

ENVIRONMENTAL WIND CONDITIONS STUDY



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8 April 2026

Prepared for:
Outline Projects

Report: 24143A-WT-ENV01

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SUMMARY

Wind-tunnel studies have been conducted to quantify the pedestrian wind safety and comfort conditions for the proposed 846-858 Glenferrie Road development, Hawthorn. The wind-tunnel studies were completed in one of MEL Consultants' boundary layer wind tunnel facility for 360 degrees of wind direction at 22.5-degree increments. The testing was performed using a 1/400 scale model of the proposed development based on drawings by Wardle Architects, received variously up to February 2026. The model was inserted into a proximity model that included topography and existing and under construction buildings out to a minimum radius of 300 m.

The model of the development within surrounding buildings, was tested in a simulated upstream boundary layer of the natural wind to determine likely environmental wind conditions. Mean and peak wind speeds were measured at locations within and around the development using hot-wire anemometers. The wind speed ratios determined from the wind-tunnel measurements were combined with local wind climate data for the site to determine equivalent full-scale wind conditions around the proposed development. These full-scale wind conditions were compared against the City of Boroondara Planning Scheme wind safety and comfort criteria. These criteria are based on the 3 second gust wind speed for pedestrian safety and the Gust Equivalent Mean (GEM) wind speed for pedestrian comfort. The wind conditions for the Existing Configuration were also presented to allow the assessment of the wind impacts of the proposed development. The study did not include the effects any landscaping or street trees.

The findings of this study are as follows:

Ground Level

- All Test Locations around the proposed development have been shown to satisfy the pedestrian safety and walking comfort criteria at a minimum.
- The wind conditions at the building entrances have been shown to satisfy the recommended standing comfort criterion at a minimum.



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Upper Levels Terraces

- The wind conditions on the upper level terraces (some with wind mitigation strategies applied) have been shown to satisfy the walking comfort criteria at a minimum.
- Recommendations for wind mitigation strategies for some upper level terraces have been made based on the wind conditions and wind mitigation strategies used for those, or nearby, terraces.

In summary, the wind conditions around and within the proposed development with additional wind mitigation strategies have been shown to satisfy the wind safety and comfort criteria defined in the City of Boroondara Planning Scheme.



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**846-858 GLENFERRIE ROAD, HAWTHORN
ENVIRONMENTAL WIND TUNNEL MODELLING**

MEL CONSULTANTS REPORT NO:

24143A-WT-ENV01

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1. INTRODUCTION

The proposed 846-858 Glenferrie Road development will be a 16 level mixed use building located on a site on Glenferrie Road between Barkers Road and Churchill Grove, in Hawthorn, as shown in Figure 1.

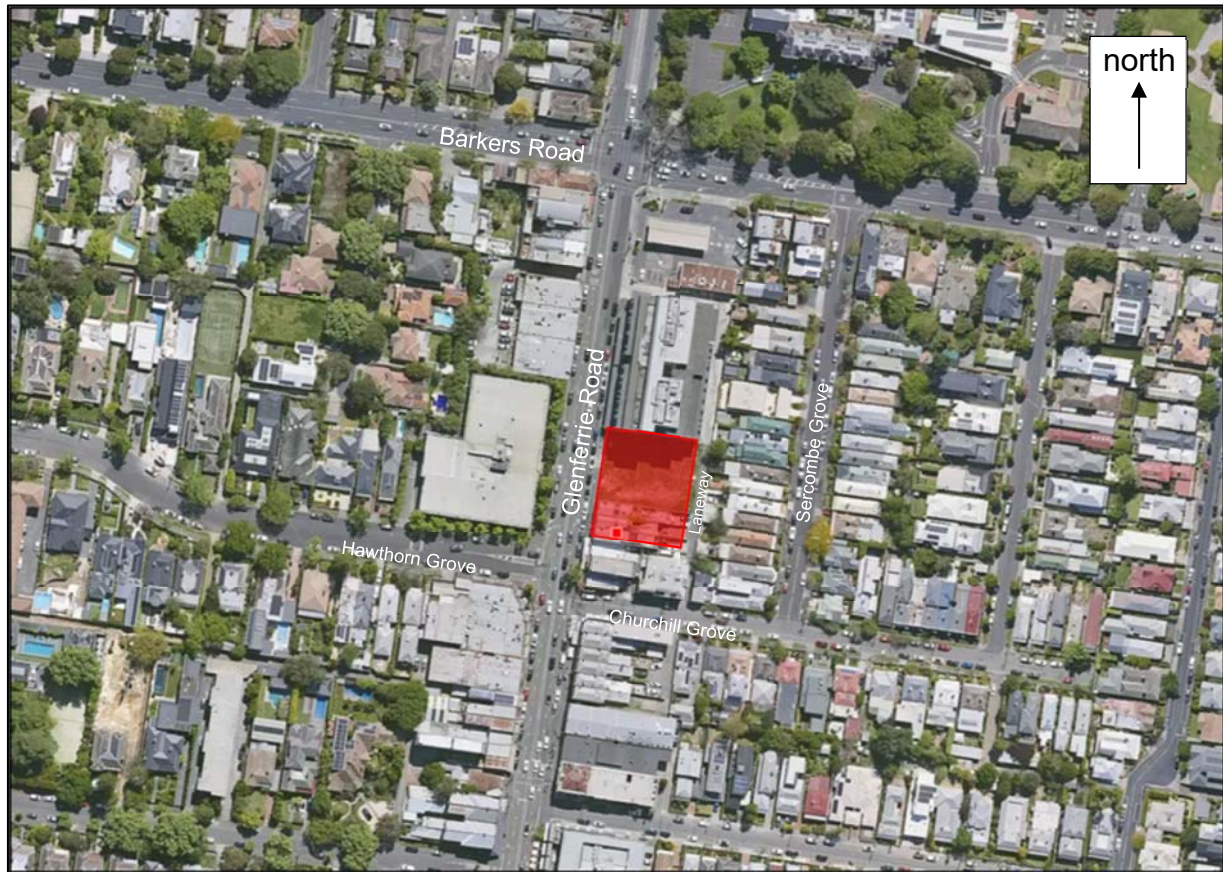


Figure 1: Satellite imagery showing the proposed 846-858 Glenferrie Road development site (Highlighted in Red)

