

1 CLAIR ROAD EAST

GUELPH, ONTARIO

PEDESTRIAN WIND STUDY

RWDI # 2401100

December 11, 2023

SUBMITTED TO

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EXECUTIVE SUMMARY

RWDI was retained to conduct a pedestrian wind assessment for the proposed project at 1 Clair Road East in Guelph, Ontario (Image 1). The assessment was based on the wind-tunnel testing conducted for the proposed development under the Existing and Proposed configurations of the site and surroundings (Image 2). The results were analyzed using the regional wind climate records (Image 3) and evaluated against the City of Guelph Pedestrian Wind Criteria for pedestrian comfort (pertaining to common wind speeds conducive to different levels of human activity) and pedestrian safety (pertaining to infrequent but strong gusts that could affect a person's footing). The criteria description is appended to this report to assist with the interpretation of the results. The predicted wind conditions are presented in Figures 1A through 2B and Table 1, and are summarized as follows:

- Wind speeds that meet the pedestrian safety criterion are expected at all areas assessed for both configurations tested.
- The existing wind conditions are considered appropriate for the intended pedestrian use throughout the year.
- With the addition of the proposed project, wind conditions are predicted to continue to be appropriate for the intended pedestrian use at all grade-level areas assessed, including all main entrances, public sidewalks, and the outdoor park area south of Tower A, throughout the year.
- Suitable wind conditions are generally expected in the summer for outdoor amenity spaces at grade, except the area between Towers C and D, where wind speeds are higher than desired for passive activities.
- Wind speeds conducive to the intended pedestrian use are expected at all Level 7 outdoor amenities during the summer, with higher-than-desired wind speeds expected around the northeast corners of Towers C and D.

While referring to the Pedestrian Wind Criteria description that follows, we encourage the design team to review the results and assess them against the intended pedestrian usage at specific locations. If there are locations where improved conditions are desired, the RWDI team is prepared to discuss and suggest conceptual wind control strategies. Additional commentary regarding background on wind flow patterns, wind comfort levels, and any further recommendations for wind control will be presented within the final report. Prior to issuing the report, we suggest a teleconference to review the results and discuss the feasibility of any wind control measures.

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Image 1: Aerial View of Site and Surroundings (Photo Courtesy of Google™ Earth)

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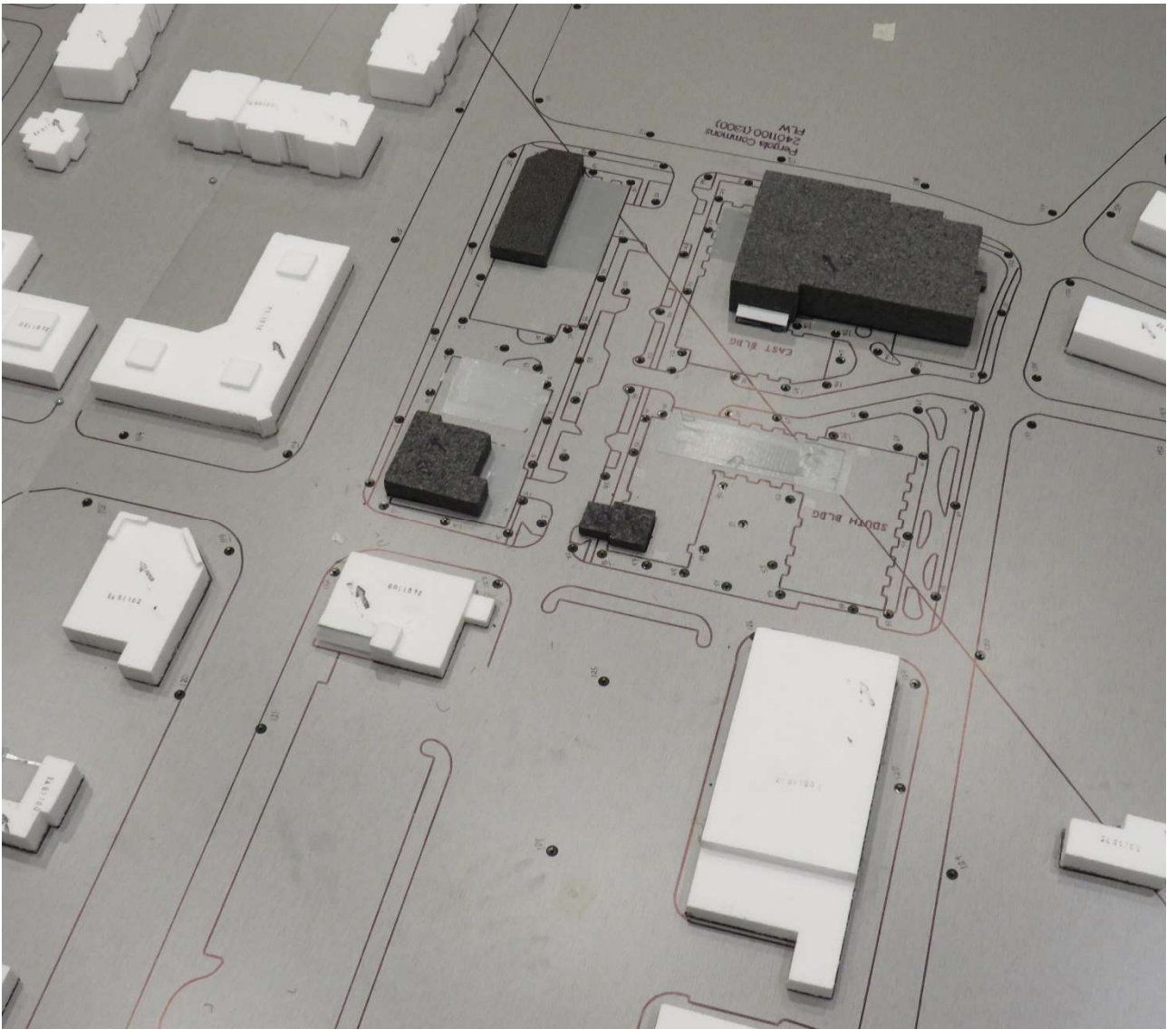


