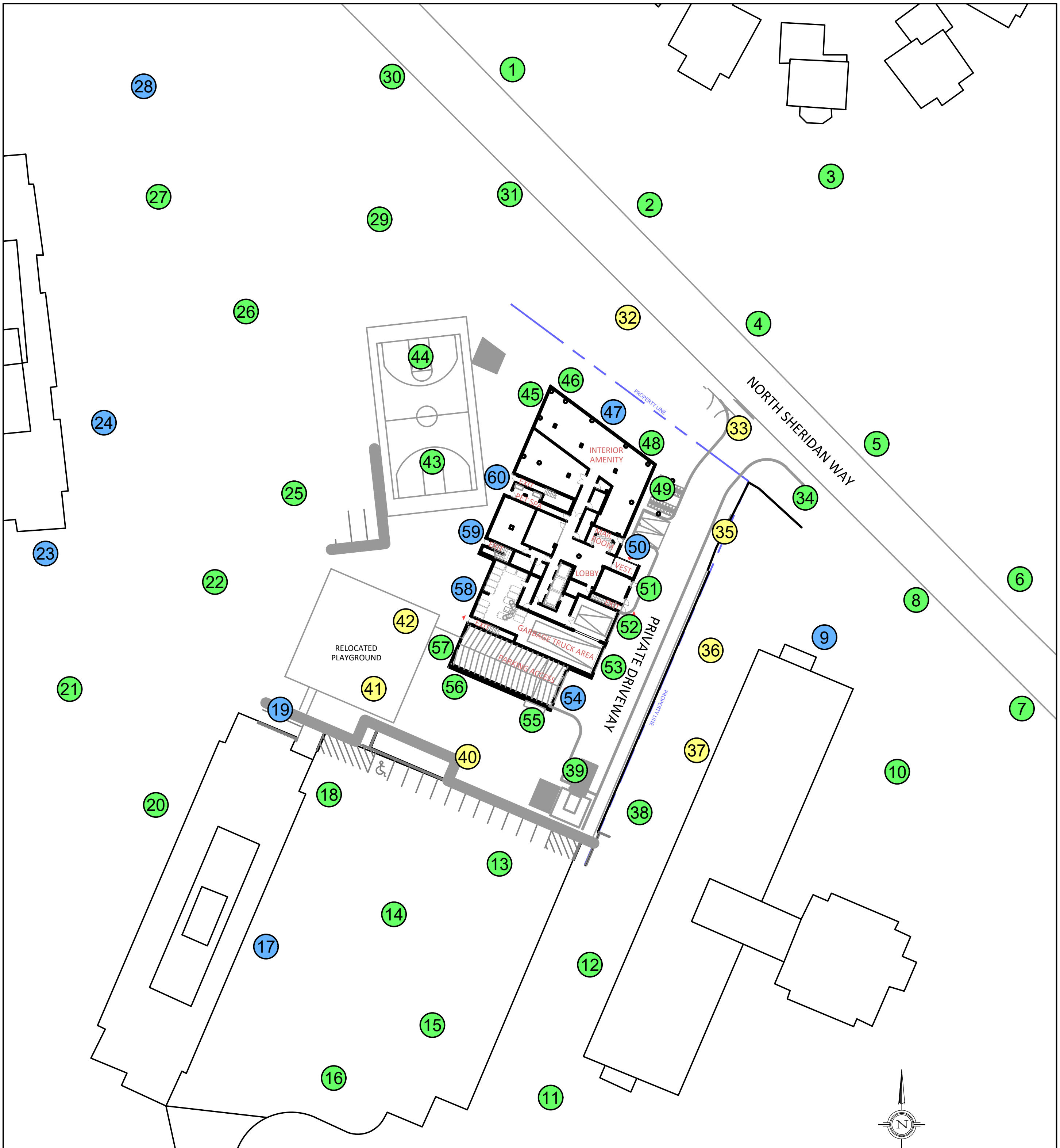
PROJECT	1970-1980 FOWLER DRIVE, MISSISSAUGA PEDESTRIAN LEVEL WIND STUDY
SCALE	1:1000 (APPROX.)
DRAWING NO.	GW25-049-PLW-2B
DATE	MAY 13, 2025
DRAWN BY	K.A.
DESCRIPTION	FIGURE 2B: WINTER EXISTING GRADE LEVEL PLW SENSOR LAYOUT PEDESTRIAN COMFORT PREDICTIONS



PREDICTED COMFORT CLASSES

- # SITTING
- # STANDING
- # WALKING
- # UNCOMFORTABLE

WIND SAFETY CRITERION

- # ACCEPTABLE
- # EXCEEDED

NOTES:

1. SCALE IS APPROXIMATE.
2. # PEDESTRIAN LEVEL WIND SENSOR LOCATION.

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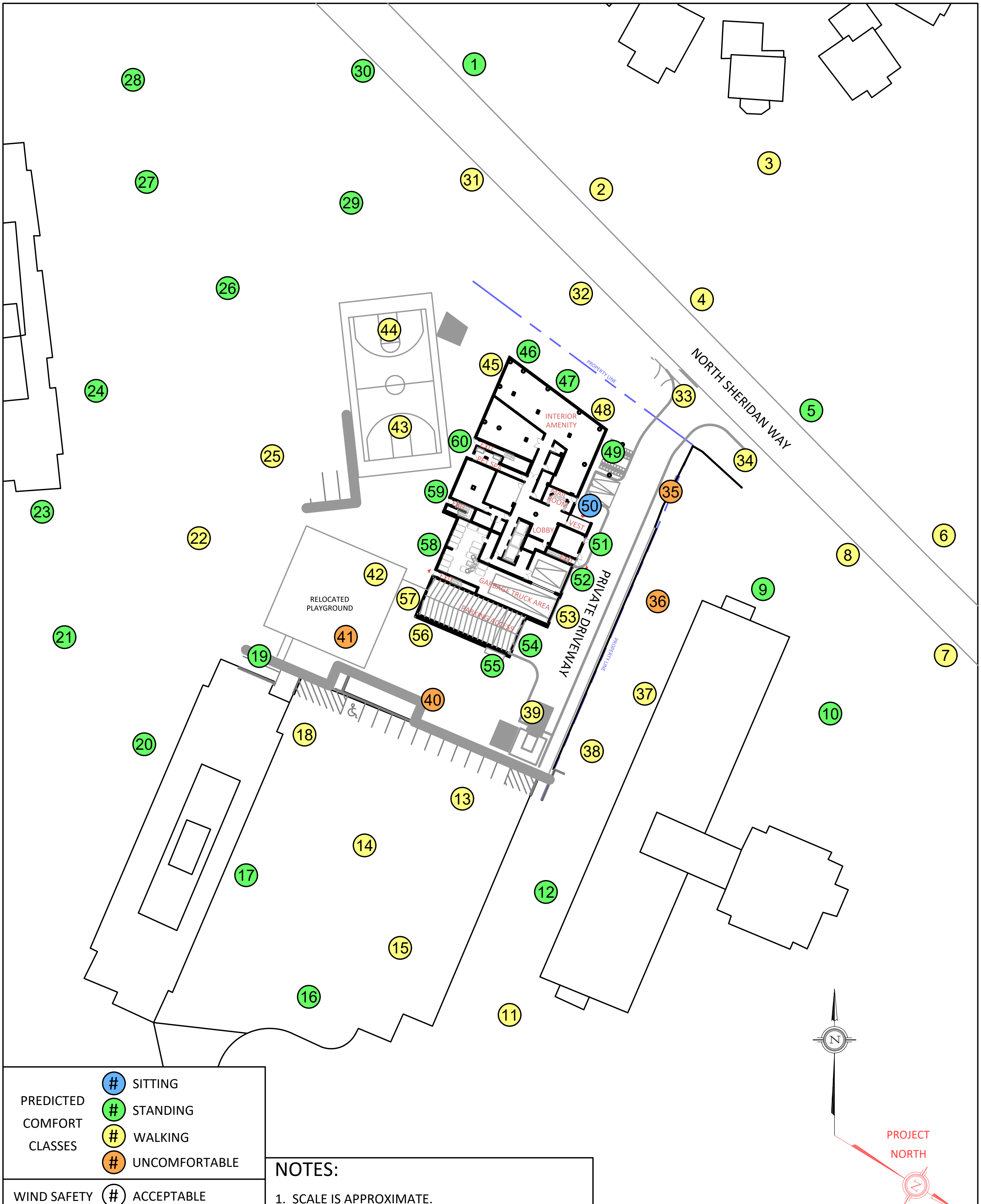
PROJECT: 1970-1980 FOWLER DRIVE, MISSISSAUGA PEDESTRIAN LEVEL WIND STUDY		DESCRIPTION: FIGURE 3A: SUMMER FUTURE GRADE LEVEL PLW SENSOR LAYOUT PEDESTRIAN COMFORT PREDICTIONS
SCALE: 1:1000 (APPROX.)	DRAWING NO. GW25-049-PLW-3A	
DATE: MAY 13, 2025	DRAWN BY: K.A.	



NOTES:

1. SCALE IS APPROXIMATE.
2. # PEDESTRIAN LEVEL WIND SENSOR LOCATION.

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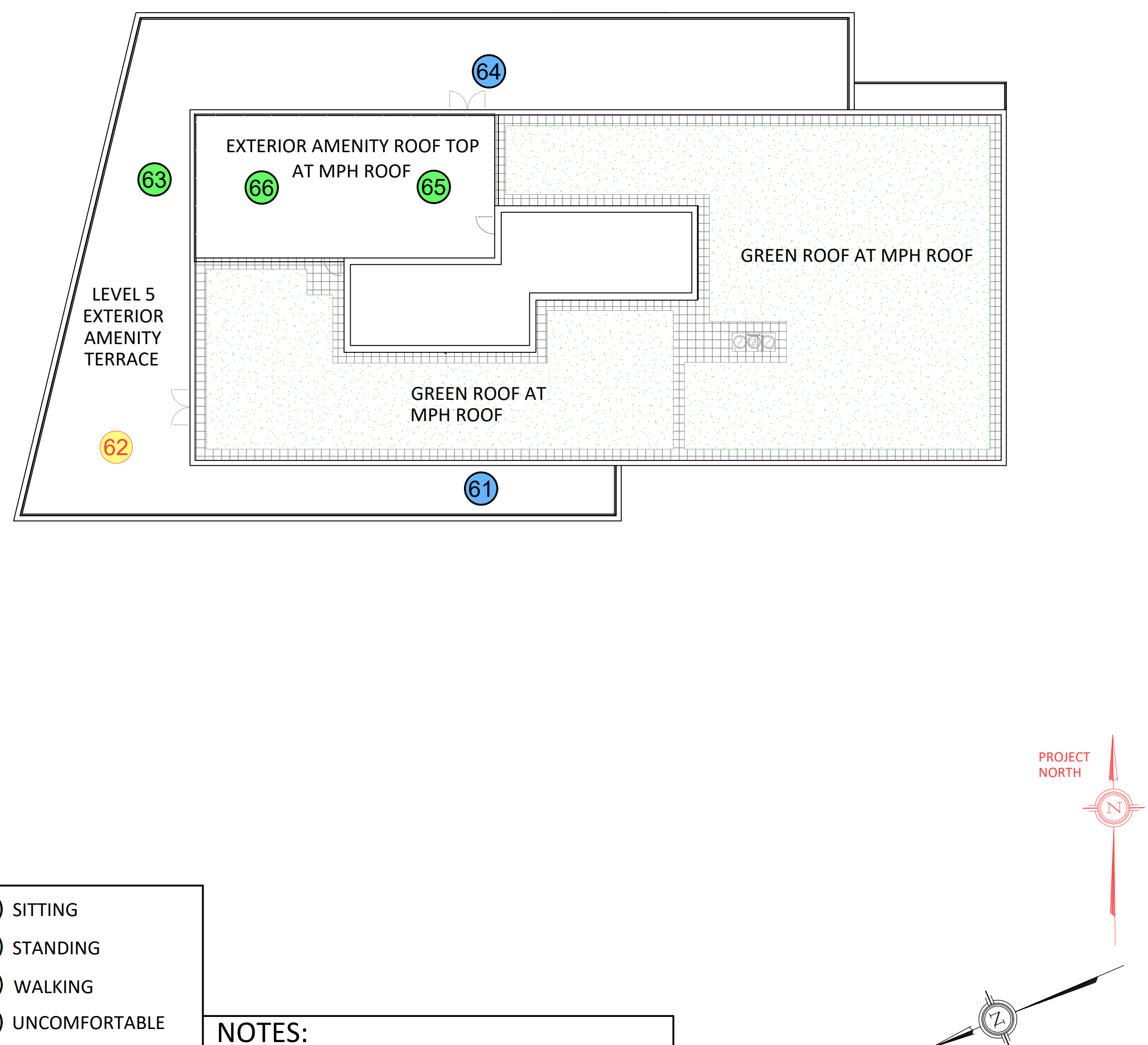
	SCALE: 1:1000 (APPROX.)	DRAWING NO.: GW25-049-PLW-3B	
	DATE: MAY 13, 2025	DRAWN BY: K.A.	