A wind tunnel study was commissioned by Outline Projects to examine the wind conditions for the proposed development and, if necessary, to develop wind mitigation strategies. This report details the environmental wind assessment of the 1/400 scale model of the proposed development within a proximity model of surrounding buildings out to a minimum radius of 300 m. These tests were carried out in one of MEL Consultants' 400 kW Boundary Layer Wind Tunnels during February 2026. Additional wind tunnel testing of some upper level terraces were carried out in March 2026 to develop wind mitigation strategies on these terraces.

2. WIND TUNNEL MODEL

A 1/400 scale model of the 846-858 Glenferrie Road development was constructed from architectural drawings by Wardle Architects, dated up to February 2026. The model of the 846-858 Glenferrie Road development was inserted into a proximity model of surrounding buildings and terrain out to a minimum radius of 300 m. No existing or proposed landscape trees were included within the model. Photographs of wind tunnel model inserted into the proximity model are presented in Figures 2a to 2c.

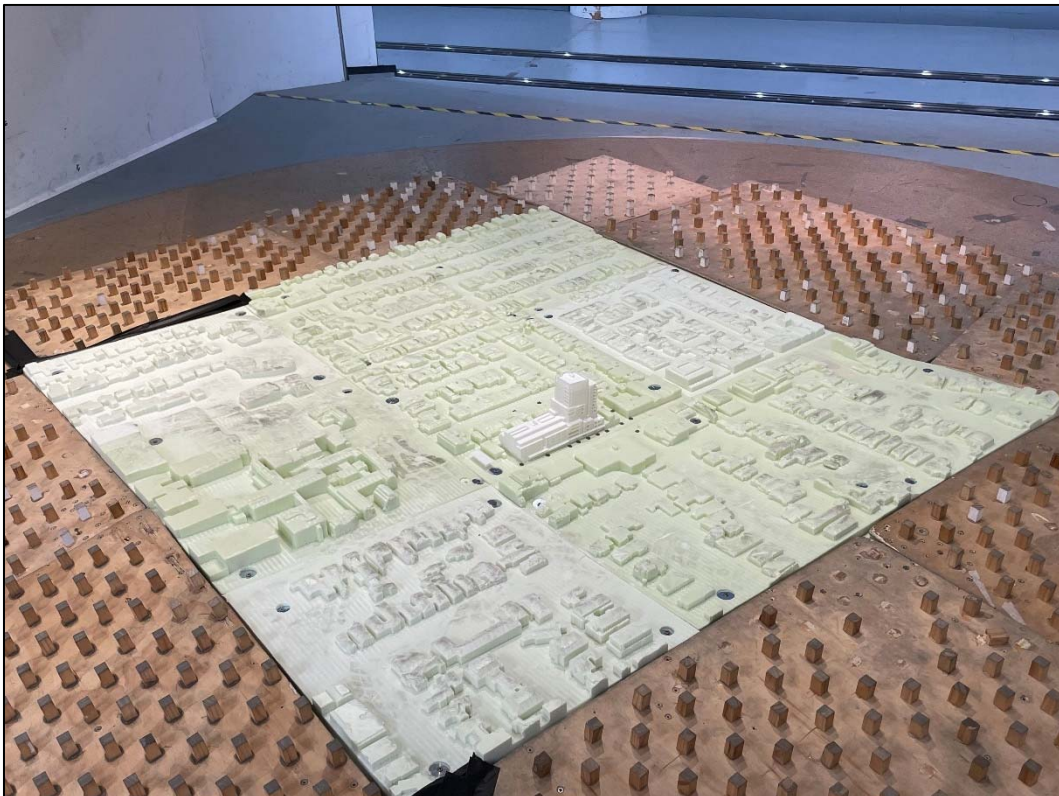


Figure 2a - View from the northwest of the 1/400 scale model of the proposed 846-858 Glenferrie Road development in the wind tunnel.

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Figure 2b - Close-up view from the northeast of the 1/400 scale model of the proposed 846-858 Glenferrie Road development in the wind tunnel.



Figure 2c - Close-up view from the southwest of the 1/400 scale model of the proposed 846-858 Glenferrie Road development in the wind tunnel.

3. ENVIRONMENTAL WIND CRITERIA

The advancement of wind tunnel testing techniques, using large boundary layer flows to simulate the natural wind, has facilitated the prediction of wind speeds likely to be induced around a development. To assess whether the predicted wind conditions are likely to be acceptable or not, the City of Boroondara Planning Scheme wind safety and comfort criteria will be used. The criteria are as follows:

Unsafe wind conditions means the annual maximum 3 second gust wind speed which exceeds 20 metres/second with the probability of exceedance of 0.1% from any wind direction considering at least 16 wind directions with the corresponding probability of exceedance percentage.

Comfortable wind conditions means hourly mean wind speed or gust equivalent mean speed from all wind directions combined with probability of exceedance less than 20% of the time, equal to or less than:

- 3 metres/second for sitting areas
- 4 metres/second for standing areas
- 5 metres/second for walking areas

Mean wind speed means the maximum of:

- Hourly mean wind speed, or
- Gust equivalent mean wind speed (3 second gust wind speed divided by 1.85)

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The above comfort criteria are pass/fail criteria which assess the integrated probability of all wind directions to determine whether a location passes or fails the threshold criterion. The safety criterion is a pass/fail criterion based upon exceedance of the wind speed for any one wind direction.

The wind condition must be assessed within a distance of half the greatest length of the building, or half the total height of the building, whichever is greater.

