7-9 CLOW STREET
DANDENONG, VIC

PEDESTRIAN WIND ASSESSMENT

RWDI # 2603851

29 APRIL 2026

SUBMITTED TO

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DOCUMENT CONTROL

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QUALITY ASSURANCE

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 Licence 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.

1. INTRODUCTION

RWDI Australia Pty Ltd (RWDI) was retained to undertake a pedestrian wind assessment of the Proposed Development located at 7-9 Clow Street, Dandenong, VIC. The development site is located within the Dandenong town centre and is bound by Clow Street to the south, low-rise buildings to the north and west, with open empty site and carpark areas to the north-east and east respectively. The location of the site within its broader existing surrounding context is shown in Image 1.

The Proposed Development is a 18-storey residential apartment building with a communal area on the ground floor and lobby entrance along Clow Street. The Proposed Development features 4 levels of carpark within the podium and rooftop private terraces areas on Level 5. Elevations of the Proposed Development are provided in Image 2.

This desk-based report provides a review of the potential wind conditions around the site and offers conceptual wind control measures and design advice suitable for early design of the development. The key outdoor pedestrian accessible areas of interest associated with the development include the pedestrian footpaths around the site, the entrances to the development, and the amenity spaces on ground and upper levels.

Image 1: Project Location and Surrounding Context
Source: Nearmaps

Image 2: Elevations of the Proposed Development (Left: South Right: West)

2. METHODOLOGY

Predicting wind speeds and occurrence frequencies around a building is a complex process, encompassing an assessment of factors such as building geometry, orientation, surrounding building heights and positions, terrain upstream, and the local wind climate. RWDI has amassed extensive expertise through conducting numerous wind-tunnel model studies and Computational Fluid Dynamics (CFD) assessments specifically focused on pedestrian wind conditions around buildings. This wealth of experience, complemented by comprehensive literature, facilitates a reliable and efficient desktop estimation of pedestrian wind conditions for concept designs without the need for wind-tunnel testing or detailed CFD studies.

Note that this approach delivers a preliminary assessment of potential wind conditions around the site. It offers a conceptual framework for wind control measures aimed at enhancing wind comfort, if and where necessary. To further validate and refine the predicted conditions discussed in this report or to fine-tune the suggested wind control measures, physical scale model tests in a boundary layer wind tunnel or CFD simulations will be required. These detailed studies offer a quantitative validation and enable a more detailed assessment, ensuring the accuracy and effectiveness of proposed wind control strategies.

Therefore, RWDI's assessment is based on the following:

- A review of the regional long-term meteorological data;
- Drawings of the development received by RWDI in April 2026;
- Wind-tunnel studies, CFD simulations, and desktop assessments undertaken by the microclimate team for projects in the region;
- Our engineering judgement, experience, and expert knowledge of wind flows around buildings[1, 2]; and,
- Assessment against a suitable criteria for pedestrian wind comfort and safety.

Note that other microclimate issues such as those relating to cladding and structural wind loads, door operability, building air quality, noise, vibration, etc. are not part of the scope of this assessment.

1. H. Wu and F. Kriksic (2012). "Designing for Pedestrian Comfort in Response to Local Climate", Journal of Wind Engineering and Industrial Aerodynamics, vol.104-106, pp.397-407.
2. C.J. Williams, H. Wu, W.F. Waechter and H.A. Baker (1999), "Experience with Remedial Solutions to Control Pedestrian Wind Problems", 10th International Conference on Wind Engineering, Copenhagen, Denmark.

3. METEOROLOGICAL DATA

Wind statistics recorded at the Moorabbin Airport were analysed for the period between 1995 and 2022 (inclusive) for the summer (Nov-Apr) and winter (May-Oct) seasons. The observation site is located approximately 10 km to the west of the project site and is a more accurate representation of the local wind climate in the region compared to other stations. Image 3 graphically depicts the directional distributions of wind frequencies and speeds recorded at the station. As can be observed, the primary regional winds originate from the north which are common throughout the year. The site is also exposed to the seasonal south-westerly coastal winds during the summers and westerly winds during winters.

