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26 June 2026

Attn: Royce Lucero
Development Manager
Billbergia
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Re: Response to DPHI Key Issues Relating to Wind
88 Waterloo Road, Macquarie Park
RWDI Project #2510813

RWDI has been engaged to respond to the Department of Planning, Housing and Infrastructure (DPHI) and City of Ryde request for further (RFI) regarding pedestrian-level wind conditions associated with the proposed development at 88 Waterloo Road, Macquarie Park. The RFIs note:

DPHI:

Wind Assessment

The Pedestrian Wind Assessment identifies that wind conditions for areas within and surrounding the development do not all achieve safe and comfortable wind conditions, with some areas achieving uncomfortable wind conditions. This includes the proposed COS on the level 4 podium rooftop which would compromise residential amenity.

Information required:

11. Detailed plans showing wind comfort conditions for all open spaces noting alignment with intended use and how comfort and safety will be achieved. Where a space includes seating or areas for standing, the comfort levels must be appropriate for this use.

12. The proposal is to demonstrate how wind impacts have been mitigated through the proposed building design and massing and that any mitigation measures will not impact solar access and the design of the building.

13. The Pedestrian Wind Assessment must be updated to confirm the effectiveness of all proposed wind mitigation strategies that have been integrated into the design

City of Ryde:

11. Wind and other Impact on Open Space and Parks

The Wind Assessment indicates that the proposal will increase the wind velocity in the Southeastern corner of the Park. Mitigation Options for this issue should be identified and included with any conditions of consent for the development.

The area identified along Waterloo Road for setback associated with linear park should not include confirmed space for commercial purpose (i.e. outdoor retail space). Use of this area should be confirmed by Council post development following application process and obtaining the necessary approvals. Design of area should allow for use of space as a linear park. This should be redesigned.

It is understood that the RFIs are based on RWDI's earlier computational wind study (Report Ref: *15–21 Cottonwood Crescent: Pedestrian Wind Assessment*, dated 9 February 2026). Since completion of that assessment, RWDI has undertaken a physical wind tunnel study of the proposed development (Report Ref: *88 Waterloo Road Pedestrian Wind Study*, dated 27 February 2026, attached). This wind tunnel study supersedes the initial CFD assessment and provides design guidance and mitigation recommendations based on the architectural configuration at that time. With regards to the comments raised by DPHI and City of Ryde, the wind tunnel report provides details with respect to the wind conditions for open areas (Section 3 and Appendices in the report) and provide recommendations based on intended usage of these spaces.

Subsequent to the wind tunnel study, RWDI has continued to engage with the design team to refine and update mitigation measures in response to ongoing design of the development, with particular focus on the Level 4 communal open space.

The latest architectural drawings issued in June 2026 have also been reviewed. These drawings indicate that key mitigation measures recommended in the wind tunnel study have been incorporated, including:

- Screening near west corner of the development on Level 2 which will work with the extensive existing trees at the south-east corner of the park to mitigate wind impacts within the park.
- Awnings along the upper ground level frontage to Waterloo Road and above the Level 4 communal terrace to provide shelter from prevailing winds redirected by towers above.
- Porous screening at the south-east corner of the development.
- Subdivision of rooftop terrace areas to reduce wind impacts.

While certain details, such as final screen heights, are yet to be confirmed, the locations and general arrangement of the proposed measures are consistent with RWDI's recommendations. We note that the design remains under development, and RWDI will continue to work closely with the design team to attain acceptable wind comfort and safety conditions.

Please do not hesitate to contact us should you require any further information or clarification.

RWDI

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Henry Kuo, *BE(Aero), DipPM, MIEAust*
Project Manager

REPORT

88 WATERLOO ROAD

MACQUARIE PARK, NSW

PEDESTRIAN WIND STUDY
RWDI # 2510813
27 February 2026

SUBMITTED TO

Billbergia
Suite 101/25 Angas Street,
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SUBMITTED BY

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DOCUMENT CONTROL

Version	Status	Date	Prepared By	Reviewed By
A	Initial	27 February 2026	RVV	RL

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RWDI Australia Pty Ltd operates a Quality Management System which complies with the requirements of AS/NZS ISO 9001:2015. This management system has been externally certified by SAI Global and License No. QEC 13457 has been issued for the following scope: The provision of consultancy services in acoustic engineering, air quality and wind engineering; and the sale, service, support and installation of acoustic monitoring and related systems and technologies.

EXECUTIVE SUMMARY

This Pedestrian Wind Study report has been prepared by RWDI Australia Pty Ltd (RWDI) to accompany a State Significant Development Application (SSDA) and concurrent Rezoning Proposal – SSD-94006708 for a mixed-use development identified at 15-21 Cottonwood Crescent, Macquarie Park (the site).

The proposal includes provision for the demolition of existing buildings and construction of a residential development comprising two residential flat buildings above a common basement car park / sleaved podium incorporating residential, car parking, and a retail component within the Waterloo Road frontage and provision of 10% affordable housing.

The legal description of the site is outlined in the table below.

Property Address	Title Description
15 Cottonwood Crescent, Macquarie Park	SP8144
17 Cottonwood Crescent, Macquarie Park	SP7630
19 Cottonwood Crescent, Macquarie Park	SP7892
21 Cottonwood Crescent, Macquarie Park	SP7984

Note: for the purposes of reporting and branding of the proposal, we will also refer to the site as **'88 Waterloo Road, Macquarie Park'**.

This report has been prepared to address the Secretary's Environmental Assessment Requirements (**SEARs**) issued for the project (SSD-94006708).

The pedestrian-level wind microclimate assessment was conducted for the following configurations of the site:

Existing Configuration: Existing site with existing/under construction surrounding buildings
Proposed Configuration: Proposed Development with existing/under construction surrounding buildings
Future Configuration: Proposed Development with existing/under construction and future surrounding buildings.

The Future Configuration noted above has been included to address the requirement for a **Cumulative Impact Assessment** and includes known potential future developments within the vicinity. The wind conditions at the pedestrian level on 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 area. The wind speeds have been evaluated against the City of Ryde Development Control Plan (2014) for pedestrian wind comfort and the AWES Criteria for pedestrian wind safety. The results of this project are summarised as follows:

Existing Configuration

- The wind speeds in the study area were found to meet the wind safety criterion for all locations assessed for the existing configuration of the site. The existing site wind conditions are generally calm and expected to be suitable for the intended pedestrian use throughout the year.

Proposed Configuration

- With the inclusion of the Proposed Development the wind speeds at the ground level and elevated locations are within the safety limits for most locations. However, wind speeds exceeding the safety limit were noted at two locations on the ground Level (marginal exceedances), four locations at Level 4 and one location on the Cottonwood tower rooftop terrace.
- Ground level wind comfort conditions range from sitting to strolling use within and around the Proposed Development. Higher wind speeds that are not suitable for the intended pedestrian use are expected at a few locations along the Waterloo Road frontage and within the Elouera Reserve Park.
- Windy conditions not suitable for the passive use were noted at most locations on the Level 4 podium rooftop area.
- Wind conditions on the tower rooftops and private balconies are well sheltered and are expected to be suitable for the intended occupant's use.
- The significant existing trees around Elouera Reserve Park, along the Waterloo Road frontage and Cottonwood Cresent are expected to in general reduce wind speeds across the site and the marginal safety exceedances at the ground level are not expected to occur. This dense vegetation is also expected to improve wind comfort conditions within the ground level areas including Elouera Reserve Park which is expected to be suitable for the intended active park use.

Future Configuration

- The addition of future buildings eliminates all the marginal safety exceedances at the ground level, however, the safety exceedances within the Level 4 north-west corner balcony of the Cottonwood Tower and at the eastern outdoor roof terrace of Cottonwood Tower persists in the future scenario.
- Wind comfort conditions around the proposed development including the Elouera Reserve Park remain consistent at most locations with the proposed scenario. Improved conditions were noted along the Waterloo Road and Cottonwood Crescent frontages at ground level whereas conditions marginally worsen across Cottonwood Cresent adjacent the future building south of the Proposed Development. In general, the elevated areas of the Proposed Development remain consistent with the proposed scenario, including private balconies of both towers.

Recommendations

Based on these findings from the wind tunnel study, this report concludes that the proposed development is suitable and warrants approval subject to the implementation of the following mitigation measures:

Ground

- Full height porous screening along the southern perimeter of the area adjacent the mail room.
- 1.2m high impermeable screening along the ramp access to Cottonwood Tower.
- An impermeable awning with a minimum depth of 3m wrapping around the eastern corner.
- 1.5m high 50% porous screening along the staircase to the Waterloo lobby entrance and within the landscaped area at the eastern corner.
- 1.5m high 50% porous screening or planter box with dense vegetation with total height of 1.5m along the proposed northern seating area.

Level 4

- 1.8m high impermeable screening around the western corner balcony of Cottonwood Tower.
- 1.5m high impermeable screening around the western pool deck area.

- An impermeable awning with a minimum depth of 2m wrapping around the western corner of Waterloo Tower.
- Retention of all proposed tree and shrub planting throughout the podium rooftop areas as densely foliating evergreen species to provide all year protection.

Cottonwood and Waterloo Rooftop Terraces

- 1.8m high impermeable screening to partition up the rooftop areas.

Following the implementation of the above management measures / mitigation measures, the remaining impacts are considered negligible and appropriate.

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1 INTRODUCTION

This report has been prepared by RWDI Australia Pty Ltd (RWDI) in support of a State Significant Development Application (SSDA) and concurrent Rezoning Proposal – SSD-94006708 – at 15-21 Cottonwood Crescent, Macquarie Park (AKA. 88 Waterloo Road).

The application seeks development consent for the redevelopment of the site for a mixed-use development comprising residential accommodation and retail uses.

Specifically, this application seeks approval for the following:

- Demolition of all existing four-storey residential flat buildings on the site
- Site preparation works including:
  - Removal of existing forty-nine (49) trees
  - Excavation of the site to a maximum depth of six (6) basement levels
- Construction of two mixed-use buildings comprising a 60 and 52 storey building respectively, which will accommodate:
  - 858 Residential apartments inclusion 10% affordable housing of the uplift being sought
- Six (6) levels of basement with 733 car parking spaces, bicycle parking, services.
  - A four-level commercial podium containing:
    - Retail spaces
    - Four townhouses
    - Residential lobbies
    - Waste Storages
    - Residential and visitor Parking spaces
    - Bicycle Parking spaces
- Communal Open Space and residential amenities on level four (4).
- Rooftop Terrace on Level 52 of Cottonwood Crescent Tower and level 60 of Waterloo Road Tower.

The proposal includes provision to amend Clauses 4.3 and 4.4 of the Ryde Local Environmental Plan 2014 (**RLEP2014**) by virtue of the concurrent rezoning process. This includes the following amendments:

- Clause 4.3 – Height of Buildings:
  - Amend the current 65m maximum building height to 212m
- Clause 4.4 – FSR:
  - Amend the current FSR of 4.5:1 to 16:8:1

Purpose of this Report

This report has been prepared in response to the wind specific requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) dated 8 October 2025 and issued for the SSDA (SSD-94006708). Specifically, this report has been prepared to respond to the SEARs requirement and government agency comments issued below.

Item	Description of Requirement	Section Reference
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.	Sections 3.2 to 3.4 discuss the wind safety and comfort exceedances within the site for the Proposed Development.
23. Public Space	If public space is proposed as part of the development, demonstrate how the development: • 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. • provides accessible public space. • maximises permeability and connectivity. • maximises the amenity of public spaces in line with their intended use, such as through adequate facilities, solar access, shade and wind protection. • maximises street activation. • minimises potential vehicle, bicycle and pedestrian conflicts.	Section 3.4 and Section 3.5 detail the effect of tested mitigations and recommendations to ameliorate wind impacts

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.

The Site

The site is at 15-21 Cottonwood Crescent (see Image 1 below); Macquarie Park is located within the Ryde Local Government Area (**LGA**). The site occupies a prominent and highly accessible position within the Macquarie Park precinct, benefitting from dual street frontages to Waterloo Road along the north-eastern boundary and Cottonwood Crescent along the south-eastern boundary. These street interfaces provide strong address, visibility and access opportunities for the proposed development.

The western boundary adjoins Elouera Reserve, providing a high-amenity interface with publicly accessible open space, mature vegetation and a landscaped green corridor. This relationship enhances the site's environmental quality and outlook and provides opportunities for sensitive integration of the proposed development with the adjoining parkland.

The south-western boundary adjoins existing residential properties at 13 Cottonwood Crescent and 12–14 Lachlan Avenue, which represent the primary low-rise residential interface for the site.