PREDICTED COMFORT CLASSES	# SITTING
	# STANDING
	# WALKING
	# UNCOMFORTABLE
WIND SAFETY CRITERION	# ACCEPTABLE
	# EXCEEDED

NOTES:

1. SCALE IS APPROXIMATE.
2. # PEDESTRIAN LEVEL WIND SENSOR LOCATION.

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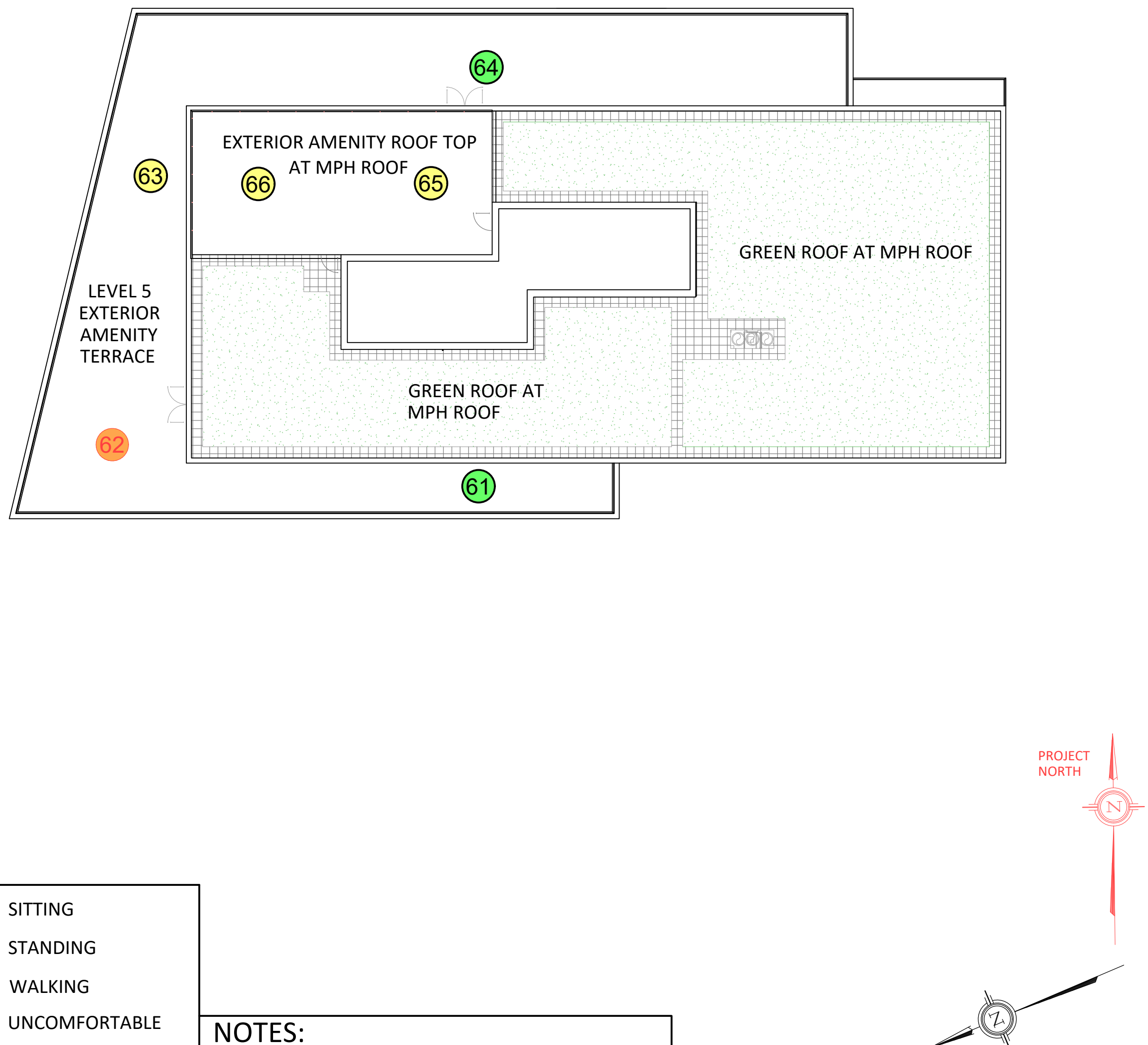
PROJECT		DESCRIPTION
1970-1980 FOWLER DRIVE, MISSISSAUGA PEDESTRIAN LEVEL WIND STUDY		FIGURE 4A: SUMMER FUTURE TERRACE PLW SENSOR LAYOUT PEDESTRIAN COMFORT PREDICTIONS
SCALE 1:400 (APPROX.)	DRAWING NO. GW25-049-PLW-4A	
DATE MAY 13, 2025	DRAWN BY K.A.	



PREDICTED COMFORT CLASSES	
#	SITTING
#	STANDING
#	WALKING
#	UNCOMFORTABLE

WIND SAFETY CRITERION	
#	ACCEPTABLE
#	EXCEEDED

NOTES:

1. SCALE IS APPROXIMATE.
2. # PEDESTRIAN LEVEL WIND SENSOR LOCATION.

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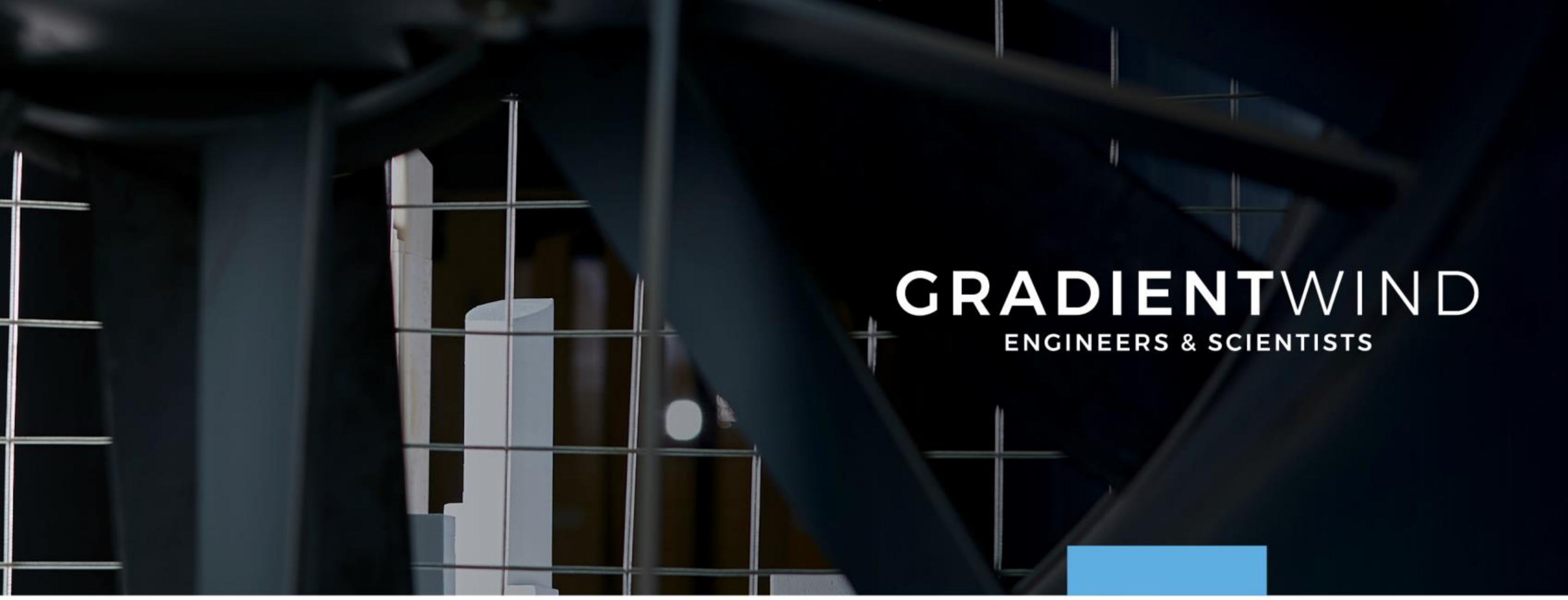
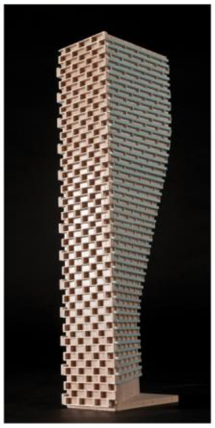
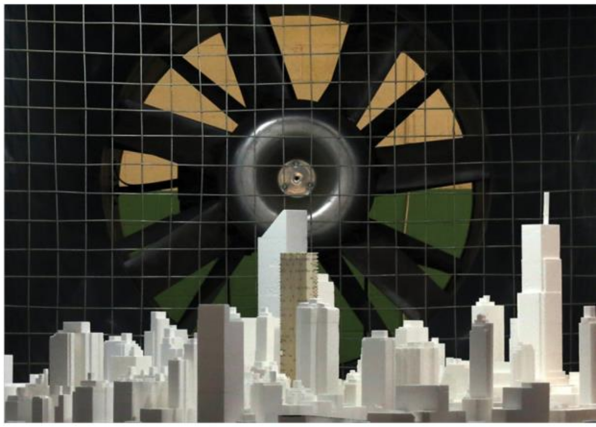
PROJECT	1970-1980 FOWLER DRIVE, MISSISSAUGA PEDESTRIAN LEVEL WIND STUDY		
SCALE	1:400 (APPROX.)	DRAWING NO.	GW25-049-PLW-4B
DATE	MAY 13, 2025	DRAWN BY	K.A.

DESCRIPTION

FIGURE 4B: WINTER
FUTURE TERRACE PLW SENSOR LAYOUT
PEDESTRIAN COMFORT PREDICTIONS







APPENDIX A

PEDESTRIAN COMFORT SUITABILITY, TABLES A1-A2 (EXISTING SCENARIO)

Guidelines	
Pedestrian Comfort	**20% exceedance wind speed** 0-10 km/h = Sitting, 10-15 km/h = Standing, 15-20 km/h = Walking, >20 km/h = Uncomfortable
Pedestrian Safety	**0.1% exceedance wind speed** 0-90 km/h = Safe

TABLE A1: SUMMARY OF PEDESTRIAN COMFORT (EXISTING SCENARIO)

Sensor	Pedestrian Comfort				Pedestrian Safety	
	Summer		Winter		Annual	
	Wind Speed	Comfort Class	Wind Speed	Comfort Class	Wind Speed	Safety Class
1	10.3	Standing	13.1	Standing	50.7	Safe
2	10.6	Standing	13.8	Standing	49.5	Safe
3	10.0	Sitting	13.6	Standing	50.5	Safe
4	10.6	Standing	13.9	Standing	50.8	Safe
5	10.8	Standing	13.7	Standing	49.3	Safe
6	11.0	Standing	13.8	Standing	52.6	Safe
7	10.0	Sitting	12.2	Standing	50.3	Safe
8	10.6	Standing	13.2	Standing	51.9	Safe
9	10.3	Standing	13.5	Standing	57.0	Safe
10	7.9	Sitting	9.5	Sitting	39.0	Safe
11	12.5	Standing	15.6	Walking	64.8	Safe
12	13.7	Standing	17.4	Walking	64.7	Safe
13	11.3	Standing	14.0	Standing	49.8	Safe
14	12.3	Standing	15.1	Walking	56.1	Safe
15	12.0	Standing	14.8	Standing	54.8	Safe
16	10.9	Standing	13.7	Standing	54.8	Safe
17	7.8	Sitting	9.9	Sitting	38.3	Safe
18	12.1	Standing	14.4	Standing	63.5	Safe
19	8.1	Sitting	10.2	Standing	43.8	Safe
20	11.2	Standing	14.3	Standing	53.3	Safe
21	10.9	Standing	14.0	Standing	52.5	Safe
22	12.6	Standing	17.0	Walking	66.6	Safe
23	9.8	Sitting	13.7	Standing	62.2	Safe
24	8.4	Sitting	10.3	Standing	41.4	Safe
25	12.1	Standing	16.1	Walking	63.7	Safe
26	10.5	Standing	12.4	Standing	51.1	Safe
27	11.3	Standing	14.0	Standing	57.9	Safe
28	11.0	Standing	13.9	Standing	53.4	Safe
29	10.8	Standing	13.0	Standing	50.9	Safe
30	10.6	Standing	12.9	Standing	49.3	Safe
31	10.6	Standing	13.2	Standing	50.4	Safe
32	9.6	Sitting	12.4	Standing	47.9	Safe
33	10.6	Standing	13.9	Standing	52.1	Safe
34	10.4	Standing	13.6	Standing	52.9	Safe
35	9.9	Sitting	13.3	Standing	53.7	Safe

Guidelines	
Pedestrian Comfort	**20% exceedance wind speed** 0-10 km/h = Sitting, 10-15 km/h = Standing, 15-20 km/h = Walking, >20 km/h = Uncomfortable
Pedestrian Safety	**0.1% exceedance wind speed** 0-90 km/h = Safe

TABLE A2: SUMMARY OF PEDESTRIAN COMFORT (EXISTING SCENARIO)