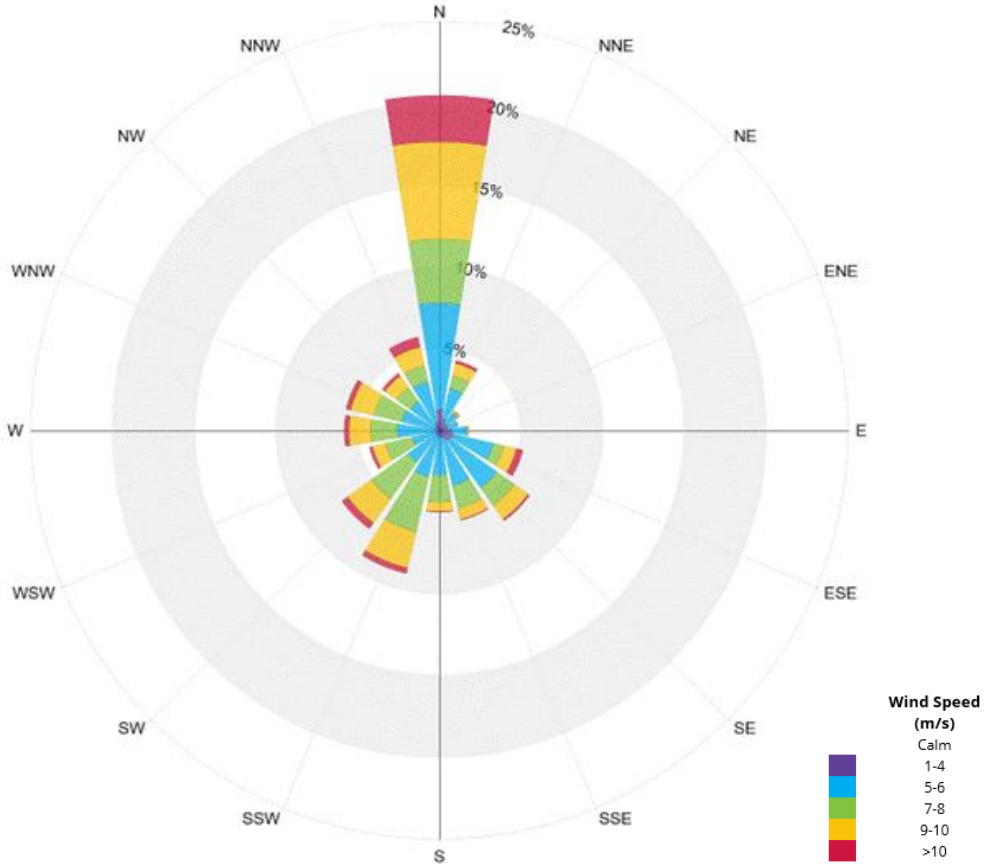

Image 3: Directional Distribution of Winds Approaching Moorabbin Airport
Recorded from 1995-2022

4. PEDESTRIAN WIND CRITERIA

4.1 Pedestrian Wind Safety Criterion

Pedestrian wind safety is associated with excessive gusts that can adversely affect a person's balance and footing. The *Greater Dandenong Planning Scheme Clause 58.04-4 – Standard D17* criteria for assessing wind safety uses a threshold of 3-second gusts exceeding 20 m/s for more than 0.1% (or 9 hours) per year. This has been assessed qualitatively in the current report.

4.2 Pedestrian Wind Comfort Criteria

The Pedestrian Wind Comfort Criteria as specified in the *Greater Dandenong Planning Scheme Clause 58.04-4 – Standard D17* sets out standards for compliance to facilitate a comfortable environment for designated pedestrian activities, as indicated in Image 4. The standards detail the requirements related to pedestrian wind comfort and safety, with the objective of mitigating adverse wind effects generated by buildings.