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The City of Boroondara Planning Scheme guidelines do not provide any methodology or worked example as how to obtain the 'from all wind directions combined'. Therefore, to obtain the probability for all wind directions combined we will apply the methodology described in Melbourne (1978) to determine the probability for all wind directions. The guidelines use the definition of mean wind speed as based on the hourly wind speed so the probabilities will be determined from the hourly wind data for an applicable automatic weather station for the Melbourne Airport. The probability data used have been corrected for the approach terrain at the location of the automatic weather station and referenced to 10m in Terrain Category 2. This is the standard reference height of AS/NZS1170.2:2021.

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3.1 Recommended Comfort Criteria

The following wind criteria are suggested for the proposed 846-858 Glenferrie Road development:

- | | |
|-----------------------------|--------------------|
| • Pedestrian transit areas | Walking Criterion |
| • Building entrances | Standing Criterion |
| • Private outdoor terraces* | Walking Criterion* |

*The wind conditions at outdoor terraces have been suggested to satisfy the walking criterion as these terraces could be considered elective when external conditions would be perceived as acceptable for the desired activity. Users of these terraces will need to be educated on the wind effects and loose objects should not be left unattended in outdoor areas.

The activation of the public realm external to the site would depend on the existing wind conditions in the streetscapes that are often beyond the control of the proposed development. For cases where the existing wind conditions in the public realm external to the site fail the safety and walking criteria, then the proposed Development should not have any additional adverse wind effects in these areas.

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4. EXPERIMENTAL TECHNIQUE

The building model was tested in a model of the natural wind generated by flow over roughness elements augmented by vorticity generators at the beginning of the wind tunnel working section. The approach Terrain Categories have been assessed based on the definitions in AS/NZS1170.2: 2021 and has been determined as Terrain Category 3 (suburban terrain) for all wind directions.

The velocity and turbulence profiles for the Terrain Category are provided in Appendix A.

Hot-wire anemometers and/or Irwin probes were used to measure the local wind speeds at locations in and around the development. The positions of the measurement locations satisfied the minimum study radius from the development as required by the Planning Scheme. Some of the positions of the measurement locations were outside the minimum radius where significant pedestrian spaces were identified. The minimum radius examined was half the building height or width, whichever is greater, measured from the site boundaries. The Test Locations in the surrounding streetscapes, and upper-level terraces are shown in Figures 3a to 3k.

The wind tunnel velocity measurements were made for an equivalent 1-hour period in full scale and filtered to determine the mean and an equivalent full scale 3 second gust wind speed for 16 wind directions.

The following velocity ratios were measured in the wind tunnel:

$$\begin{aligned} \text{mean } \bar{V}_R &= \frac{\bar{V}_{local}}{\bar{V}_{300m}} \\ \text{gust } \hat{V}_R &= \frac{\hat{V}_{local}}{\bar{V}_{300m}} \end{aligned}$$

where:

$\bar{V}_{local}$ is the mean velocity

$\hat{V}_{300m}$ is the gust velocity

V_{300m} is the velocity at the free-stream reference height of 300m

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These measured velocity ratios were combined with a statistical model of the local wind climate that relates wind speed to a probability of exceedance. The model of the wind climate also includes the directional variation of wind speed (frequency). The measured wind speeds are assessed against the pedestrian safety and the pedestrian comfort criteria. The pedestrian safety criterion is applied to the annual hourly maximum wind gusts for each wind direction. The pedestrian comfort criteria are based on all wind directions combined (i.e. summation of exceedances across 360° of wind direction) and the pedestrian comfort criterion utilises the maximum of either the hourly mean wind speed, or the gust equivalent mean wind speed (GEM) as follows

$$\text{Mean wind speed for comfort criterion} = \max \left(\bar{V}, \frac{\hat{V}}{1.85} \right)$$

where:

$\bar{V}$ is the mean wind speed

$\hat{V}$ is the 3-second gust wind speed

$\frac{\hat{V}}{1.85}$ is the gust equivalent mean (GEM) velocity

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The three model configurations examined in this study are as follows:

1) *Existing Configuration*

- Existing surrounding proximity model
- Existing 3-storey building on site

2) *Proposed Configuration*

- Existing surrounding proximity model
- Proposed 846-858 Glenferrie Road building

3) *Proposed Configuration with wind mitigation strategies*

- Existing surrounding proximity model
- Proposed 846-858 Glenferrie Road building with wind mitigation strategies

The wind tunnel study has been undertaken to exceed the requirements of the Australasian Wind Engineering Society Quality Assurance Manual for Wind Tunnel Studies (2019).