The approximate boundary dimensions are as follows:

52.45 metres to Waterloo Road

97.35 metres to Cottonwood Crescent

50.6 metres to adjoining residential properties

100.9 metres to Elouera Reserve

The site is fully serviced, with existing connections to water, sewer, electricity, gas and telecommunications, and is therefore capable of supporting redevelopment without the need for major external servicing upgrades

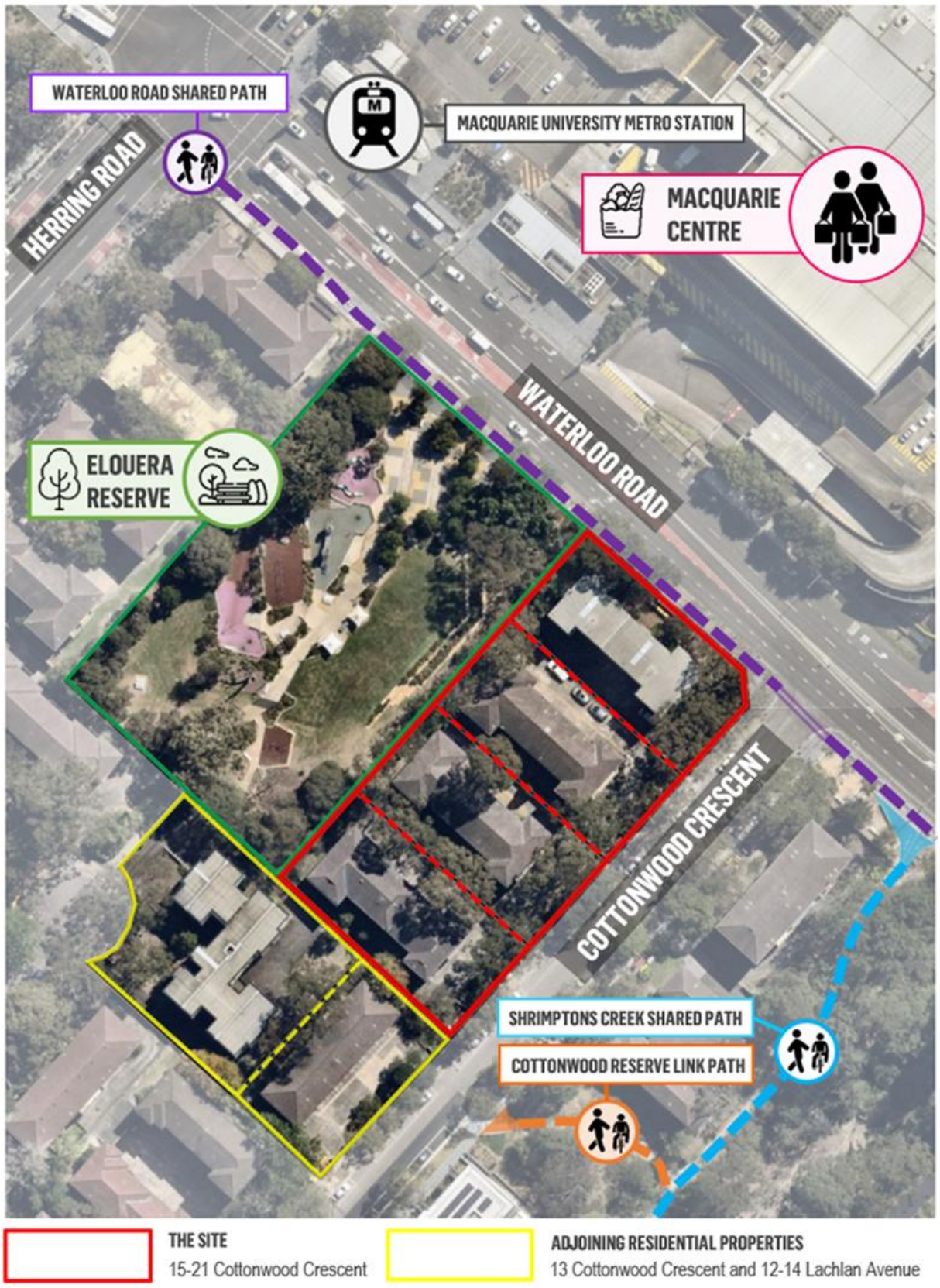

Image 1: Site Location and Surrounding Context
Source: Urbis (Nearmap)

2 BACKGROUND AND APPROACH

2.1 Wind Tunnel Study Model

To assess the wind environment around the proposed project, a 1:400 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/under construction surrounding buildings (Image 2A);
Proposed Configuration:	Proposed Development with existing/under construction surrounding buildings (Image 2B); and
Future Configuration:	Proposed Development with existing/under construction and future surrounding buildings (Image 2C).

The Future Configuration noted above has been included to address the requirement for a **Cumulative Impact Assessment** and includes known potential future developments within the vicinity. The wind tunnel model included all relevant surrounding buildings and topography within a radius of 360m 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 91 specially designed wind speed sensors to measure mean and gust wind speeds at a full-scale height of approximately 1.5m above local ground in pedestrian areas throughout the study site. The placement of wind measurement sensors was based on our 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 configuration tests in accordance with AWES Guidelines. 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).

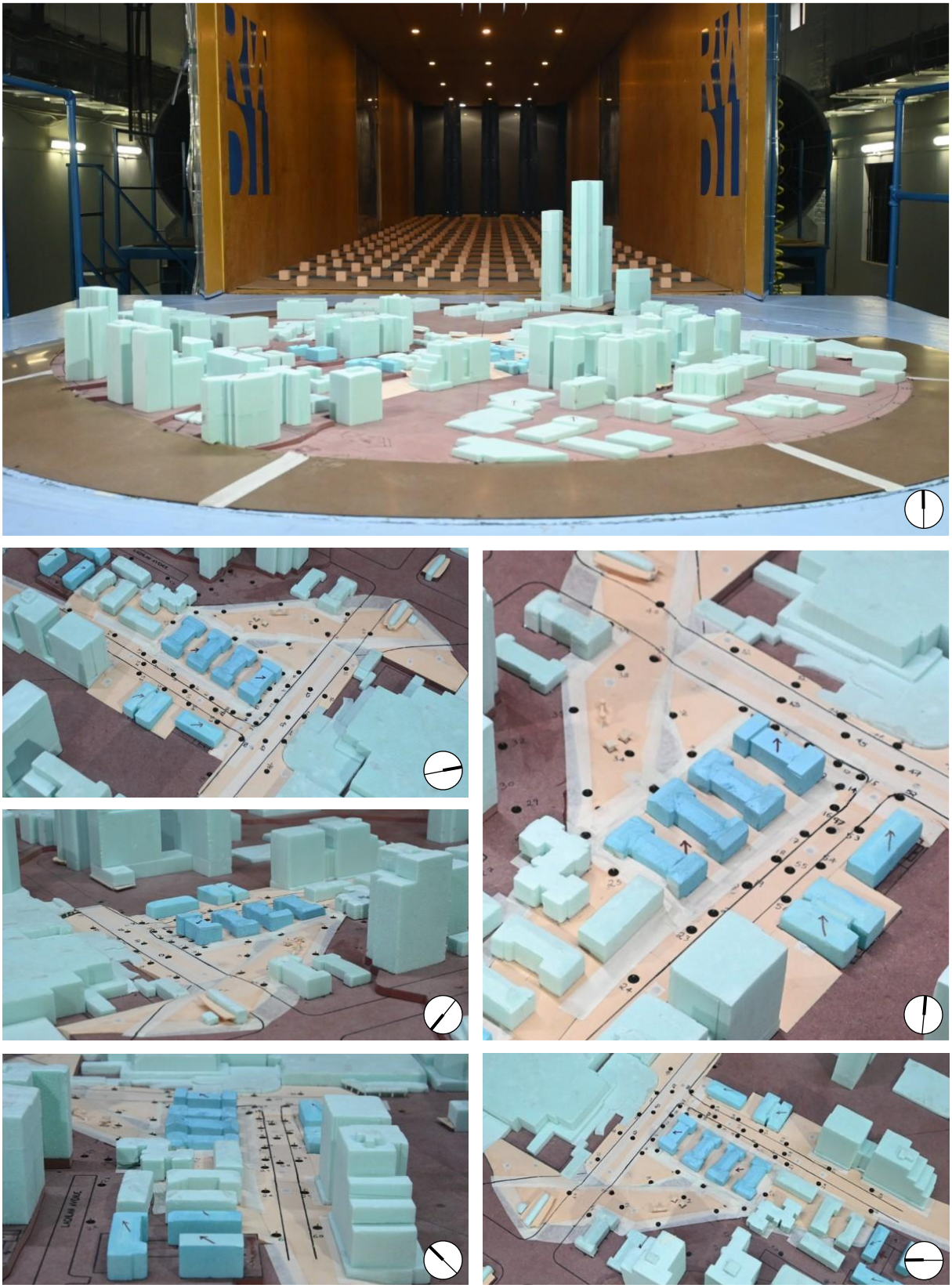

Image 2A: Wind Tunnel Study Model – Existing Configuration

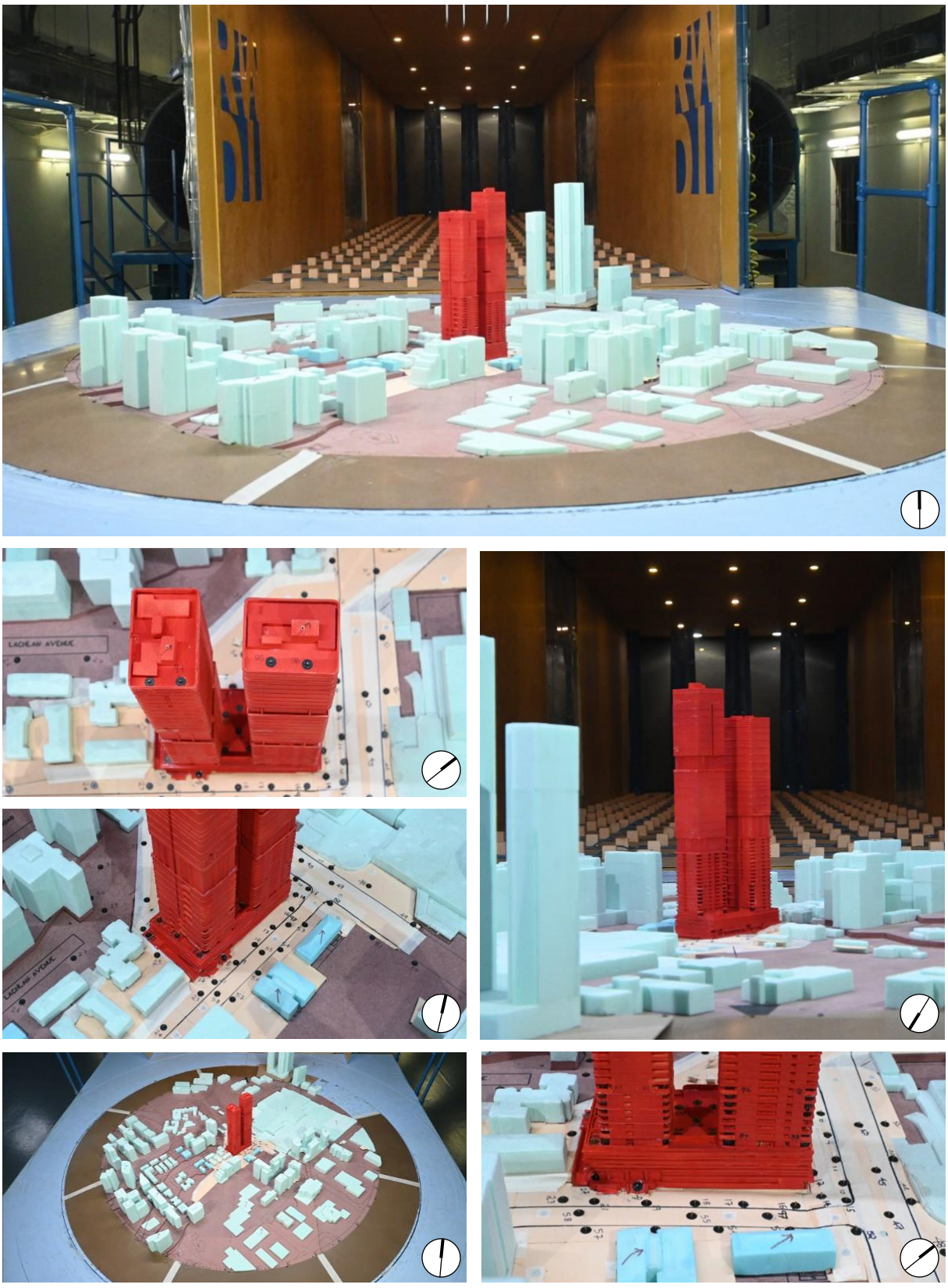

Image 2B: Wind Tunnel Study Model – Proposed Configuration

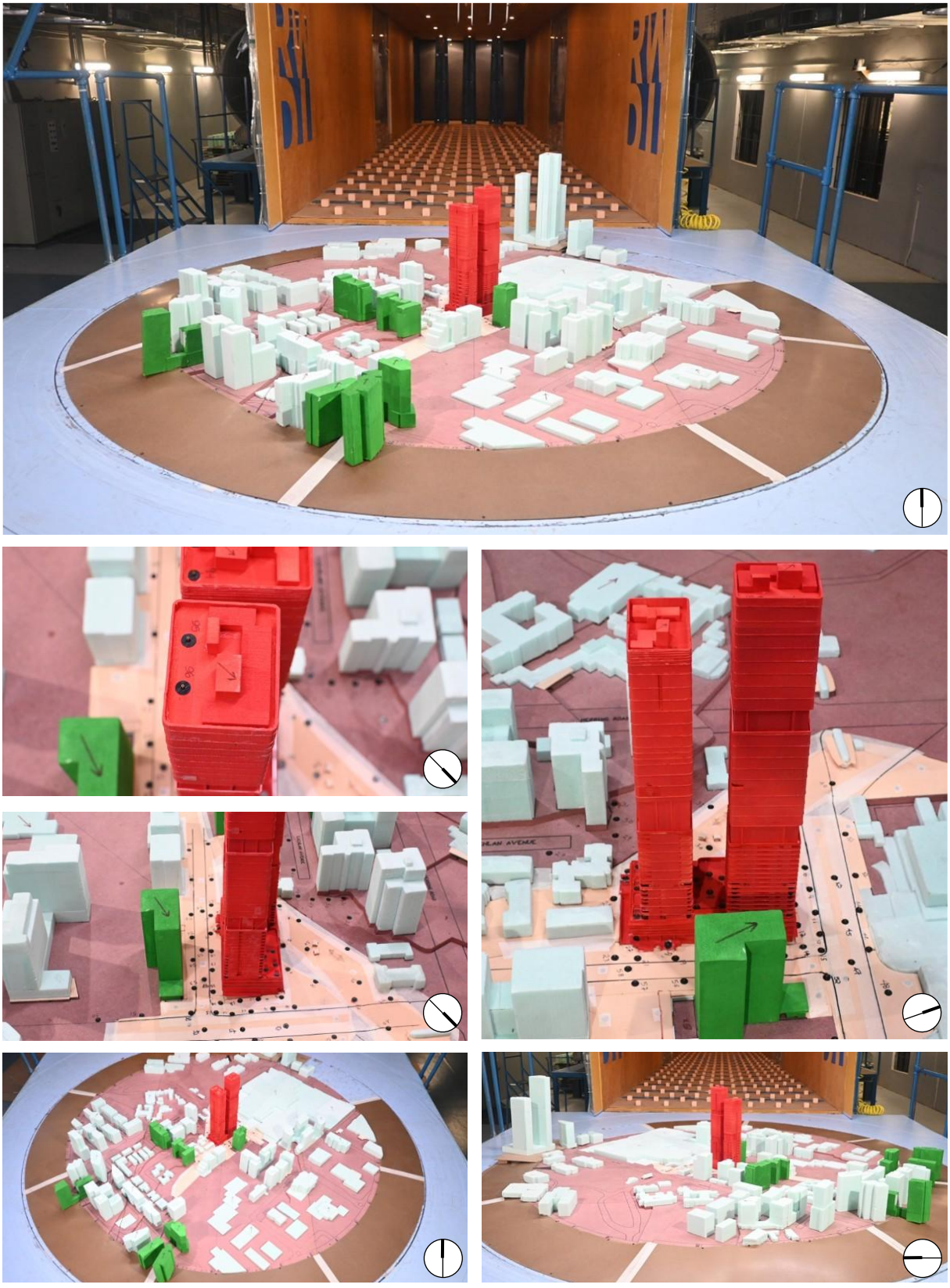

Image 2C: Wind Tunnel Study Model – Future Configuration

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 10 m/s measured at the airport (at an anemometer height of 10 m) occur for 8% of the time throughout 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.

