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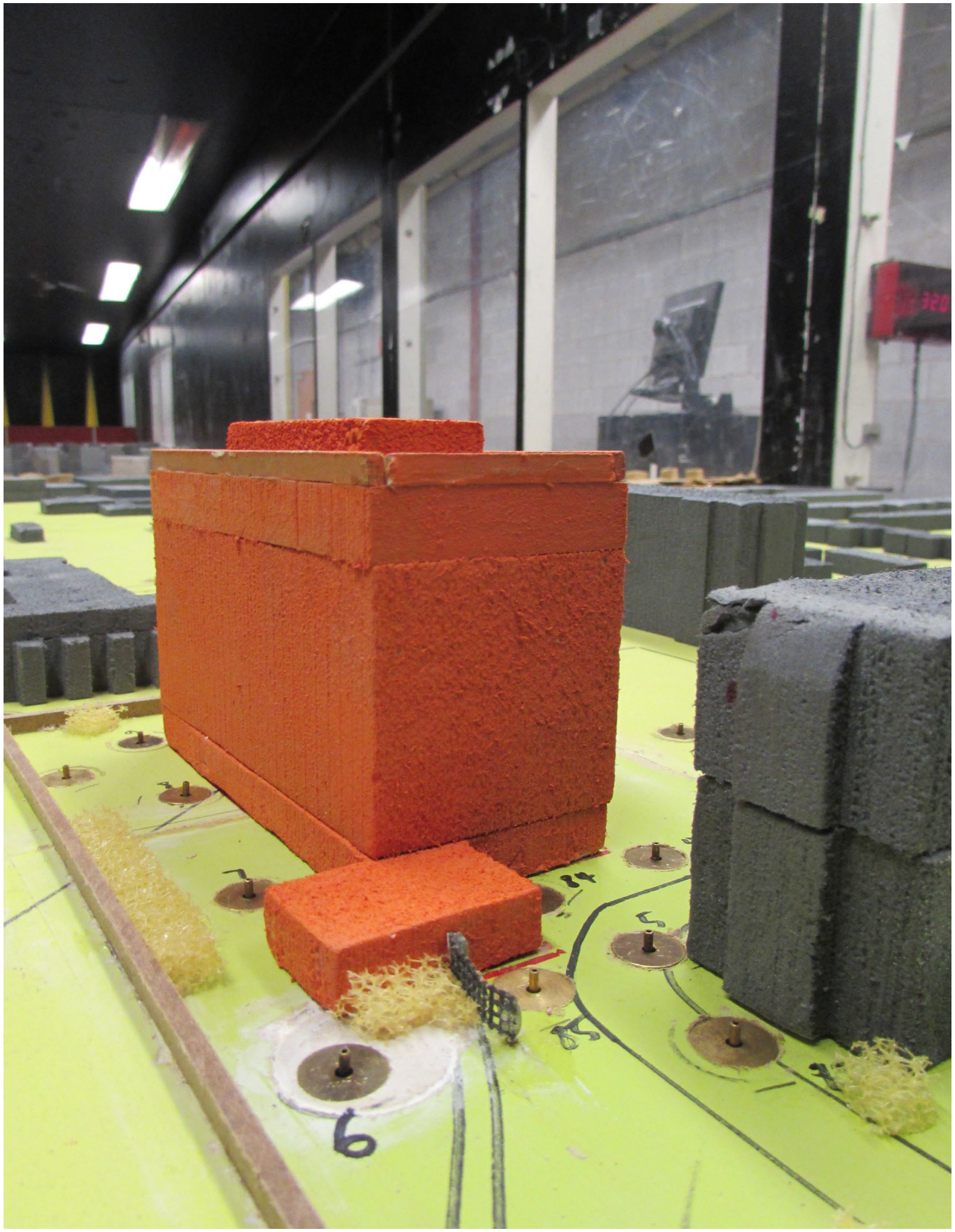
Date: May 16, 2024

Re: Pedestrian Wind Study
Pacific Way
Mississauga, ON
SLR Project #241.30617.00000



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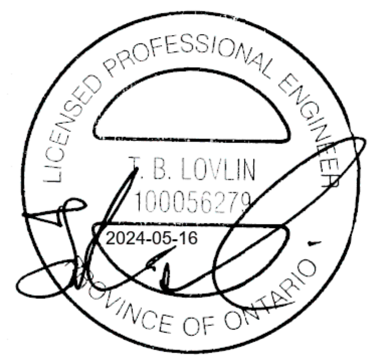

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1	May 16, 2024	Tahrana Lovlin	Shannon Testart	Tahrana Lovlin

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1.0 Introduction

SLR Consulting (Canada) Ltd. (SLR) was retained IMH Havenwood and Williamsport Ltd. to conduct a pedestrian wind study for the Pacific Way development site in Mississauga, Ontario. This report is in support of the resubmission of Official Plan Amendment (OPA) and Zoning Bylaw Amendment (ZBA) applications for the development. SLR previously conducted a wind tunnel study of the proposed development in the autumn of 2023.

1.1 Existing Site

The proposed development site is located between Williamsport Drive and Havenwood Drive, to the north of the existing 1485 Williamsport Drive building. The site is currently occupied by a low-rise building and a swimming pool. Figure 1 provides an aerial view of the immediate study area. A virtual site visit was conducted by SLR using Google Earth images dated November 2022.

Immediately surrounding the site are a low-rise residential building to the west, a parking lot to the north, a mid-rise residential building to the northwest, another parking lot to the east and a mid-rise residential building to the south. Beyond the immediate surroundings are mainly low-rise residential and commercial buildings in all directions.

Typically, developments with Site Plan Control approval and/or those currently under construction within a 500 radius are included as existing surroundings. For this assessment, the approved development of 1500 Gulleden Drive was included, which is an addition to the community centre.

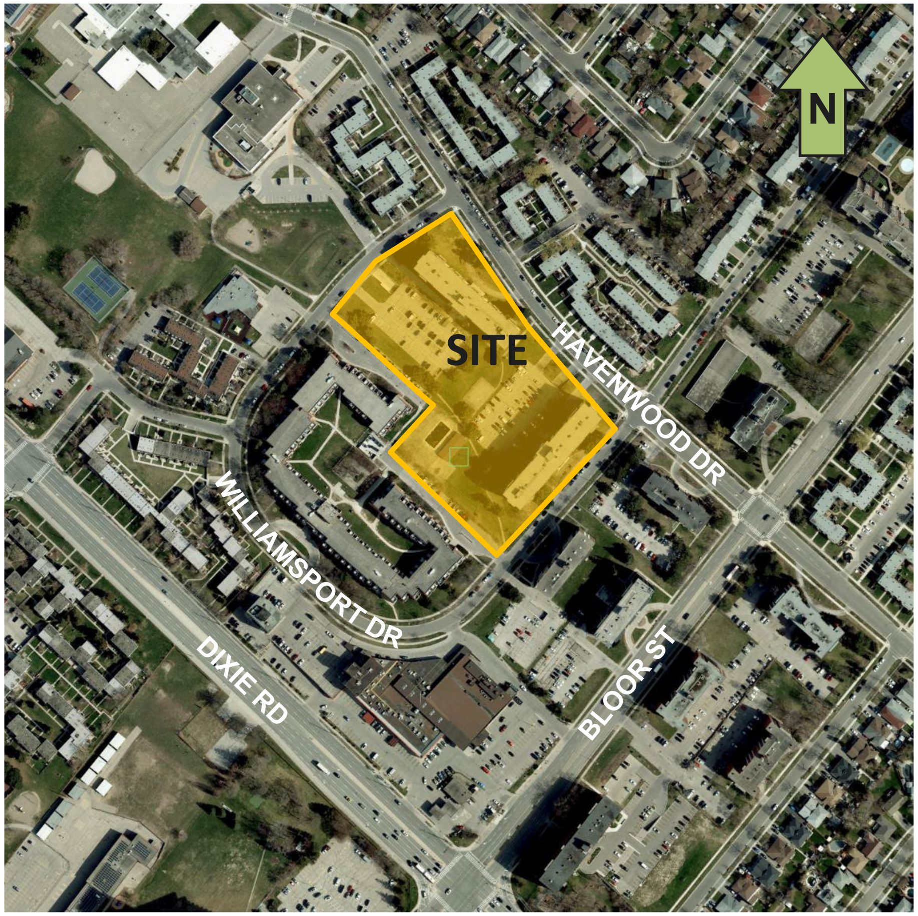


Figure 1: Aerial view of existing site & surroundings
Credit: Esri, Maxar, Earthstar Geographics, and the GIS User Community (Image Date April 2022)

1.2 Proposed Development

The proposed project is an infill which includes a new mid-rise residential building along the west edge of the property. This building will be ten storeys in height, plus a mechanical penthouse, for a total height of approximately 37 m. Figure 2 illustrates the massing model of the proposed development.

