REPORT

64-66 LAVENDER STREET & 3-7 MIDDLEMISS STREET

LAVENDER BAY, NSW

SSDA PEDESTRIAN WIND STUDY

RWDI # 2512833

13 March 2026

SUBMITTED TO

Central Element
Level 17/100 Miller St,
North Sydney NSW 2060

SUBMITTED BY

RWDI Australia Pty Ltd
Suite 602, Level 6, 80 William Street,
Woolloomooloo NSW 2011, Australia
ABN 86 641 303 871

rwdi.com

DOCUMENT CONTROL

Version	Status	Date	Prepared By	Reviewed By
A	Initial	13 March 2026	IA	AMC

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EXECUTIVE SUMMARY

RWDI Australia Pty Ltd (RWDI) was engaged to conduct a pedestrian wind assessment for the Proposed Development located at 64-66 Lavender Street & 3-7 Middlemiss Street in Lavender Street, NSW. The pedestrian-level wind microclimate assessment was conducted for the following configurations of the site:

Existing Configuration:	Existing Site with Existing Surrounding Buildings
Proposed Configuration:	Proposed Development with Existing Surrounding Buildings

The pedestrian level wind conditions within and around the proposed development were predicted using the results from a boundary-layer wind tunnel test combined with historical meteorological wind records for the region. The wind speeds have been evaluated against suitable criteria to assess pedestrian wind safety and comfort conditions.

This report concludes that the Proposed Development is suitable and warrants approval subject to the implementation of the proposed design changes highlighted in Section 3.6 of this report. Following the implementation of these measures, the remaining impacts are considered appropriate. Additional wind tunnel testing will be undertaken for the DD Stage of the development.

SEARs Declaration Table

Declaration		
Qualified Professional Name	Dr. Aman Choudhry	
Qualified Professional Qualifications	PhD, MIEAust	
	The undersigned declares that this SSDA Pedestrian Wind Study has been prepared in response to the following SEARs requirements issued for the Project on 30 June 2025 (EIS) and 2 July 2025 (Rezoning Report) for SSD-86797708:	
SEARs item no.	**SEARs Issue and Assessment Requirement**	**Relevant Section of this Report that addresses SEARs Requirement**
7	**Environmental Amenity** Assess amenity impacts on the surrounding locality, including solar access,visual privacy, view loss and view sharing, as well as **wind**, lighting and reflectivity impacts. A high level of environmental amenity for any surrounding residential or other sensitive land uses must be demonstrated.	Section 3
23	**Public Spaces** • If public space is proposed as part of the development, demonstrate how the development: o maximises the amount, access to and quality of public spaces (including open space, public facilities and streets/plazas within and surrounding the site), reflecting relevant design guidelines and advice from the local council and the Department. o provides accessible public space. o maximises permeability and connectivity. o maximises the amenity of public spaces in line with their intended use, such as through adequate facilities, solar access, shade and **wind protection**. o maximises street activation. o o minimises potential vehicle, bicycle and pedestrian conflicts.	Sections 3
Signed		
Dated	13 March 2026	

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1 PROJECT OVERVIEW

1.1 Introduction

RWDI Australia Pty Ltd (RWDI) was retained to conduct a pedestrian wind assessment on and around the Proposed Development located at 64-66 Lavender Street & 3-7 Middlemiss Street in Lavender Bay, NSW. This report presents the project objectives, background, and approach, and discusses the results from RWDI's wind tunnel assessment. Commentary on conceptual wind control measures is also provided, if necessary.

The Proposed Development seeks approval for the rezoning of the site and development consent for the construction of a residential development.

1.The SSDA specifically involves the following works:

- Demolition of the existing buildings on site;
- Site excavation, and other preparatory site works;
- Construction of a 32 and 23-storey residential flat building including 3% designated affordable housing consisting of approximately a total of 160 dwellings,
- Five levels of basement parking,
- Vehicular access from Lavender Street and loading access from Middlemiss Street,
- A new public accessible open space, including through-site link and site landscaping and
- Site amalgamation,
- Utility and services augmentation as required.

To accommodate the proposed SSDA, a concurrent rezoning is sought to increase the site's maximum building height.

1.2 Subject Site

The development site is located south of the North Sydney CBD bounded by Middlemiss Street to the north, Lavender Street to the south, and low- rise residential buildings to the east and west. Clark Park, Lavender Bay and Luna Park lie to the south-west of the project site with the Warringah Freeway and railway immediately to the north-east. The location of the site within its broader existing surrounding context is shown in Image 1.

The Proposed Development comprises of two residential towers atop a shared podium, Tower A to the north (23 storeys) and Tower B to the south (32 storeys) with their lobbies located along the eastern aspects accessible via Middlemiss Street and Lavender Street. The Proposed Development features a through-site link connecting Arthur Lane to Lavender Street and Middlemiss Street with outdoor communal areas on the podium rooftop at Level 4 and on Level 5 of Tower B.

Image 1: Aerial View of Site and Surroundings

(Source: Nearmap)

The objective of the study is to assess the wind comfort and safety conditions along pedestrian areas within and around the study site and provide recommendations for minimising adverse wind effects, if needed. This quantitative assessment is based on wind speed measurements on a scale model of the Proposed Development and its surroundings in one of RWDI's boundary-layer wind tunnels. These measurements were combined with the local wind records and compared with the appropriate criteria to gauge the wind comfort and safety in pedestrian areas. The key outdoor pedestrian-accessible areas of interest associated with the development include the pedestrian footpaths around the site, entrances to the development, and the various outdoor amenity spaces on ground and upper levels of the development.

2 BACKGROUND AND APPROACH

2.1 Wind Tunnel Study Model

To assess the wind environment within and around the Proposed Development, a 1:300 scale model of the project site and surroundings was constructed for the wind tunnel tests of the following configurations:

Existing Configuration:	Existing Site with Existing Surrounding Buildings (Image 2A); and
Proposed Configuration:	Proposed Development with Existing Surrounding Buildings (Image 2B);

The wind tunnel model included all relevant surrounding buildings and topography within a radius of 360 m around the project site. This encompassed both existing structures and those currently under construction, with an expectation that these would likely be present or completed by the time the proposed subject development concludes. Additionally, the wind and turbulence profiles in the atmospheric boundary layer beyond the modelled area were simulated in RWDI's wind tunnel, incorporating spires and roughness blocks.

The wind tunnel model was instrumented with 54 specially designed wind speed sensors to measure mean and gust wind speeds at a full-scale height of approximately 1.5 - 2 m above local ground in pedestrian areas throughout the study site. The placement of wind measurement sensors was based on RWDI's experience and understanding of the pedestrian usage for this site. Wind speeds were measured for 36 directions in 10-degree increments. The measurements at each sensor location were recorded in the form of ratios of local mean and gust speeds to the mean wind speed at a reference height above the model.

Note that no vegetation was included as part of the configurations tested, in accordance with AWES Guidelines (2024). The method for testing scale models in the wind tunnel is consistent with internationally recognised good practice, and meets the requirements set out in the Australasian Wind Engineering Society Quality Assurance Manual (AWES-QAM-2019).