The wind comfort levels are categorised based on typical/intended pedestrian activity and are expressed in terms of their suitability for various levels of human activity. Wind comfort levels are categorised according to the typical/intended pedestrian activity such that higher the activity level, higher the wind speed tolerable while engaged in the activity. Wind conditions are assessed at a typical pedestrian chest height and are considered suitable for the intended use of the space if the associated winds are not expected to exceed the specified criterion for more than 20% of the time during the year. Wind control measures are recommended for areas where the occurrence frequencies of wind speeds are expected to exceed the threshold values for specific pedestrian activities.

It should be noted that these criteria for wind forces represent average wind tolerance and can be subjective with regional differences in wind climate and thermal conditions as well as variations in age, health, clothing, etc. also impacting and individual's perception of the wind climate. For a full assessment of comfort, a thermal comfort study is required.

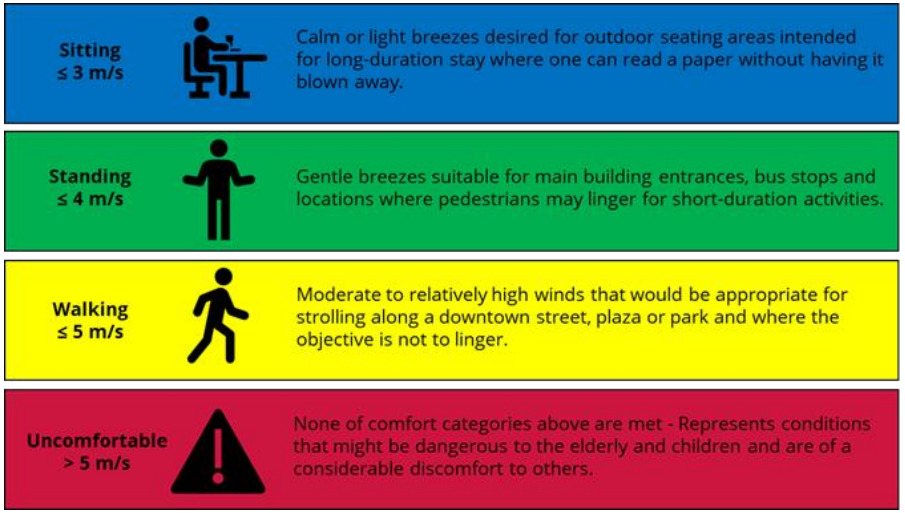

Image 4: Pedestrian Wind Comfort Criteria

5. RESULTS AND DISCUSSION

5.1 General Wind Flow around Buildings

In the following discussion of wind conditions on and around the Proposed Development, reference may be made to the following generalised wind flows (see Image 5). 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 for a prevailing wind direction, deep canopies close to ground level, wind screens / tall trees with dense landscaping, etc. can help reduce 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.