1.3 Areas of Interest

Areas of interest for pedestrian wind conditions include those areas which pedestrians are expected to use on a frequent basis. Typically, these include sidewalks, main entrances, transit stops, plazas and parks.

There is a main entrance near the southwest corner of the building, as well as one in the middle of the east facade. Secondary entrances and exits are along the east and west facade. An outdoor amenity area is located to the north and west of the building at grade, with additional amenity space to the northeast of the propose building. On-site areas of interest are shown in **Figure 3**. In addition, an outdoor amenity terrace is located on the rooftop.

In addition to the areas discussed above, SLR focused on the northwest and northeast corners of the adjacent existing building, immediately to the south. For this submission, the City had concerns regarding these areas per previous pedestrian wind comfort reports.

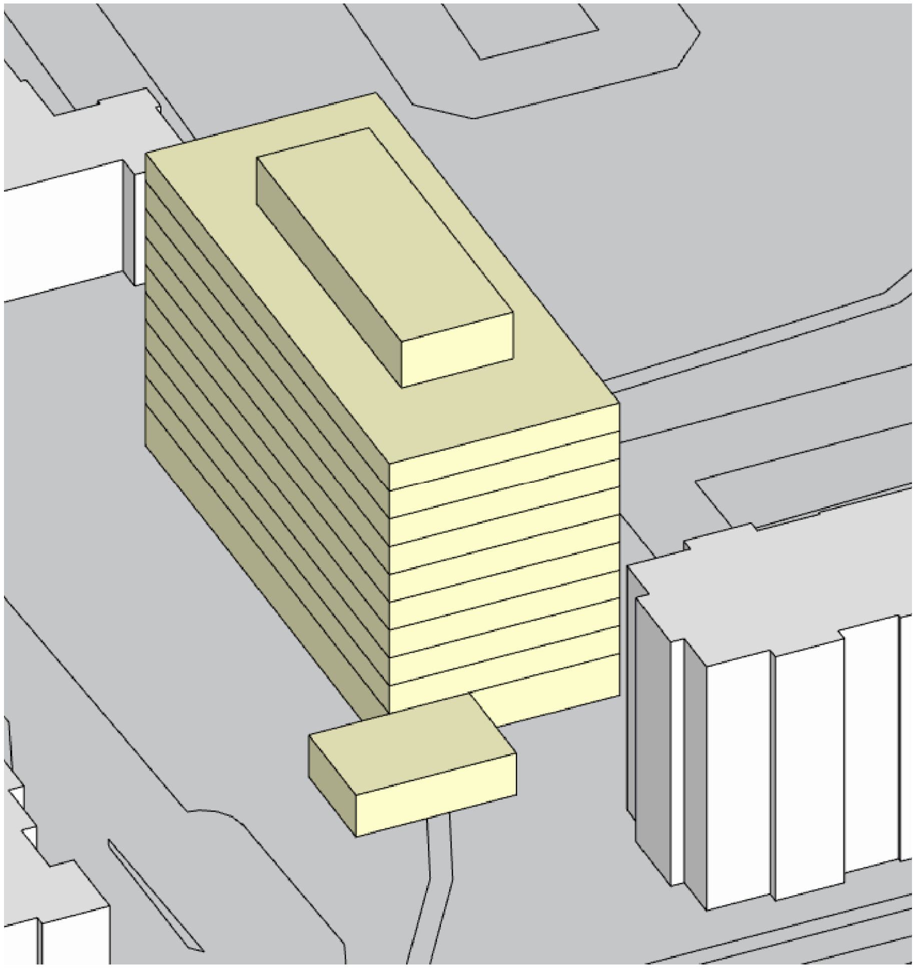


Figure 2: Simple rendering of the proposed development
Credit: Architecture Unfolded

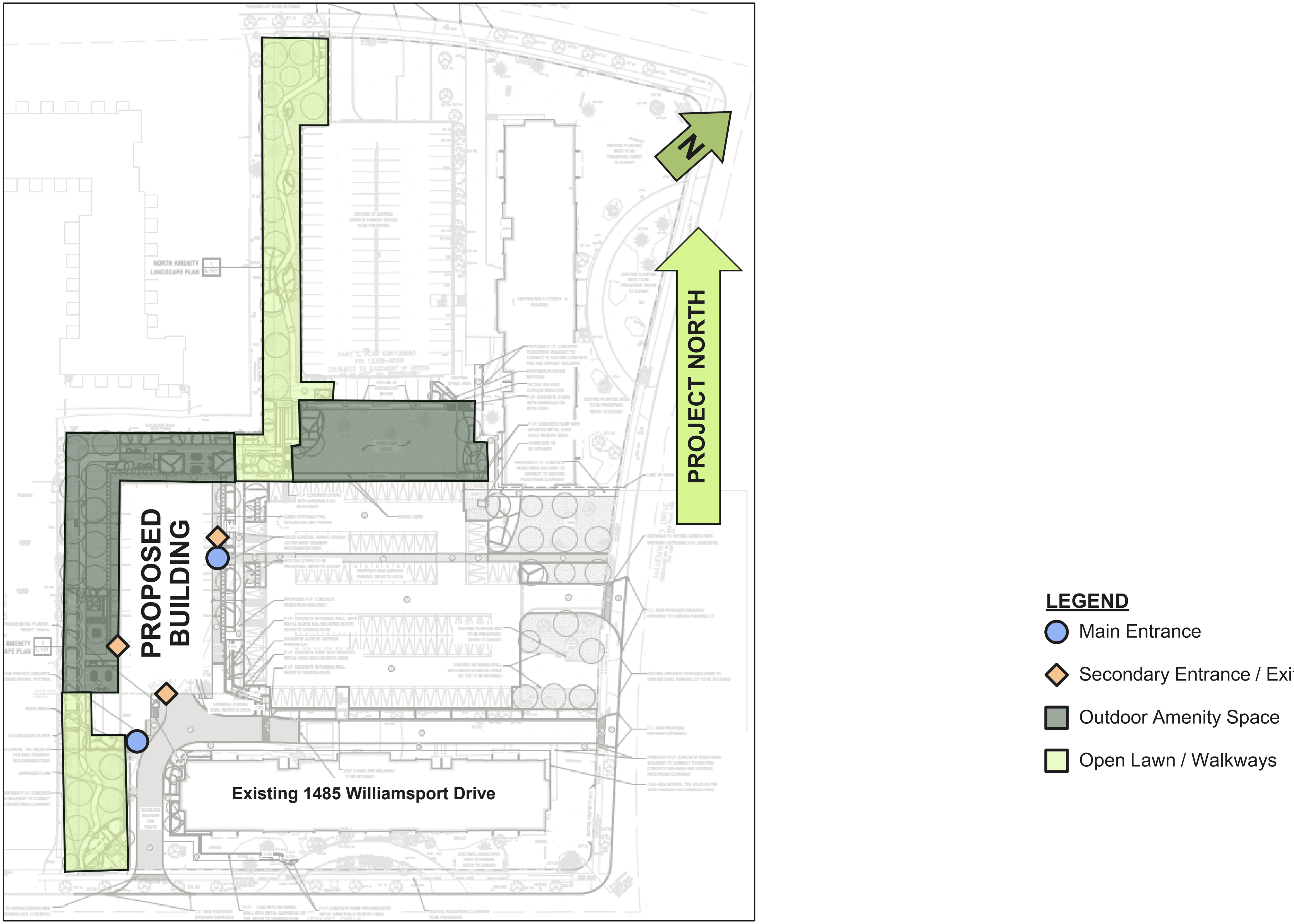


Figure 3: Areas of Interest – Grade Level
Credit: LANDARTDESIGN Landscape Architects Inc.

2.0 Approach

The objective of the wind tunnel study is to assist the design team and City Planning officials in making informed decisions about the building form considered and its influence on pedestrian comfort. This quantitative analysis involves the construction of a physical model of the development and surrounding features that influence wind flow. The physical model is instrumented with probes and tested in a wind tunnel. Afterwards, the wind tunnel data are combined with regional meteorological data; this analysis is then compared to the relevant wind criteria and standards in order to determine how appropriate the wind conditions are for the intended pedestrian usage.

2.1 Scale Model Construction

A 1:400 scale model of the proposed Pacific Way was constructed based on up-to-date architectural information received by SLR on April 22, 2024, from Architectural Unfolded. Landscape information was received on April 30, 2024. The proximity model of the surrounding area was built in block form for a radius of approximately 480 m from the site centre. As existing buildings surrounding the site will influence wind characteristics, existing buildings, and those buildings with SPA approval were included in the model for both the Existing and Proposed Configurations. Information regarding which approved developments to include within the existing surrounds was determined per Section 1.1.