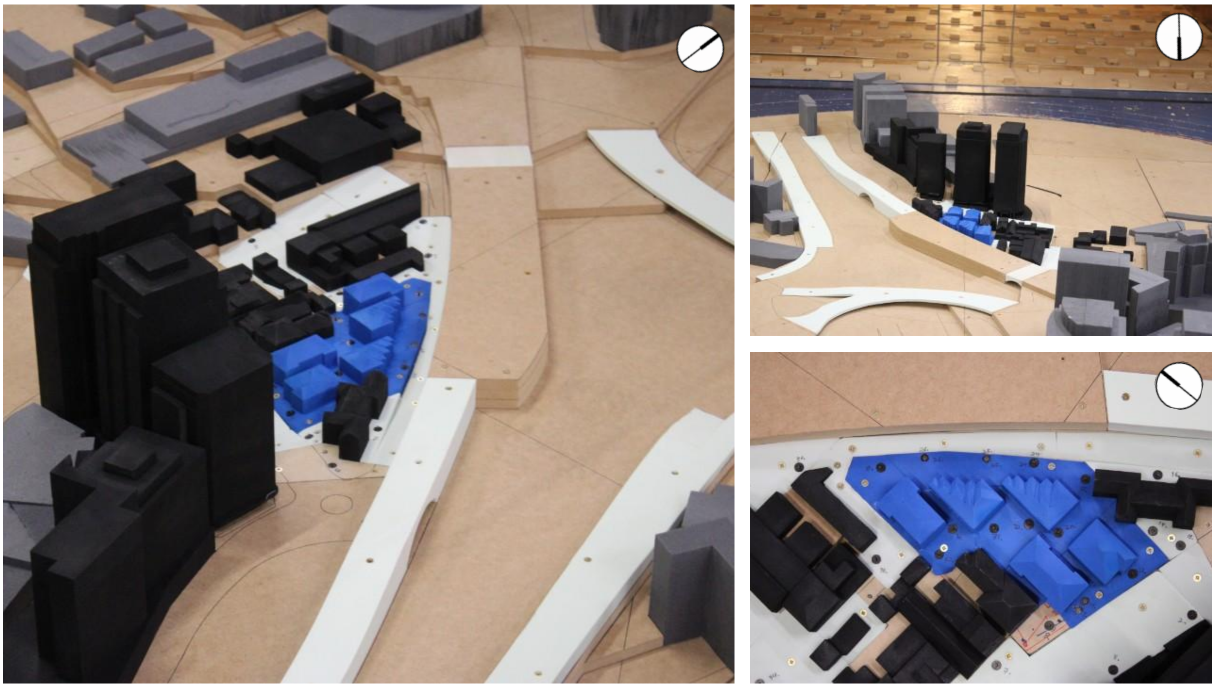

Image 2A: Wind Tunnel Study Model – Existing Configuration

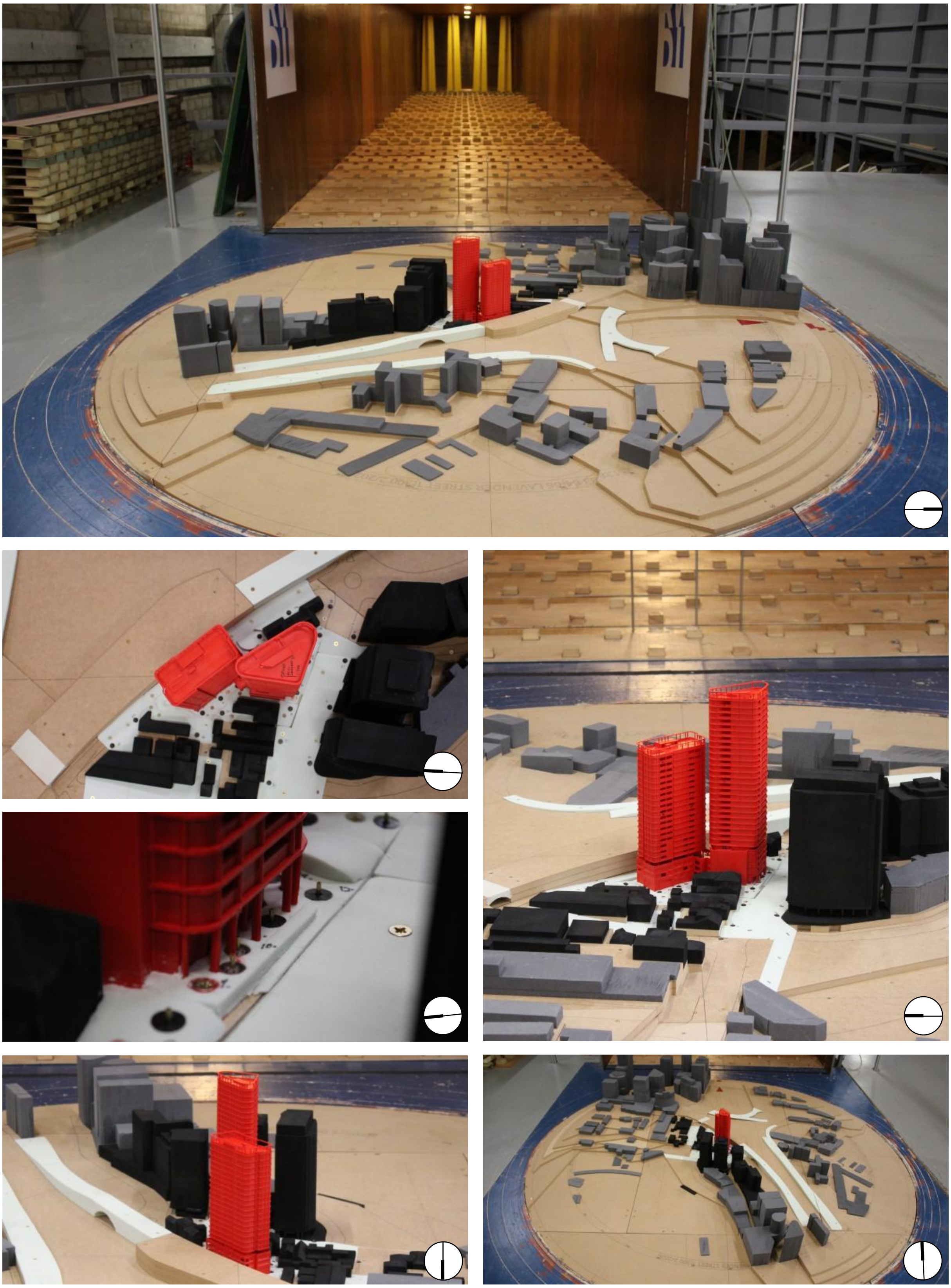

Image 2B: Wind Tunnel Study Model – Proposed Configuration

2.2 Meteorological Data

Wind statistics recorded at Sydney International Airport between 1995 and 2022 (inclusive) were analysed annually to assess the wind conditions in the study area. Image 3 graphically depicts the directional distributions of wind frequencies and speeds for the year. Winds from the northeast, south, west and north-west are predominant throughout the year as indicated by the wind rose. Strong winds of a mean speed greater than 30 km/h measured at the airport (at an anemometer height of 10 m) occur for 11.2% of the time during the year.