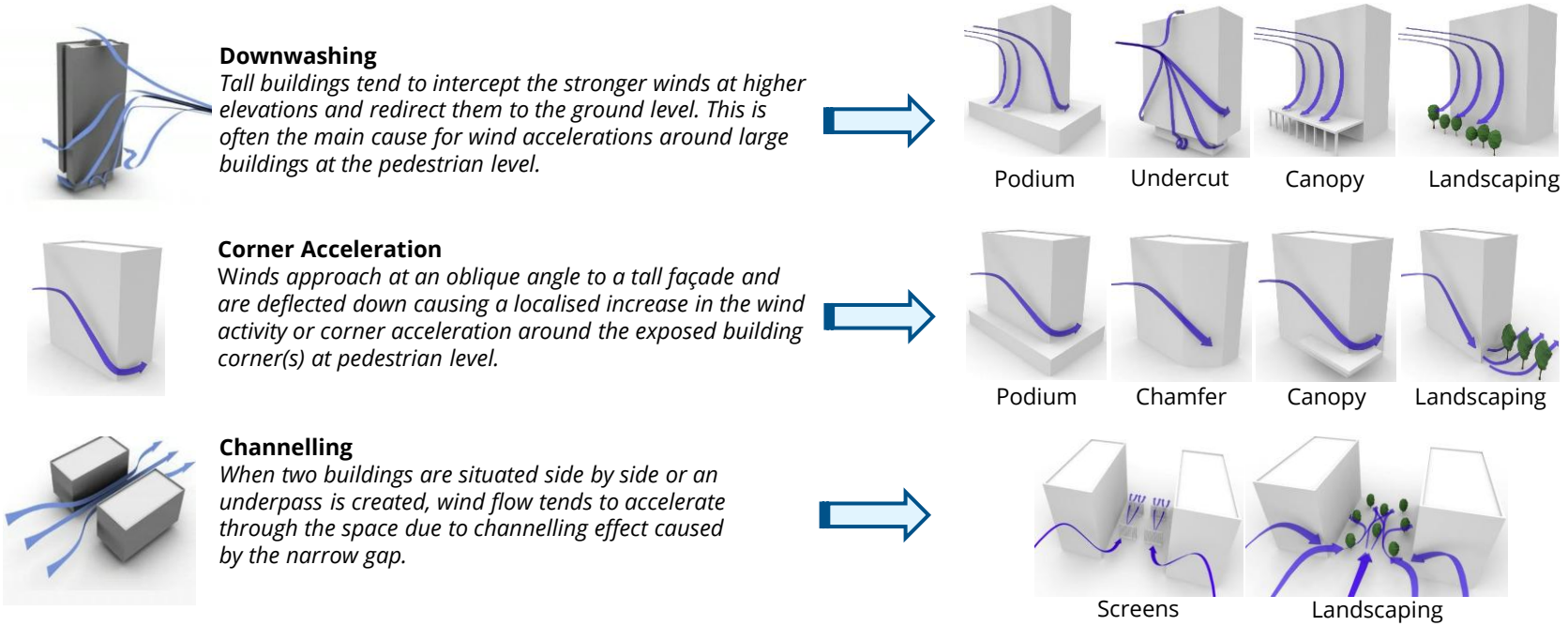

Image 5: General Wind Flow around Buildings with Examples of Common Wind Measures

5. RESULTS AND DISCUSSION

5.2 Site Exposure and Existing Site Conditions

The exposure of the site to regional prevailing winds is illustrated in Image 6 and discussed below:

1. To the south of the site lie a few mid-rise buildings amid predominantly low-rise buildings. These upwind buildings are expected to provide some buffering against the south-south westerly winds. However, the north-south aligned Thomas Street provides a path for these winds to channel towards the site.
2. Low-rise buildings make up the terrain in all other directions, with open areas nearby to the north and east from carpark areas and undeveloped land. This upwind terrain is expected to provide little or no buffer against the rest of the prevailing wind directions.

The existing site is currently an open car park area with the local wind environment predominantly driven by the existing site's exposure and the surrounding context as described above. Given the site's exposure and the surrounding context, wind impacts are expected to be moderate when considering the strength of the regional winds and the exposed nature of the site. As a result, overall wind conditions across the site are anticipated to remain within comfortable thresholds for walking use along the Clow Street footpath and within the carpark area throughout the year. High wind events exceeding comfort or safety criteria are not expected within or around the existing site areas.