SLR assessed two configurations, for comparison, as follows:

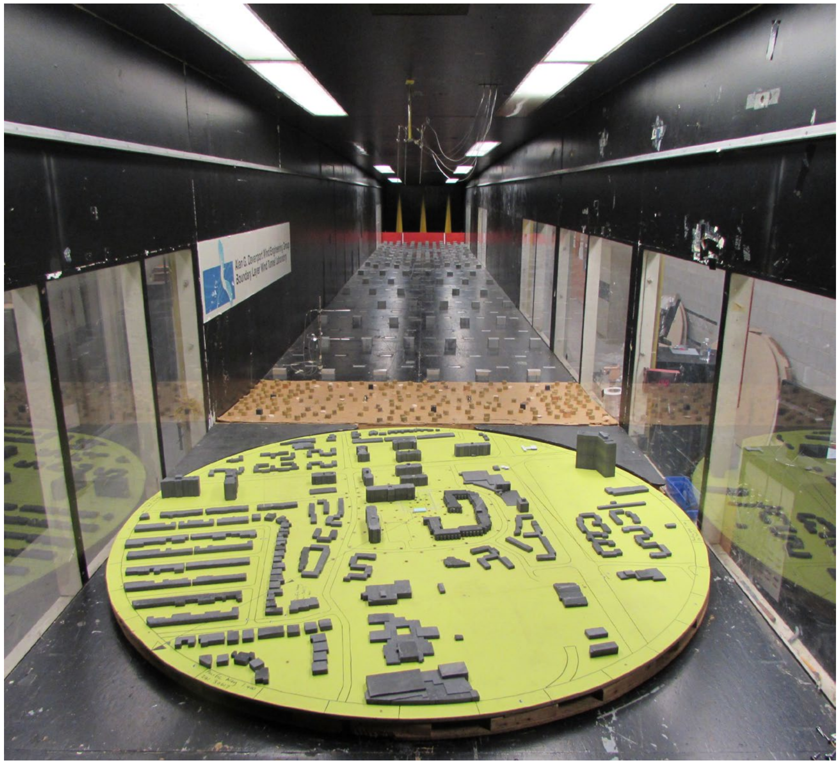
- Existing Configuration: Existing site with existing and SPA-approved surroundings (September 2023).
- Proposed Configuration: Proposed development with existing and SPA-approved surroundings, as well as key wind mitigation features (May 2024).

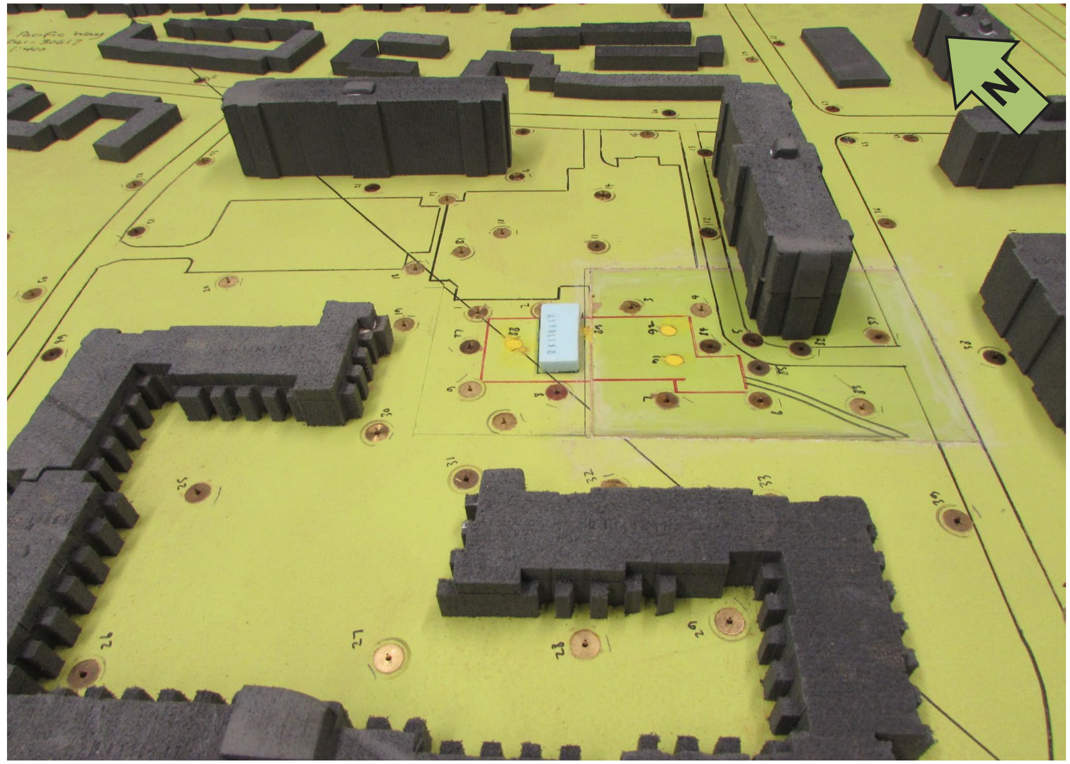
Photographs of the wind tunnel model showing both the Existing Configuration and the Proposed Configuration are included in Figures 4a and 4b. The wind mitigation features included in the testing are shown in Figure 5.

2.2 Wind Tunnel

Wind tunnel tests were conducted in the Alan G. Davenport Wind Engineering Group Boundary-Layer Wind Tunnel Laboratory at the University of Western Ontario. The upstream test section of the wind tunnel included generic roughness blocks and turbulence-generating spires to modify the wind flow approaching the model. These features develop characteristics of the wind flow that are similar to the actual site. The test model is rotated on a turn-table to simulate different wind directions with the upstream terrain being changed as appropriate to reflect the various upwind conditions encountered around the site.

The test model was equipped with 92 omni-directional probes to record wind speed at the pedestrian-level (approximately 1.5 m above grade). The orientation of the model was rotated in 10° intervals on the turn-table to permit measurement of wind speed at each probe location for 36 wind directions. The wind tunnel data were then combined with the wind climate model for this region to predict the occurrence of wind speeds in the pedestrian realm and compare against wind criteria for comfort and safety.