Wind statistics were combined with the wind tunnel data to predict the frequency of occurrence of full-scale wind speeds. The full-scale wind predictions were then compared with the wind criteria for pedestrian comfort and safety, as described in Section 2.3.

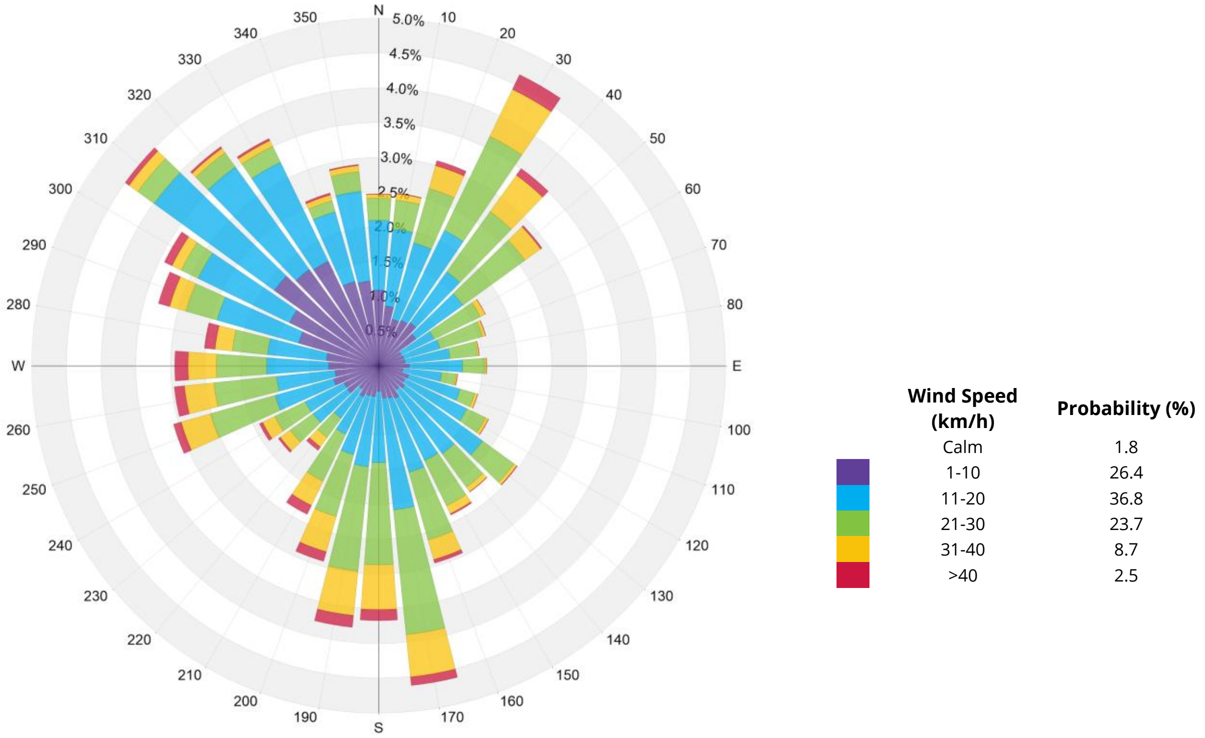

Image 3: Directional Distribution of Winds Approaching Sydney International Airport (1995 - 2022)

2.3 Pedestrian Wind Criteria

A review of the pedestrian wind criteria outlined in The North Sydney Development Control Plan 2013 (Section 2.3.3) indicates a single wind speed threshold of 13 m/s has been proposed to assess conditions on footpaths and other accessible outdoor spaces. However, the DCP does not specify wind speed thresholds for other uses or the probability of occurrence for the wind speeds that is required to fully assess the wind conditions. It is understood that this criterion is derived from the work of Melbourne (1978), which used a 3-second gust occurring 0.1% of the time annually (equivalent to two to three occurrences per year) to assess conditions typically suitable for short-duration use.

While the gust-based approach is suitable for evaluating wind safety as it focuses on infrequent, strong winds that may affect a pedestrian's stability, it is not typically recommended for assessing pedestrian comfort. Current industry best practice is to use the gust-equivalent-mean (GEM) wind speeds which account for both mean winds and gusts when evaluating pedestrian comfort. The frequency of occurrence is also more relevant to understanding pedestrian comfort - ranging from a weekly recurrence to daily recurrence of adverse winds during the relevant assessment periods.

For this assessment, the following criteria have been applied to assess pedestrian wind conditions:

2.3.1 Wind Safety

Pedestrian safety is associated with excessive gusts that can adversely affect a pedestrian's balance and footing. The criterion to assess pedestrian safety is based on *Australasian Wind Engineering Society Guidelines for Pedestrian Wind Effects Criteria* (2024). The guidelines dictate that if the **maximum average 3-second gust speeds of more than 83 km/h (23 m/s) occur for more than 9 hours (0.1% of the time) on an annual basis**, the wind conditions are considered severe. Wind control measures, in the form of an architectural response, are typically required at locations where wind speeds exceed the wind safety criterion.

2.3.2 Wind Comfort

The RWDI pedestrian wind comfort criteria, which have been developed through research and consulting practice since 1974, have been utilised for the current assessment. These criteria, shown in the Table below, have gained widespread acceptance among municipal authorities, building designers, and city planners globally. Pedestrian wind comfort is assessed using GEM wind speeds. The wind comfort levels are categorised based on intended pedestrian use and are expressed in terms of their suitability for various levels of human activity. Wind control measures are typically required at locations where the occurrence frequencies of wind speeds exceed the threshold values for the specific pedestrian activity intended for the space.

Table: Pedestrian Wind Comfort Criteria

Comfort Category	GEM Speed (km/h)	Description
Sitting	≤ 10	Calm or light breezes are desired for outdoor restaurants and seating areas where one can read a paper without having it blown away
Standing	≤ 14	Gentle breezes suitable for main building entrances, bus stops, communal terraces, and other places where pedestrians may linger
Strolling	≤ 17	Moderate winds that would be appropriate for window shopping and strolling along a downtown street, plaza, or park
Walking	≤ 20	Relatively high speeds 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)

(2) Gust Speed = Mean Speed + 3*RMS Speed

(3) Wind conditions are 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.

3 RESULTS AND DISCUSSION

The predicted wind conditions are shown on the plan figures in Figures 1A and 2D located in the "Figures" section of this report. These conditions and the associated wind speeds are also represented in Table 1, located in the "Tables" section of this report. The following is a detailed discussion of the suitability of the predicted wind conditions for the anticipated pedestrian use of each area of interest. Note that wind tunnel tests have been carried out without any form of vegetation to establish a baseline understanding of the wind conditions around the site.