Image 2A: Wind Tunnel Study Model - Existing Configuration

**PEDESTRIAN WIND STUDY
1 CLAIR ROAD EAST**

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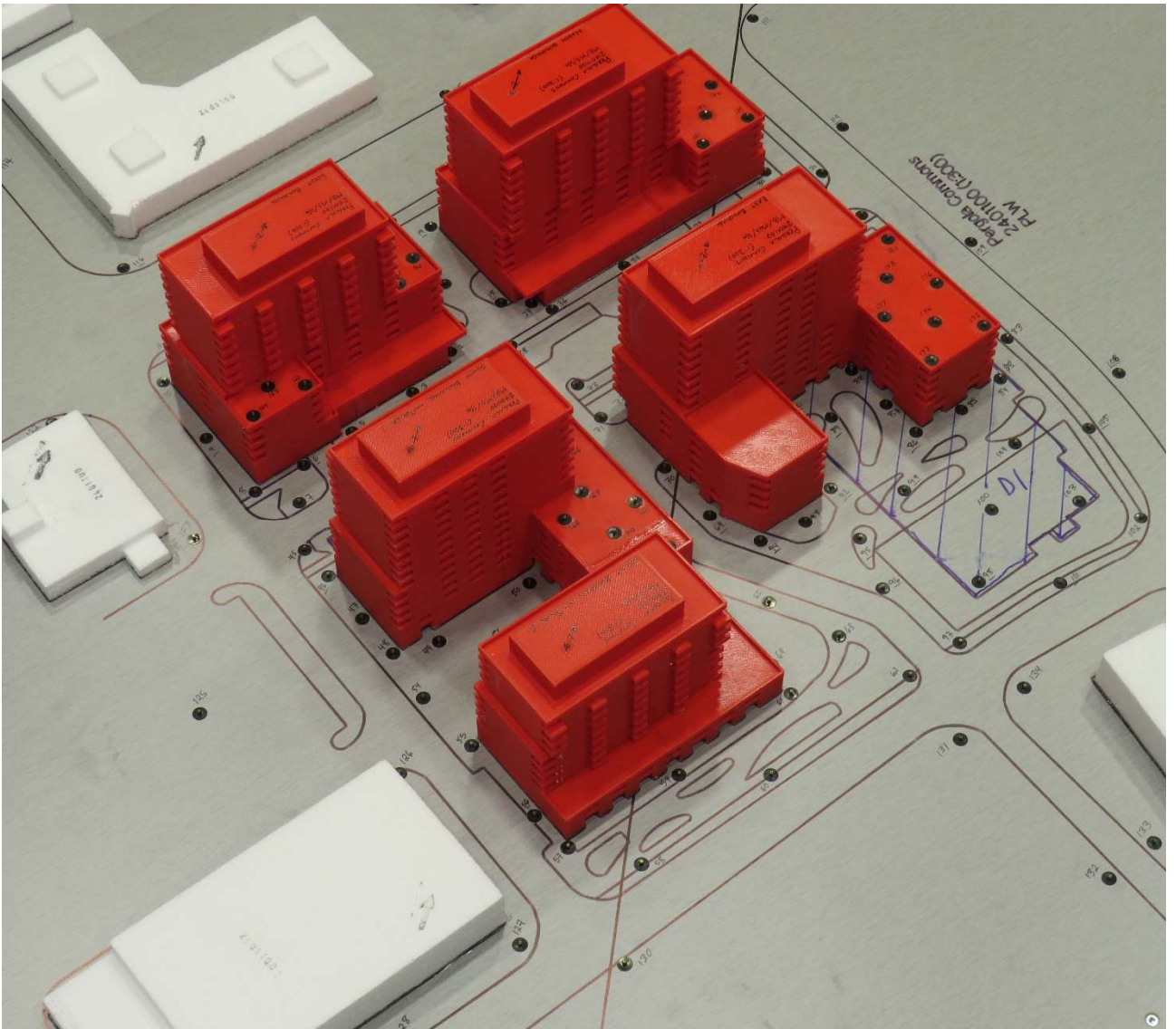
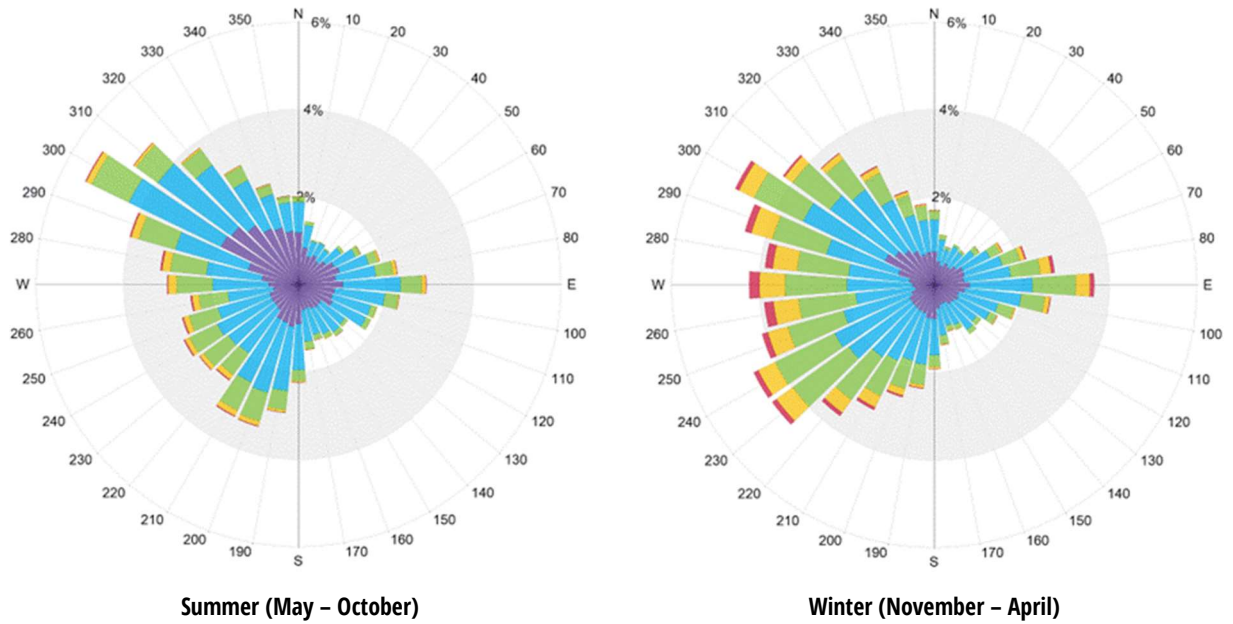


Image 2B: Wind Tunnel Study Model - Proposed Configuration

**PEDESTRIAN WIND STUDY
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Wind Speed (km/h)	Probability (%)	
	Summer	Winter
Calm	13.1	6.4
1-10	33.6	24.2
11-20	37.4	38.7
21-30	13.4	22.4
31-40	2.2	6.5
>40	0.3	1.8

Image 3: Directional Distribution of Winds Approaching the Region of Waterloo International Airport between 1991 and 2021



City of Guelph Pedestrian Wind Criteria

The pedestrian wind criteria are outlined in the City of Guelph's "Pedestrian Level Wind Studies Terms of Reference", dated May 2019. The following defines the criteria in detail.

Comfort Category	GEM Speed (km/h)	Description
Sitting	≤ 10	Calm or light breezes desired for outdoor restaurants and seating areas where one can read a paper without having it blown away
Standing	≤ 15	Gentle breezes suitable for main building entrances, bus stops, plazas, and other places where pedestrians may linger
Walking	≤ 20	Relatively high speeds that can be tolerated if one's objective is to walk, run, or cycle without lingering
Uncomfortable	> 20	Strong winds of this magnitude are considered a nuisance for all pedestrian activities, and wind mitigation is typically recommended

Notes:

- (1) $GEM\ Speed = \max(Mean\ Speed, Gust\ Speed/1.85)$ and $Gust\ Speed = Mean\ Speed + 3 * RMS\ Speed$;
- (2) Wind conditions are considered to be comfortable if the predicted GEM speeds are within the respective thresholds for at least 80% of the time between 6:00 and 23:00. Nightly hours between 0:00 and 5:00 are excluded from the wind analysis for comfort since limited usage of outdoor spaces is anticipated; and,
- (3) Instead of standard four seasons, two periods of summer (May to October) and winter (November to April) are adopted in the wind analysis, because in a climate such as that found in **Guelph**, there are distinct differences in pedestrian outdoor behaviour between these time periods.

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

Notes:

- (1) Based on an annual exceedance of 9 hours or 0.1% of the time for 24 hours a day; and,
- (2) Only gust speeds need to be considered in the wind safety criterion. These are usually rare events but deserve special attention in city planning and building design due to their potential safety impact on pedestrians.