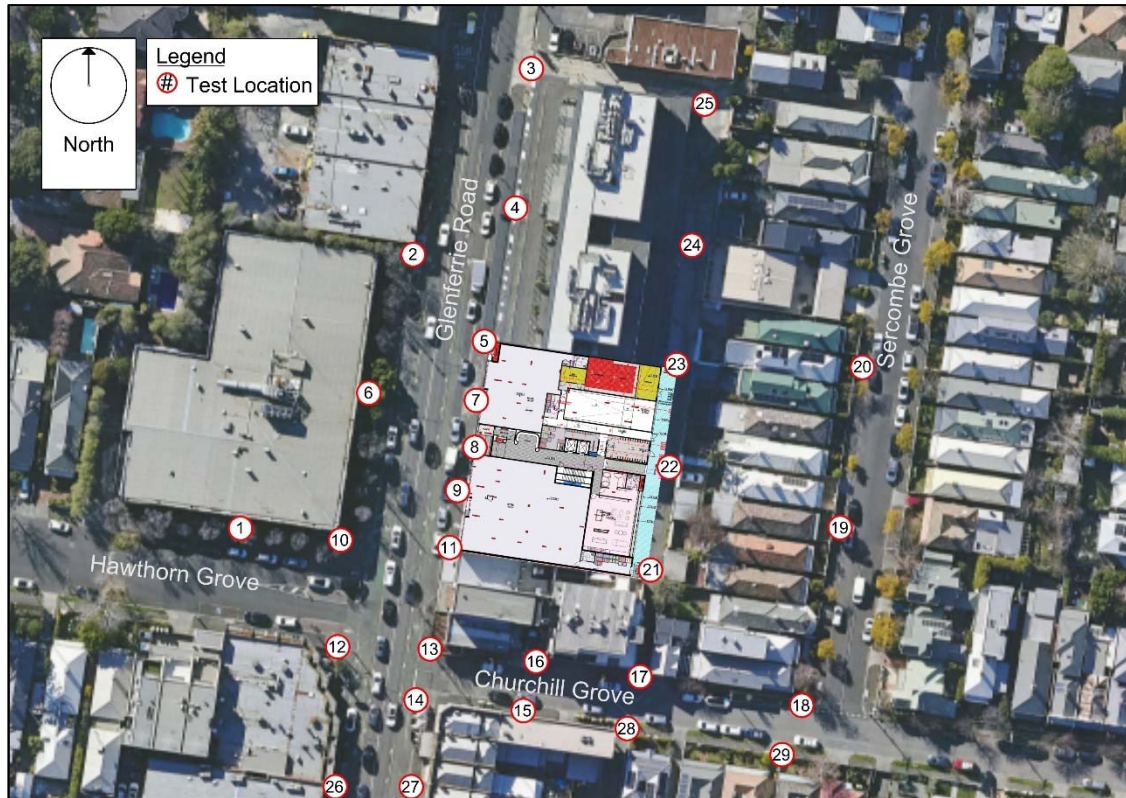


Figure 3a - Test Locations in the streetscapes surrounding the proposed 846-858 Glenferrie Road development.

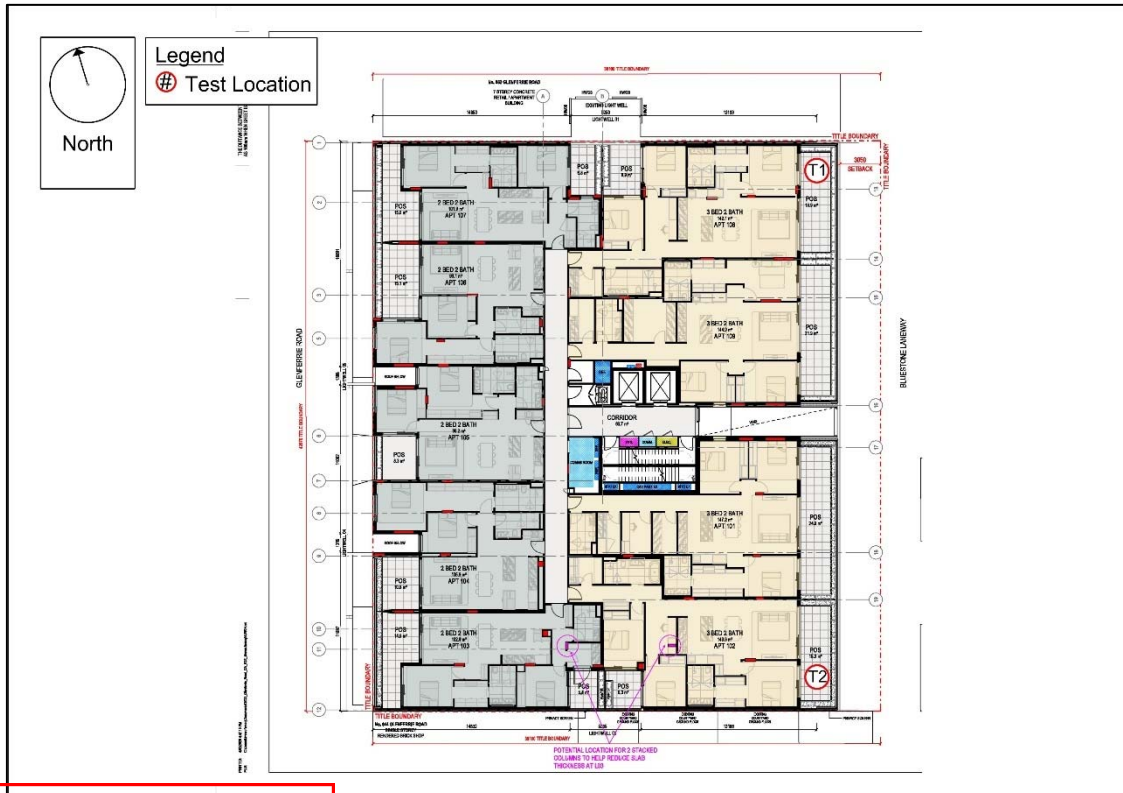


Figure 3b - Test Locations on Level 1 of proposed 846-858 Glenferrie Road development.

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Figure 3c - Test Locations on Level 2 of proposed 846-858 Glenferrie Road development.