3.1 Generalised Wind Flows

In the discussion of wind conditions on and around the Proposed Development, reference may be made to the following generalised wind flows (see Image 4). If these building/wind combinations occur for prevailing winds, there is a greater potential for increased wind activity and uncomfortable or potentially unsafe conditions. Design details such as setting back a tower from the edges of a podium, deep canopies close to ground level, windscreens / tall trees with dense landscaping, etc. as shown in Image 4 can help to reduce the high wind activity. The choice and effectiveness of these measures would depend on the exposure and orientation of the site with respect to the prevailing wind directions and the size and massing of the proposed buildings.

Conversely, in areas where higher wind velocities are desired, design measures can be implemented to enhance wind flow. For instance, channels aligned with prevailing wind directions can be integrated into the design to promote increased wind infiltration in regions prone to stagnant conditions. Such measures are particularly beneficial in areas with generally milder climates and high humidity levels, such as those closer to the equator.

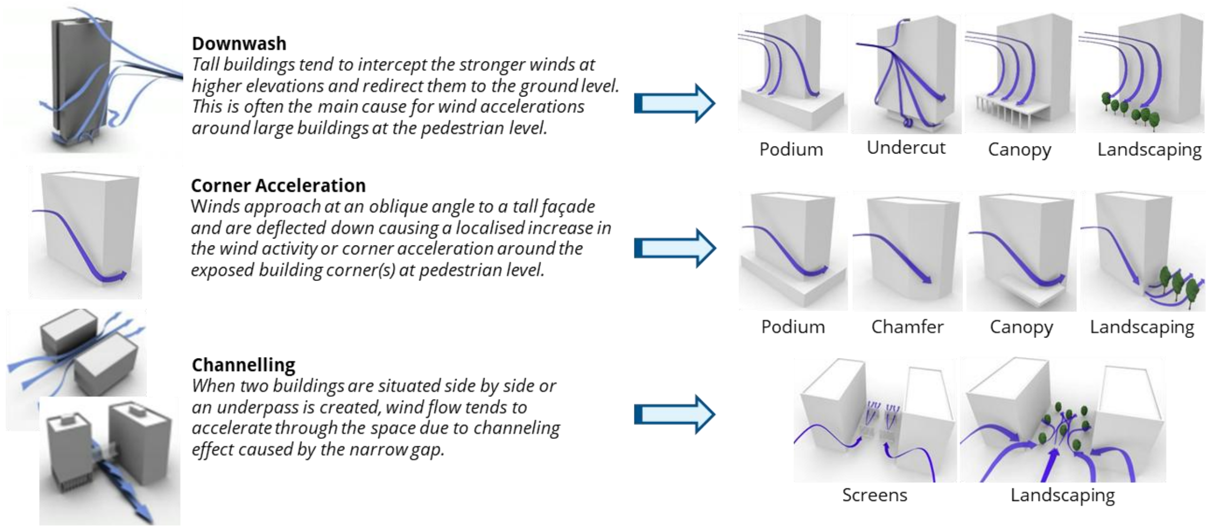

Image 4: General Wind Flows around Buildings and Examples of Wind Control Measures

3.2 Pedestrian Safety

3.2.1 Existing Configuration

Wind speeds exceeding the safety criteria were observed at the corner of Lavender Street and Harbourview Crescent (Sensor 4). These were caused by the interaction of regional winds from the west with the existing high-rise building at the corner.

3.2.2 Proposed Configuration

With the inclusion of the Proposed Development, the existing exceedance at the corner of Lavender Street and Harbourview Crescent is expected to be mitigated. However, strong winds are likely to occur at the following locations:

- Corner of Middlemiss Street and Lavender Street (Sensor 15), caused by west sector winds redirected by the Proposed Development.
- Southwest corner of Tower A (Sensor 22), caused by west winds channelling through the corridor.
- Level 4 communal space between the towers (Sensor 39), caused by channelling of west winds through the space.

3.3 Pedestrian Comfort

Wind conditions suitable for walking use are appropriate for footpaths / walkways and areas where pedestrians will be active and less likely to remain in one area for prolonged periods of time. Lower wind speeds conducive to standing are preferred at building entrances & drop-off areas, bus stops and communal outdoor terraces. Wind speeds comfortable for sitting use are preferred for areas intended for passive long-duration activities such as outdoor dining or café seating.

3.3.1 Existing Configuration

For the existing configuration, the wind conditions were observed to be generally calm with most areas achieving the criteria for sitting and strolling throughout the year at all locations assessed. Slightly windier conditions, suitable for strolling use, were noted along Lavender Street.

High winds exceeding the wind comfort criteria were observed at the corner of Harbourview Crescent and Lavender Street (Sensor 4). This was caused westerly winds moving around the corner.

3.3.2 Proposed Configuration

The inclusion of the Propsoed Development is expected to mitigate the high winds noted at the corner of Harview Crescent and Lavender Street (Sensor 4) where conditions are expected to be suitable for strolling use. Wind conditions around key areas are noted below:

- **Ground Level:** With the inclusion of the Proposed Development, overall wind environment is noted to remain comfortable for sitting to strolling use at most locations around the site. Wind conditions around all entrances to Towers A and B were noted to achieve the required comfort criteria for standing. Wind conditions along thoroughfares were observed to be comfortable for strolling use or better. Two isolated locations were observed to be comfortable for walking use. These are located to the north and south-west corners of the Tower A (Sensors 22 and 27) and may be perceived as windy spaces given intended use.

- **Communal Areas - Levels 4 and 5:** The wind conditions for most communal outdoor areas on Levels 4 and 5 were observed to be comfortable for their intended use (sitting to standing comfort level). However, the area between the Towers on Level 4 are expected to be windy and suitable for active strolling to waklking use. These are caused by channelling of westerly and northeasterly winds through the space.
- **Private Balconies:** Wind conditions within all the upper private balconies were observed to be suitable for sitting use.

3.4 Review of Updated Architectural Drawings

Review of latest drawings, received by RWDI on 4 March 2026, shows that the overall design of development remans consistent with the wind tunnel models. However, it is noted that the southwest corner balconies of Tower B have now been shifted to the corner from Levels 23 to 31. Furthermore, corner balconies have been introduced within Tower A which may be impacted by northeast sector winds. These spaces are likely to be windier compared to the recessed design evaluated as part of the wind tunnel tests.

3.5 Cumulative Scheme

Potential developments that may be constructed within the proximity of the Proposed Development are shown in Image 5a and are as follows:

1. 52 Alfred Street South, Milsons Point (Approved)
2. 68 Alfred Street South, Milsons Point (In Planning)
3. 271-273 Alfred Street, North Sydney (In Planning)
4. 15 Blue Street, North Sydney (In Planning)
5. Blue Street, North Sydney (In Planning)
6. 1-19 Mackenzie Street, Lavender Bay (In Planning)

The above potential future buildings are outside the immediate vicinity of the project site and are in general expected to have limited impact on site conditions. Developments 4 to 6 to the north-west of the site may provide limited shelter from northwest sector winds.