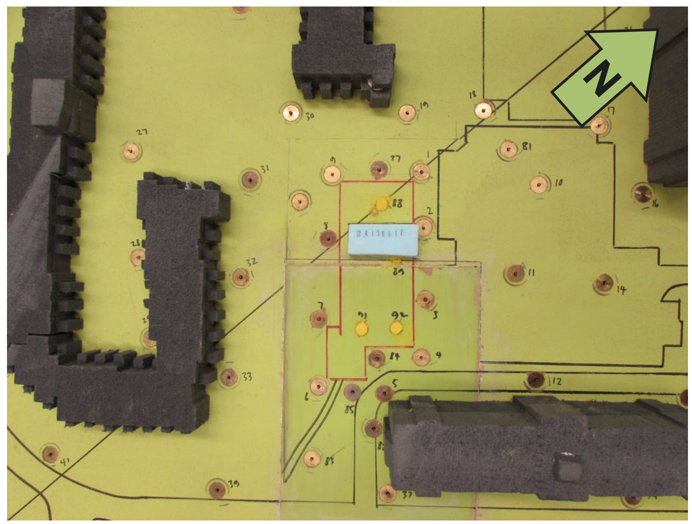
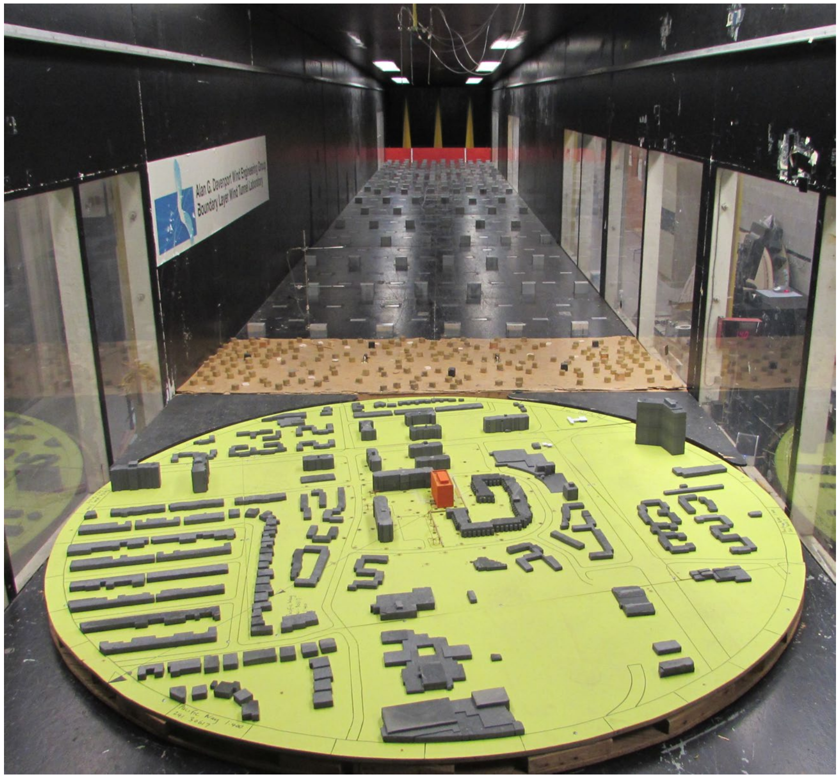
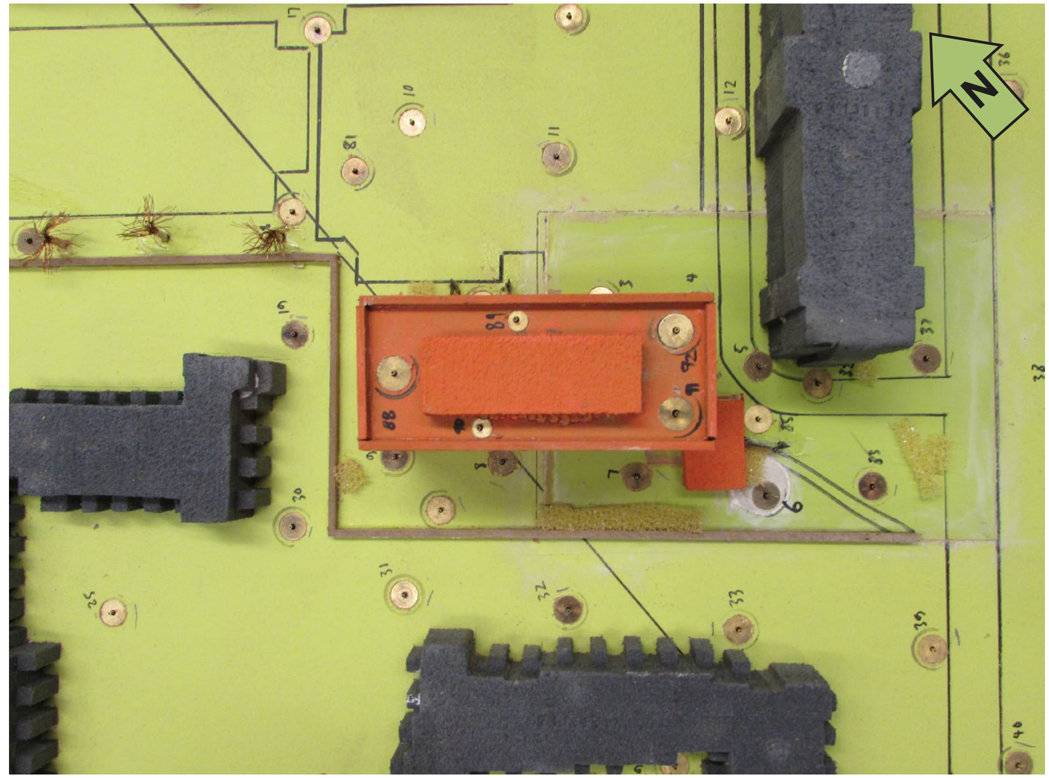


Figure 4a: Existing Configuration (September 2023)





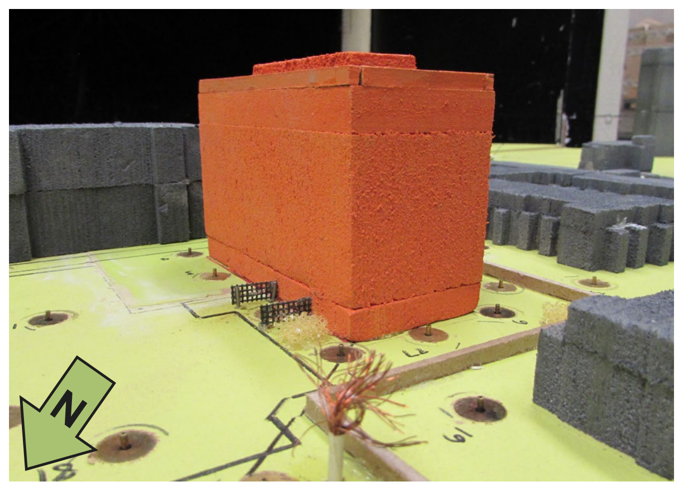


Figure 4b: Proposed Configuration (May 2024)

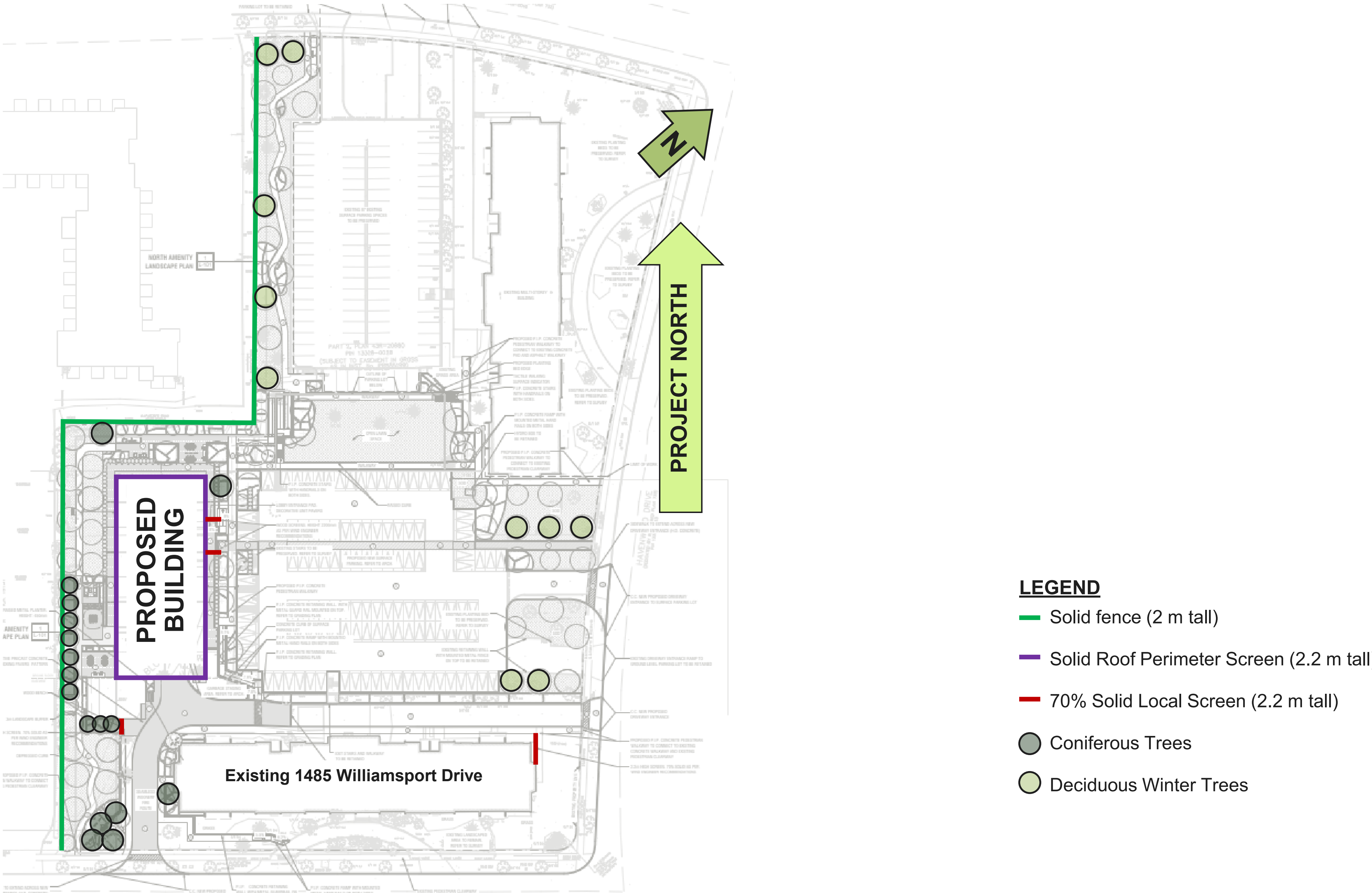


Figure 5: Mitigation Measures included in the Proposed Configuration

2.3 Wind Climate

Wind data recorded at Toronto Pearson International Airport in Toronto for the period of 1991 to 2020 were obtained and analysed to create a wind climate model for the region. Annual and seasonal wind distribution diagrams ("wind roses") are shown in Figure 6. These diagrams illustrate the percentage of time wind blows from the 16 main compass directions. Of main interest are the longest peaks that identify the most frequently occurring wind directions. The annual wind rose indicates that wind approaching from the northerly through westerly directions are most prevalent. The seasonal wind roses readily show how the prevalent winds shift throughout the year.