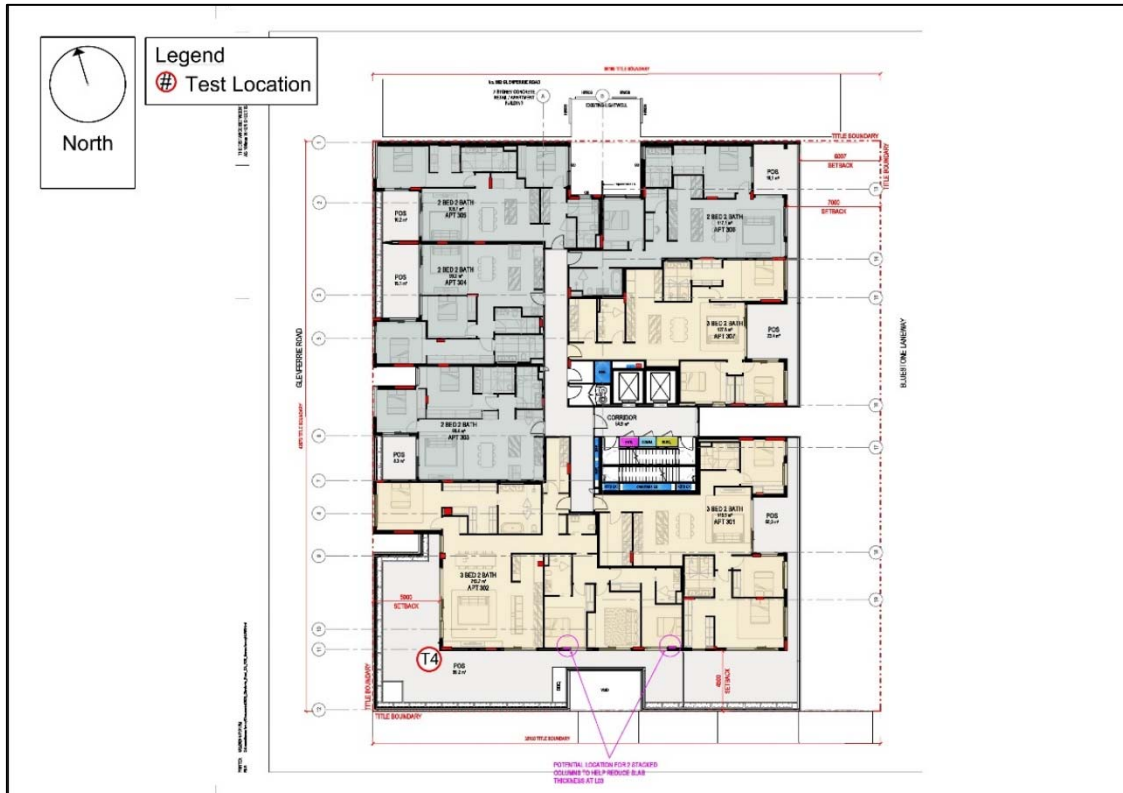
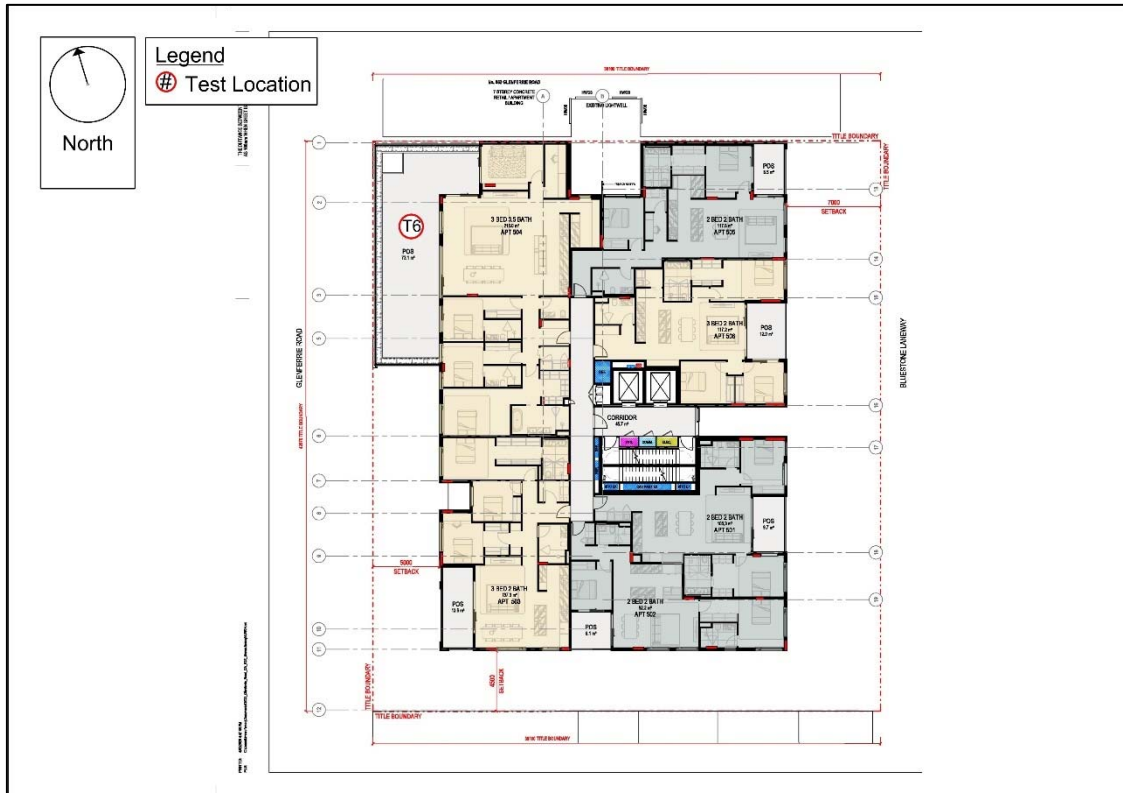
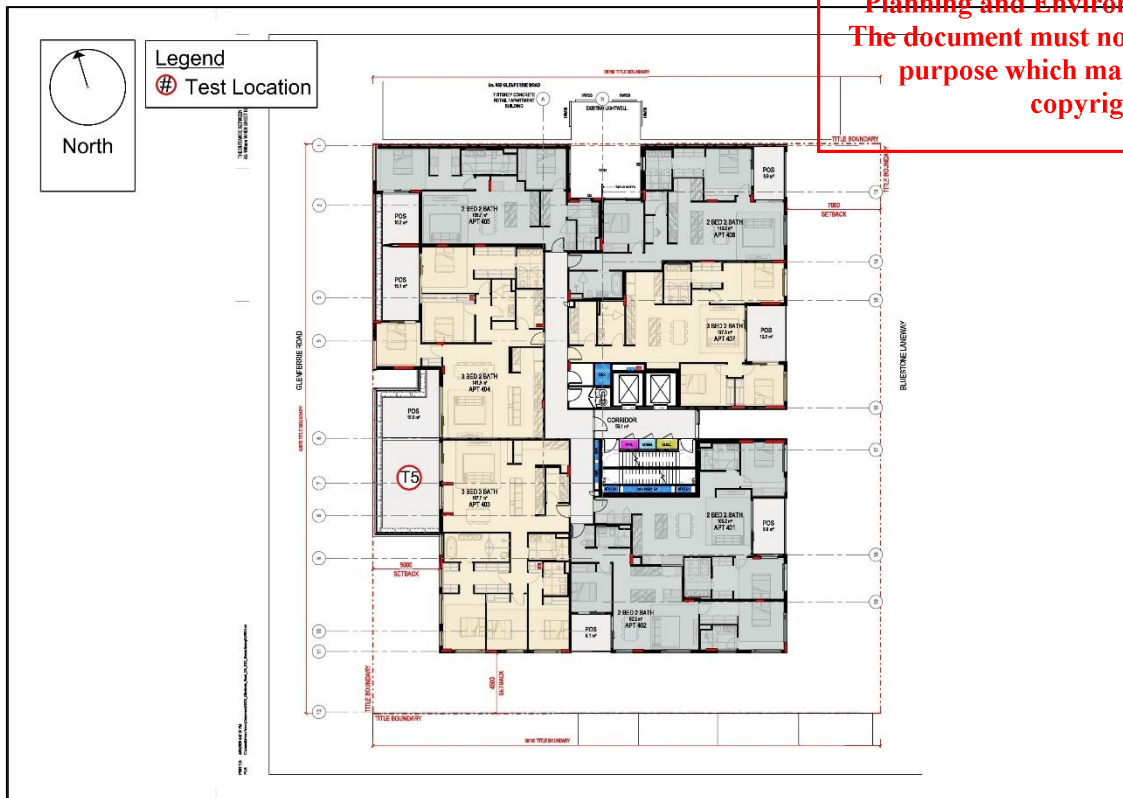