The project site is also within the zone included by the NSW State government's Low and Mid-Rise (LMR) housing reforms which encourages development of more low and mid-rise housing. Based on the LMR planning provisions a potential massing scheme of the neighbouring sites has been prepared by SJB shown in Image 5b. The addition of these potential massings are expected to generally reduce exposure of project site to westerly winds but may also introduce areas prone to channelling wind effects to the east and west of the site. Any densely foliating vegetation and/or porous elements within these areas are expected to reduce the strength of these effects.

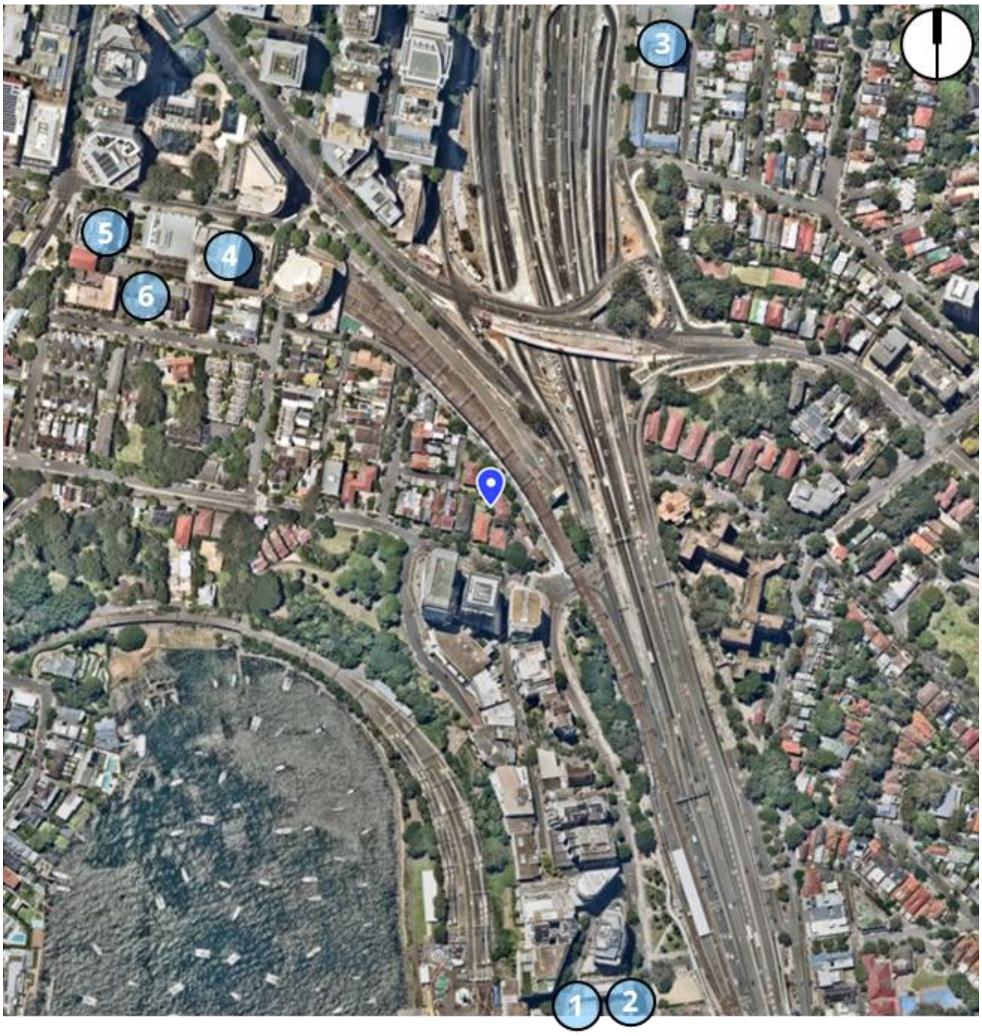

Image 5a: Potential Future Surrounding Developments

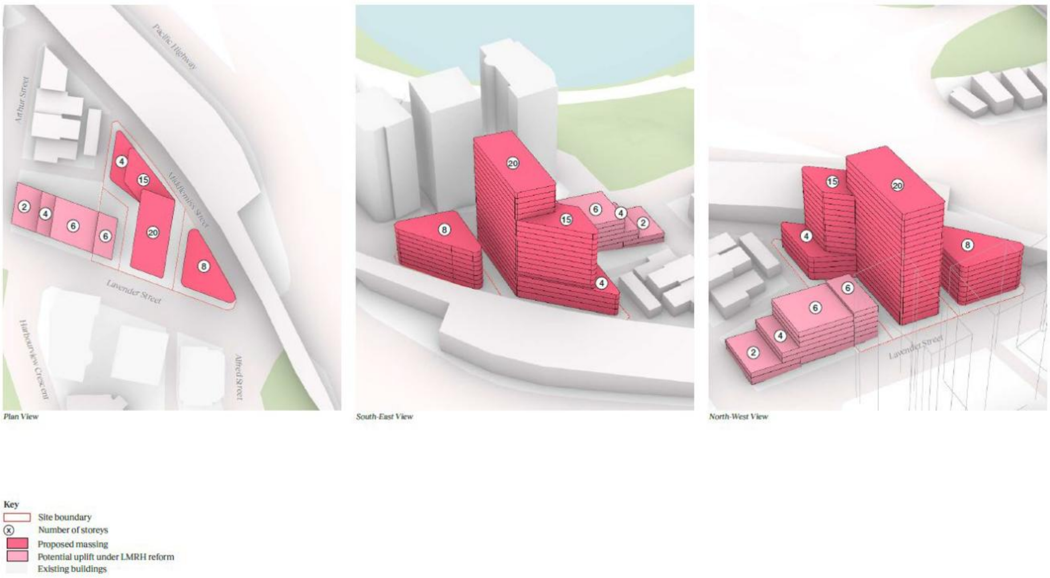

Image 5b: Indicative Massing Scheme of Neighbouring Sites

(Source: SJB)

3.6 Design Advice and Recommendations

Based on the findings of the wind tunnel study, the following in-principle wind mitigation strategies can be incorporated in the design of the development to improve the overall wind environment:

- **Ground Level:**
  - It is recommended to retain the dense landscaping within the site. It is recommended to include densely foliating hedges around any proposed outdoor seating areas to the north of Tower A (total height of vegetation and planter to be a minimum of 1.5 m).
  - Vertical porous screening is recommended within the proposed planting areas to reduce the wind impacts at the corner of Lavender Street and Middlemiss Street and between the towers. Indicative location of screening is shown in Image 6a. Screens should be at least 2 to 3 m tall with a maximum porosity of 50%.
- **Level 4:**
  - It is recommended to retain the densely foliating vegetation within the proposed perimeter planting areas. Vegetation to comprise of densely foliating evergreen species.
  - It is recommended to include an overhead trellis or canopy with a maximum porosity of 50% to reduce the risk of westerly winds reattaching within the space. It is also recommended to include a porous vertical screen connecting to the canopy and level above along the northern perimeter. Refer to Image 6b.
- **Corner Balconies:** It is recommended to include full-height vertical screening (maximum porosity of 50%) along one of the open aspects for all corner balconies within Towers A and B.