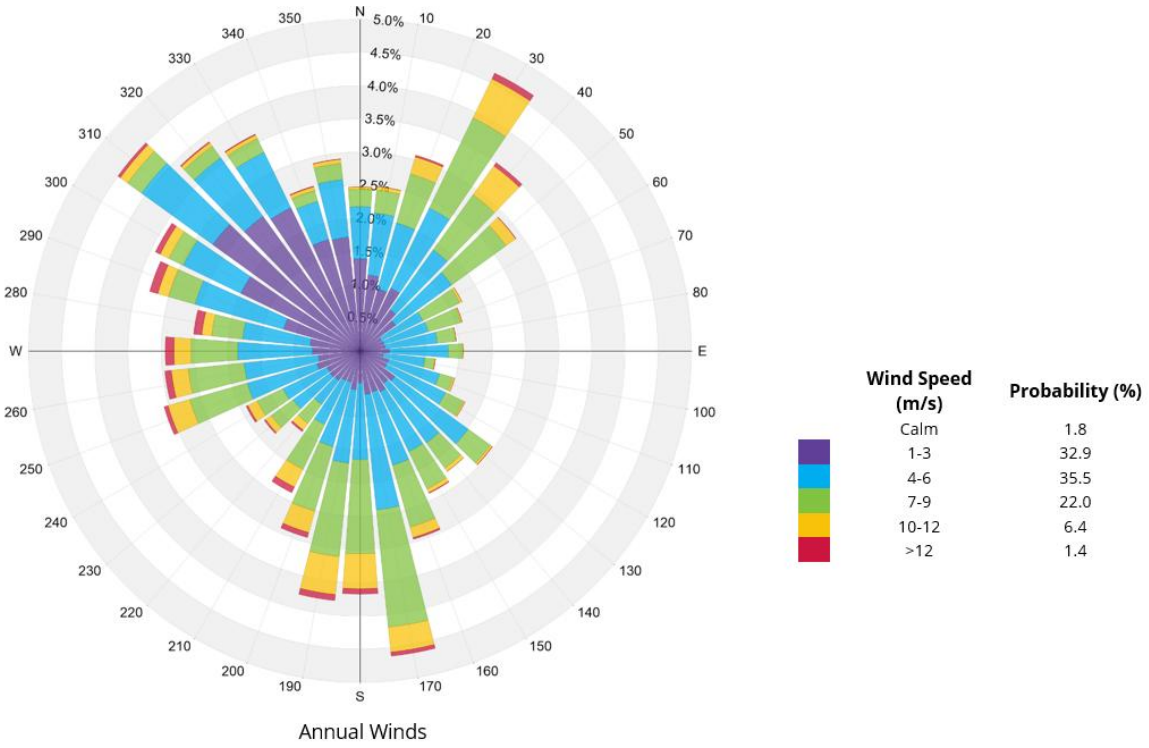

Image 3: Directional Distribution of Winds Approaching Sydney International Airport (1995 – 2022)

2.3 Pedestrian Wind Criteria

2.3.1 Wind Safety

To assess excessive gust speeds that can adversely affect the balance and footing of a pedestrian, the criterion for pedestrian safety is based on the guidelines of the Australasian Wind Engineering Society (2014). This is also in accordance with the requirements of the City of Ryde DCP 2014. The guidelines dictate that if the **maximum average 3-second gust speeds of more than 23m/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 or built-form response, are typically required at locations where winds exceed the wind safety criterion.

2.3.2 Wind Comfort

The City of Ryde Development Control Plan (2014) sets out standards for compliance to facilitate a comfortable environment for designated pedestrian activities. The standards detail the requirements related to pedestrian wind comfort, with the objective of mitigating adverse wind effects generated by tall buildings. The standard requires that a new building must not cause wind speeds around it to exceed the category for the intended use of the area, as set out in the table below.

Table: Pedestrian Wind Comfort Criteria

Comfort Category	GEM Speed (m/s)	Description
Sitting	≤ 3.5	Calm or light breezes desired for outdoor seating areas intended for long-duration stay such as dining areas, amphitheatres etc.
Standing	≤ 5.5	Gentle breezes suitable for main retail centres and retail streets, parks, communal recreational areas and locations where pedestrians may linger.
Strolling	≤ 7.5	Moderate winds that would be appropriate for strolling along footpaths and other pedestrian accessways and where the objective is not to linger.
Walking	≤ 10	High winds generally suitable for infrequently used laneways, easements, private balconies.
Uncomfortable	> 10	None of comfort categories above are met - Represents conditions that might be dangerous to the elderly and children and are of a considerable discomfort to others

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 95% of the time between 6:00 and 22:00. Nightly hours 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 site plans in Figures 1A through 2B located in the "Figures" section of this report. These conditions and the associated wind speeds are also presented 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 wind ameliorations or vegetation/landscaping to establish a baseline understanding of the wind conditions around the site, as per guidelines.

3.1 Generalised Wind Flows

In our 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.

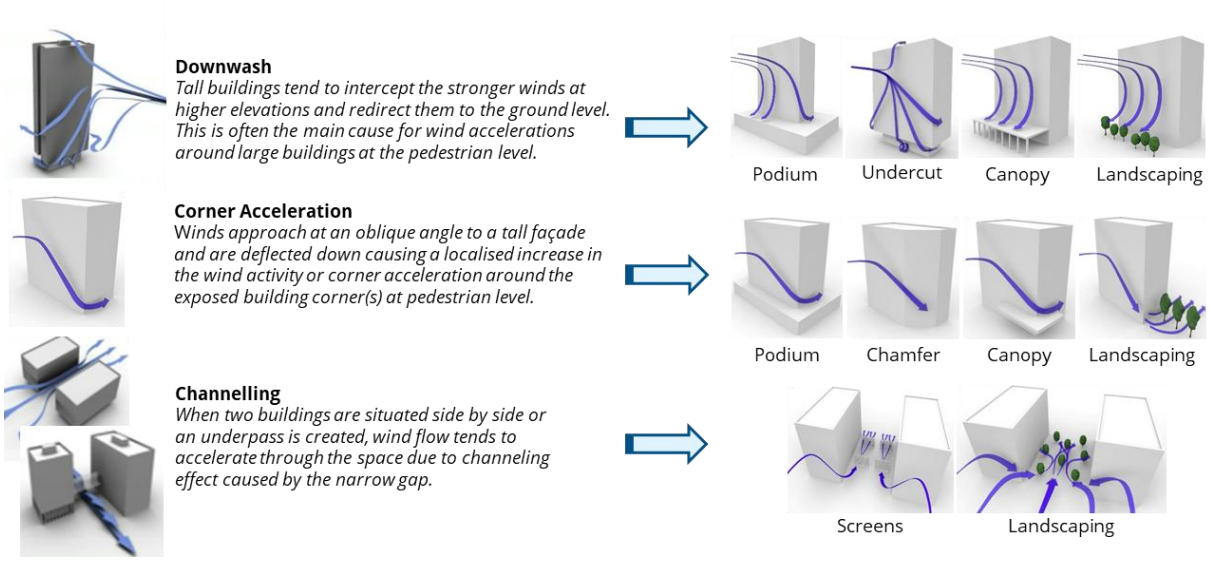

Image 4: General Wind Flows around Buildings and Examples of Wind Control Measures

3.2 Existing Configuration

3.2.1 Wind Safety

Wind speeds were found to meet the wind safety criterion at all locations assessed around the existing site (Figure 2A). Therefore, no safety concerns are anticipated for pedestrians in and around the existing site in relation to the wind forces.

3.2.2 Wind Comfort

The site consists of existing buildings and is surrounded by mostly the mid-rise structures. Wind conditions are, therefore, observed to be typically calm and suitable for standing use at most locations throughout the year (Figure 1A). Higher wind speeds suitable for active pedestrian use (strolling use) are also expected at a few locations on the northwest of the site and to the southwest along Cottonwood Crescent (Sensors 24, 27 to 29, 33, 54 and 56).

3.3 Proposed Configuration

3.3.1 Wind Safety

- Wind speeds at most locations around the site were within acceptable thresholds for wind safety (Figure 2.1B). However, marginal exceedances were observed at the balconies represented by Sensors 15 and 34, at the eastern corner where Cotton Crescent and Waterloo Road intersect, and at the centre of the Elouera Reserve park. The significant existing trees around Elouera Reserve Park, along the Waterloo Road frontage and Cottonwood Cresent are expected to in general reduce wind speeds across the site and these marginal exceedances are likely to not occur. However, the mitigation measures recommended in Section 3.4 are expected to help eliminate these safety exceedances.
- Strong winds exceeding the safety limits are also expected within the Level 4 north-west corner balcony of the Cottonwood Tower (Sensor 58) and the Level 4 podium rooftop area between the Cottonwood and Waterloo towers (Sensors 58, 63, 66, and 65).
- An isolated location at the eastern outdoor roof terrace of Cottonwood Tower (Sensor 89) was noted to exceed the safety limits.

3.3.2 Wind Comfort

With the inclusion of the Proposed Development, the following key average wind effects and conditions are noted within and around the development (Figure 1.1B):

- Ground level wind conditions around the Proposed Development range between sitting use in relatively sheltered areas close to the building through to strolling use at the northern half of Elouera Reserve Park, along Waterloo Road and Cottonwood Crescent. The wind conditions for the Proposed Configuration generally align with the intended use of most areas within and around the development site, offering a comfortable environment for the various activities. However, there are a few locations along the Waterloo Road frontage and footpaths where higher winds speeds were noted that exceed the target comfort level (Sensors 11, 14, 15 and 22). Strolling wind conditions unsuitable for intended passive uses are expected at the northern corner outdoor seating area (Sensor 7).

- Wind conditions around most entrances of the Proposed Development are expected to be comfortable for the intended pedestrian use. However, slightly higher wind speeds—unsuitable for passive pedestrian use—are anticipated at the northern corner entrance (Sensor 7) and at the southern mailroom entrance (Sensor 22).
- Wind speeds are expected to increase at most locations of the Elouera Reserve park with the addition of the Proposed Development. These increased wind speeds range from strolling to walking use (Sensors 33-38). However, the existing dense tree and shrub planting around Elouera Reserve Park, specifically the taller trees at the southern corner where the majority of the winds are flowing from, is expected to reduce wind speeds within the park area and to keep the wind conditions suitable for the intended active park use.
- Higher wind speeds unsuitable for intended passive occupant use are expected at most locations on the Level 4 amenity terrace—within the central podium rooftop area between the towers, and the western corner of the Waterloo Tower (Sensors 62–67 and 69).
- Wind conditions within most private balconies and on the tower rooftops were observed to be comfortable for passive sitting to standing use throughout the year. All private balconies are within the required walking use comfort category or better. However, wind speeds suitable only for active strolling use are expected at a few isolated locations on the tower rooftops of both the Cottonwood and Waterloo towers (Sensors 89, and 91). Note that wind comfort on balconies can exhibit notable variability based on the wind direction and position of an individual relative to the balustrade, partitions, screens, and other structural elements.

3.4 Future Configuration

3.4.1 Wind Safety

The addition of future buildings around the Proposed Development eliminates the marginal safety exceedances previously noted at the ground level and at the Level 4 central podium rooftop area in the proposed configuration. However, the safety exceedances within the Level 4 north-west corner balcony of the Cottonwood Tower (Sensor 58) and at the eastern outdoor roof terrace of Cottonwood Tower (Sensor 89) persists in the future scenario.

3.4.2 Wind Comfort

- Wind conditions around the proposed development including the Elouera Reserve Park remain consistent at most locations with the proposed scenario. Sheltering provided by the future buildings generally improve conditions along the Waterloo Road and Cottonwood Crescent frontages at ground level improving these areas to within strolling use. Wind conditions across Cottonwood Cresent adjacent the future building south of the Proposed Development (Sensors 51 and 52) marginally exceed strolling use to increase to walking use conditions. Similar to the proposed configuration the significant existing trees around Elouera Reserve Park, along Cottonwood Cresent and Waterloo Road are expected to improve wind conditions on the ground level across the site to levels that are expected to be suitable for intended uses.
- In general, the elevated areas of the Proposed Development remain consistent with the proposed scenario, including private balconies of both towers. Wind conditions improved at the Level 4 north-west corner balcony of the Cottonwood Tower (Sensor 58), and at the eastern and western ends of the Level 4 central podium rooftop area (Sensors 62 and 65).