Statement of Limitations

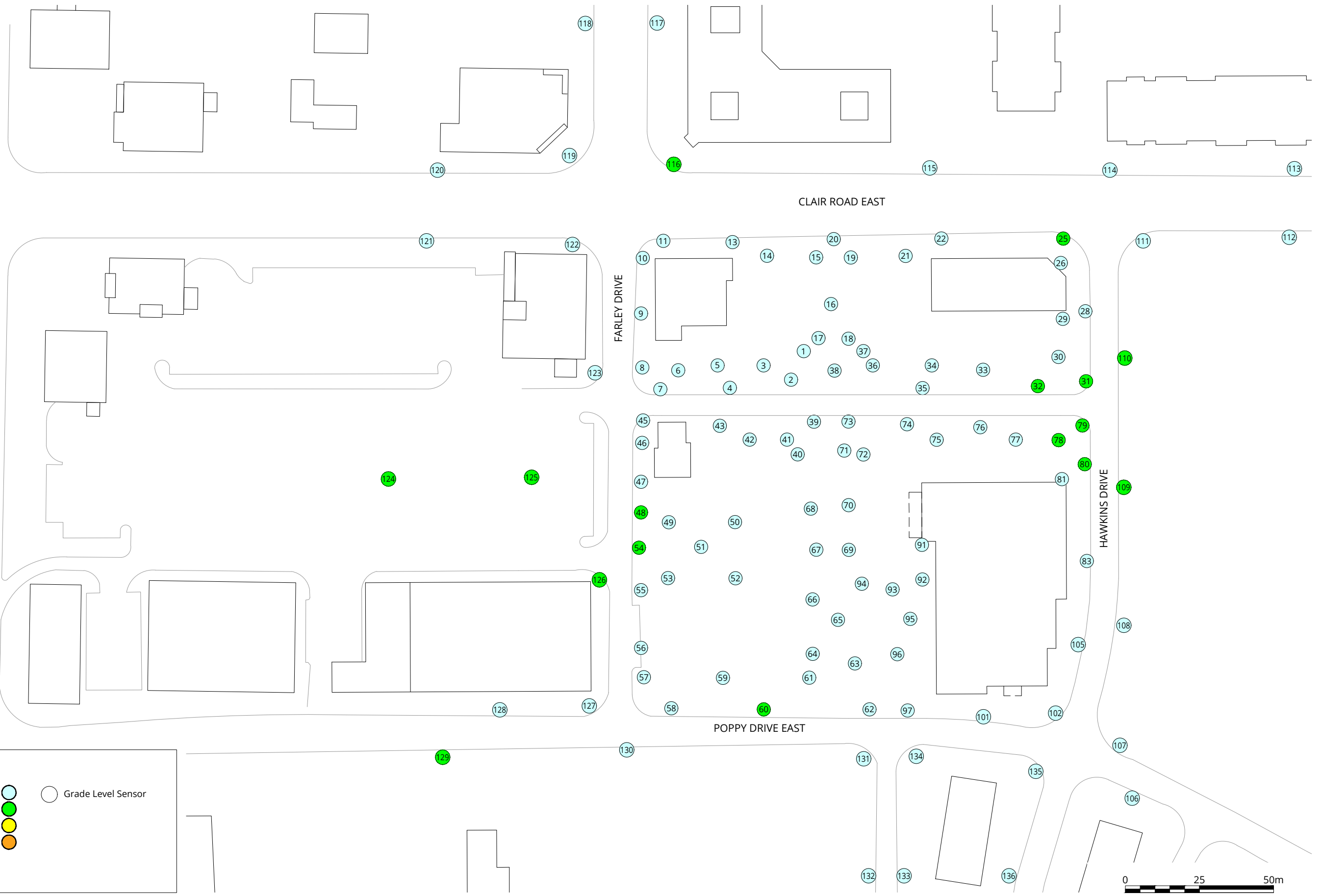
This report was prepared by RWDI AIR Inc. ("RWDI") for First Capital ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). The conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared. Because the contents of this report may not reflect the final design of the Project or subsequent changes made after the date of this report, RWDI recommends that it be retained by Client during the final stages of the project to verify that the results and recommendations provided in this report have been correctly interpreted in the final design of the Project.

The conclusions and recommendations contained in this report have also been made for the specific purpose(s) set out herein. Should the Client or any other third party utilize the report and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the conclusions and recommendations provided.

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FIGURES



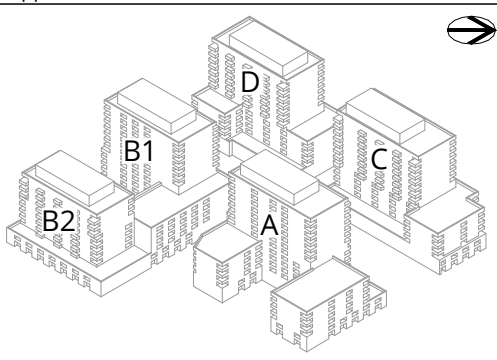
LEGEND:

COMFORT CATEGORIES:

- Sitting ●
- Standing ●
- Walking ●
- Uncomfortable ●

Grade Level Sensor



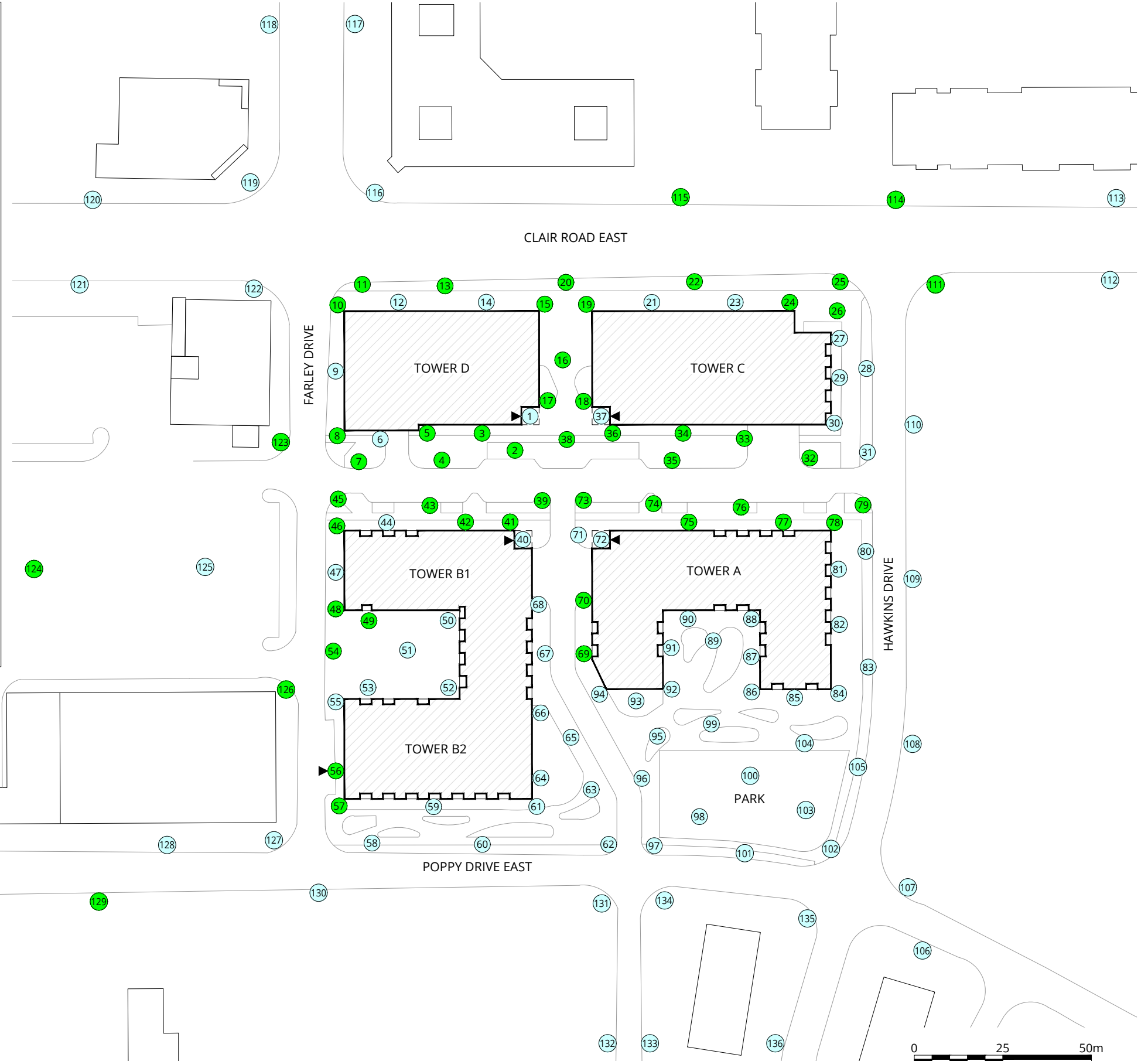


LEGEND:

COMFORT CATEGORIES:

- Sitting ●
- Standing ●
- Walking ●
- Uncomfortable ●

- Grade Level Sensor
- Outdoor Amenity Sensor
- Building Above Removed for Clarity
- ▶ Main Entrance Location



Pedestrian Wind Comfort Conditions

Proposed Configuration
Summer (May to October, 6:00 to 23:00)

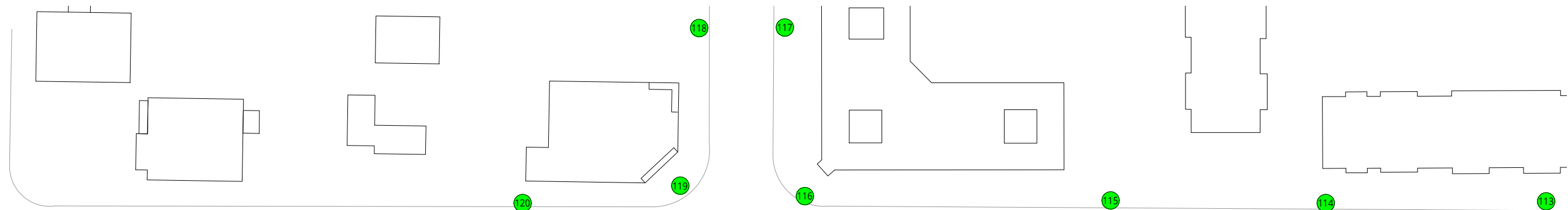
1 Clair Road East - Guelph, ON



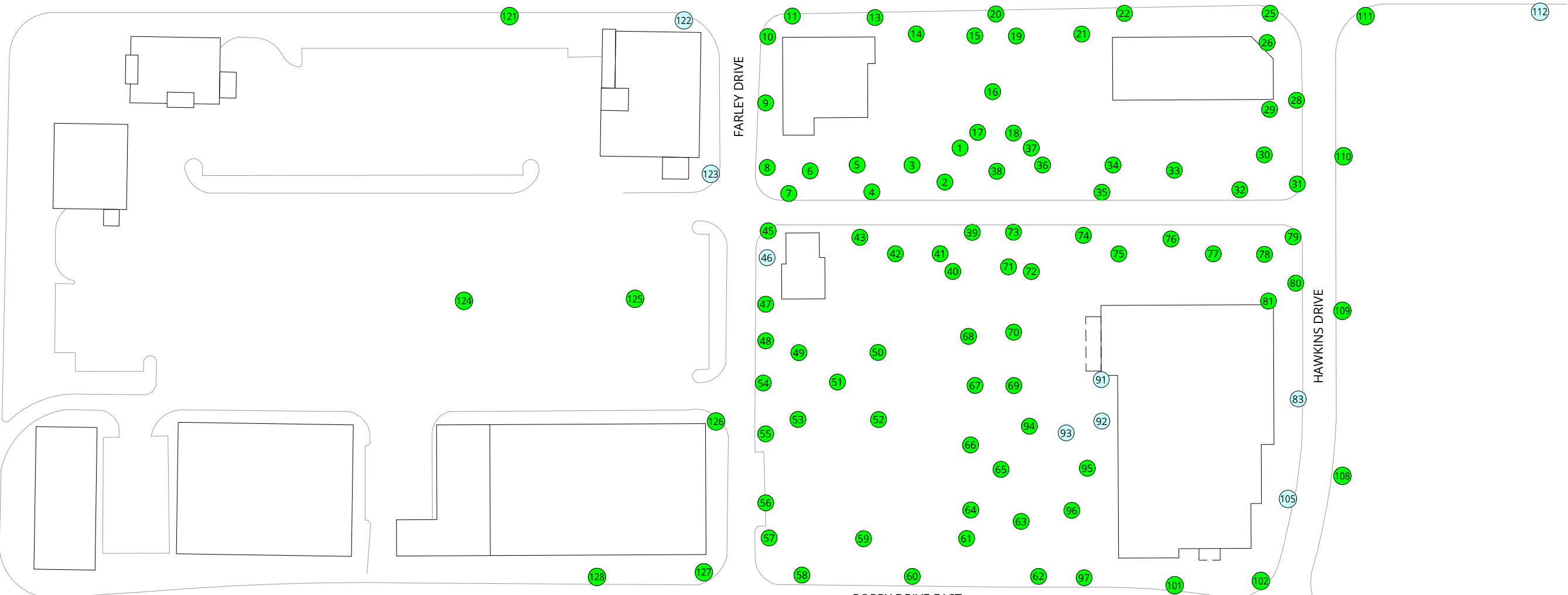
Drawn by: GRE	Figure: 1B
Approx. Scale: 1:1250	
Date Revised: Dec. 8, 2023	



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CLAIR ROAD EAST



POPPY DRIVE EAST

GORDON STREET

FARLEY DRIVE

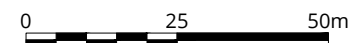
HAWKINS DRIVE

LEGEND:

COMFORT CATEGORIES:

- Sitting
- Standing
- Walking
- Uncomfortable

Grade Level Sensor



Pedestrian Wind Comfort Conditions

Existing Configuration
 Winter (November to April, 6:00 to 23:00)