The directions from which stronger winds (e.g., > 30 km/h) approach are also of interest as they have the highest potential of creating problematic wind conditions, depending upon site exposure and the building configurations. The wind roses in Figure 6 also identify the directional frequency of these stronger winds, as indicated in the figure's legend colour key. On an annual basis, strong winds occur from the northwesterly and westerly sectors. All wind speeds and directions were included in the wind climate model.

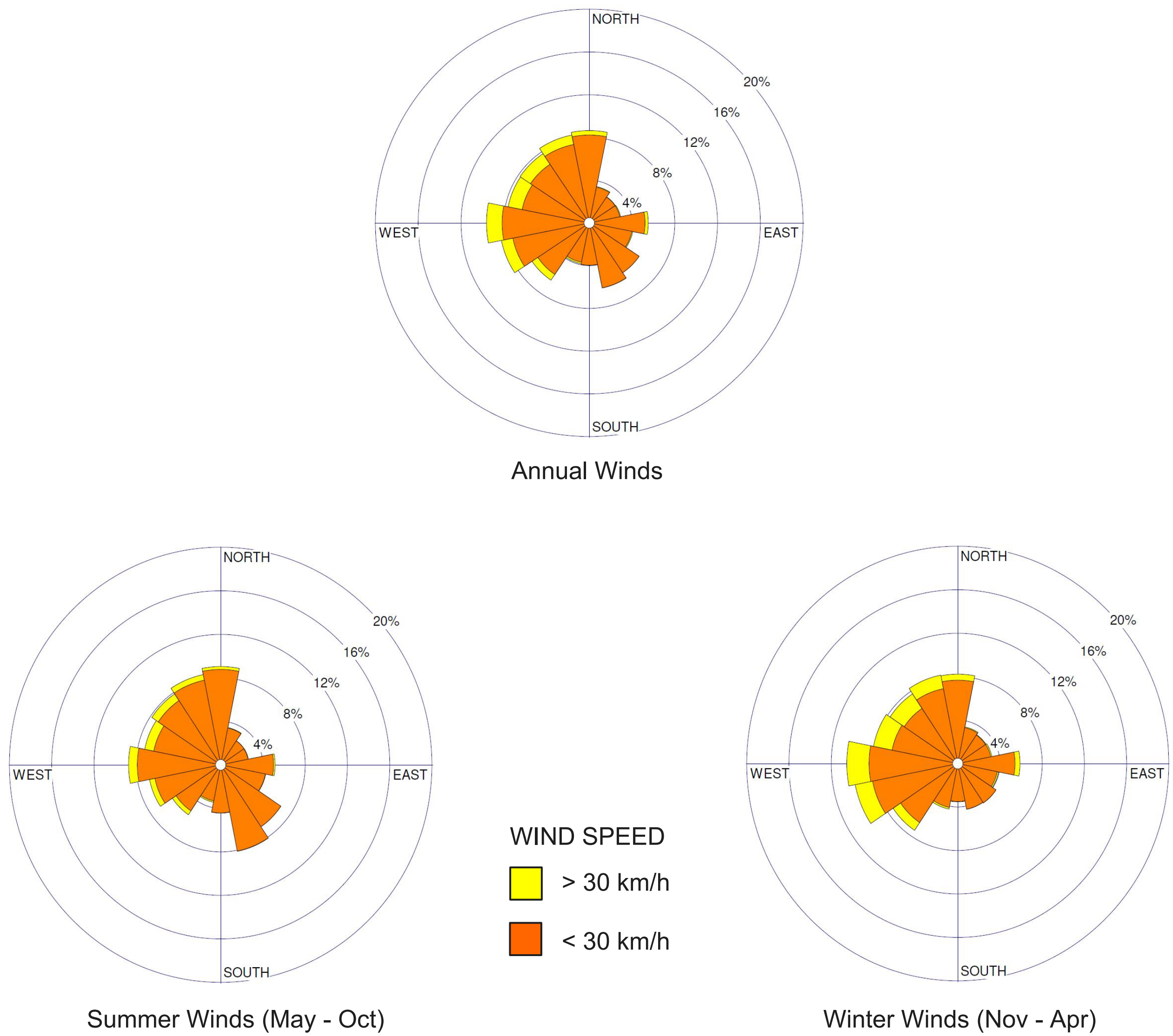


Figure 6: Wind Roses for Toronto Pearson International Airport (1991-2020)

3.0 Pedestrian Wind Criteria

Wind comfort conditions are discussed in terms of being acceptable for certain pedestrian activities and are based on predicted wind force and the expected frequency of occurrence. Wind chill, clothing, humidity and exposure to direct sun, for example, all affect a person's thermal comfort; however, these influences are not considered in the wind comfort criteria.

The criteria utilized for this analysis is provided by the City of Mississauga, in the document *Urban Design Terms of Reference – Pedestrian Wind Comfort and Safety Studies* (February 2023). The comfort criteria, which is based on certain predicted hourly gust-equivalent mean (GEM) wind speeds being exceeded 20% of the time are summarized in Table 1. By allowing for a 20% exceedance, it assumes wind speeds will be comfortable for the corresponding activity at least four out of five days. The comfort criteria consider only daytime hours, between 6:00am and 11:00pm. GEM is defined as the maximum of either mean wind speed or gust wind speed divided by 1.85.

The criterion for wind safety in the table is based on hourly gust wind speeds that are exceeded nine hours per year (approximately 0.1%) of the time. When more than one event is predicted annually, wind mitigation measures are then advised. The wind safety criterion is shown in Table 2.

Table 1: Wind Comfort Criteria

Comfort Category	GEM Wind Speed Exceeded 20% of the time	Description of Wind Comfort
Sitting	10 km/h	Calm or light breezes desired for outdoor restaurants and seating areas where one can read a paper without having it blown away.
Standing	15 km/h	Gentle breezes suitable for main building entrances and bus stops.
Walking	20 km/h	Moderate breezes that can be tolerated if one's objective is to walk, run or cycle without lingering.
Uncomfortable	> 20 km/h	Strong winds of this magnitude are considered a nuisance for most activities, and wind mitigation is typically recommended.

Table 2: Wind Safety Criterion

Safety Criterion	Gust Wind Speed Exceeded Once Per Year (0.1%)	Description of Wind Effects
Exceeded	> 90 km/h	Excessive gust speeds that can adversely affect a pedestrian's balance and footing. Wind mitigation is typically required.

4.0 Results

Figures 7 and 8 present graphical images of the wind comfort conditions for the summer and winter months around the proposed development in both the Existing Configuration and the Proposed ConfigurationThe "comfort zones" shown are based on an integration of wind speed and frequency for all 36 wind directions tested with the seasonal wind climate model. Full detailed results for the summer and winter can be found in Appendix A. Annual wind safety results are also provided in Appendix A, as well as Figure 9.

There are generally accepted wind comfort levels that are desired for various pedestrian uses. However, it some climates these may be difficult to achieve in the winter due to the overall climate. For sidewalks, walkways and pathways, wind comfort suitable for walking are desirable year-round but may not be feasible in the winter. For main entrances, transit stops, and public amenity spaces such as parks and playgrounds, wind conditions conducive to standing are preferred throughout the year. For on-site amenity areas, wind conditions suitable for sitting or standing are desirable during the summer, with stronger wind flows, conducive to walking, tolerated in the winter. The most stringent category of sitting is desirable during the summer for dedicated seating areas, such as patios, where calmer wind is expected for the comfort of patrons.

Note, Project North is approximately 40° counter-clockwise from True North. When referring to the building, Project North is used; when referring to wind directions, True North is used.

4.1 Building Entrances, Amenity & Walkways (Locations 1–4, 6–9, and 84–87)

In the Existing Configuration, wind conditions on the site are generally suitable for walking or better throughout the year (**Figures 7** and **8**).

With the proposed development in place, wind conditions on-site generally remain comfortable for walking or better in both the summer and winter seasons (Figures 7 and 8). At the main entrance on the south facade (Location 85) wind conditions are suitable for standing in the summer and walking in the winter in the Proposed Configuration. To create calmer wind conditions at the main entrance we recommend increasing the height of the nearby wind screen and/or incorporating a canopy that connects with the screen.