Figure 3d - Test Locations on Level 3 of proposed 846-858 Glenferrie Road development.



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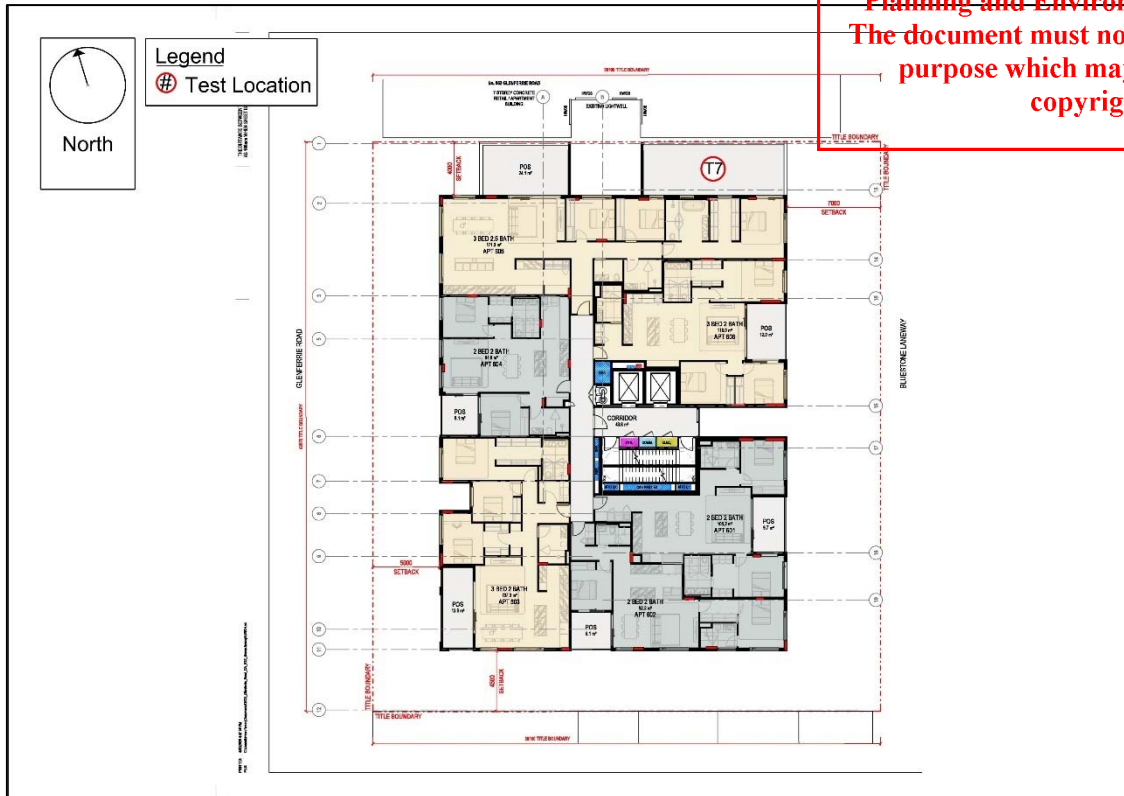


Figure 3g - Test Locations on Level 6 of proposed 846-858 Glenferrie Road development.