3.5 Design Advice and Recommendations

The following wind mitigation measures are recommended to reduce wind impacts around the site and are marked up in Images 5 to 7:

Ground (see Image 5)

- Full height porous screening along the southern perimeter of the area adjacent the mail room.
- 1.2m high impermeable screening along the ramp access to Cottonwood Tower.
- An impermeable awning with a minimum depth of 3m wrapping around the eastern corner.
- 1.5m high 50% porous screening along the staircase to the Waterloo lobby entrance and within the landscaped area at the eastern corner.
- 1.5m high 50% porous screening or planter box with dense vegetation with total height of 1.5m along the proposed northern seating area.

Level 4 (see Image 6)

- 1.8m high impermeable screening around the western corner balcony of Cottonwood Tower.
- 1.5m high impermeable screening around the western pool deck area.
- An impermeable awning with a minimum depth of 2m wrapping around the western corner of Waterloo Tower.
- Retention of all proposed tree and shrub planting throughout the podium rooftop areas as densely foliating evergreen species to provide all year protection.

Cottonwood and Waterloo Rooftop Terraces (see Image 7)

- 1.8m high impermeable screening to partition up the rooftop areas.

With the inclusion of these measures, it is anticipated that the wind conditions within and around the subject site will meet the required comfort and safety criteria.

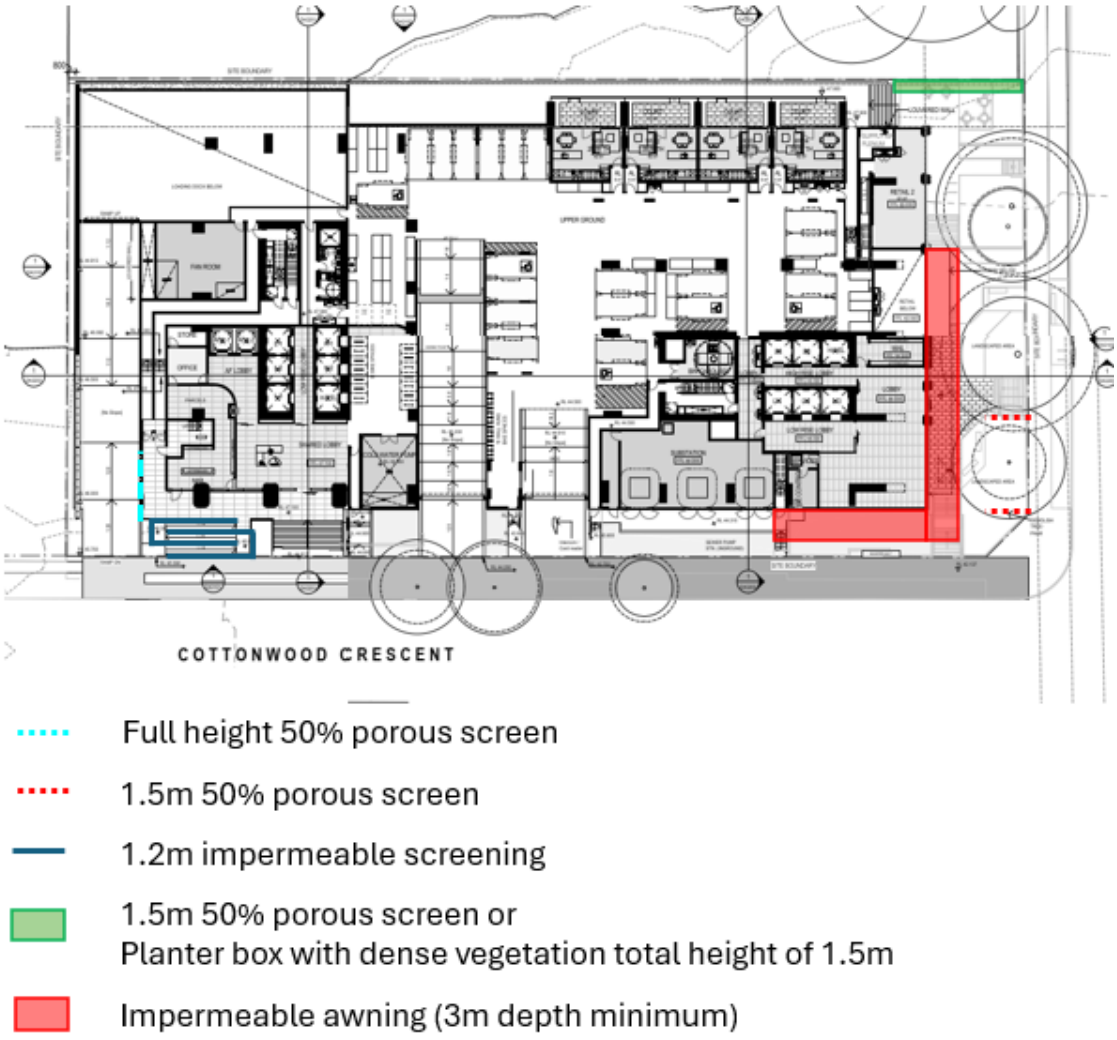

Image 5: Wind Mitigation Strategy on Ground Level

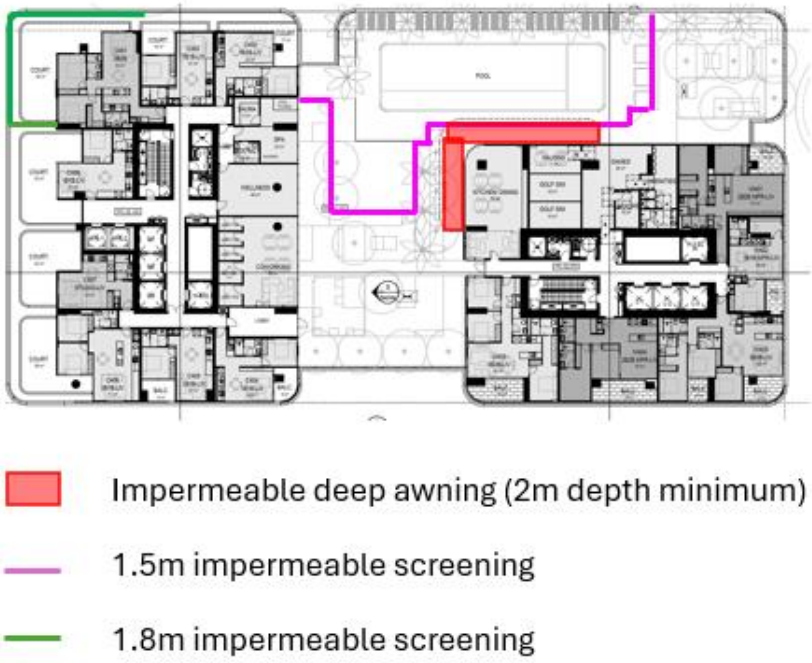

Image 6: Wind Mitigation Strategy on Level 4

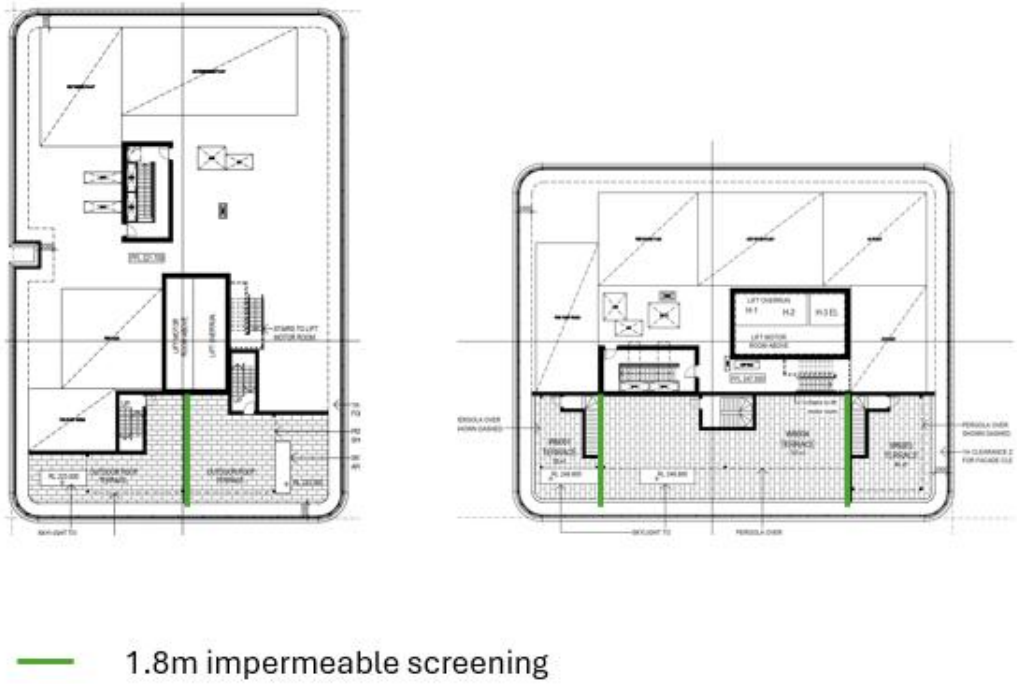

Image 7: Wind Mitigation Strategy on Cottonwood Tower and Waterloo Tower Rooftops

4 STATEMENT OF LIMITATIONS

Limitations

This report entitled '*88 Waterloo Road Pedestrian Wind Study*' was prepared by RWDI Australia Pty Ltd ("RWDI") for Billbergia ("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 "**Assessment**") 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 from the client and used to construct the scale model of the development **("Project Data**")

File Name	File Type	Date Received
23024_DA2007_LOWER GROUND_[11]	AutoCAD drawing	2 February 2026
23024_DA2008_UPPER GROUND_[11]	AutoCAD drawing	2 February 2026
23024_DA2009_LEVEL 1_[11]	AutoCAD drawing	2 February 2026
23024_DA2010_LEVEL 2_[11]	AutoCAD drawing	2 February 2026
23024_DA2011_LEVEL 3_[11]	AutoCAD drawing	2 February 2026
23024_DA2012_LEVEL 4_[15]	AutoCAD drawing	2 February 2026
23024_DA2013_LEVELS 5 - 9_[15]	AutoCAD drawing	2 February 2026
23024_DA2014_LEVEL 10_[14]	AutoCAD drawing	2 February 2026
23024_DA2015_LEVELS 11 - 19_[14]	AutoCAD drawing	2 February 2026

23024_DA2016_LEVELS 20 - 22_[13]	AutoCAD drawing	2 February 2026
23024_DA2017_LEVEL 23_[13]	AutoCAD drawing	2 February 2026
23024_DA2018_LEVEL 24_[13]	AutoCAD drawing	2 February 2026
23024_DA2019_LEVEL 25 - 26_[4]	AutoCAD drawing	2 February 2026
23024_DA2020_LEVEL 27_[4]	AutoCAD drawing	2 February 2026
23024_DA2021_LEVEL 28_[4]	AutoCAD drawing	2 February 2026
23024_DA2022_LEVEL 29 - 30_[4]	AutoCAD drawing	2 February 2026
23024_DA2023_LEVEL 31_[4]	AutoCAD drawing	2 February 2026
23024_DA2024_LEVEL 32 - 33_[4]	AutoCAD drawing	2 February 2026
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23024_DA2026_LEVEL 35 - 40_[12]	AutoCAD drawing	2 February 2026
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23024_DA3101_EAST ELEVATION COTTONWOOD TOWER_[3]	AutoCAD drawing	2 February 2026
23024_DA3102_WEST ELEVATION COTTONWOOD TOWER_[3]	AutoCAD drawing	2 February 2026
23024_DA3103_SOUTH ELEVATION COTTONWOOD TOWER_[3]	AutoCAD drawing	2 February 2026
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23024_DA3203_SECTIONS 3_[6]	AutoCAD drawing	2 February 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 the 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 upon 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

ASCE Task Committee on Outdoor Human Comfort (2004). Outdoor Human Comfort and Its Assessment, 68 pages, American Society of Civil Engineers, Reston, Virginia, USA.