Sensor	Pedestrian Comfort				Pedestrian Safety	
	Summer		Winter		Annual	
	Wind Speed	Comfort Class	Wind Speed	Comfort Class	Wind Speed	Safety Class
36	9.9	Sitting	12.8	Standing	56.3	Safe
37	9.4	Sitting	12.0	Standing	50.2	Safe
38	12.2	Standing	15.6	Walking	58.9	Safe
39	9.9	Sitting	12.7	Standing	52.9	Safe
40	9.2	Sitting	11.6	Standing	44.5	Safe
41	10.9	Standing	14.1	Standing	66.1	Safe
42	12.5	Standing	16.3	Walking	69.6	Safe
43	12.4	Standing	15.7	Walking	61.3	Safe
44	11.0	Standing	13.5	Standing	51.7	Safe
45	11.3	Standing	14.2	Standing	52.9	Safe
46	10.8	Standing	13.7	Standing	50.7	Safe
47	10.7	Standing	13.5	Standing	49.8	Safe
48	10.4	Standing	13.5	Standing	49.0	Safe
49	10.4	Standing	13.4	Standing	52.1	Safe
50	10.8	Standing	13.8	Standing	52.3	Safe
51	9.6	Sitting	12.2	Standing	56.2	Safe
52	10.5	Standing	13.0	Standing	55.5	Safe
53	10.3	Standing	12.7	Standing	54.4	Safe
54	10.1	Standing	12.6	Standing	53.6	Safe
55	10.6	Standing	13.3	Standing	53.6	Safe
56	10.6	Standing	13.4	Standing	58.3	Safe
57	11.5	Standing	14.5	Standing	62.2	Safe
58	11.9	Standing	15.2	Walking	62.9	Safe
59	11.9	Standing	15.4	Walking	62.4	Safe
60	11.8	Standing	15.0	Standing	59.3	Safe

APPENDIX B

PEDESTRIAN COMFORT SUITABILITY, TABLES B1-B2 (PROPOSED SCENARIO)

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Guidelines	
Pedestrian Comfort	**20% exceedance wind speed** 0-10 km/h = Sitting, 10-15 km/h = Standing, 15-20 km/h = Walking, >20 km/h = Uncomfortable
Pedestrian Safety	**0.1% exceedance wind speed** 0-90 km/h = Safe

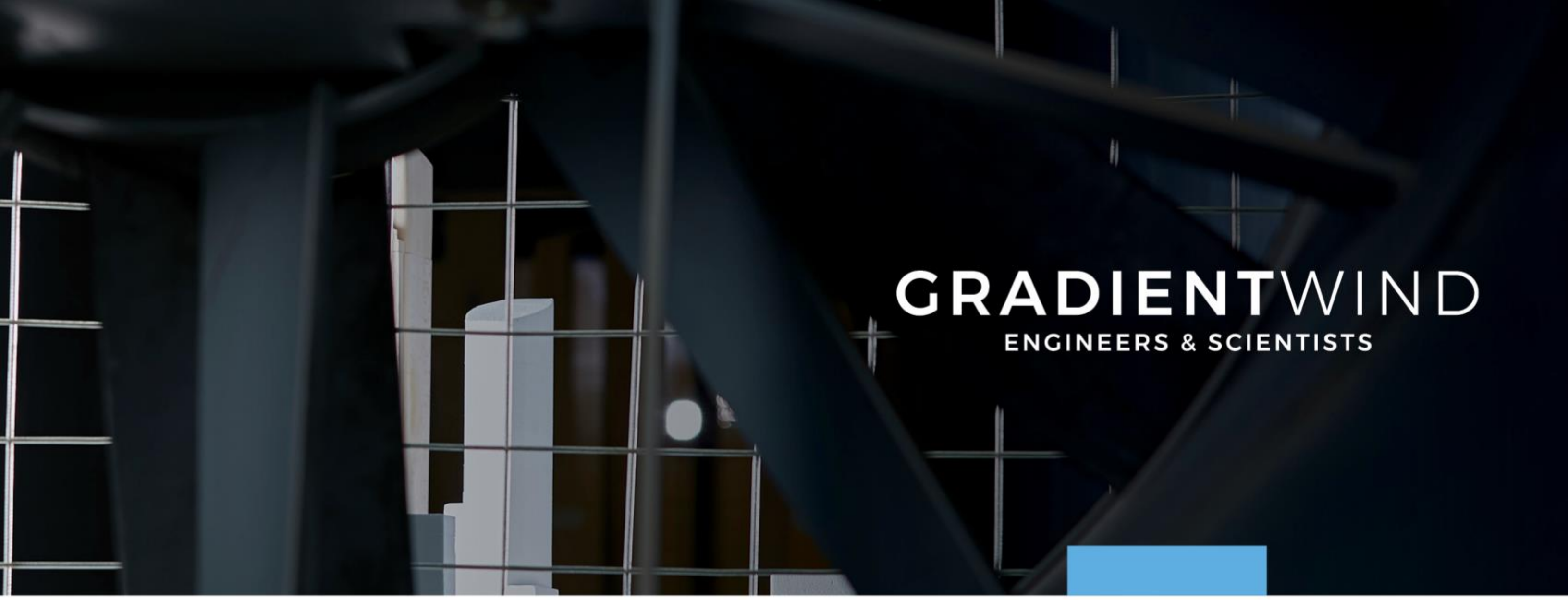
TABLE B1: SUMMARY OF PEDESTRIAN COMFORT (PROPOSED SCENARIO)

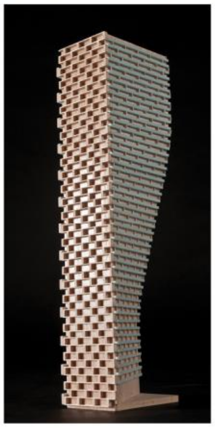
Sensor	Pedestrian Comfort				Pedestrian Safety	
	Summer		Winter		Annual	
	Wind Speed	Comfort Class	Wind Speed	Comfort Class	Wind Speed	Safety Class
1	11.3	Standing	14.0	Standing	51.1	Safe
2	14.3	Standing	18.3	Walking	67.6	Safe
3	13.0	Standing	18.1	Walking	66.5	Safe
4	13.8	Standing	17.2	Walking	67.5	Safe
5	11.6	Standing	14.6	Standing	61.3	Safe
6	12.9	Standing	16.2	Walking	63.9	Safe
7	12.3	Standing	15.9	Walking	64.6	Safe
8	12.3	Standing	15.6	Walking	63.2	Safe
9	9.3	Sitting	11.9	Standing	50.8	Safe
10	10.5	Standing	13.8	Standing	60.8	Safe
11	11.4	Standing	15.1	Walking	72.5	Safe
12	11.2	Standing	14.8	Standing	62.4	Safe
13	12.3	Standing	16.1	Walking	73.6	Safe
14	14.0	Standing	17.7	Walking	71.9	Safe
15	12.6	Standing	15.7	Walking	66.6	Safe
16	10.7	Standing	13.5	Standing	57.0	Safe
17	7.8	Sitting	10.2	Standing	43.6	Safe
18	13.3	Standing	16.1	Walking	74.3	Safe
19	9.6	Sitting	12.4	Standing	59.5	Safe
20	11.2	Standing	14.4	Standing	53.9	Safe
21	11.1	Standing	14.5	Standing	55.5	Safe
22	12.9	Standing	17.0	Walking	63.5	Safe
23	9.4	Sitting	13.3	Standing	64.4	Safe
24	8.8	Sitting	10.6	Standing	48.2	Safe
25	13.9	Standing	16.8	Walking	60.4	Safe
26	11.0	Standing	13.6	Standing	55.7	Safe
27	10.2	Standing	12.8	Standing	53.1	Safe
28	10.0	Sitting	12.9	Standing	49.5	Safe
29	10.9	Standing	14.0	Standing	55.6	Safe
30	10.8	Standing	13.7	Standing	51.9	Safe
31	12.4	Standing	15.9	Walking	61.7	Safe
32	15.4	Walking	19.5	Walking	74.8	Safe
33	15.7	Walking	19.0	Walking	66.0	Safe
34	14.0	Standing	18.0	Walking	70.0	Safe
35	17.4	Walking	22.0	Uncomfortable	78.7	Safe