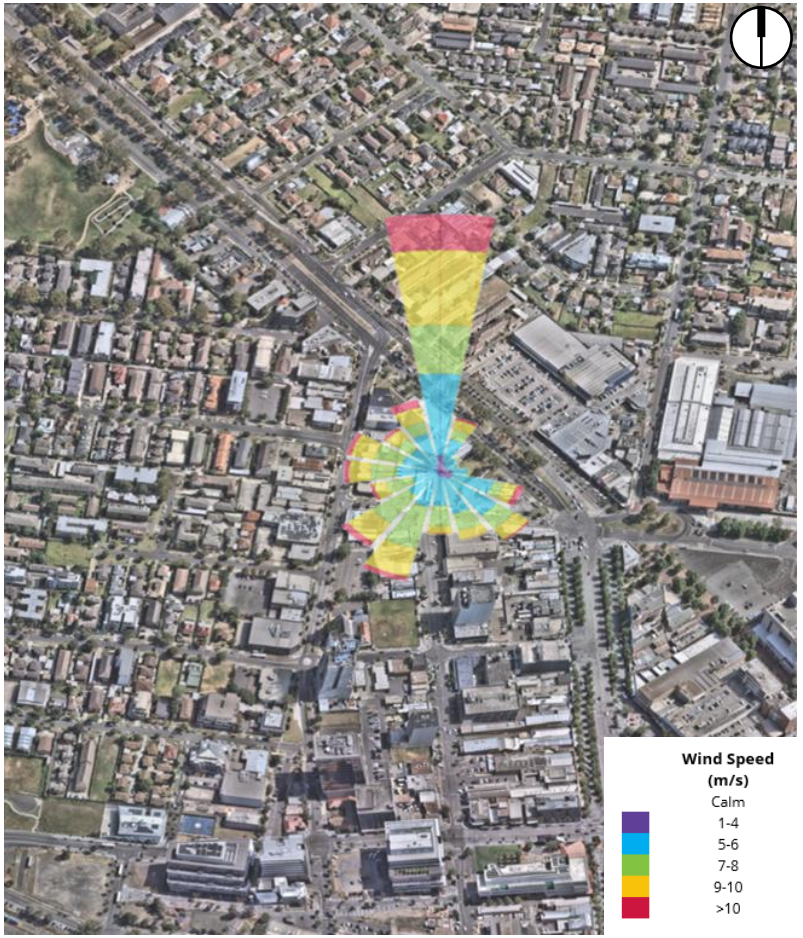

Image 6: Exposure of Site to Regional Prevailing Winds

5.3 Proposed Site Conditions and Recommendations

A summary of the expected wind conditions at trafficable areas and recommendations (examples shown in Image 7) are provided below:

5.3.1 Ground Level

The Clow Street frontage includes the lobby entrance and a retail entrance along the southern aspect of the Proposed Development. This area benefits from shielding of the predominant northern winds by the building itself.

The prevailing south-south-westerly winds have the potential to impact the ground level areas along Clow Street directly and also downwash from the southern façade aspects of the Proposed Development above. However, the offset of the southern tower aspects from the podium and the narrower southern façade are expected to reduce the strength of the down washed winds.

The prevailing westerly sector winds also have the potential to impact the areas along Clow Street due to the exposed western façade aspects and the lack of a setback in tower form from the western podium perimeter.

Expected Conditions:

Standing to Walking along Clow Street.

Recommendations:

- Impermeable awning along the Clow Street frontage of the site, supplemented with densely foliating tree planting where possible.
- Recess lobby and retail entrances into the building form.

5.3 Proposed Site Conditions and Recommendations

5.3.2 Private Terraces and Balconies

The private terraces of the Proposed Development on Level 5 are located along the northern, eastern and southern aspects of the tower massing. The terraces along the northern and eastern aspects are generally exposed to the direct prevailing winds due to their large trafficable spaces that allow winds to reattach after flowing over the perimeter balustrade. These terraces are also open to downwash flows from the tower aspects above, particularly along the northern and southern terraces, as well as corner accelerated flows at the north-western and south-eastern corners.