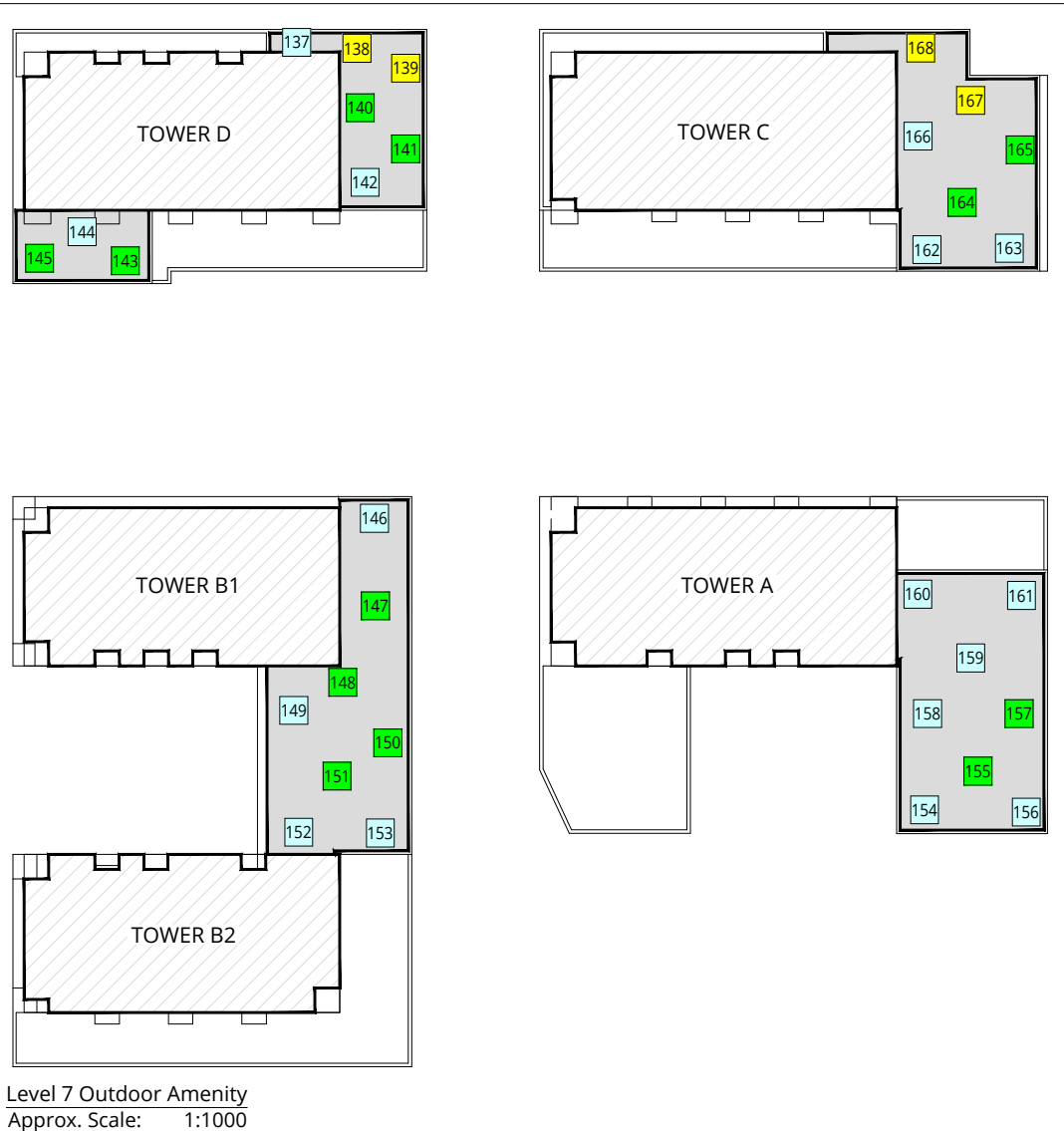
1 Clair Road East - Guelph, ON



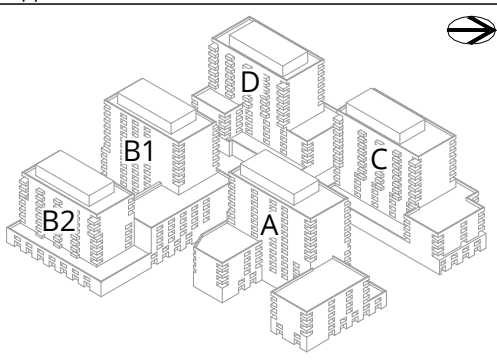
Drawn by: GRE	Figure: 2A
Approx. Scale: 1:1250	
Date Revised: Dec. 8, 2023	



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Level 7 Outdoor Amenity
Approx. Scale: 1:1000



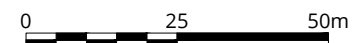
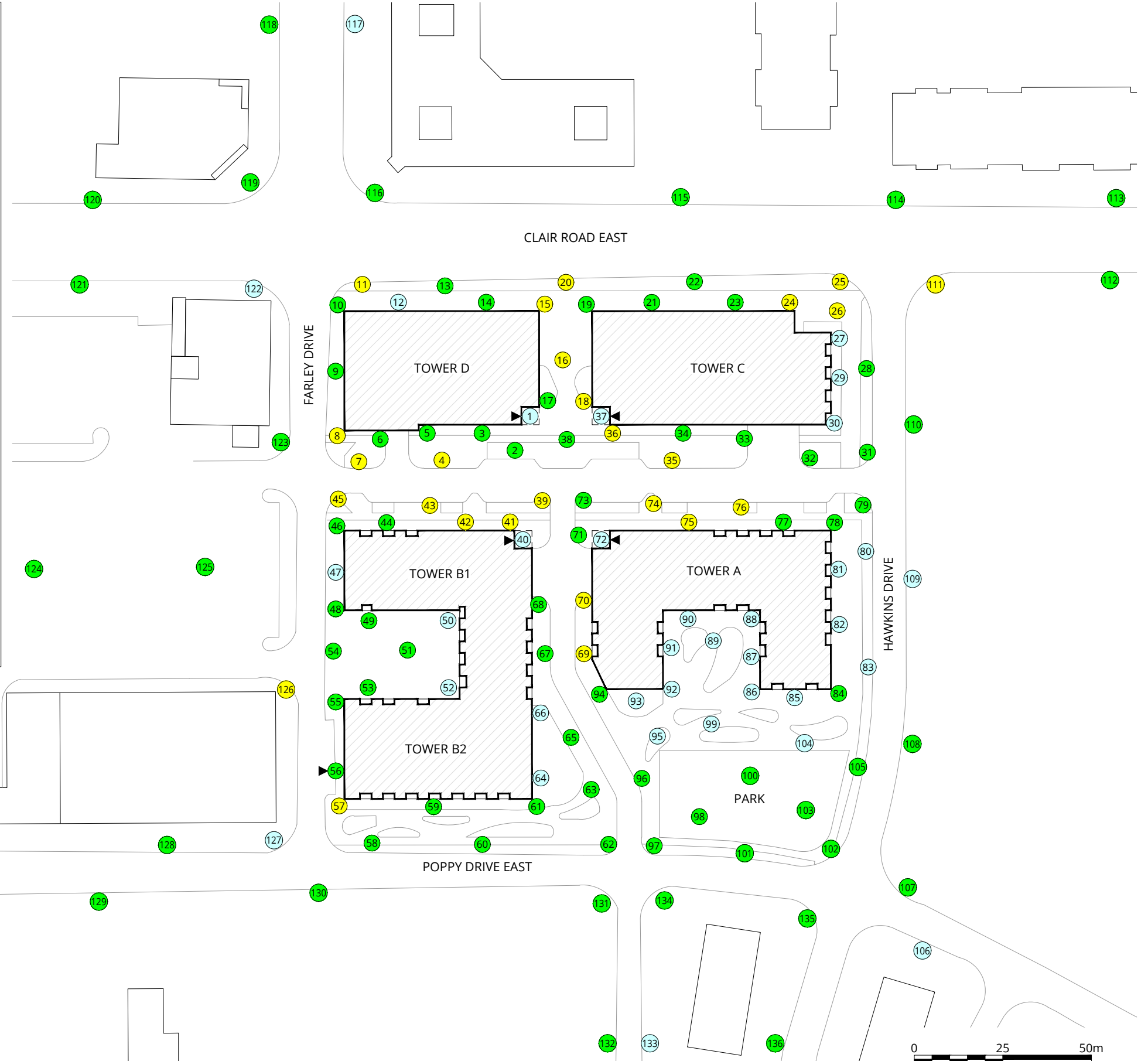
Isometric View of Buildings

LEGEND:

COMFORT CATEGORIES:

- Sitting ———— ●
- Standing ———— ●
- Walking ———— ●
- Uncomfortable ———— ●

- Grade Level Sensor
- Outdoor Amenity Sensor
- Building Above Removed for Clarity
- ▶ Main Entrance Location



Pedestrian Wind Comfort Conditions

Proposed Configuration
Winter (November to April, 6:00 to 23:00)