Image 6a: Recommended Wind Mitigation Measures – Ground Level

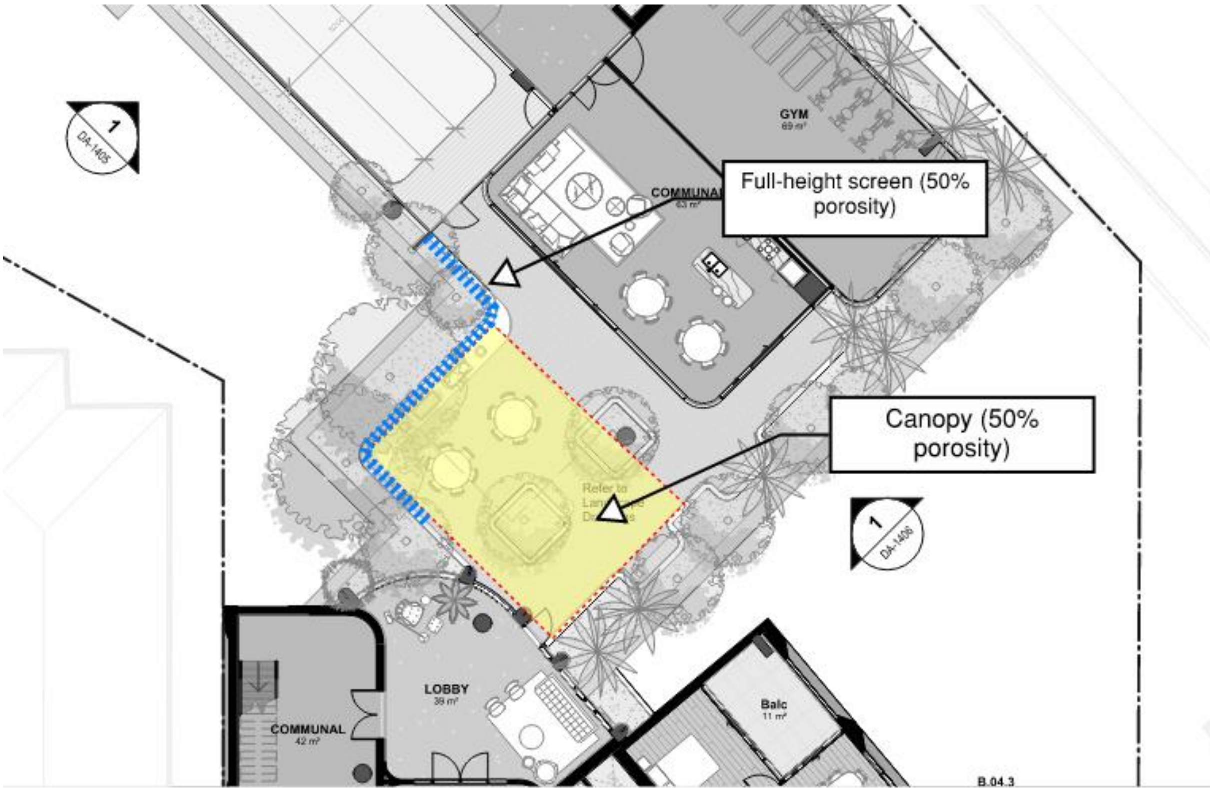

Image 6b: Recommended Wind Mitigation Measures – Level 4

Additional wind tunnel testing is recommended during the DD stage to confirm the efficacy of these measure.

4 STATEMENT OF LIMITATIONS

Limitations

This report entitled '*64-66 Lavender Street & 3-7 Middlemiss Street SSDA Pedestrian Wind Study*' was prepared by RWDI Australia Pty Ltd ("RWDI") for Central Element ("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.

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 utilise 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.

Design Assumptions

RWDI confirms that the pedestrian wind assessment (the "**Assessmen**t") discussed herein was performed by RWDI in accordance with generally accepted professional standards at the time when the Assessment was performed and in the location of the Project. No other representations, warranties, or guarantees are made with respect to the accuracy or completeness of the information, findings, recommendations, or conclusions contained in this Report. This report is not a legal opinion regarding compliance with applicable laws.

The findings and recommendations set out in this report are based on the following information disclosed to RWDI. Drawings and information listed below were received and used to construct the scale model of the Proposed Development **("Project Data**").

File Name	File Type	Date Received
6419-DA-0201[-] - SITE PLAN	Dwg file	12 January 2026
6419_A24_LAVENDER_BAY_Building - 3D View - {3D - lchampley}	Dwg file	16 January 2026

The recommendations and conclusions are based on the assumption that the Project Data and Climate Data are accurate and complete. RWDI assumes no responsibility for any inaccuracy or deficiency in information it has received from others. In addition, the recommendations and conclusions in this report are partially based on historical data and can be affected by a number of external factors, including but not limited to Project design, quality of materials and construction, site conditions, meteorological events, and climate change. As such, the conclusions and recommendations contained in this report do not list every possible outcome.

The opinions in this report can only be relied up on to the extent that the Project Data and Project Specific Conditions have not changed. Any change in the Project Data or Project Specific Conditions not reflected in this report can impact and/or alter the recommendations and conclusions in this report. Therefore, it is incumbent upon the Client and/or any other third party reviewing the recommendations and conclusions in this report to contact RWDI in the event of any change in the Project Data and Project Specific Conditions in order to determine whether any such change(s) may impact the assumptions upon which the recommendations and conclusions were made.

5 REFERENCES

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FIGURES

COMFORT CATEGORIES:

- Sitting
- Standing
- Strolling
- Walking
- Uncomfortable

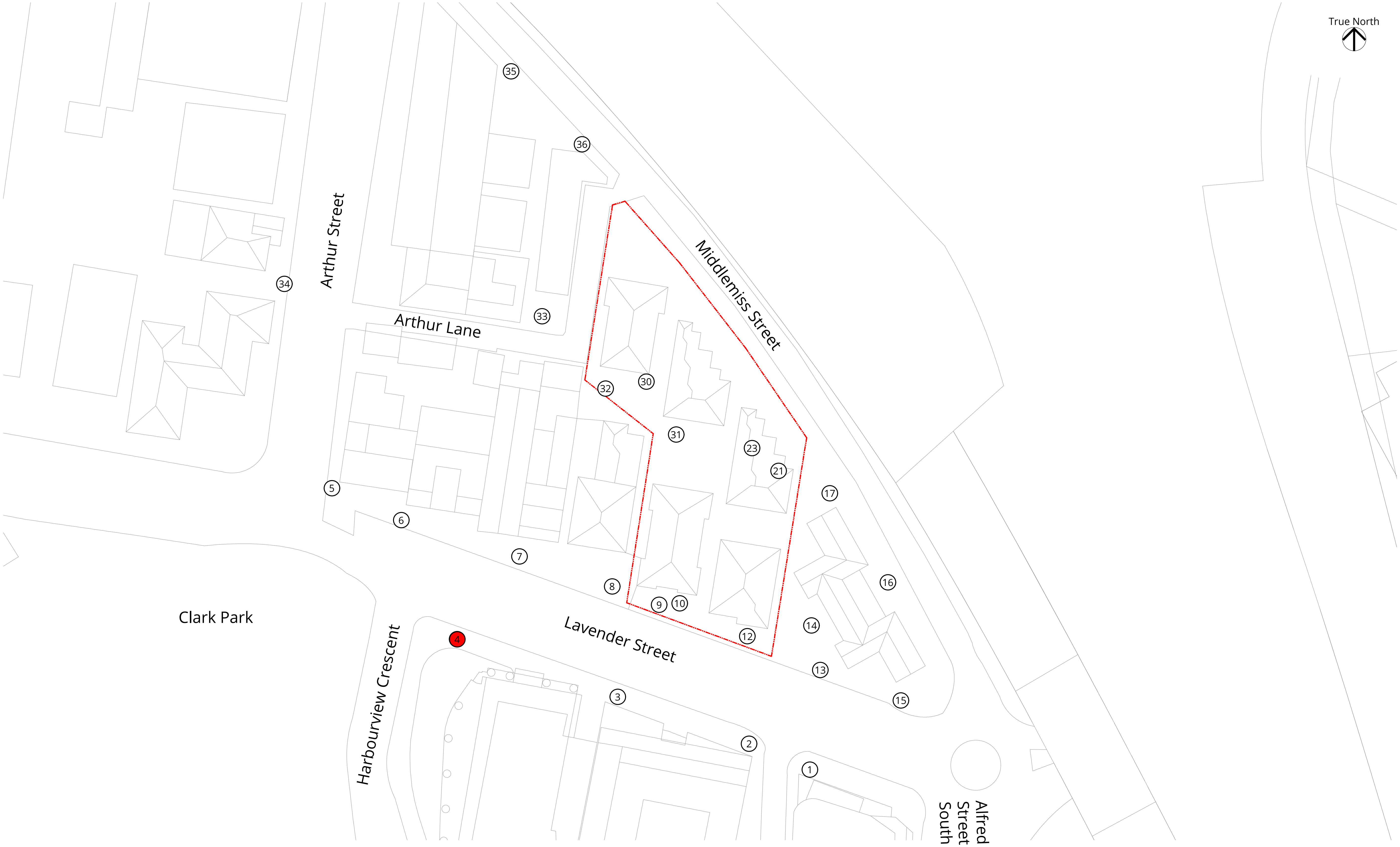
Pedestrian Wind Comfort Conditions - Ground Floor

Configuration 1: Existing Site with Existing Surrounding Buildings

Annual

2512833 64-66 Lavender Street & 3-7 Middlemiss Street - Lavender Bay, NSW

Figure: 1A



SAFETY CATEGORIES:

Pass

Exceeded

Pedestrian Wind Safety Conditions - Ground Floor

Configuration 1: Existing Site with Existing Surrounding Buildings

Annual

2512833 64-66 Lavender Street & 3-7 Middlemiss Street - Lavender Bay, NSW

Figure: 1B

COMFORT CATEGORIES:

- Sitting
- Standing
- Strolling
- Walking
- Uncomfortable

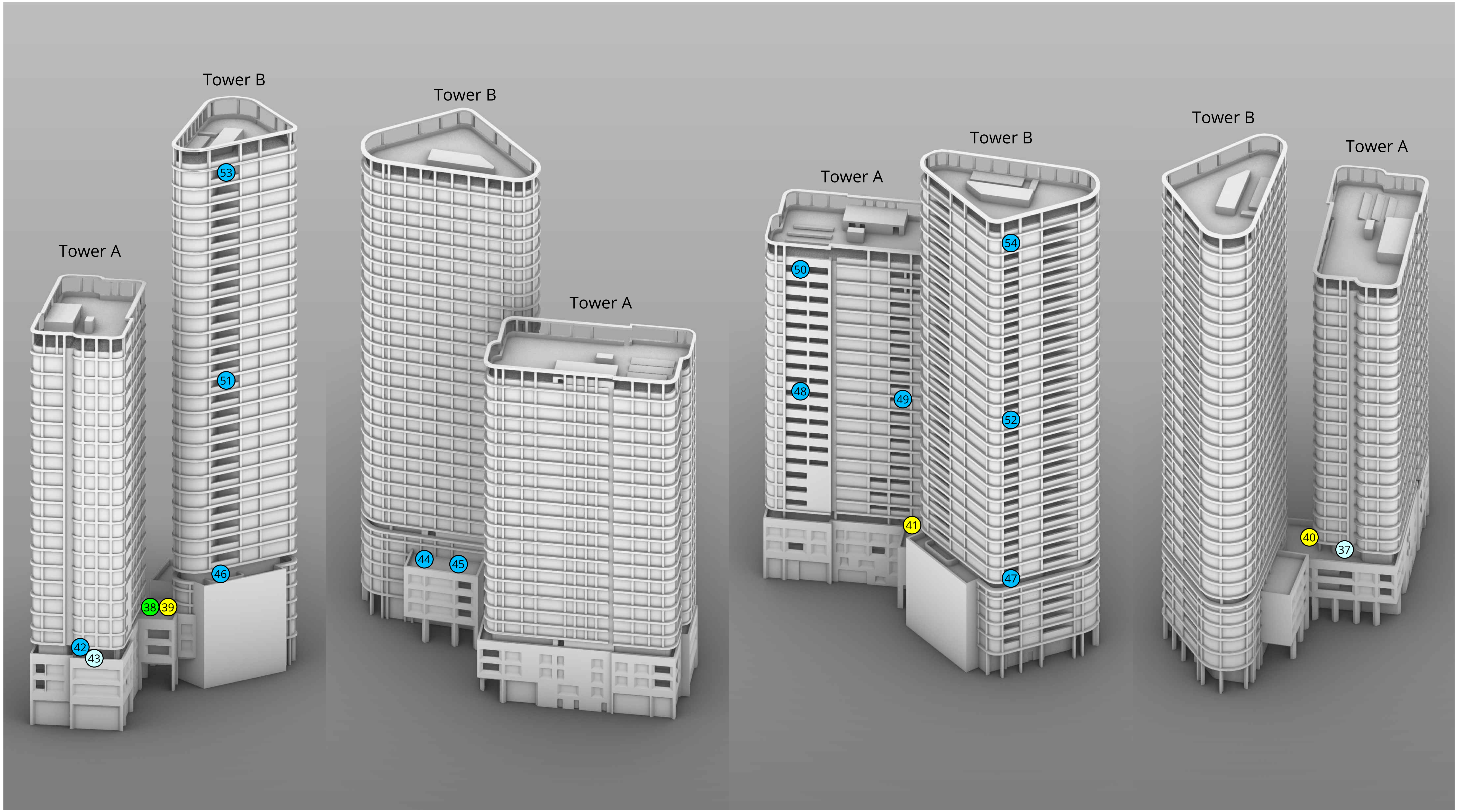
Pedestrian Wind Comfort Conditions - Ground Floor