At the east main entrance (Location 2), wind conditions are conducive to standing year-round with the inclusion of wind screens to the north and south of the entrance (Figures 7 and 8). In the outdoor amenity space, wind conditions are comfortable for standing in the summer of the Proposed Configuration (Locations 7, 8, 9, 86, and 87 in Figure 7). During the winter season, wind conditions in this amenity space are comfortable for walking or standing (Figure 8). The inclusion of a 1.8 m tall solid fence along the north and west edges of the space is a positive design feature that should be retained in the final design. To achieve calmer wind conditions comfortable for sitting or standing within the amenity space, we suggest including vertical elements such as partitions and/or screens to the west and/or north of seating areas. In addition, the inclusion of trees throughout the space, per the landscaping plan, is a positive design feature that will provide additional local sheltering from the westerly winds.

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Figure 7: Existing Configuration and Proposed Configuration – Pedestrian Wind Comfort Summer – On-site and Surrounding Areas

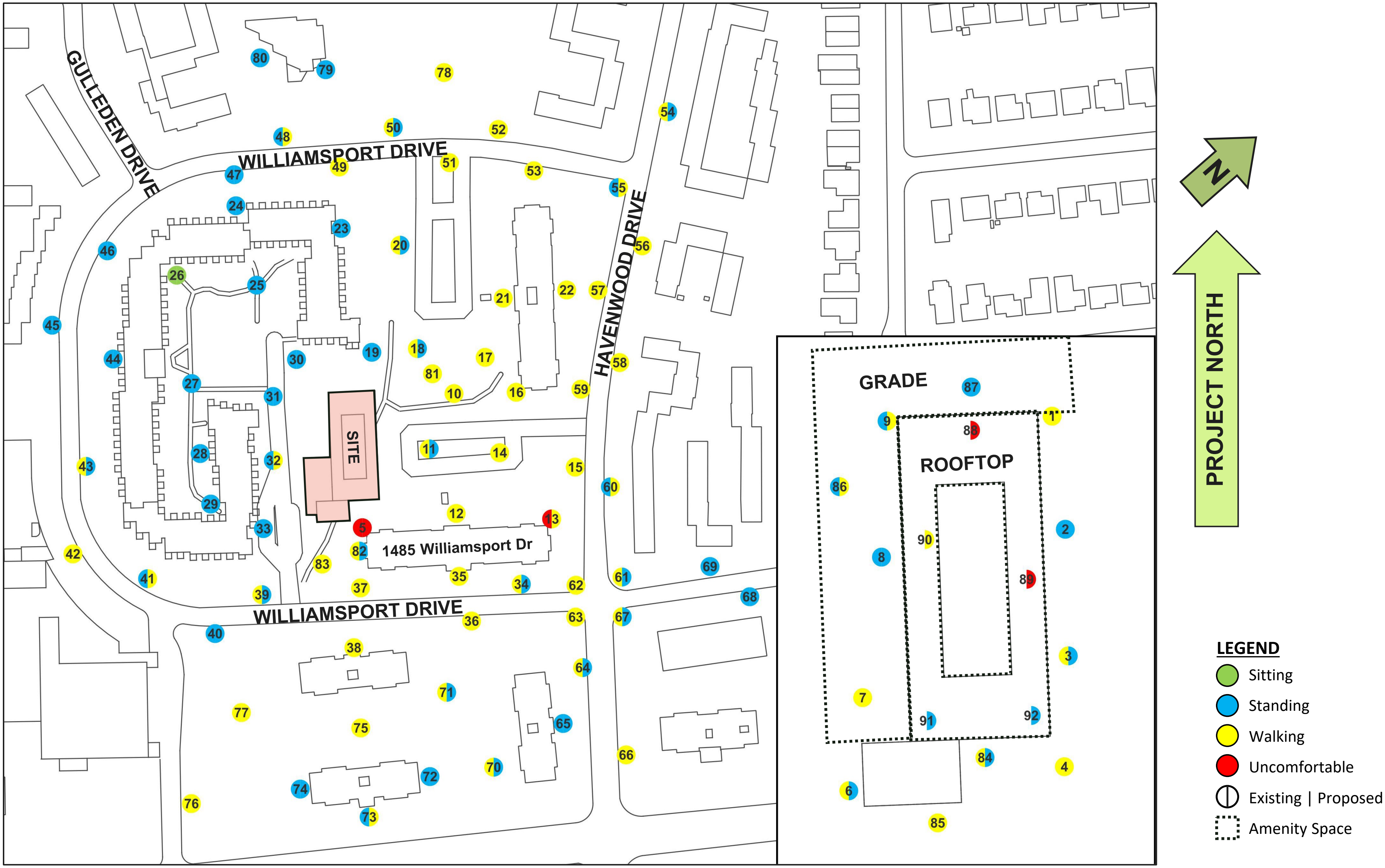

Figure 8: Existing Configuration and Proposed Configuration – Pedestrian Wind Comfort Winter – On-site and Surrounding Areas

4.2 Amenity Terrace (Locations 88 to 92)

On the rooftop terrace, wind conditions are comfortable for standing or walking in the summer months (Figure 7). During the winter season, wind conditions on this terrace are generally comfortable for walking or standing (Figure 8). Uncomfortable wind conditions occur on the north and east edges of the space in the winter season (Locations 88 and 89). A 2.2 m tall wind screen was included around the perimeter of the terrace to provide local wind protection. To improve wind conditions, we recommend planning seating areas west and south sides of the spaces, where calmer wind conditions are anticipated. Additional wind control measures in the form of localized screens and/or partitions can be considered for calmer wind activities. Another alternative would be to increase the height of the perimeter wind screen to a minimum of 3 m.

4.3 Surrounding Sidewalks & Existing Amenity (Locations 5 and 10 through 83)

Existing wind conditions along the sidewalks of Williamsport Drive, Havenwood Drive, and around the existing surrounding buildings are generally comfortable for walking or better year-round (Figures 7 and 8). In the existing central lawn/amenity space (Locations 10, 17, and 81) wind conditions are conducive standing or walking in the summer, while in the winter wind conditions are suitable for walking. Uncomfortable wind conditions occur at the northwest and northeast corners of 1485 Williamsport Drive in the winter months (Locations 5 and 13 in Figure 8). In the YMCA childcare outdoor playground north of the site (Location 80), wind conditions are comfortable for sitting in the summer and standing in the winter months in the Existing Configuration.

In the Proposed Configuration, wind conditions along the surrounding sidewalks of Williamsport Drive, Havenwood Drive, and around the existing surrounding buildings remain comfortable for walking or better throughout the year (Figures 7 and 8). Wind conditions in the central amenity space remain suitable for standing or walking in the summer, and comfortable for walking in the winter (Locations 10, 17 and 81). Wind conditions at the northwest corner of 1485 Williamsport Drive (Location 5) remain marginally uncomfortable in the winter months; the utilization of landscaping to dissuade pedestrians from using the immediate area is a positive design feature. Wind conditions in the YMCA playground are suitable for standing throughout the year, which is considered appropriate.

4.4 Wind Safety

In the Existing Configuration, the wind safety criterion was met in all but two locations on an annual basis (Figure 9). One location is to the south of the proposed development, at the northwest corner of the existing 1485 Williamsport Drive (Location 5). The other location is on the west side of the same existing building (Location 82).

In the Proposed Configuration, wind safety criterion is met at all on-grade locations on-site and surrounding the site on an annual basis (Figure 9). The existing wind safety exceedances are eliminated from the west side of the existing 1485 Williamsport Drive building. However, the wind safety criterion was exceeded on the rooftop terrace on an annual basis (Locations 88 and 89). Section 4.2 provides recommendations to improve wind comfort and safety.