1 Clair Road East - Guelph, ON



Drawn by: GRE Figure: 2B

Approx. Scale: 1:1250

Date Revised: Dec. 8, 2023

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TABLES

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Configuration	Wind Comfort				Wind Safety	
		Summer		Winter		Annual	
		Speed (km/h)	Rating	Speed (km/h)	Rating	Speed (km/h)	Rating
1	Existing	10	Sitting	12	Standing	46	Pass
	Proposed	5	Sitting	7	Sitting	30	Pass
2	Existing	10	Sitting	12	Standing	49	Pass
	Proposed	12	Standing	15	Standing	60	Pass
3	Existing	9	Sitting	12	Standing	44	Pass
	Proposed	11	Standing	13	Standing	52	Pass
4	Existing	9	Sitting	11	Standing	46	Pass
	Proposed	14	Standing	18	Walking	71	Pass
5	Existing	9	Sitting	11	Standing	45	Pass
	Proposed	12	Standing	15	Standing	61	Pass
6	Existing	9	Sitting	11	Standing	49	Pass
	Proposed	9	Sitting	12	Standing	52	Pass
7	Existing	10	Sitting	13	Standing	51	Pass
	Proposed	14	Standing	18	Walking	72	Pass
8	Existing	10	Sitting	12	Standing	52	Pass
	Proposed	14	Standing	19	Walking	78	Pass
9	Existing	9	Sitting	11	Standing	47	Pass
	Proposed	9	Sitting	11	Standing	52	Pass
10	Existing	9	Sitting	11	Standing	45	Pass
	Proposed	13	Standing	15	Standing	64	Pass
11	Existing	9	Sitting	12	Standing	53	Pass
	Proposed	13	Standing	16	Walking	74	Pass
12	Existing	-	-	-	-	-	-
	Proposed	8	Sitting	10	Sitting	50	Pass
13	Existing	10	Sitting	13	Standing	52	Pass
	Proposed	11	Standing	14	Standing	61	Pass
14	Existing	9	Sitting	12	Standing	51	Pass
	Proposed	9	Sitting	12	Standing	57	Pass
15	Existing	9	Sitting	11	Standing	46	Pass
	Proposed	14	Standing	18	Walking	71	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Configuration	Wind Comfort				Wind Safety	
		Summer		Winter		Annual	
		Speed (km/h)	Rating	Speed (km/h)	Rating	Speed (km/h)	Rating
16	Existing	9	Sitting	11	Standing	45	Pass
	Proposed	15	Standing	18	Walking	73	Pass
17	Existing	10	Sitting	12	Standing	46	Pass
	Proposed	12	Standing	14	Standing	61	Pass
18	Existing	10	Sitting	12	Standing	48	Pass
	Proposed	15	Standing	19	Walking	87	Pass
19	Existing	9	Sitting	11	Standing	47	Pass
	Proposed	12	Standing	15	Standing	58	Pass
20	Existing	9	Sitting	12	Standing	48	Pass
	Proposed	13	Standing	17	Walking	66	Pass
21	Existing	9	Sitting	11	Standing	42	Pass
	Proposed	10	Sitting	13	Standing	68	Pass
22	Existing	10	Sitting	12	Standing	49	Pass
	Proposed	12	Standing	15	Standing	66	Pass
23	Existing	-	-	-	-	-	-
	Proposed	10	Sitting	14	Standing	68	Pass
24	Existing	-	-	-	-	-	-
	Proposed	12	Standing	16	Walking	72	Pass
25	Existing	11	Standing	14	Standing	55	Pass
	Proposed	15	Standing	20	Walking	77	Pass
26	Existing	9	Sitting	11	Standing	51	Pass
	Proposed	15	Standing	19	Walking	76	Pass
27	Existing	-	-	-	-	-	-
	Proposed	8	Sitting	10	Sitting	55	Pass
28	Existing	9	Sitting	11	Standing	42	Pass
	Proposed	9	Sitting	11	Standing	48	Pass
29	Existing	8	Sitting	11	Standing	44	Pass
	Proposed	6	Sitting	7	Sitting	43	Pass
30	Existing	10	Sitting	13	Standing	53	Pass
	Proposed	8	Sitting	9	Sitting	49	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Configuration	Wind Comfort				Wind Safety	
		Summer		Winter		Annual	
		Speed (km/h)	Rating	Speed (km/h)	Rating	Speed (km/h)	Rating
31	Existing	11	Standing	14	Standing	57	Pass
	Proposed	10	Sitting	12	Standing	50	Pass
32	Existing	11	Standing	14	Standing	55	Pass
	Proposed	11	Standing	13	Standing	53	Pass
33	Existing	10	Sitting	13	Standing	49	Pass
	Proposed	11	Standing	13	Standing	52	Pass
34	Existing	10	Sitting	13	Standing	51	Pass
	Proposed	11	Standing	14	Standing	61	Pass
35	Existing	10	Sitting	13	Standing	53	Pass
	Proposed	13	Standing	17	Walking	75	Pass
36	Existing	10	Sitting	13	Standing	51	Pass
	Proposed	15	Standing	19	Walking	88	Pass
37	Existing	10	Sitting	12	Standing	48	Pass
	Proposed	6	Sitting	7	Sitting	32	Pass
38	Existing	10	Sitting	13	Standing	49	Pass
	Proposed	12	Standing	15	Standing	70	Pass
39	Existing	10	Sitting	13	Standing	52	Pass
	Proposed	12	Standing	16	Walking	66	Pass
40	Existing	10	Sitting	12	Standing	48	Pass
	Proposed	4	Sitting	5	Sitting	21	Pass
41	Existing	10	Sitting	12	Standing	49	Pass
	Proposed	13	Standing	17	Walking	69	Pass
42	Existing	10	Sitting	12	Standing	47	Pass
	Proposed	12	Standing	16	Walking	68	Pass
43	Existing	9	Sitting	11	Standing	47	Pass
	Proposed	15	Standing	19	Walking	75	Pass
44	Existing	-	-	-	-	-	-
	Proposed	10	Sitting	13	Standing	55	Pass
45	Existing	9	Sitting	11	Standing	45	Pass
	Proposed	12	Standing	16	Walking	63	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Configuration	Wind Comfort				Wind Safety	
		Summer		Winter		Annual	
		Speed (km/h)	Rating	Speed (km/h)	Rating	Speed (km/h)	Rating
46	Existing	7	Sitting	9	Sitting	39	Pass
	Proposed	11	Standing	14	Standing	61	Pass
47	Existing	10	Sitting	13	Standing	49	Pass
	Proposed	8	Sitting	10	Sitting	51	Pass
48	Existing	11	Standing	14	Standing	54	Pass
	Proposed	12	Standing	15	Standing	68	Pass
49	Existing	10	Sitting	13	Standing	51	Pass
	Proposed	11	Standing	15	Standing	80	Pass
50	Existing	10	Sitting	13	Standing	48	Pass
	Proposed	6	Sitting	8	Sitting	41	Pass
51	Existing	10	Sitting	13	Standing	50	Pass
	Proposed	9	Sitting	11	Standing	63	Pass
52	Existing	10	Sitting	13	Standing	51	Pass
	Proposed	5	Sitting	7	Sitting	33	Pass
53	Existing	10	Sitting	13	Standing	53	Pass
	Proposed	10	Sitting	12	Standing	52	Pass
54	Existing	11	Standing	14	Standing	54	Pass
	Proposed	11	Standing	14	Standing	57	Pass