Configuration 2: Proposed Development with Existing Surrounding Buildings

Annual

2512833 64-66 Lavender Street & 3-7 Middlemiss Street - Lavender Bay, NSW

Figure: 2A



North West Isometric View

North East Isometric View

South West Isometric View

South East Isometric View

COMFORT CATEGORIES:

- Sitting
- Standing
- Strolling
- Walking
- Uncomfortable

Pedestrian Wind Comfort Conditions - Elevated Levels

Configuration 2: Proposed Development with Existing Surrounding Buildings

Annual

2512833 64-66 Lavender Street & 3-7 Middlemiss Street - Lavender Bay, NSW

Figure: 2B

SAFETY CATEGORIES:

Pass

Exceeded

Pedestrian Wind Safety Conditions - Ground Floor

Configuration 2: Proposed Development with Existing Surrounding Buildings

Annual

2512833 64-66 Lavender Street & 3-7 Middlemiss Street - Lavender Bay, NSW

Figure: 2C

North West Isometric View

North East Isometric View

South West Isometric View

South East Isometric View

SAFETY CATEGORIES:

Pass

Exceeded

Pedestrian Wind Safety Conditions - Elevated Levels

Configuration 2: Proposed Development with Existing Surrounding Buildings

Annual

2512833 64-66 Lavender Street & 3-7 Middlemiss Street - Lavender Bay, NSW

Figure: 2D

TABLES

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Configuration	Wind Comfort		Wind Safety	
		Annual		Annual	
		Speed (km/h)	Rating	Speed (km/h)	Rating
1	Existing	13	Standing	63	Pass
	Proposed	15	Strolling	81	Pass
2	Existing	11	Standing	58	Pass
	Proposed	12	Standing	57	Pass
3	Existing	11	Standing	61	Pass
	Proposed	13	Standing	81	Pass
4	Existing	21	Uncomfortable	87	Exceeded
	Proposed	16	Strolling	78	Pass
5	Existing	13	Standing	65	Pass
	Proposed	14	Standing	65	Pass
6	Existing	12	Standing	45	Pass
	Proposed	13	Standing	50	Pass
7	Existing	15	Strolling	59	Pass
	Proposed	13	Standing	52	Pass
8	Existing	14	Standing	60	Pass
	Proposed	15	Strolling	61	Pass
9	Existing	12	Standing	62	Pass
	Proposed	14	Standing	78	Pass
10	Existing	12	Standing	68	Pass
	Proposed	10	Sitting	44	Pass
11	Existing	-	-	-	-
	Proposed	14	Standing	55	Pass
12	Existing	13	Standing	67	Pass
	Proposed	13	Standing	49	Pass
13	Existing	15	Strolling	65	Pass
	Proposed	15	Strolling	65	Pass
14	Existing	10	Sitting	60	Pass
	Proposed	13	Standing	59	Pass
15	Existing	14	Standing	71	Pass
	Proposed	16	Strolling	87	Exceeded
16	Existing	8	Sitting	40	Pass
	Proposed	13	Standing	47	Pass
17	Existing	9	Sitting	37	Pass
	Proposed	10	Sitting	40	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Configuration	Wind Comfort		Wind Safety	
		Annual		Annual	
		Speed (km/h)	Rating	Speed (km/h)	Rating
18	Existing	-	-	-	-
	Proposed	11	Standing	45	Pass
19	Existing	-	-	-	-
	Proposed	11	Standing	47	Pass
20	Existing	8	Sitting	40	Pass
	Proposed	16	Strolling	83	Pass
21	Existing	-	-	-	-
	Proposed	10	Sitting	44	Pass
22	Existing	10	Sitting	48	Pass
	Proposed	18	Walking	103	Exceeded
23	Existing	-	-	-	-
	Proposed	11	Standing	44	Pass
24	Existing	10	Sitting	49	Pass
	Proposed	11	Standing	55	Pass
25	Existing	10	Sitting	54	Pass
	Proposed	9	Sitting	58	Pass
26	Existing	10	Sitting	54	Pass
	Proposed	15	Strolling	80	Pass
27	Existing	10	Sitting	48	Pass
	Proposed	18	Walking	83	Pass
28	Existing	-	-	-	-
	Proposed	12	Standing	53	Pass
29	Existing	-	-	-	-
	Proposed	11	Standing	62	Pass
30	Existing	9	Sitting	47	Pass
	Proposed	9	Sitting	40	Pass
31	Existing	9	Sitting	43	Pass
	Proposed	13	Standing	59	Pass
32	Existing	9	Sitting	45	Pass
	Proposed	15	Strolling	66	Pass
33	Existing	7	Sitting	34	Pass
	Proposed	9	Sitting	48	Pass
34	Existing	10	Sitting	50	Pass
	Proposed	12	Standing	54	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Configuration	Wind Comfort Annual Speed (km/h)	Wind Comfort Annual Rating	Wind Safety Annual Speed (km/h)	Wind Safety Annual Rating
35	Existing Proposed	8 11	Sitting Standing	43 54	Pass Pass
36	Existing Proposed	9 12	Sitting Standing	48 67	Pass Pass
37	Existing Proposed	- 13	- Standing	- 54	- Pass
38	Existing Proposed	- 16	- Strolling	- 76	- Pass
39	Existing Proposed	- 18	- Walking	- 85	- Exceeded
40	Existing Proposed	- 19	- Walking	- 71	- Pass
41	Existing Proposed	- 18	- Walking	- 81	- Pass
42	Existing Proposed	- 7	- Sitting	- 41	- Pass
43	Existing Proposed	- 14	- Standing	- 66	- Pass
44	Existing Proposed	- 9	- Sitting	- 53	- Pass
45	Existing Proposed	- 10	- Sitting	- 54	- Pass
46	Existing Proposed	- 7	- Sitting	- 34	- Pass
47	Existing Proposed	- 10	- Sitting	- 57	- Pass
48	Existing Proposed	- 5	- Sitting	- 19	- Pass
49	Existing Proposed	- 5	- Sitting	- 20	- Pass
50	Existing Proposed	- 5	- Sitting	- 20	- Pass
51	Existing Proposed	- 6	- Sitting	- 30	- Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Configuration	Wind Comfort – Annual – Speed (km/h)	Wind Comfort – Annual – Rating	Wind Safety – Annual – Speed (km/h)	Wind Safety – Annual – Rating
52	Existing	-	-	-	-
	Proposed	5	Sitting	22	Pass
53	Existing	-	-	-	-
	Proposed	10	Sitting	38	Pass
54	Existing	-	-	-	-
	Proposed	6	Sitting	29	Pass

Season	Months	Hours
Annual	January - December	6:00 - 23:00 for comfort
Annual	January - December	0:00 - 23:00 for safety

Configurations	
Existing	Existing site and surroundings
Proposed	Project with existing surroundings

Comfort Speed (km/h) (20% Seasonal Exceedance)	
≤ 10	Sitting
11 - 14	Standing
15 - 17	Strolling
18 - 20	Walking
> 20	Uncomfortable

Safety Speed (km/h) (0.1% Annual Exceedance)	
≤ 83	Pass
> 83	Exceeded