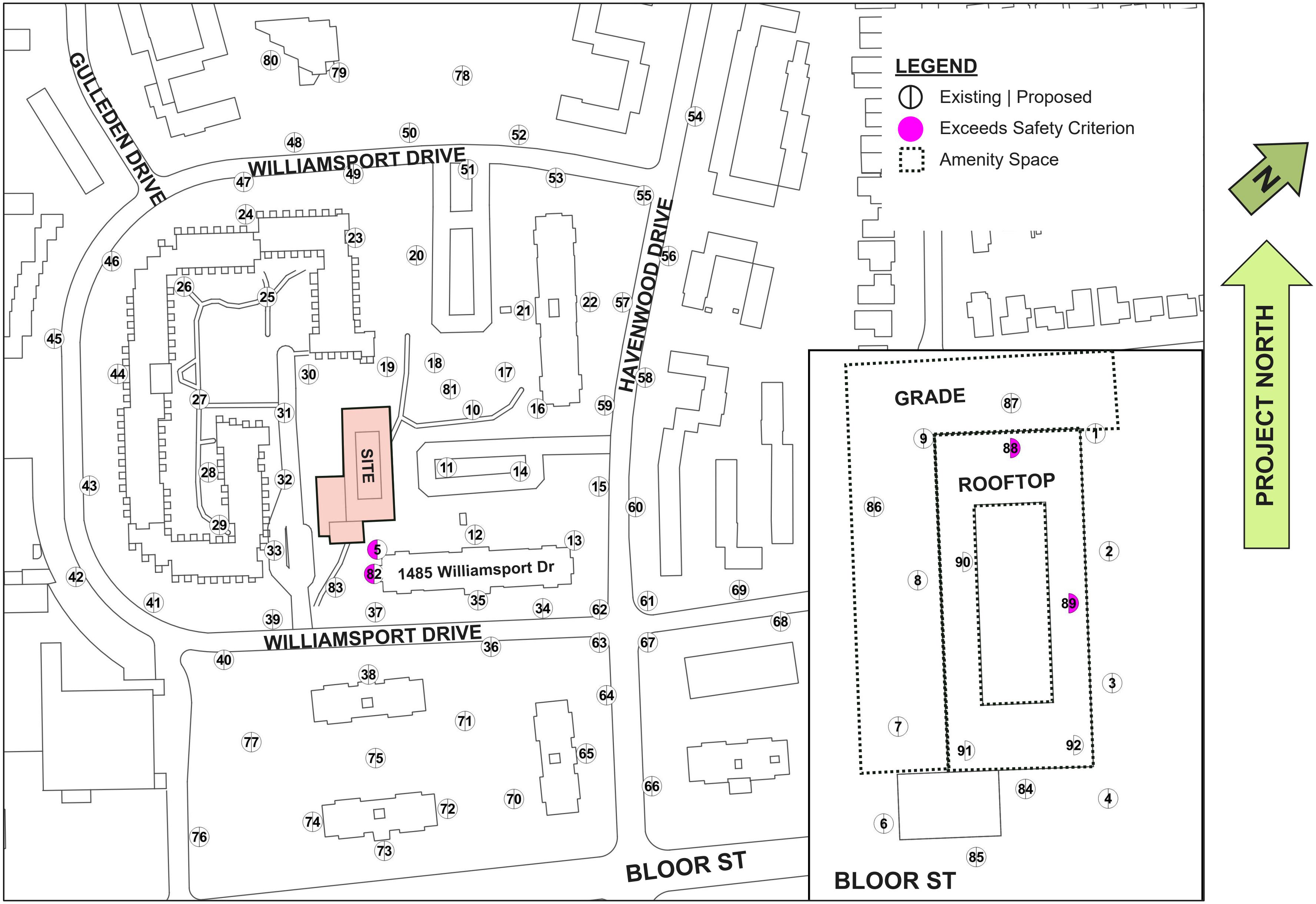

Figure 9: Existing Configuration & Proposed Configuration – Wind Safety Annual – On-site and Surrounding Areas

5.0 Conclusion & Recommendations

The pedestrian wind conditions predicted for the proposed development at Pacific Way development in Mississauga have been assessed through quantitative wind tunnel modeling techniques. Based on the results of our study, the following conclusions have been reached:

- The wind safety criterion is met at all but two locations surrounding the development the Existing Configuration. In the Proposed Configuration, the wind safety criterion is met at all on-grade locations on and off-site. However, exceedances occur on the rooftop terrace.
- Wind conditions on the site are generally expected to be suitable for the intended use year-round. Additional wind control measures are recommended for the main entrance in the winter season.
- Wind conditions in the grade-level outdoor amenity space are suitable for the intended use in most areas in the summer. Additional wind control measures are recommended for the winter season.
- On the sidewalks surrounding the proposed development, wind conditions are similar between the Existing and Proposed Configurations.

6.0 Limitations of Liability

This report has been prepared by SLR Consulting (Canada) Ltd. (SLR) for IMH Havenwood and Williamsport Ltd. (Client) in accordance with the scope of work and all other terms and conditions of the agreement between such parties. SLR acknowledges and agrees that the Client may provide this report to government agencies, interest holders, and/or Indigenous communities as part of project planning or regulatory approval processes. Copying or distribution of this report, in whole or in part, for any other purpose other than as aforementioned is not permitted without the prior written consent of SLR.

Any findings, conclusions, recommendations, or designs provided in this report are based on conditions and criteria that existed at the time work was completed and the assumptions and qualifications set forth herein.

This report may contain data or information provided by third party sources on which SLR is entitled to rely without verification and SLR does not warrant the accuracy of any such data or information.

Nothing in this report constitutes a legal opinion nor does SLR make any representation as to compliance with any laws, rules, regulations, or policies established by federal, provincial territorial, or local government bodies, other than as specifically set forth in this report. Revisions to legislative or regulatory standards referred to in this report may be expected over time and, as a result, modifications to the findings, conclusions, or recommendations may be necessary.

7.0 References

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Appendix A

Pedestrian Wind Comfort & Safety Tables

Interpretation Of Results

Example Table 1 below illustrates the wind comfort and safety criteria. The table provides the GEM (Gust Equivalent Mean) wind speed (in km/h) exceeded 20% of the time for comfort for each of the two seasons for each configuration. It also categorizes the wind speeds as either sitting, standing, walking or uncomfortable. In addition, the table provides the gust wind speed exceeded 0.1% of the time annually.

For instance, at Location 1 there is not data in the Existing Configuration, while in the Proposed Configuration, wind conditions are suitable for walking in the winter season, while in the summer wind conditions are suitable for standing.

At Location 3, wind conditions are suitable for standing in the summer seasons for both Existing and Proposed Configurations. During the winter, the wind conditions are uncomfortable in both Configurations. In addition, the safety criteria is exceeded on an annual basis at Location 3 for both Configurations.

The categories are summarized in **Example Table 2**.

Example Table 1: Pedestrian Wind Conditions

Location	Configuration	Wind Comfort: GEM Speed Exceeded 20% of the Time (km/h)		Wind Safety: Gust Speed Exceeded 0.1% of the Time (km/h)
		Summer	Winter	
1	Existing			
1	Proposed	14.7	18.4	80.8
2	Existing	11.5	13.9	51.7
2	Proposed	8.3	9.8	40.2
3	Existing	13.0	22.3	90.5
3	Proposed	10.9	24.5	92.6

Example Table 2: Categories

Comfort Category	GEM Wind Speed Exceeded 20% of the time
Sitting	10 km/h
Standing	15 km/h
Walking	20 km/h
Uncomfortable	> 20 km/h
Safety	> 90 km/h

Table A1-1: Pedestrian Wind Conditions

Location	Configuration	Wind Comfort: GEM Speed Exceeded 20% of the Time (km/h) Summer	Wind Comfort: GEM Speed Exceeded 20% of the Time (km/h) Winter	Wind Safety: Gust Speed Exceeded 0.1% of the Time (km/h)
1	Existing	13.0	15.4	57.3
1	Proposed	14.0	17.5	76.5
2	Existing	11.5	13.9	51.7
2	Proposed	11.1	13.2	45.7
3	Existing	13.0	15.0	55.6
3	Proposed	10.8	13.3	55.1
4	Existing	15.4	17.6	76.2
4	Proposed	15.9	18.7	70.4
5	Existing	17.3	20.3	92.0
5	Proposed	17.6	20.8	79.3
6	Existing	15.0	17.3	72.3
6	Proposed	12.3	14.8	58.6
7	Existing	13.1	15.0	56.2
7	Proposed	12.4	15.1	61.4
8	Existing	12.1	14.5	58.5
8	Proposed	11.9	14.1	63.7
9	Existing	12.0	14.4	54.0
9	Proposed	15.0	17.4	70.5
10	Existing	14.0	16.9	63.1
10	Proposed	13.3	15.8	57.8

Table A1-2: Pedestrian Wind Conditions

Location	Configuration	Wind Comfort: GEM Speed Exceeded 20% of the Time (km/h) Summer	Wind Comfort: GEM Speed Exceeded 20% of the Time (km/h) Winter	Wind Safety: Gust Speed Exceeded 0.1% of the Time (km/h)
11	Existing	12.7	15.1	54.7
11	Proposed	12.2	14.8	68.7
12	Existing	13.8	16.9	69.0
12	Proposed	14.0	16.2	61.9
13	Existing	16.7	20.6	87.1
13	Proposed	12.8	15.6	61.0
14	Existing	13.2	15.6	58.2
14	Proposed	12.6	15.1	59.3
15	Existing	14.6	17.3	66.4
15	Proposed	12.9	15.3	60.1
16	Existing	14.6	17.7	70.6
16	Proposed	14.9	18.5	74.8
17	Existing	15.7	19.3	75.6
17	Proposed	15.7	19.3	74.8
18	Existing	13.4	15.9	63.4
18	Proposed	11.7	13.9	52.4
19	Existing	12.7	13.9	50.7
19	Proposed	11.4	13.4	49.1
20	Existing	13.3	15.7	64.6
20	Proposed	10.9	12.7	50.6