55	Existing	10	Sitting	13	Standing	54	Pass
	Proposed	9	Sitting	11	Standing	53	Pass
56	Existing	9	Sitting	11	Standing	43	Pass
	Proposed	12	Standing	15	Standing	67	Pass
57	Existing	9	Sitting	11	Standing	42	Pass
	Proposed	15	Standing	20	Walking	73	Pass
58	Existing	10	Sitting	12	Standing	48	Pass
	Proposed	10	Sitting	14	Standing	66	Pass
59	Existing	10	Sitting	12	Standing	48	Pass
	Proposed	8	Sitting	11	Standing	62	Pass
60	Existing	11	Standing	13	Standing	50	Pass
	Proposed	10	Sitting	13	Standing	66	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Configuration	Wind Comfort				Wind Safety	
		Summer		Winter		Annual	
		Speed (km/h)	Rating	Speed (km/h)	Rating	Speed (km/h)	Rating
61	Existing	10	Sitting	13	Standing	49	Pass
	Proposed	10	Sitting	12	Standing	53	Pass
62	Existing	10	Sitting	13	Standing	49	Pass
	Proposed	10	Sitting	12	Standing	56	Pass
63	Existing	10	Sitting	13	Standing	49	Pass
	Proposed	10	Sitting	13	Standing	62	Pass
64	Existing	10	Sitting	13	Standing	49	Pass
	Proposed	7	Sitting	9	Sitting	47	Pass
65	Existing	10	Sitting	12	Standing	48	Pass
	Proposed	9	Sitting	12	Standing	64	Pass
66	Existing	10	Sitting	12	Standing	49	Pass
	Proposed	8	Sitting	10	Sitting	46	Pass
67	Existing	10	Sitting	13	Standing	51	Pass
	Proposed	10	Sitting	12	Standing	49	Pass
68	Existing	10	Sitting	13	Standing	50	Pass
	Proposed	9	Sitting	11	Standing	54	Pass
69	Existing	9	Sitting	12	Standing	48	Pass
	Proposed	12	Standing	16	Walking	75	Pass
70	Existing	10	Sitting	12	Standing	48	Pass
	Proposed	12	Standing	17	Walking	85	Pass
71	Existing	10	Sitting	12	Standing	48	Pass
	Proposed	10	Sitting	13	Standing	51	Pass
72	Existing	10	Sitting	12	Standing	47	Pass
	Proposed	6	Sitting	7	Sitting	34	Pass
73	Existing	10	Sitting	13	Standing	52	Pass
	Proposed	11	Standing	14	Standing	60	Pass
74	Existing	10	Sitting	13	Standing	50	Pass
	Proposed	12	Standing	16	Walking	64	Pass
75	Existing	10	Sitting	13	Standing	53	Pass
	Proposed	12	Standing	16	Walking	68	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Configuration	Wind Comfort				Wind Safety	
		Summer		Winter		Annual	
		Speed (km/h)	Rating	Speed (km/h)	Rating	Speed (km/h)	Rating
76	Existing	10	Sitting	13	Standing	55	Pass
	Proposed	13	Standing	17	Walking	66	Pass
77	Existing	9	Sitting	12	Standing	55	Pass
	Proposed	11	Standing	14	Standing	60	Pass
78	Existing	11	Standing	14	Standing	56	Pass
	Proposed	11	Standing	14	Standing	61	Pass
79	Existing	11	Standing	14	Standing	56	Pass
	Proposed	11	Standing	14	Standing	56	Pass
80	Existing	11	Standing	14	Standing	59	Pass
	Proposed	7	Sitting	9	Sitting	46	Pass
81	Existing	8	Sitting	11	Standing	54	Pass
	Proposed	6	Sitting	8	Sitting	49	Pass
82	Existing	-	-	-	-	-	-
	Proposed	6	Sitting	8	Sitting	40	Pass
83	Existing	8	Sitting	10	Sitting	41	Pass
	Proposed	8	Sitting	10	Sitting	42	Pass
84	Existing	-	-	-	-	-	-
	Proposed	9	Sitting	11	Standing	46	Pass
85	Existing	-	-	-	-	-	-
	Proposed	6	Sitting	7	Sitting	35	Pass
86	Existing	-	-	-	-	-	-
	Proposed	7	Sitting	9	Sitting	37	Pass
87	Existing	-	-	-	-	-	-
	Proposed	6	Sitting	7	Sitting	32	Pass
88	Existing	-	-	-	-	-	-
	Proposed	3	Sitting	4	Sitting	20	Pass
89	Existing	-	-	-	-	-	-
	Proposed	6	Sitting	7	Sitting	39	Pass
90	Existing	-	-	-	-	-	-
	Proposed	5	Sitting	6	Sitting	33	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Configuration	Wind Comfort				Wind Safety	
		Summer		Winter		Annual	
		Speed (km/h)	Rating	Speed (km/h)	Rating	Speed (km/h)	Rating
91	Existing	7	Sitting	9	Sitting	45	Pass
	Proposed	6	Sitting	7	Sitting	41	Pass
92	Existing	8	Sitting	10	Sitting	47	Pass
	Proposed	7	Sitting	8	Sitting	45	Pass
93	Existing	8	Sitting	10	Sitting	45	Pass
	Proposed	6	Sitting	7	Sitting	35	Pass
94	Existing	9	Sitting	11	Standing	46	Pass
	Proposed	10	Sitting	13	Standing	59	Pass
95	Existing	9	Sitting	11	Standing	46	Pass
	Proposed	7	Sitting	9	Sitting	44	Pass
96	Existing	9	Sitting	11	Standing	45	Pass
	Proposed	9	Sitting	11	Standing	48	Pass
97	Existing	10	Sitting	13	Standing	52	Pass
	Proposed	9	Sitting	12	Standing	54	Pass
98	Existing	-	-	-	-	-	-
	Proposed	9	Sitting	12	Standing	56	Pass
99	Existing	-	-	-	-	-	-
	Proposed	8	Sitting	9	Sitting	41	Pass
100	Existing	-	-	-	-	-	-
	Proposed	9	Sitting	11	Standing	49	Pass
101	Existing	9	Sitting	11	Standing	53	Pass
	Proposed	10	Sitting	13	Standing	56	Pass
102	Existing	10	Sitting	12	Standing	49	Pass
	Proposed	10	Sitting	12	Standing	52	Pass
103	Existing	-	-	-	-	-	-
	Proposed	10	Sitting	12	Standing	52	Pass
104	Existing	-	-	-	-	-	-
	Proposed	8	Sitting	10	Sitting	44	Pass
105	Existing	8	Sitting	10	Sitting	43	Pass
	Proposed	10	Sitting	12	Standing	48	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Configuration	Wind Comfort				Wind Safety	
		Summer		Winter		Annual	
		Speed (km/h)	Rating	Speed (km/h)	Rating	Speed (km/h)	Rating
106	Existing	9	Sitting	11	Standing	50	Pass
	Proposed	8	Sitting	10	Sitting	48	Pass
107	Existing	10	Sitting	12	Standing	48	Pass
	Proposed	9	Sitting	12	Standing	48	Pass
108	Existing	9	Sitting	11	Standing	45	Pass
	Proposed	10	Sitting	12	Standing	47	Pass
109	Existing	11	Standing	15	Standing	62	Pass
	Proposed	8	Sitting	10	Sitting	42	Pass
110	Existing	11	Standing	14	Standing	52	Pass
	Proposed	10	Sitting	12	Standing	50	Pass
111	Existing	10	Sitting	13	Standing	49	Pass
	Proposed	12	Standing	16	Walking	70	Pass
112	Existing	8	Sitting	10	Sitting	42	Pass
	Proposed	9	Sitting	11	Standing	43	Pass