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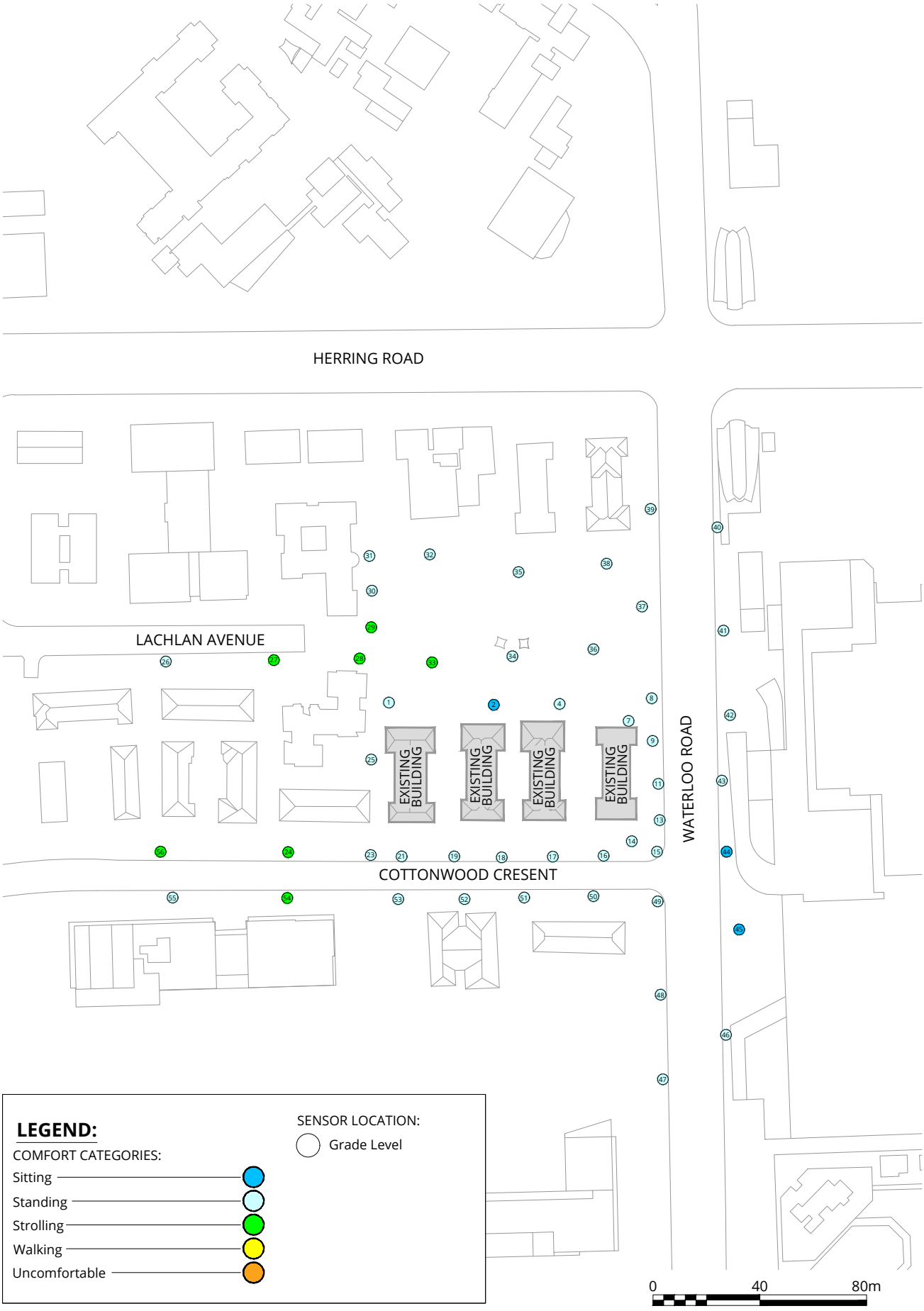
FIGURES



Pedestrian Wind Comfort Conditions

Existing Configuration
Annual (January to December, 6:00 to 22:00)

88 Waterloo Road - Macquarie, NSW

Project #2510813

True North

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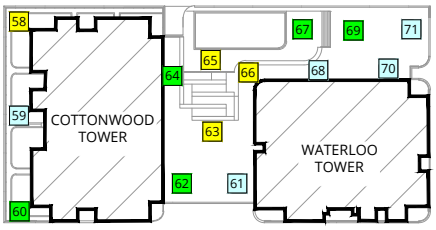
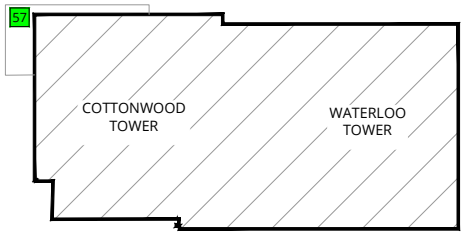
Approx. Scale:	1:2000		
Date Revised:	Feb. 25, 2026		



LEVEL 4

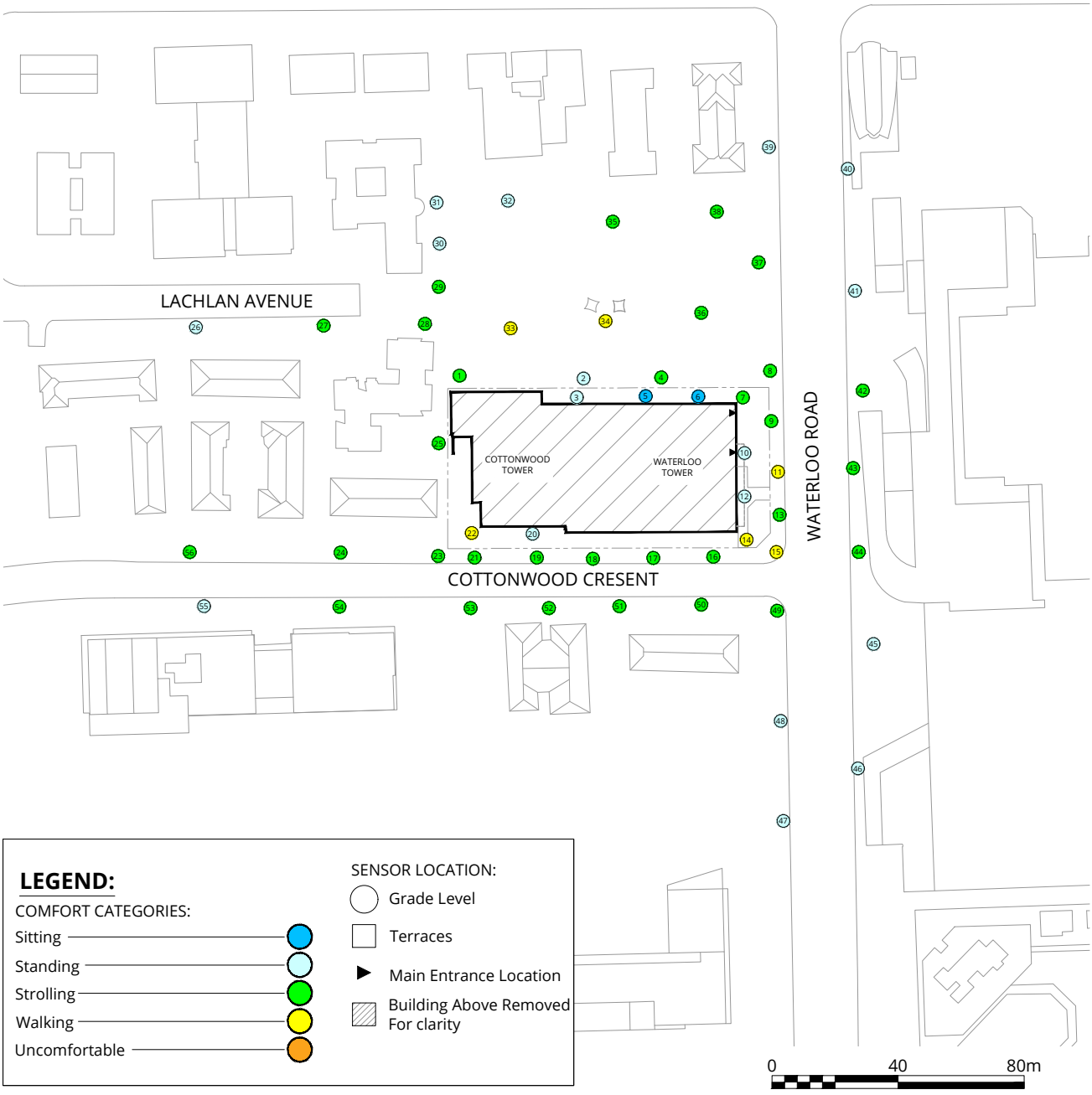
Approx. Scale: 1:1500



LEVEL 1

Approx. Scale: 1:1500

HERRING ROAD



LEGEND:

COMFORT CATEGORIES:

- Sitting
- Standing
- Strolling
- Walking
- Uncomfortable

SENSOR LOCATION:

- Grade Level
- Terraces
- Main Entrance Location
- Building Above Removed For clarity

Pedestrian Wind Comfort Conditions

Proposed Configuration

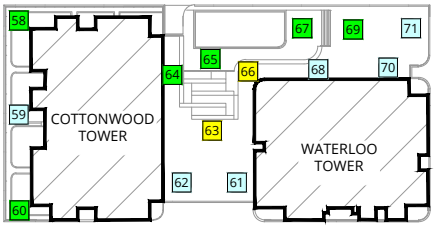
Annual (January to December, 6:00 to 22:00)

88 Waterloo Road - Macquarie, NSW

Project #2510813

True North

Drawn by:	RR	Figure:	1.1B
Approx. Scale:	1:2000		
Date Revised:	Feb. 25, 2026		



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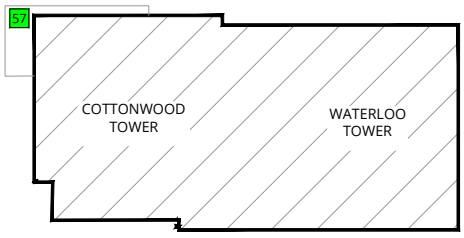

LEVEL 1

Approx. Scale: 1:1500

HERRING ROAD

LEGEND:

COMFORT CATEGORIES:

- Sitting
- Standing
- Strolling
- Walking
- Uncomfortable

SENSOR LOCATION:

- Grade Level
- Terraces
- Main Entrance Location
- Building Above Removed For clarity

Pedestrian Wind Comfort Conditions

Future Configuration

Annual (January to December, 6:00 to 22:00)

88 Waterloo Road - Macquarie, NSW

Project #2510813

True North

Drawn by:	RR	Figure:	1.1C
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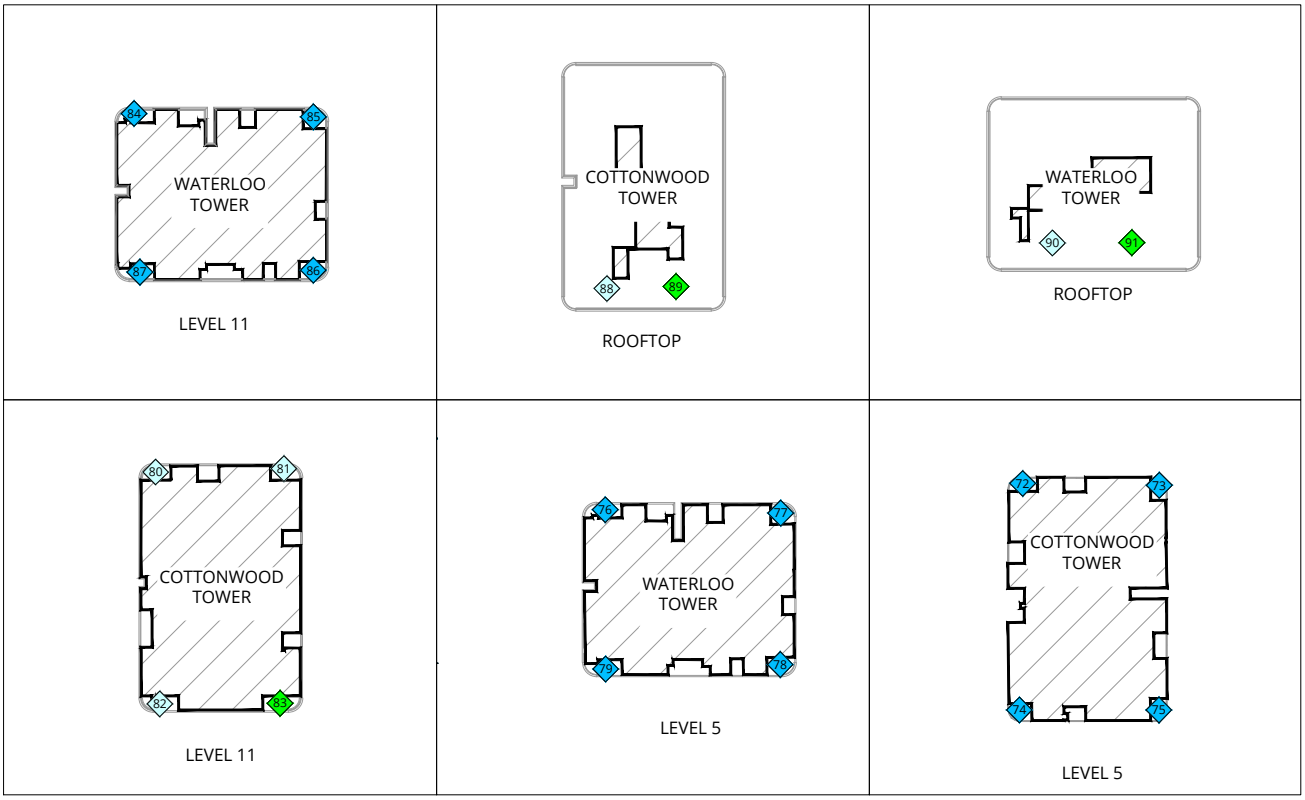
Date Revised:	Feb. 25, 2026		



LEGEND:

COMFORT CATEGORIES:

- Sitting
- Standing
- Strolling
- Walking
- Uncomfortable

SENSOR LOCATION:

- Balconies

0 25 50m

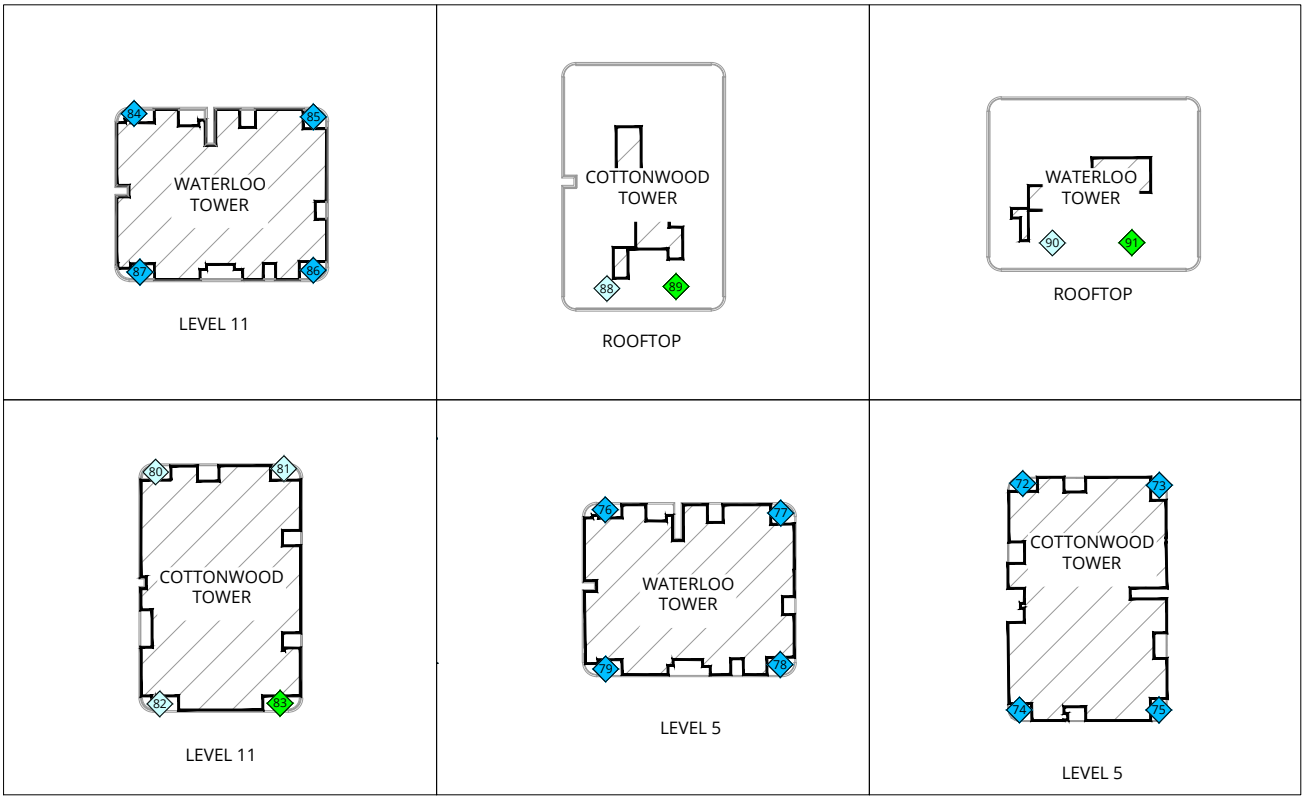
Pedestrian Wind Comfort Conditions
Proposed Configuration
Annual (January to December, 6:00 to 22:00)

True North

Drawn by:	RR	Figure:	1.2B
Approx. Scale:	1:1250		
Date Revised:	Feb. 25, 2026		

88 Waterloo Road - Macquarie, NSW

Project #2510813



LEGEND:

COMFORT CATEGORIES:

- Sitting
- Standing
- Strolling
- Walking
- Uncomfortable

SENSOR LOCATION:

- Balconies

0 25 50m

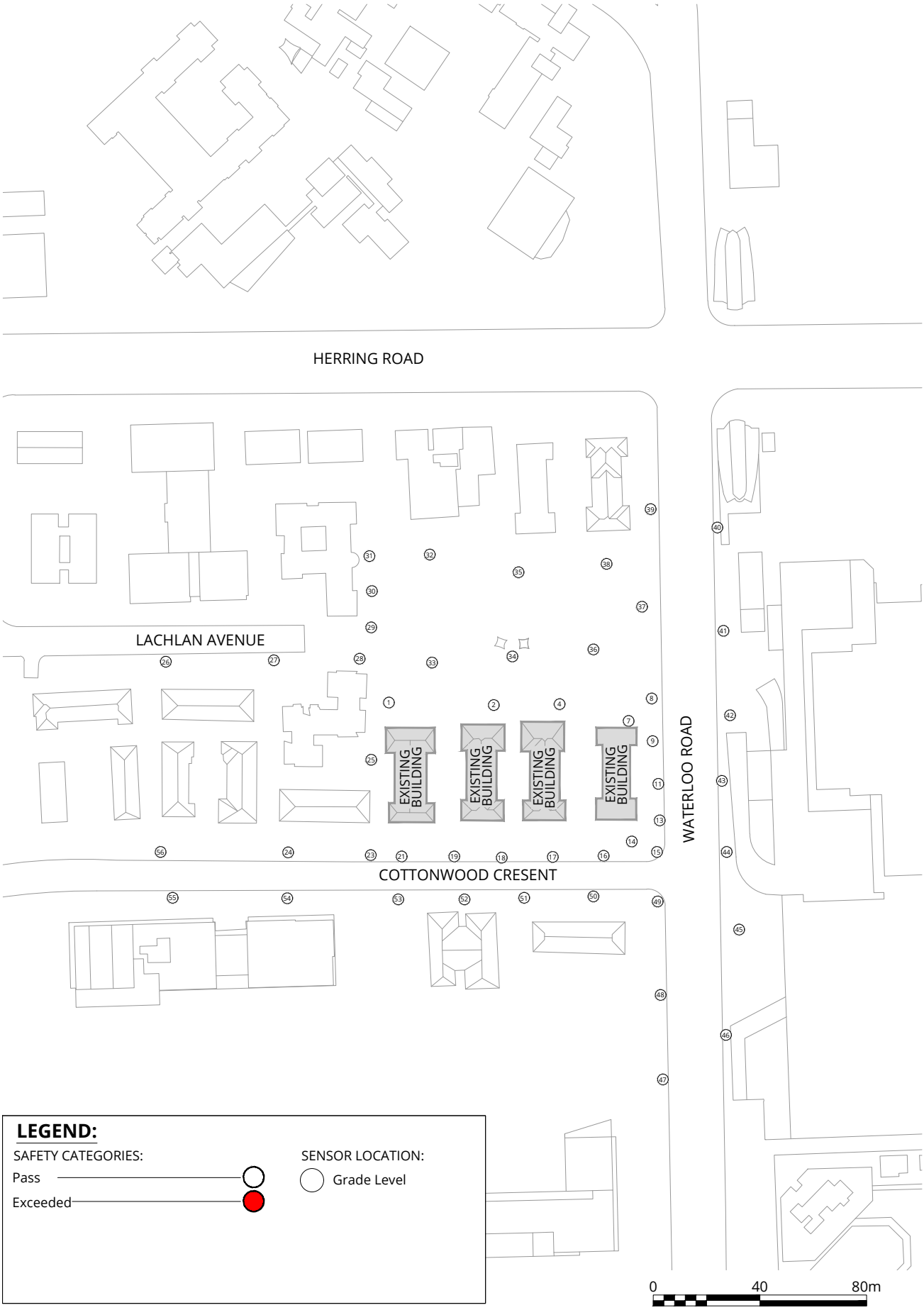
Pedestrian Wind Comfort Conditions
Future Configuration
Annual (January to December, 6:00 to 22:00)

True North

Drawn by:	RR	Figure:	1.2C
Approx. Scale:	1:1250		
Date Revised:	Feb. 25, 2026		

88 Waterloo Road - Macquarie, NSW

Project #2510813



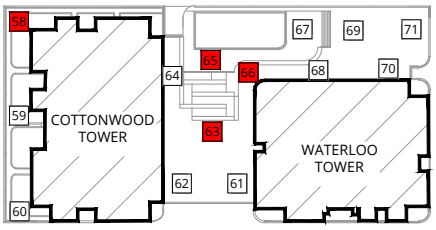
Pedestrian Wind Safety Conditions
Existing Configuration
Annual (January to December, 0:00 to 23:00)

88 Waterloo Road - Macquarie, NSW

Project #2510813

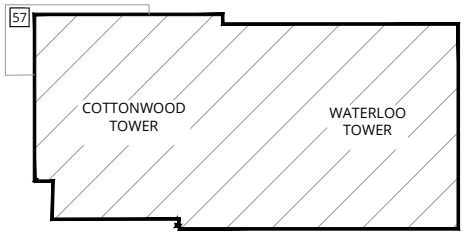
True North

Drawn by:	RR	Figure:	2A
Approx. Scale:	1:2000		
Date Revised:	Feb. 25, 2026		



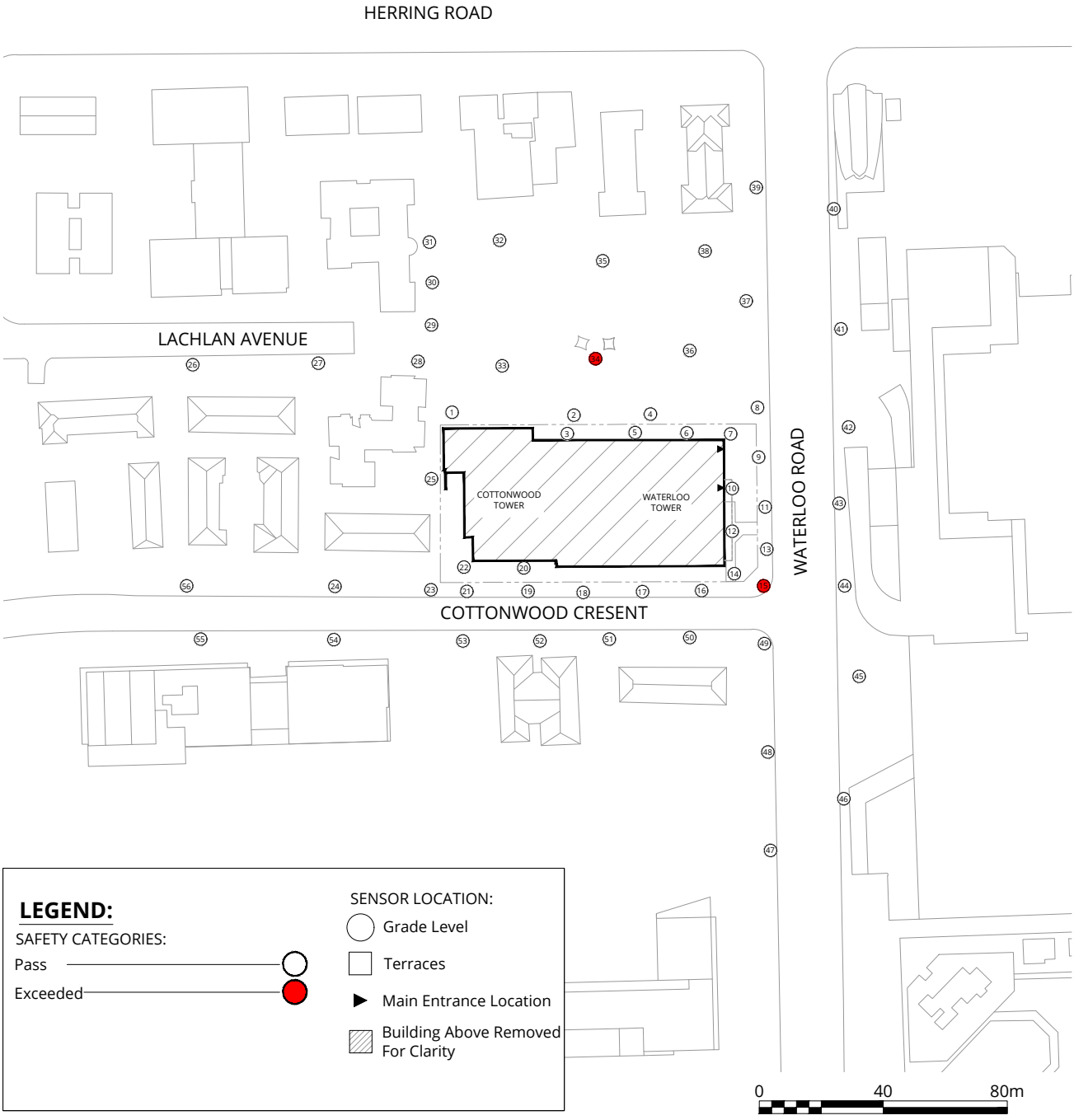
LEVEL 4

Approx. Scale: 1:1500



LEVEL 1

Approx. Scale: 1:1500



LEGEND:

SAFETY CATEGORIES:

Pass

Exceeded

SENSOR LOCATION:

Grade Level

Terraces

Main Entrance Location

Building Above Removed For Clarity

Pedestrian Wind Safety Conditions

Proposed Configuration

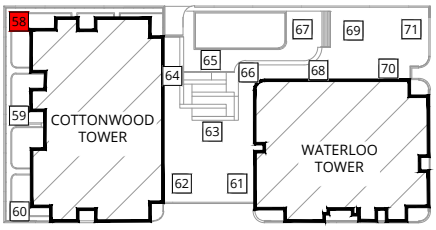
Annual (January to December, 0:00 to 23:00)