Table A1-3: Pedestrian Wind Conditions

Location	Configuration	Wind Comfort: GEM Speed Exceeded 20% of the Time (km/h)		Wind Safety: Gust Speed Exceeded 0.1% of the Time (km/h)
		Summer	Winter	
21	Existing	14.4	17.5	77.1
21	Proposed	13.5	16.6	74.2
22	Existing	12.9	15.4	62.8
22	Proposed	12.6	15.2	63.0
23	Existing	10.3	12.4	52.4
23	Proposed	9.9	11.8	51.4
24	Existing	11.2	13.5	56.2
24	Proposed	10.9	13.1	52.4
25	Existing	10.0	11.8	46.6
25	Proposed	10.2	12.0	45.9
26	Existing	7.8	8.8	32.0
26	Proposed	8.1	9.4	33.9
27	Existing	11.8	13.9	54.0
27	Proposed	12.8	15.0	57.4
28	Existing	10.8	13.0	50.4
28	Proposed	10.3	12.4	46.3
29	Existing	9.3	11.2	43.3
29	Proposed	9.3	11.0	42.5
30	Existing	12.7	13.9	50.8
30	Proposed	11.5	13.8	49.6

Table A1-4: Pedestrian Wind Conditions

Location	Configuration	Wind Comfort: GEM Speed Exceeded 20% of the Time (km/h) – Summer	Wind Comfort: GEM Speed Exceeded 20% of the Time (km/h) – Winter	Wind Safety: Gust Speed Exceeded 0.1% of the Time (km/h)
31	Existing	11.6	13.7	51.8
31	Proposed	12.7	14.8	56.7
32	Existing	12.2	14.5	58.6
32	Proposed	13.3	16.0	64.5
33	Existing	12.3	14.4	58.6
33	Proposed	11.9	14.5	57.3
34	Existing	15.0	17.1	71.4
34	Proposed	13.2	14.8	57.7
35	Existing	14.1	16.1	68.5
35	Proposed	14.7	17.1	53.4
36	Existing	15.0	17.9	82.8
36	Proposed	14.6	17.2	72.8
37	Existing	15.7	18.4	77.7
37	Proposed	14.4	17.2	64.8
38	Existing	14.8	18.1	76.7
38	Proposed	13.8	16.7	63.0
39	Existing	14.0	16.2	62.4
39	Proposed	12.5	14.5	54.6
40	Existing	12.3	14.5	53.2
40	Proposed	12.4	14.5	53.5

Table A1-5: Pedestrian Wind Conditions

Location	Configuration	Wind Comfort: GEM Speed Exceeded 20% of the Time (km/h)		Wind Safety: Gust Speed Exceeded 0.1% of the Time (km/h)
		Summer	Winter	
41	Existing	12.2	15.0	58.7
41	Proposed	12.5	15.2	59.5
42	Existing	13.6	16.4	69.3
42	Proposed	13.9	16.9	69.7
43	Existing	12.8	15.3	64.8
43	Proposed	12.6	14.9	62.0
44	Existing	10.3	12.7	52.5
44	Proposed	10.9	13.2	52.8
45	Existing	11.9	13.9	58.0
45	Proposed	12.4	14.5	60.4
46	Existing	12.6	14.7	58.8
46	Proposed	13.1	15.0	58.0
47	Existing	11.9	14.1	51.6
47	Proposed	12.1	14.3	52.8
48	Existing	12.4	14.8	55.0
48	Proposed	12.8	15.4	58.0
49	Existing	13.0	15.8	61.8
49	Proposed	13.0	15.9	61.7
50	Existing	14.0	16.4	63.7
50	Proposed	12.4	14.9	57.6

Table A1-6: Pedestrian Wind Conditions

Location	Configuration	Wind Comfort: GEM Speed Exceeded 20% of the Time (km/h) Summer	Wind Comfort: GEM Speed Exceeded 20% of the Time (km/h) Winter	Wind Safety: Gust Speed Exceeded 0.1% of the Time (km/h)
51	Existing	14.4	16.8	66.3
51	Proposed	13.5	15.7	63.4
52	Existing	13.9	16.2	60.6
52	Proposed	13.6	16.2	62.3
53	Existing	14.3	17.5	66.6
53	Proposed	13.7	16.7	65.0
54	Existing	13.2	15.5	60.8
54	Proposed	12.5	14.9	59.6
55	Existing	12.7	14.6	58.4
55	Proposed	13.6	16.5	67.1
56	Existing	13.5	16.1	67.0
56	Proposed	12.7	15.1	61.3
57	Existing	14.3	17.2	72.5
57	Proposed	13.4	16.3	69.4
58	Existing	13.9	16.5	73.9
58	Proposed	13.4	15.9	67.7
59	Existing	15.7	18.2	72.7
59	Proposed	14.7	17.2	69.7
60	Existing	12.8	15.0	59.9
60	Proposed	12.9	15.5	67.6

Table A1-7: Pedestrian Wind Conditions

Location	Configuration	Wind Comfort GEM Speed Exceeded 20% of the Time (km/h)		Wind Safety Gust Speed Exceeded 0.1% of the Time (km/h)
		Summer	Winter	
61	Existing	13.8	16.5	70.2
61	Proposed	12.3	14.5	59.2
62	Existing	14.7	17.5	69.5
62	Proposed	14.8	17.2	63.6
63	Existing	13.2	16.3	77.2
63	Proposed	13.1	15.9	72.4
64	Existing	14.1	17.6	89.7
64	Proposed	12.4	14.9	68.6
65	Existing	12.1	14.7	64.7
65	Proposed	11.8	14.3	57.3
66	Existing	14.7	18.1	76.4
66	Proposed	13.0	15.2	60.3
67	Existing	13.0	15.6	65.0
67	Proposed	12.6	14.9	61.9
68	Existing	11.9	14.5	54.7
68	Proposed	11.0	13.1	49.6
69	Existing	11.1	13.1	49.3
69	Proposed	10.5	12.6	48.5
70	Existing	13.9	17.1	73.8
70	Proposed	12.3	14.8	59.2

Table A1-8: Pedestrian Wind Conditions

Location	Configuration	Wind Comfort: GEM Speed Exceeded 20% of the Time (km/h)		Wind Safety: Gust Speed Exceeded 0.1% of the Time (km/h)
		Summer	Winter	
71	Existing	13.5	15.5	63.4
71	Proposed	12.2	14.2	63.2
72	Existing	12.1	14.2	63.5
72	Proposed	11.1	13.1	58.7
73	Existing	12.0	14.0	55.4
73	Proposed	13.0	15.4	58.3
74	Existing	11.7	14.1	65.5
74	Proposed	11.9	14.3	61.9
75	Existing	15.0	17.8	76.9
75	Proposed	15.4	18.3	74.9
76	Existing	13.3	15.7	58.2
76	Proposed	14.0	16.6	63.0
77	Existing	13.7	16.1	66.7
77	Proposed	13.6	16.0	66.8
78	Existing	14.1	16.5	63.9
78	Proposed	13.6	16.1	62.7
79	Existing	11.5	13.3	51.8
79	Proposed	11.8	14.0	59.8
80	Existing	9.6	12.3	59.3
80	Proposed	10.4	12.9	56.0

Table A1-9: Pedestrian Wind Conditions

Location	Configuration	Wind Comfort: GEM Speed Exceeded 20% of the Time (km/h)		Wind Safety: Gust Speed Exceeded 0.1% of the Time (km/h)
		Summer	Winter	
81	Existing	13.7	16.5	64.3
81	Proposed	12.9	15.3	57.3
82	Existing	15.5	18.7	96.4
82	Proposed	11.5	13.8	55.5
83	Existing	15.8	18.7	79.6
83	Proposed	12.6	15.1	58.8
84	Existing	15.3	17.4	78.7
84	Proposed	12.3	14.8	62.7
85	Existing	16.2	18.8	88.8
85	Proposed	14.1	17.0	66.4
86	Existing	11.6	13.7	51.9
86	Proposed	14.8	17.6	78.1
87	Existing	12.0	14.5	54.0
87	Proposed	12.3	14.8	55.9
88	Existing			
88	Proposed	17.0	20.9	92.3
89	Existing			
89	Proposed	18.4	22.0	92.3
90	Existing			
90	Proposed	16.4	19.9	84.5

Table A1-10: Pedestrian Wind Conditions

Location	Configuration	Wind Comfort: GEM Speed Exceeded 20% of the Time (km/h)		Wind Safety: Gust Speed Exceeded 0.1% of the Time (km/h)
		Summer	Winter	
91	Existing			
91	Proposed	12.4	14.7	59.2
92	Existing			
92	Proposed	12.8	14.3	57.6