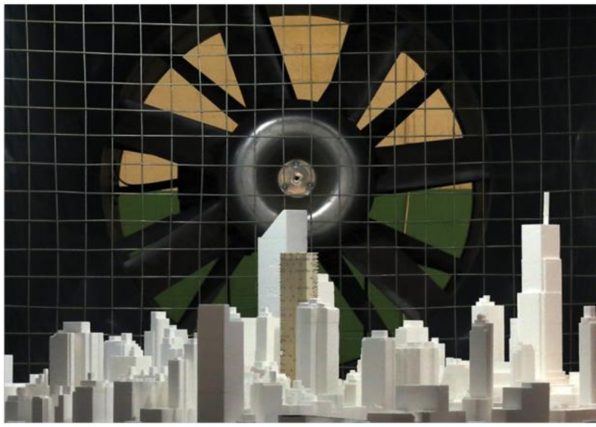
Guidelines	
Pedestrian Comfort	**20% exceedance wind speed** 0-10 km/h = Sitting, 10-15 km/h = Standing, 15-20 km/h = Walking, >20 km/h = Uncomfortable
Pedestrian Safety	**0.1% exceedance wind speed** 0-90 km/h = Safe

TABLE B2: SUMMARY OF PEDESTRIAN COMFORT (PROPOSED SCENARIO)

Sensor	Pedestrian Comfort				Pedestrian Safety	
	Summer		Winter		Annual	
	Wind Speed	Comfort Class	Wind Speed	Comfort Class	Wind Speed	Safety Class
36	18.5	Walking	23.4	Uncomfortable	81.6	Safe
37	15.1	Walking	19.2	Walking	76.0	Safe
38	14.2	Standing	17.9	Walking	67.7	Safe
39	13.1	Standing	16.8	Walking	67.4	Safe
40	18.6	Walking	24.3	Uncomfortable	85.5	Safe
41	16.7	Walking	21.5	Uncomfortable	75.7	Safe
42	16.4	Walking	19.7	Walking	70.7	Safe
43	13.6	Standing	17.4	Walking	67.8	Safe
44	12.6	Standing	16.8	Walking	67.1	Safe
45	11.1	Standing	16.4	Walking	72.4	Safe
46	10.6	Standing	13.3	Standing	57.9	Safe
47	10.0	Sitting	12.5	Standing	50.0	Safe
48	13.6	Standing	16.4	Walking	65.0	Safe
49	13.2	Standing	14.9	Standing	60.9	Safe
50	6.9	Sitting	8.2	Sitting	32.8	Safe
51	11.1	Standing	14.5	Standing	63.4	Safe
52	10.9	Standing	14.3	Standing	59.3	Safe
53	12.7	Standing	16.5	Walking	62.0	Safe
54	8.4	Sitting	11.2	Standing	51.7	Safe
55	11.0	Standing	14.6	Standing	71.8	Safe
56	12.6	Standing	16.0	Walking	86.1	Safe
57	14.1	Standing	17.6	Walking	64.8	Safe
58	9.0	Sitting	11.3	Standing	41.7	Safe
59	9.8	Sitting	12.3	Standing	44.6	Safe
60	8.7	Sitting	11.2	Standing	45.4	Safe
61	7.4	Sitting	10.2	Standing	44.7	Safe
62	18.0	Walking	25.7	Uncomfortable	94.6	Dangerous
63	13.5	Standing	17.6	Walking	75.7	Safe
64	9.5	Sitting	11.0	Standing	50.2	Safe
65	13.2	Standing	15.5	Walking	77.1	Safe
66	14.5	Standing	17.7	Walking	71.3	Safe







APPENDIX C

WIND TUNNEL SIMULATION OF THE NATURAL WIND

WIND TUNNEL SIMULATION OF THE NATURAL WIND

Wind flowing over the surface of the earth develops a boundary layer due to the drag produced by surface features such as vegetation and man-made structures. Within this boundary layer, the mean wind speed varies from zero at the surface to the gradient wind speed at the top of the layer. The height of the top of the boundary layer is referred to as the gradient height, above which the velocity remains more-or-less constant for a given synoptic weather system. The mean wind speed is taken to be the average value over one hour. Superimposed on the mean wind speed are fluctuating (or turbulent) components in the longitudinal (i.e. along wind), vertical and lateral directions. Although turbulence varies according to the roughness of the surface, the turbulence level generally increases from nearly zero (smooth flow) at gradient height to maximum values near the ground. While for a calm ocean the maximum could be 20%, the maximum for a very rough surface such as the center of a city could be 100%, or equal to the local mean wind speed. The height of the boundary layer varies in time and over different terrain roughness within the range of 400 metres (m) to 600 m.

Simulating real wind behaviour in a wind tunnel requires simulating the variation of mean wind speed with height, simulating the turbulence intensity, and matching the typical length scales of turbulence. It is the ratio between wind tunnel turbulence length scales and turbulence scales in the atmosphere that determines the geometric scales that models can assume in a wind tunnel. Hence, when a 1:200 scale model is quoted, this implies that the turbulence scales in the wind tunnel and the atmosphere have the same ratios. Some flexibility in this requirement has been shown to produce reasonable wind tunnel predictions compared to full scale. In model scale the mean and turbulence characteristics of the wind are obtained with the use of spires at one end of the tunnel and roughness elements along the floor of the tunnel. The fan is located at the model end and wind is pulled over the spires, roughness elements and model. It has been found that, to a good approximation, the mean wind profile can be represented by a power law relation, shown below, giving height above ground versus wind speed.

$$U = U_g \left(\frac{Z}{Z_g} \right)^{\alpha}$$

Where; ***U*** = mean wind speed, U_g = gradient wind speed, ***Z*** = height above ground, Z_g = depth of the boundary layer (gradient height) and α is the power law exponent.