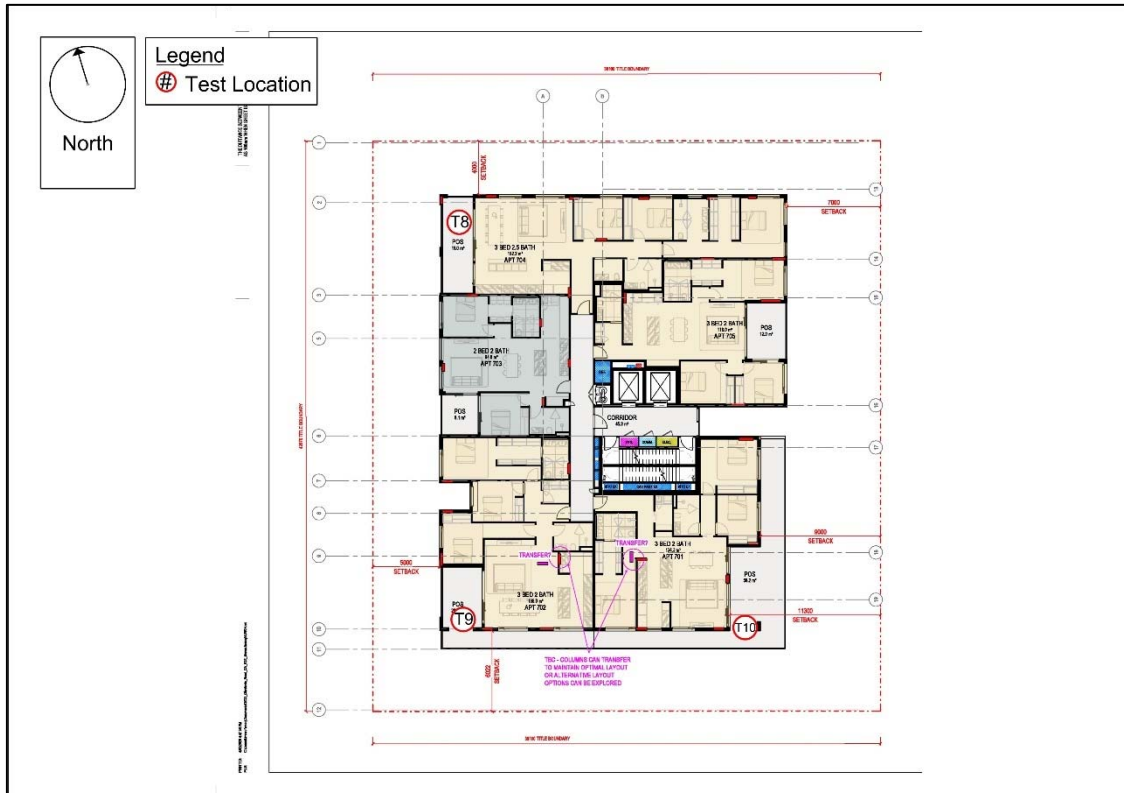


Figure 3h - Test Locations on Level 7 of proposed 846-858 Glenferrie Road development.

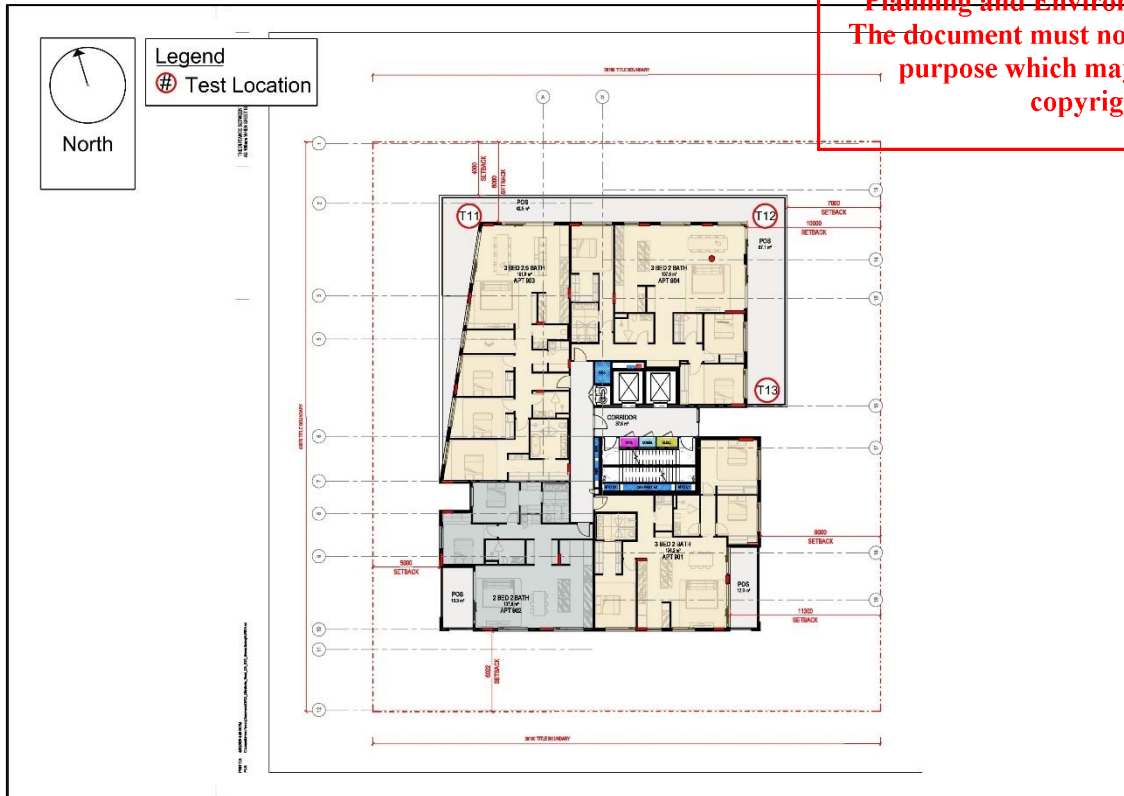


Figure 3i - Test Locations on Level 9 of proposed 846-858 Glenferrie Road development.