113	Existing	9	Sitting	12	Standing	50	Pass
	Proposed	10	Sitting	12	Standing	53	Pass
114	Existing	10	Sitting	12	Standing	52	Pass
	Proposed	11	Standing	14	Standing	54	Pass
115	Existing	10	Sitting	12	Standing	47	Pass
	Proposed	11	Standing	14	Standing	56	Pass
116	Existing	11	Standing	14	Standing	56	Pass
	Proposed	10	Sitting	13	Standing	52	Pass
117	Existing	9	Sitting	11	Standing	47	Pass
	Proposed	8	Sitting	10	Sitting	42	Pass
118	Existing	10	Sitting	12	Standing	48	Pass
	Proposed	9	Sitting	11	Standing	46	Pass
119	Existing	10	Sitting	12	Standing	49	Pass
	Proposed	10	Sitting	13	Standing	48	Pass
120	Existing	10	Sitting	14	Standing	54	Pass
	Proposed	9	Sitting	11	Standing	49	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Configuration	Wind Comfort				Wind Safety	
		Summer		Winter		Annual	
		Speed (km/h)	Rating	Speed (km/h)	Rating	Speed (km/h)	Rating
121	Existing	10	Sitting	13	Standing	50	Pass
	Proposed	10	Sitting	12	Standing	47	Pass
122	Existing	8	Sitting	10	Sitting	47	Pass
	Proposed	8	Sitting	10	Sitting	46	Pass
123	Existing	8	Sitting	10	Sitting	40	Pass
	Proposed	11	Standing	13	Standing	56	Pass
124	Existing	11	Standing	14	Standing	55	Pass
	Proposed	11	Standing	13	Standing	53	Pass
125	Existing	11	Standing	14	Standing	54	Pass
	Proposed	10	Sitting	12	Standing	47	Pass
126	Existing	12	Standing	15	Standing	58	Pass
	Proposed	13	Standing	16	Walking	63	Pass
127	Existing	9	Sitting	12	Standing	47	Pass
	Proposed	7	Sitting	9	Sitting	44	Pass
128	Existing	9	Sitting	12	Standing	51	Pass
	Proposed	9	Sitting	12	Standing	50	Pass
129	Existing	11	Standing	14	Standing	57	Pass
	Proposed	11	Standing	14	Standing	58	Pass
130	Existing	10	Sitting	13	Standing	54	Pass
	Proposed	10	Sitting	13	Standing	52	Pass
131	Existing	10	Sitting	13	Standing	50	Pass
	Proposed	9	Sitting	12	Standing	57	Pass
132	Existing	10	Sitting	13	Standing	49	Pass
	Proposed	9	Sitting	11	Standing	47	Pass
133	Existing	9	Sitting	11	Standing	44	Pass
	Proposed	8	Sitting	10	Sitting	43	Pass
134	Existing	10	Sitting	12	Standing	49	Pass
	Proposed	10	Sitting	12	Standing	53	Pass
135	Existing	9	Sitting	11	Standing	48	Pass
	Proposed	9	Sitting	11	Standing	44	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Configuration	Wind Comfort				Wind Safety	
		Summer		Winter		Annual	
		Speed (km/h)	Rating	Speed (km/h)	Rating	Speed (km/h)	Rating
136	Existing	9	Sitting	12	Standing	54	Pass
	Proposed	8	Sitting	11	Standing	46	Pass
137	Existing	-	-	-	-	-	-
	Proposed	6	Sitting	7	Sitting	32	Pass
138	Existing	-	-	-	-	-	-
	Proposed	14	Standing	18	Walking	85	Pass
139	Existing	-	-	-	-	-	-
	Proposed	12	Standing	16	Walking	76	Pass
140	Existing	-	-	-	-	-	-
	Proposed	9	Sitting	11	Standing	59	Pass
141	Existing	-	-	-	-	-	-
	Proposed	12	Standing	15	Standing	67	Pass
142	Existing	-	-	-	-	-	-
	Proposed	8	Sitting	10	Sitting	46	Pass
143	Existing	-	-	-	-	-	-
	Proposed	9	Sitting	11	Standing	52	Pass
144	Existing	-	-	-	-	-	-
	Proposed	7	Sitting	8	Sitting	43	Pass
145	Existing	-	-	-	-	-	-
	Proposed	9	Sitting	13	Standing	73	Pass
146	Existing	-	-	-	-	-	-
	Proposed	8	Sitting	10	Sitting	51	Pass
147	Existing	-	-	-	-	-	-
	Proposed	9	Sitting	11	Standing	48	Pass
148	Existing	-	-	-	-	-	-
	Proposed	10	Sitting	12	Standing	54	Pass
149	Existing	-	-	-	-	-	-
	Proposed	8	Sitting	10	Sitting	45	Pass
150	Existing	-	-	-	-	-	-
	Proposed	9	Sitting	12	Standing	52	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Configuration	Wind Comfort				Wind Safety	
		Summer		Winter		Annual	
		Speed (km/h)	Rating	Speed (km/h)	Rating	Speed (km/h)	Rating
151	Existing	-	-	-	-	-	-
	Proposed	10	Sitting	12	Standing	52	Pass
152	Existing	-	-	-	-	-	-
	Proposed	7	Sitting	9	Sitting	48	Pass
153	Existing	-	-	-	-	-	-
	Proposed	8	Sitting	10	Sitting	51	Pass
154	Existing	-	-	-	-	-	-
	Proposed	7	Sitting	9	Sitting	40	Pass
155	Existing	-	-	-	-	-	-
	Proposed	9	Sitting	11	Standing	49	Pass
156	Existing	-	-	-	-	-	-
	Proposed	7	Sitting	8	Sitting	34	Pass
157	Existing	-	-	-	-	-	-
	Proposed	9	Sitting	11	Standing	47	Pass
158	Existing	-	-	-	-	-	-
	Proposed	8	Sitting	10	Sitting	48	Pass
159	Existing	-	-	-	-	-	-
	Proposed	9	Sitting	10	Sitting	55	Pass
160	Existing	-	-	-	-	-	-
	Proposed	6	Sitting	7	Sitting	42	Pass
161	Existing	-	-	-	-	-	-
	Proposed	8	Sitting	9	Sitting	41	Pass
162	Existing	-	-	-	-	-	-
	Proposed	8	Sitting	10	Sitting	47	Pass
163	Existing	-	-	-	-	-	-
	Proposed	8	Sitting	10	Sitting	43	Pass
164	Existing	-	-	-	-	-	-
	Proposed	10	Sitting	12	Standing	54	Pass
165	Existing	-	-	-	-	-	-
	Proposed	10	Sitting	12	Standing	55	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Configuration	Wind Comfort				Wind Safety	
		Summer		Winter		Annual	
		Speed (km/h)	Rating	Speed (km/h)	Rating	Speed (km/h)	Rating
166	Existing	-	-	-	-	-	-
	Proposed	8	Sitting	10	Sitting	50	Pass
167	Existing	-	-	-	-	-	-
	Proposed	13	Standing	17	Walking	76	Pass
168	Existing	-	-	-	-	-	-
	Proposed	14	Standing	18	Walking	73	Pass

Season	Months	Hours	Comfort Speed (km/h)	Safety Speed (km/h)
Summer	May - October	6:00 - 23:00 for comfort	(20% Seasonal Exceedance)	(0.1% Annual Exceedance)
Winter	November - April	6:00 - 23:00 for comfort	≤ 10 Sitting	≤ 90 Pass
Annual	January - December	0:00 - 23:00 for safety	11 - 15 Standing	> 90 Exceeded
Configurations				
Existing	Existing site and surroundings			
Proposed	Project with existing surroundings			
			16 - 20 Walking	
			> 20 Uncomfortable	