Figure C1 on the following page plots three velocity profiles for open country, and suburban and urban exposures.

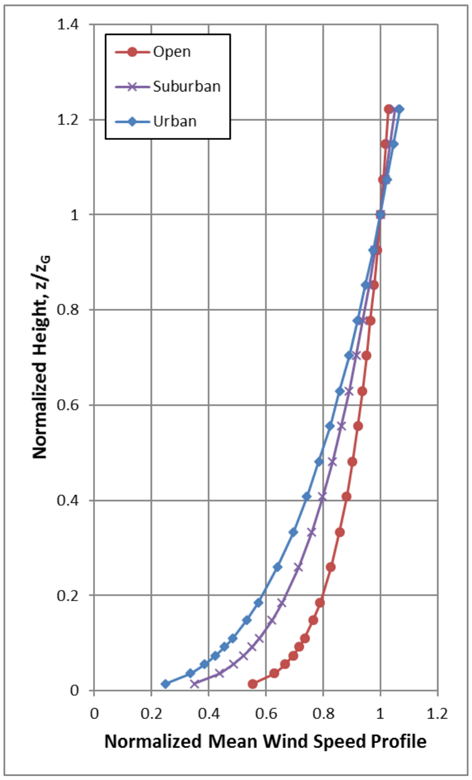
The exponent α varies according to the type of upwind terrain; α ranges from 0.14 for open country to 0.33 for an urban exposure. Figure C2 illustrates the theoretical variation of turbulence for open country, suburban and urban exposures.

The integral length scale of turbulence can be thought of as an average size of gust in the atmosphere. Although it varies with height and ground roughness, it has been found to generally be in the range of 100 m to 200 m in the upper half of the boundary layer. Thus, for a 1:300 scale, the model value should be between 1/3 and 2/3 of a metre. Integral length scales are derived from power spectra, which describe the energy content of wind as a function of frequency. There are several ways of determining integral length scales of turbulence. One way is by comparison of a measured power spectrum in model scale to a non-dimensional theoretical spectrum such as the Davenport spectrum of longitudinal turbulence. Using the Davenport spectrum, which agrees well with full-scale spectra, one can estimate the integral scale by plotting the theoretical spectrum with varying L until it matches as closely as possible the measured spectrum:

$$f \times S(f) = \frac{\dfrac{4(Lf)^2}{U_{10}{}^2}}{\left[1 + \dfrac{4(Lf)^2}{U_{10}{}^2}\right]^{\frac{4}{3}}}$$

Where, f is frequency, S(f) is the spectrum value at frequency f, U10 is the wind speed 10 m above ground level, and L is the characteristic length of turbulence.

Once the wind simulation is correct, the model, constructed to a suitable scale, is installed at the center of the working section of the wind tunnel. Different wind directions are represented by rotating the model to align with the wind tunnel center-line axis.



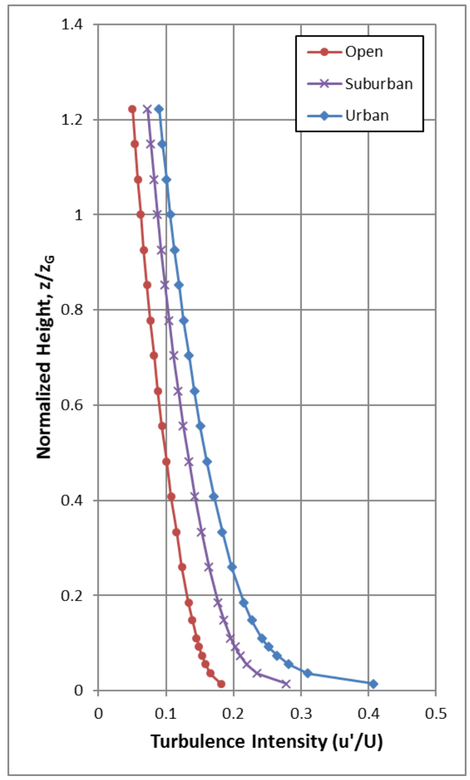


FIGURE C1 (LEFT): MEAN WIND SPEED PROFILES;
FIGURE C2 (RIGHT): TURBULENCE INTENSITY PROFILES

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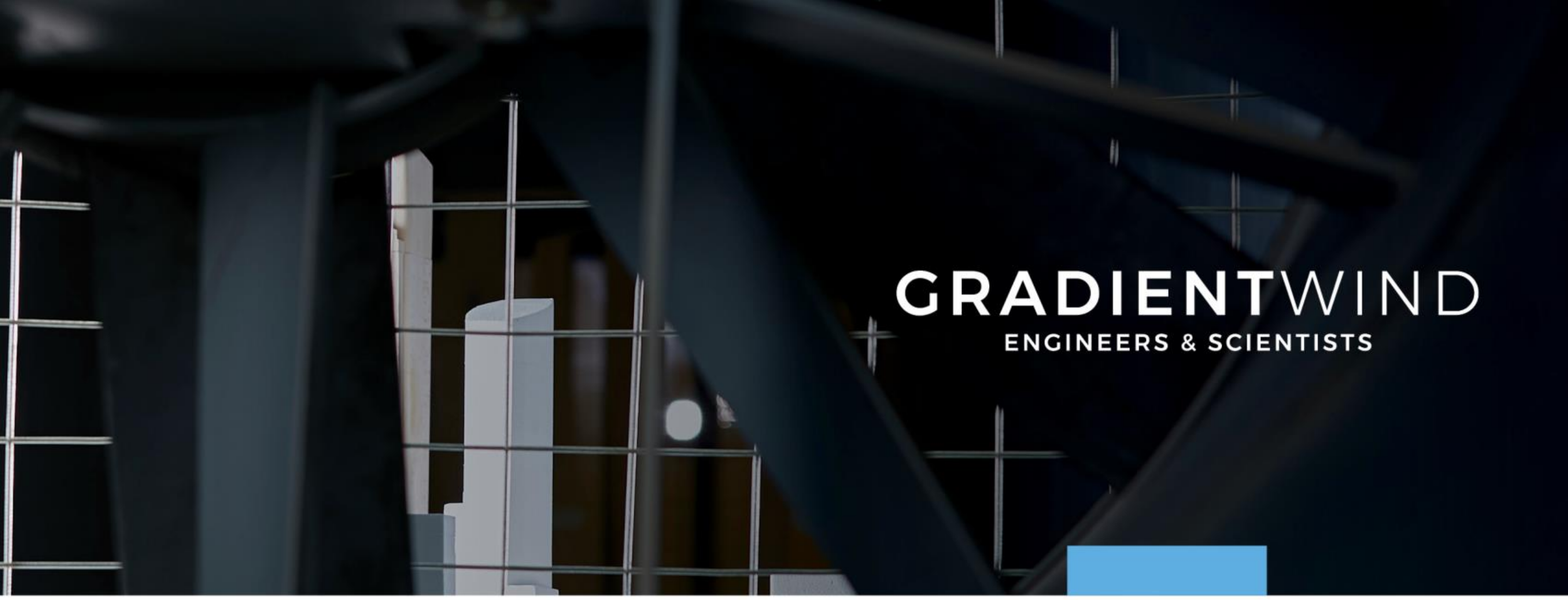
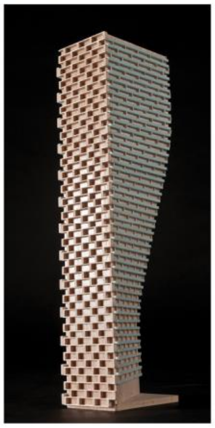
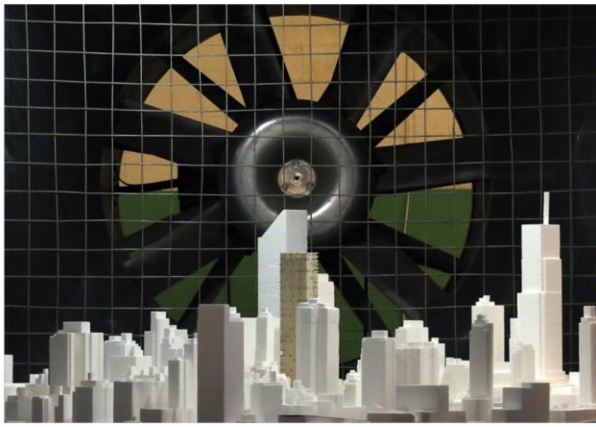
4. Bradley, E.F., Coppin, P.A., Katen, P.C., ‘*Turbulent Wind Structure Above Very Rugged Terrain*’, 9th Australian Fluid Mechanics Conference, Auckland, Dec. 1966