88 Waterloo Road - Macquarie, NSW

Project #2510813

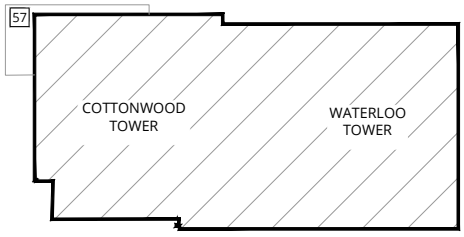
True North

Drawn by:	RR	Figure:	2.1B
Approx. Scale:	1:2000		
Date Revised:	Feb. 25, 2026		



LEVEL 4

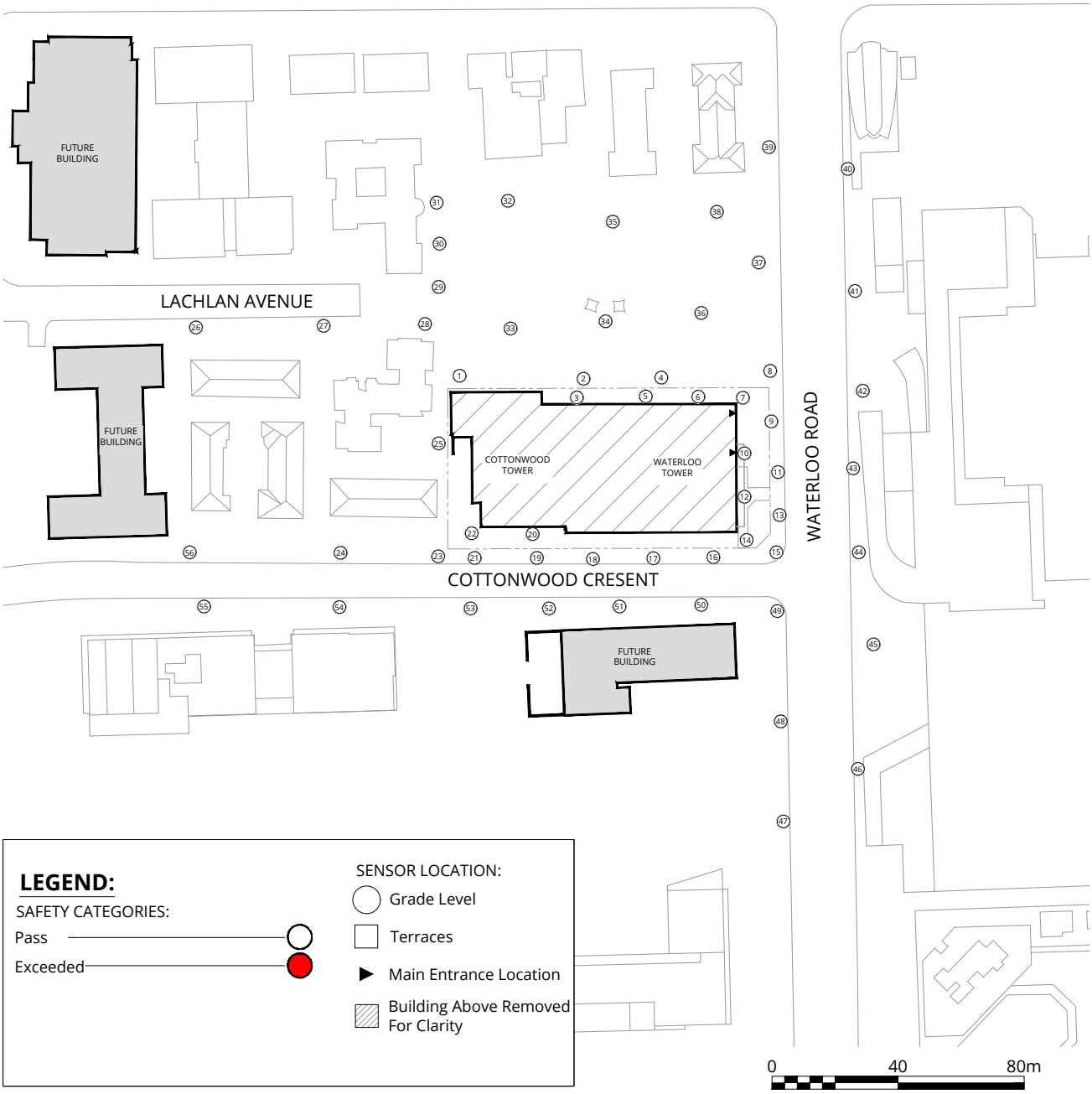
Approx. Scale: 1:1500



LEVEL 1

Approx. Scale: 1:1500

HERRING ROAD



LEGEND:

SAFETY CATEGORIES:

Pass

Exceeded

SENSOR LOCATION:

Grade Level

Terraces

Main Entrance Location

Building Above Removed For Clarity

Pedestrian Wind Safety Conditions

Future Configuration

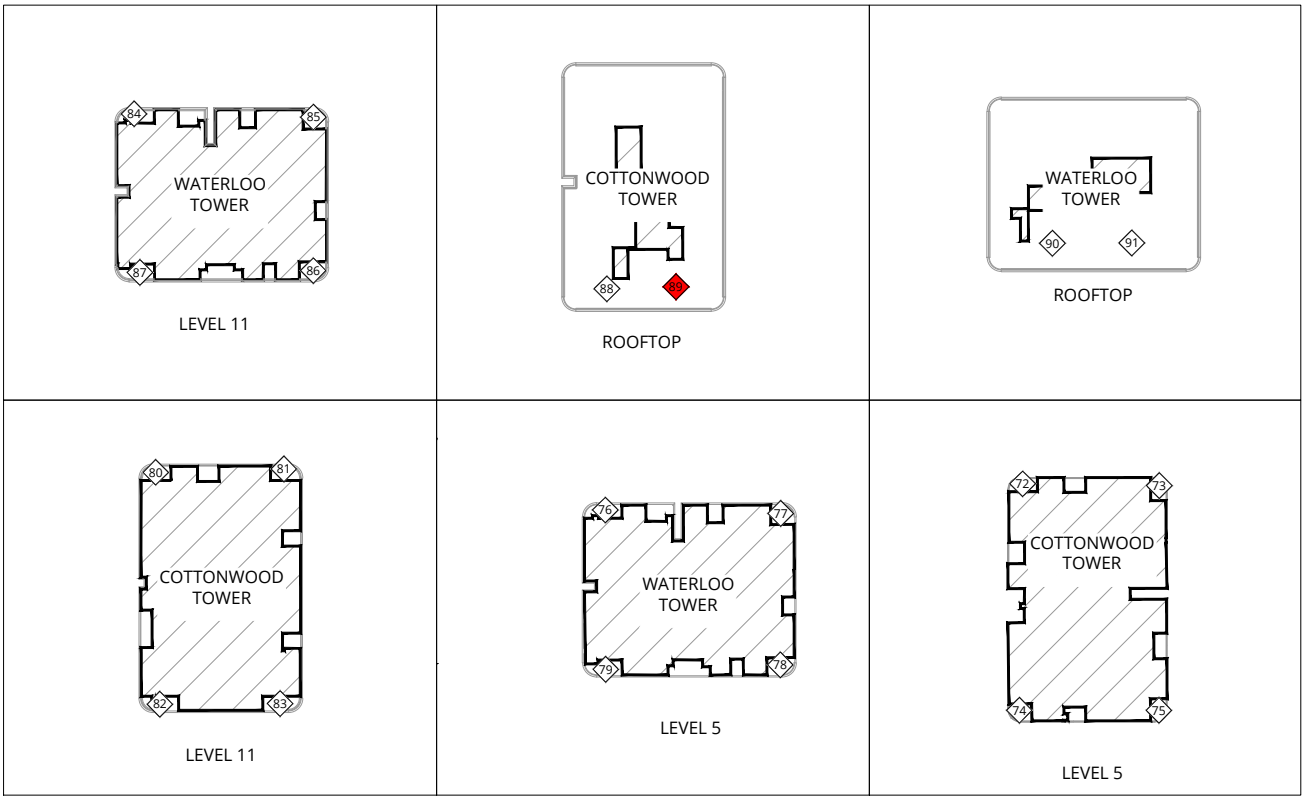
Annual (January to December, 0:00 to 23:00)

88 Waterloo Road - Macquarie, NSW

Project #2510813

True North

Drawn by:	RR	Figure:	2.1C
Approx. Scale:	1:2000		
Date Revised:	Feb. 25, 2026		



LEGEND:

SAFETY CATEGORIES:

Pass

Exceeded

SENSOR LOCATION:

Balconies

0 25 50m

Pedestrian Wind Safety Conditions

Proposed Configuration

Annual (January to December, 0:00 to 23:00)

88 Waterloo Road - Macquarie, NSW

Project #2510813

True North

Drawn by:	RR	Figure:	2.2B
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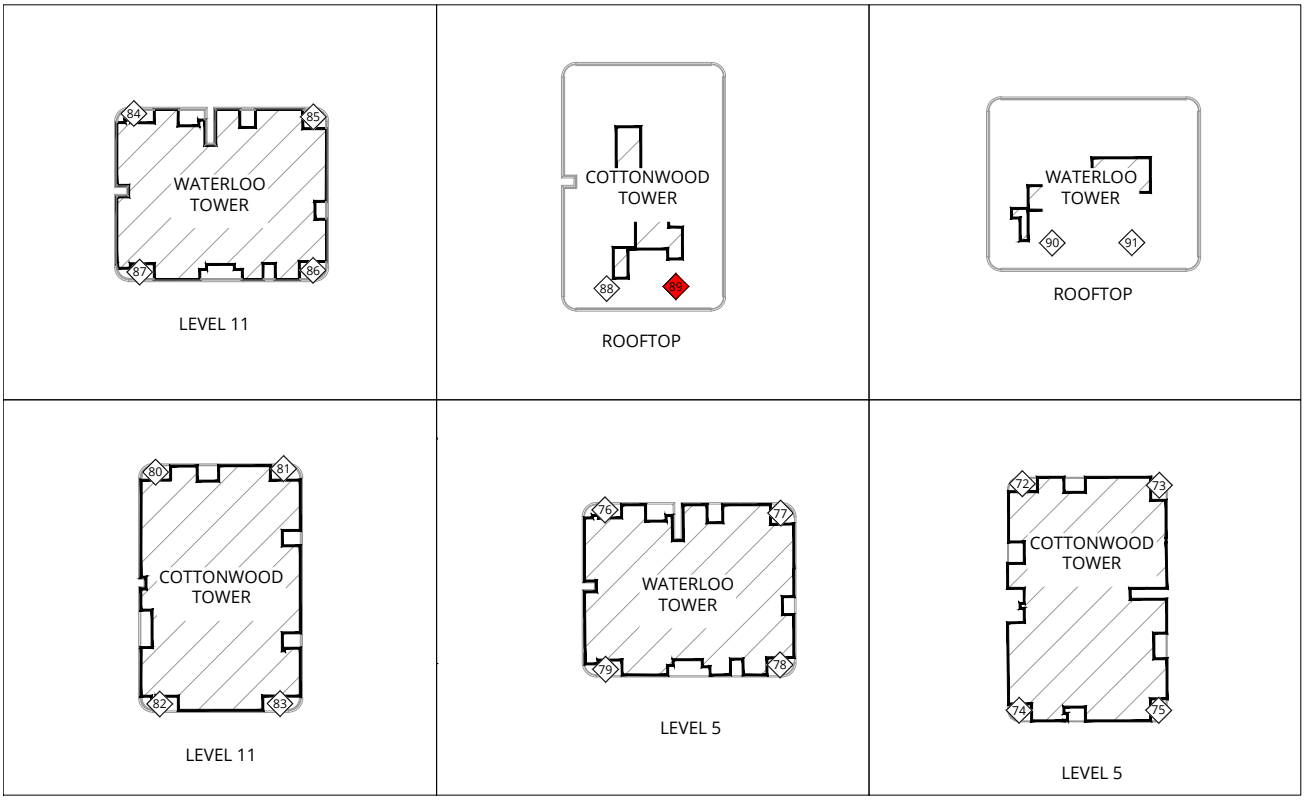

LEGEND:

SAFETY CATEGORIES:

Pass

Exceeded

SENSOR LOCATION:

Balconies

0 25 50m

Pedestrian Wind Safety Conditions

Future Configuration

Annual (January to December, 0:00 to 23:00)