All other private balconies distributed throughout the height of the proposed building feature either a recessed single aspect design or include impermeable walling for a significant portion of an exposed aspect. These design features ensure calm wind conditions in the covered areas throughout the year and are expected to be suitable for passive activities. Corner balconies that have a partial enclosure of an aspect with impermeable walling can experience corner accelerated flows confined to small zones at the balcony edges but usage is not expected to be impacted.

Expected Conditions:

- Standing to Uncomfortable at Level 5 Private Terraces.
- Sitting to Standing at all other balconies.

Recommendations:

- Level 5 Private Rooftop Terraces:
  - Impermeable awning along the northern and eastern aspects.
  - Impermeable intertenancy screening at least 1.8m tall.
  - Extension of the full height impermeable walls at the north-western and south-eastern corners of the building.

5.3 Proposed Site Conditions and Recommendations

5.3.3 Level 18 Rooftop Communal Area

The Level 18 rooftop communal area is predominantly exposed to the prevailing northerly winds which are expected to flow over the perimeter screening to reattach within the terrace are. These winds are expected to stream through the open space and accelerate through to the south creating uncomfortable wind conditions. These flows can also accelerate around the north-western corner of the lift overrun to impact the north-western area of the terrace as well. Due to the height of the communal area these winds are expected to be particularly strong.

Expected Conditions:

- Walking to Uncomfortable.

Recommendations:

- Increase perimeter screening to at least 1.8m height.
- Include planters interspersed throughout the terrace area with densely foliating evergreen planting, reaching at least 1.5 m in total height.
- Include localised impermeable screening around any areas proposed for seating on multiple aspects approximately 1.5 m in height.

Image 7: Examples of Wind Control Measures

(Screening, Awnings and Recessed Entrance)

6. SUMMARY

Wind conditions on and around the Proposed Development located at 7-9 Clow Street in Dandenong, VIC are discussed in this report. The qualitative assessment is based on the review of local wind climate and the current design of the Proposed Development. The impact of the surrounding buildings and the local land topography has also been considered. The assessment is based on RWDI's experience with wind tunnel testing of earlier designs of the development and of similar buildings within the region.

Conceptual wind flows around the Proposed Development are discussed in the report for the prevailing wind directions to identify key wind sensitive areas. The review indicates that wind conditions within the public domain are unlikely to significantly change from the existing wind conditions. The proposed development incorporates design features that will reduce overall wind impacts. These include setbacks along the various aspects of the tower, blade walls at the base of the tower and partially along corner balconies. However, higher winds can occur on the Level 5 and Level 18 rooftop terraces of the development due to their exposure to direct winds as well as down wash and corner acceleration effects. Conceptual mitigation strategies have been provided in the report which include impermeable wrap around awnings, impermeable screening, planter boxes and blade wall extensions.

Purposely designed mitigation measures, along the lines of the concepts described above, could be expected to reduce local wind speeds. The effect of including such measures would be to better align the wind conditions with the intended use of the various outdoor spaces in and around the site. The wind mitigation strategy should be developed and refined through further consultation, potentially involving wind tunnel testing or computational fluid dynamics (CFD) simulations.

7. APPLICABILITY OF ASSESSMENT

The assessment discussed in this report pertains to the Proposed Development in accordance with the drawings and information received in April 2026. In the event of any significant changes to the design, construction or operation of the building or addition of surroundings in the future, RWDI could provide an assessment of their impact on the wind conditions discussed in this report. It is the responsibility of others to contact RWDI to initiate this process.

Statement of Limitations

This report entitled '*7-9 Clow Street: Pedestrian Wind Assessment*', dated 29 April 2026, was prepared by RWDI Australia Pty Ltd ("RWDI"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). The conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared. Because the contents of this report may not reflect the final design of the Project or subsequent changes made after the date of this report, RWDI recommends that it be retained by Client during the final stages of the project to verify that the results and recommendations provided in this report have been correctly interpreted in the final design of the Project.

The conclusions and recommendations contained in this report have also been made for the specific purpose(s) set out herein. Should the Client or any other third party 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.