APPENDIX D

PEDESTRIAN LEVEL WIND MEASUREMENT METHODOLOGY

PEDESTRIAN LEVEL WIND MEASUREMENT METHODOLOGY

Pedestrian level wind studies are performed in a wind tunnel on a physical model of the study buildings at a suitable scale. Instantaneous wind speed measurements are recorded at a model height corresponding to 1.5 m full scale using either a hot wire anemometer or a pressure-based transducer. Measurements are performed at any number of locations on the model and usually for 36 wind directions. For each wind direction, the roughness of the upwind terrain is matched in the wind tunnel to generate the correct mean and turbulent wind profiles approaching the model.

The hot wire anemometer is an instrument consisting of a thin metallic wire conducting an electric current. It is an omni-directional device equally sensitive to wind approaching from any direction in the horizontal plane. By compensating for the cooling effect of wind flowing over the wire, the associated electronics produce an analog voltage signal that can be calibrated against velocity of the air stream. For all measurements, the wire is oriented vertically so as to be sensitive to wind approaching from all directions in a horizontal plane.

The pressure sensor is a small cylindrical device that measures instantaneous pressure differences over a small area. The sensor is connected via tubing to a transducer that translates the pressure to a voltage signal that is recorded by computer. With appropriately designed tubing, the sensor is sensitive to a suitable range of fluctuating velocities.

For a given wind direction and location on the model, a time history of the wind speed is recorded for a period of time equal to one hour in full-scale. The analog signal produced by the hot wire or pressure sensor is digitized at a rate of 400 samples per second. A sample recording for several seconds is illustrated in Figure D1. This data is analyzed to extract the mean, root-mean-square (rms) and the peak of the signal. The peak value, or gust wind speed, is formed by averaging a number of peaks obtained from sub-intervals of the sampling period. The mean and gust speeds are then normalized by the wind tunnel gradient wind speed, which is the speed at the top of the model boundary layer, to obtain mean and gust ratios. At each location, the measurements are repeated for 36 wind directions to produce normalized polar plots, which will be provided upon request.

In order to determine the duration of various wind speeds at full scale for a given measurement location the gust ratios are combined with a statistical (mathematical) model of the wind climate for the project site. This mathematical model is based on hourly wind data obtained from one or more meteorological stations (usually airports) close to the project location. The probability model used to represent the data is the Weibull distribution expressed as:

$$P\left(>U_g\right) = A_\theta \bullet \exp\left[\left(-\frac{U_g}{C_\theta}\right)^{K\theta}\right]$$

Where,

P (> U_g) is the probability, fraction of time, that the gradient wind speed ***U_g*** is exceeded; ***θ*** is the wind direction measured clockwise from true north, ***A***, ***C***, ***K*** are the Weibull coefficients, (Units: A - dimensionless, C - wind speed units [km/h] for instance, K - dimensionless). ***A_θ*** is the fraction of time wind blows from a 10° sector centered on ***θ***.

Analysis of the hourly wind data recorded for a length of time, on the order of 10 to 30 years, yields the ***A_θ, C_θ*** and ***K_θ*** values. The probability of exceeding a chosen wind speed level, say 20 km/h, at sensor *N* is given by the following expression:

$$P_N(>20) = \Sigma_\theta P\left[\frac{(>20)}{\left(\frac{U_N}{U_g}\right)}\right]$$

$$P_N\,(>20) \;=\; \Sigma_\theta\, P\,\{>20/(U_N/Ug)\}$$

Where, ***U_N/U_g*** is the gust velocity ratios, where the summation is taken over all 36 wind directions at 10° intervals.

If there are significant seasonal variations in the weather data, as determined by inspection of the $\boldsymbol{C_\theta}$ and $\boldsymbol{K_\theta}$ values, then the analysis is performed separately for two or more times corresponding to the groupings of seasonal wind data. Wind speed levels of interest for predicting pedestrian comfort are based on the comfort guidelines chosen to represent various pedestrian activity levels as discussed in the main text.

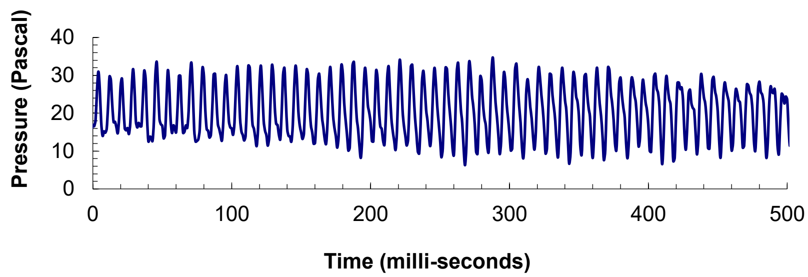


FIGURE D1: TIME VERSUS VELOCITY TRACE FOR A TYPICAL WIND SENSOR

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