88 Waterloo Road - Macquarie, NSW

Project #2510813

True North

Drawn by:	RR	Figure:	2.2C
Approx. Scale:	1:1250		
Date Revised:	Feb. 25, 2026		

TABLES

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed (m/s)	Rating	Speed (m/s)	Rating
1	Annual	Existing	4.4	Standing	13	Pass
		Proposed	6.4	Strolling	17	Pass
		Future	6.2	Strolling	17	Pass
2	Annual	Existing	3.4	Sitting	11	Pass
		Proposed	4.4	Standing	13	Pass
		Future	4.1	Standing	13	Pass
3	Annual	Existing	2.0	Sitting	6	Pass
		Proposed	4.1	Standing	14	Pass
		Future	4.0	Standing	13	Pass
4	Annual	Existing	4.8	Standing	15	Pass
		Proposed	7.0	Strolling	21	Pass
		Future	6.3	Strolling	19	Pass
5	Annual	Existing	1.3	Sitting	4	Pass
		Proposed	2.7	Sitting	9	Pass
		Future	2.5	Sitting	9	Pass
6	Annual	Existing	1.3	Sitting	4	Pass
		Proposed	3.2	Sitting	12	Pass
		Future	3.1	Sitting	12	Pass
7	Annual	Existing	4.2	Standing	13	Pass
		Proposed	6.3	Strolling	20	Pass
		Future	6.2	Strolling	20	Pass
8	Annual	Existing	5.0	Standing	16	Pass
		Proposed	6.4	Strolling	19	Pass
		Future	6.3	Strolling	18	Pass
9	Annual	Existing	4.1	Standing	14	Pass
		Proposed	6.6	Strolling	20	Pass
		Future	6.4	Strolling	19	Pass
10	Annual	Existing	2.7	Sitting	8	Pass
		Proposed	5.3	Standing	18	Pass
		Future	5.3	Standing	18	Pass
11	Annual	Existing	3.7	Standing	12	Pass
		Proposed	7.6	Walking	23	Pass
		Future	7.1	Strolling	22	Pass
12	Annual	Existing	3.7	Standing	12	Pass
		Proposed	4.8	Standing	18	Pass
		Future	5.0	Standing	17	Pass
13	Annual	Existing	3.9	Standing	12	Pass
		Proposed	7.3	Strolling	23	Pass
		Future	6.9	Strolling	23	Pass
14	Annual	Existing	4.5	Standing	13	Pass
		Proposed	8.0	Walking	23	Pass
		Future	7.1	Strolling	21	Pass
15	Annual	Existing	4.3	Standing	13	Pass
		Proposed	7.6	Walking	24	Exceeded
		Future	6.6	Strolling	23	Pass
16	Annual	Existing	4.1	Standing	13	Pass
		Proposed	7.4	Strolling	21	Pass
		Future	6.5	Strolling	19	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed (m/s)	Rating	Speed (m/s)	Rating
17	Annual	Existing	4.4	Standing	13	Pass
		Proposed	6.8	Strolling	19	Pass
		Future	7.1	Strolling	19	Pass
18	Annual	Existing	4.5	Standing	14	Pass
		Proposed	6.9	Strolling	20	Pass
		Future	7.4	Strolling	19	Pass
19	Annual	Existing	4.8	Standing	15	Pass
		Proposed	7.5	Strolling	20	Pass
		Future	7.2	Strolling	19	Pass
20	Annual	Existing	1.3	Sitting	4	Pass
		Proposed	4.5	Standing	16	Pass
		Future	4.1	Standing	15	Pass
21	Annual	Existing	4.9	Standing	16	Pass
		Proposed	7.4	Strolling	19	Pass
		Future	6.8	Strolling	18	Pass
22	Annual	Existing	2.1	Sitting	6	Pass
		Proposed	7.7	Walking	23	Pass
		Future	6.0	Strolling	20	Pass
23	Annual	Existing	5.1	Standing	16	Pass
		Proposed	6.3	Strolling	19	Pass
		Future	6.2	Strolling	18	Pass
24	Annual	Existing	6.1	Strolling	18	Pass
		Proposed	6.9	Strolling	22	Pass
		Future	6.5	Strolling	21	Pass
25	Annual	Existing	3.9	Standing	11	Pass
		Proposed	6.2	Strolling	19	Pass
		Future	5.5	Standing	18	Pass
26	Annual	Existing	4.9	Standing	15	Pass
		Proposed	5.2	Standing	16	Pass
		Future	4.8	Standing	14	Pass
27	Annual	Existing	5.6	Strolling	16	Pass
		Proposed	5.9	Strolling	16	Pass
		Future	5.1	Standing	15	Pass
28	Annual	Existing	6.1	Strolling	18	Pass
		Proposed	6.9	Strolling	20	Pass
		Future	6.3	Strolling	20	Pass
29	Annual	Existing	5.6	Strolling	15	Pass
		Proposed	6.4	Strolling	17	Pass
		Future	6.1	Strolling	16	Pass
30	Annual	Existing	4.7	Standing	14	Pass
		Proposed	5.4	Standing	16	Pass
		Future	5.3	Standing	17	Pass
31	Annual	Existing	3.9	Standing	12	Pass
		Proposed	4.2	Standing	13	Pass
		Future	4.3	Standing	12	Pass
32	Annual	Existing	5.0	Standing	15	Pass
		Proposed	5.5	Standing	16	Pass
		Future	5.2	Standing	15	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed (m/s)	Rating	Speed (m/s)	Rating
33	Annual	Existing	5.9	Strolling	19	Pass
		Proposed	7.7	Walking	19	Pass
		Future	6.7	Strolling	18	Pass
34	Annual	Existing	4.7	Standing	15	Pass
		Proposed	8.2	Walking	24	Exceeded
		Future	7.6	Walking	23	Pass
35	Annual	Existing	4.9	Standing	15	Pass
		Proposed	6.8	Strolling	21	Pass
		Future	6.2	Strolling	18	Pass
36	Annual	Existing	4.8	Standing	16	Pass
		Proposed	7.0	Strolling	21	Pass
		Future	6.6	Strolling	20	Pass
37	Annual	Existing	4.9	Standing	15	Pass
		Proposed	6.0	Strolling	20	Pass
		Future	5.8	Strolling	18	Pass
38	Annual	Existing	4.4	Standing	13	Pass
		Proposed	6.1	Strolling	21	Pass
		Future	6.0	Strolling	19	Pass
39	Annual	Existing	4.3	Standing	15	Pass
		Proposed	4.2	Standing	13	Pass
		Future	4.2	Standing	13	Pass
40	Annual	Existing	5.2	Standing	17	Pass
		Proposed	5.4	Standing	17	Pass
		Future	5.2	Standing	16	Pass
41	Annual	Existing	4.7	Standing	15	Pass
		Proposed	5.1	Standing	16	Pass
		Future	5.1	Standing	16	Pass
42	Annual	Existing	4.5	Standing	15	Pass
		Proposed	6.1	Strolling	18	Pass
		Future	6.0	Strolling	18	Pass
43	Annual	Existing	4.0	Standing	13	Pass
		Proposed	6.7	Strolling	21	Pass
		Future	6.0	Strolling	16	Pass
44	Annual	Existing	3.5	Sitting	13	Pass
		Proposed	5.7	Strolling	21	Pass
		Future	5.5	Standing	21	Pass
45	Annual	Existing	3.5	Sitting	11	Pass
		Proposed	4.9	Standing	20	Pass
		Future	5.1	Standing	21	Pass
46	Annual	Existing	3.7	Standing	13	Pass
		Proposed	4.3	Standing	16	Pass
		Future	4.5	Standing	17	Pass
47	Annual	Existing	4.2	Standing	12	Pass
		Proposed	4.6	Standing	15	Pass
		Future	4.8	Standing	15	Pass
48	Annual	Existing	4.1	Standing	12	Pass
		Proposed	5.0	Standing	18	Pass
		Future	5.7	Strolling	21	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed (m/s)	Rating	Speed (m/s)	Rating
49	Annual	Existing	4.3	Standing	13	Pass
		Proposed	6.8	Strolling	23	Pass
		Future	6.1	Strolling	23	Pass
50	Annual	Existing	4.0	Standing	12	Pass
		Proposed	7.1	Strolling	21	Pass
		Future	6.3	Strolling	19	Pass
51	Annual	Existing	4.4	Standing	13	Pass
		Proposed	7.5	Strolling	22	Pass
		Future	7.6	Walking	21	Pass
52	Annual	Existing	4.6	Standing	14	Pass
		Proposed	6.8	Strolling	21	Pass
		Future	7.7	Walking	20	Pass
53	Annual	Existing	4.5	Standing	15	Pass
		Proposed	6.3	Strolling	21	Pass
		Future	6.4	Strolling	18	Pass
54	Annual	Existing	6.2	Strolling	18	Pass
		Proposed	6.3	Strolling	20	Pass
		Future	5.7	Strolling	16	Pass
55	Annual	Existing	5.4	Standing	15	Pass
		Proposed	4.5	Standing	14	Pass
		Future	5.3	Standing	15	Pass
56	Annual	Existing	6.5	Strolling	18	Pass
		Proposed	6.2	Strolling	18	Pass
		Future	6.6	Strolling	18	Pass
57	Annual	Existing	1.5	Sitting	5	Pass
		Proposed	7.1	Strolling	18	Pass
		Future	7.0	Strolling	19	Pass
58	Annual	Existing	1.8	Sitting	6	Pass
		Proposed	8.1	Walking	26	Exceeded
		Future	7.4	Strolling	26	Exceeded
59	Annual	Existing	1.5	Sitting	4	Pass
		Proposed	4.0	Standing	12	Pass
		Future	4.1	Standing	12	Pass
60	Annual	Existing	2.1	Sitting	6	Pass
		Proposed	6.3	Strolling	20	Pass
		Future	5.6	Strolling	19	Pass
61	Annual	Existing	1.5	Sitting	5	Pass
		Proposed	4.9	Standing	15	Pass
		Future	4.7	Standing	14	Pass
62	Annual	Existing	1.7	Sitting	6	Pass
		Proposed	5.6	Strolling	15	Pass
		Future	5.4	Standing	14	Pass
63	Annual	Existing	1.9	Sitting	6	Pass
		Proposed	9.3	Walking	24	Exceeded
		Future	8.2	Walking	22	Pass
64	Annual	Existing	1.6	Sitting	5	Pass
		Proposed	7.0	Strolling	20	Pass
		Future	6.4	Strolling	19	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed (m/s)	Rating	Speed (m/s)	Rating
65	Annual	Existing	1.9	Sitting	6	Pass
		Proposed	8.0	Walking	24	Exceeded
		Future	7.1	Strolling	21	Pass
66	Annual	Existing	1.8	Sitting	5	Pass
		Proposed	8.9	Walking	25	Exceeded
		Future	8.0	Walking	22	Pass
67	Annual	Existing	1.8	Sitting	6	Pass
		Proposed	6.8	Strolling	19	Pass
		Future	6.7	Strolling	19	Pass
68	Annual	Existing	1.8	Sitting	5	Pass
		Proposed	4.8	Standing	14	Pass
		Future	5.1	Standing	15	Pass
69	Annual	Existing	1.6	Sitting	5	Pass
		Proposed	5.9	Strolling	17	Pass
		Future	5.8	Strolling	17	Pass
70	Annual	Existing	1.6	Sitting	5	Pass
		Proposed	4.3	Standing	16	Pass
		Future	4.2	Standing	16	Pass
71	Annual	Existing	1.8	Sitting	6	Pass
		Proposed	5.2	Standing	16	Pass
		Future	5.1	Standing	16	Pass
72	Annual	Existing	1.6	Sitting	5	Pass
		Proposed	3.2	Sitting	14	Pass
		Future	3.1	Sitting	15	Pass
73	Annual	Existing	1.8	Sitting	6	Pass
		Proposed	3.2	Sitting	10	Pass
		Future	3.2	Sitting	10	Pass
74	Annual	Existing	1.9	Sitting	6	Pass
		Proposed	2.5	Sitting	8	Pass
		Future	2.7	Sitting	8	Pass
75	Annual	Existing	2.0	Sitting	6	Pass
		Proposed	2.1	Sitting	6	Pass
		Future	2.5	Sitting	6	Pass
76	Annual	Existing	1.4	Sitting	4	Pass
		Proposed	3.1	Sitting	10	Pass
		Future	2.8	Sitting	10	Pass
77	Annual	Existing	1.7	Sitting	5	Pass
		Proposed	1.9	Sitting	6	Pass
		Future	1.9	Sitting	6	Pass
78	Annual	Existing	1.6	Sitting	5	Pass
		Proposed	2.2	Sitting	7	Pass
		Future	2.2	Sitting	7	Pass
79	Annual	Existing	1.8	Sitting	6	Pass
		Proposed	1.9	Sitting	6	Pass
		Future	1.8	Sitting	5	Pass
80	Annual	Existing	1.6	Sitting	5	Pass
		Proposed	3.7	Standing	19	Pass
		Future	3.7	Standing	19	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed (m/s)	Rating	Speed (m/s)	Rating
81	Annual	Existing	1.8	Sitting	6	Pass
		Proposed	4.2	Standing	21	Pass
		Future	4.2	Standing	21	Pass
82	Annual	Existing	1.5	Sitting	5	Pass
		Proposed	5.4	Standing	18	Pass
		Future	5.2	Standing	18	Pass
83	Annual	Existing	1.9	Sitting	6	Pass
		Proposed	6.3	Strolling	20	Pass
		Future	6.0	Strolling	19	Pass
84	Annual	Existing	1.8	Sitting	5	Pass
		Proposed	3.3	Sitting	13	Pass
		Future	3.3	Sitting	12	Pass
85	Annual	Existing	1.7	Sitting	5	Pass
		Proposed	2.4	Sitting	8	Pass
		Future	2.5	Sitting	8	Pass
86	Annual	Existing	1.9	Sitting	5	Pass
		Proposed	2.6	Sitting	8	Pass
		Future	2.8	Sitting	8	Pass
87	Annual	Existing	1.6	Sitting	5	Pass
		Proposed	2.8	Sitting	9	Pass
		Future	2.4	Sitting	8	Pass
88	Annual	Existing	1.4	Sitting	5	Pass
		Proposed	5.2	Standing	19	Pass
		Future	5.3	Standing	18	Pass
89	Annual	Existing	1.8	Sitting	6	Pass
		Proposed	7.3	Strolling	24	Exceeded
		Future	7.3	Strolling	24	Exceeded
90	Annual	Existing	2.1	Sitting	6	Pass
		Proposed	5.3	Standing	18	Pass
		Future	5.3	Standing	18	Pass
91	Annual	Existing	1.5	Sitting	5	Pass
		Proposed	5.8	Strolling	20	Pass
		Future	5.7	Strolling	19	Pass
92	Annual	Existing	4.3	Standing	13	Pass
		Proposed	7.2	Strolling	19	Pass
		Future	7.1	Strolling	21	Pass
93	Annual	Existing	4.8	Standing	14	Pass
		Proposed	7.8	Walking	22	Pass
		Future	8.4	Walking	21	Pass
94	Annual	Existing	4.9	Standing	17	Pass
		Proposed	6.9	Strolling	22	Pass
		Future	6.7	Strolling	20	Pass
95	Annual	Existing	4.1	Standing	13	Pass
		Proposed	7.0	Strolling	23	Pass
		Future	6.2	Strolling	23	Pass
96	Annual	Existing	4.0	Standing	13	Pass
		Proposed	7.3	Strolling	21	Pass
		Future	6.5	Strolling	18	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Season	Configuration	Wind Comfort		Wind Safety	
			Speed (m/s)	Rating	Speed (m/s)	Rating
97	Annual	Existing	4.6	Standing	15	Pass
		Proposed	6.2	Strolling	18	Pass
		Future	5.9	Strolling	17	Pass

Seasons	Months	Hours	Wind Comfort (m/s)		Wind Safety (m/s)	
Annual Comfort	January - December	6:00 - 22:00	≤ 3.5	Sitting	≤ 23	Pass
Annual Safety	January - December	0:00 - 23:00	≤ 5.5	Standing	> 23	Exceeded
			≤ 7.5	Strolling		
			≤ 10	Walking		
			> 10	Uncomfortable		

Configurations	
Existing	Existing site and surrounds
Proposed	Study building with existing surrounds
Future	Study building with existing surrounds and future buildings