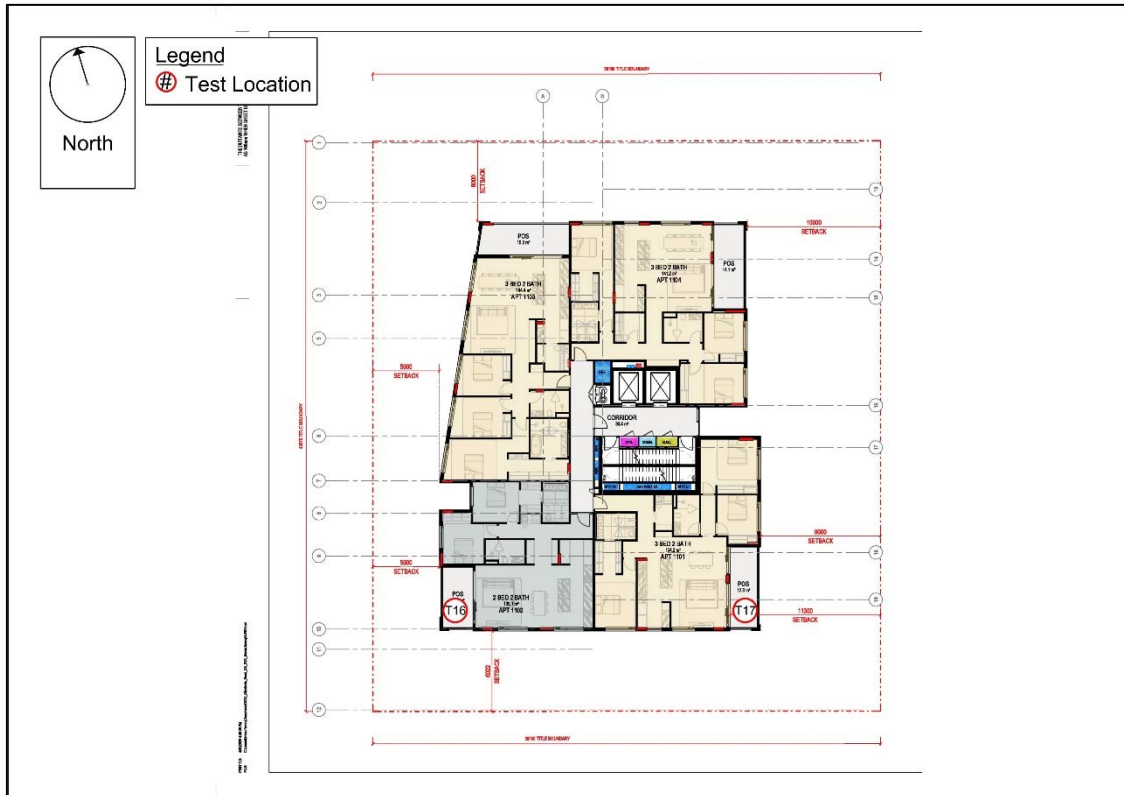


Figure 3j - Test Locations on Level 13 of proposed 846-858 Glenferrie Road development.

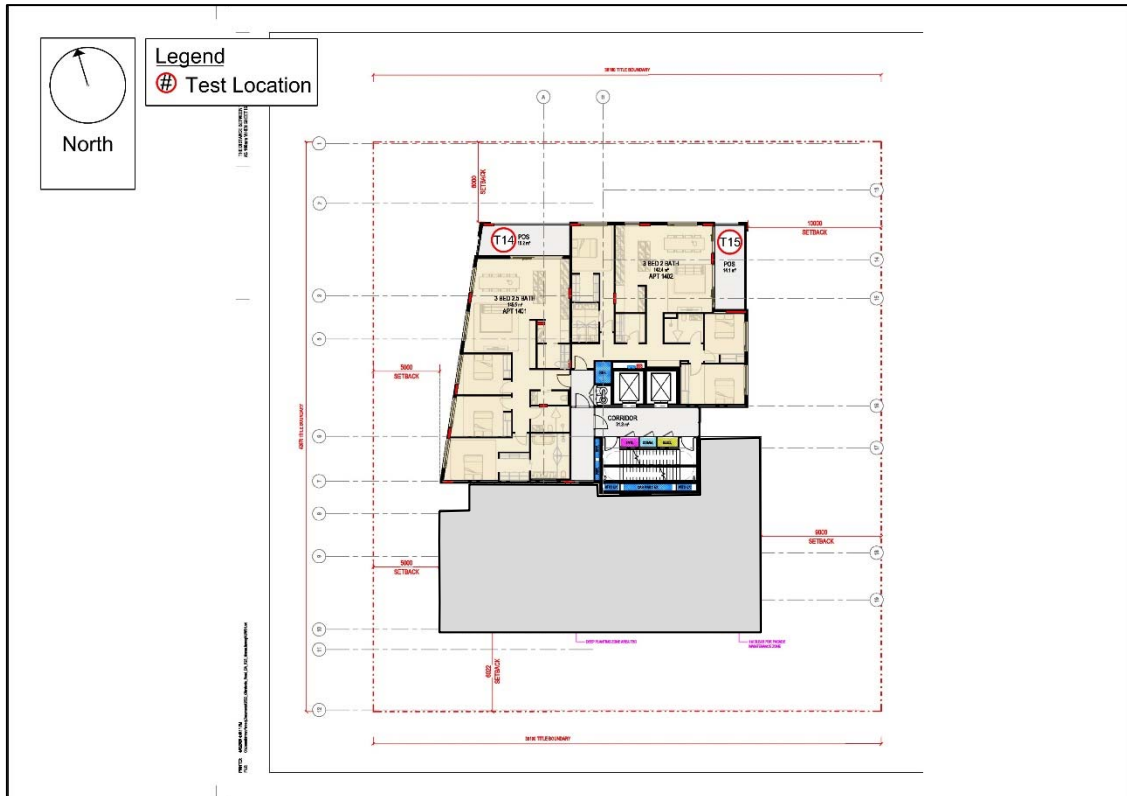


Figure 3k - Test Locations on Level 14 of proposed 846-858 Glenferrie Road development.

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5. DISCUSSION OF RESULTS

The assessment of the wind safety and comfort criteria are presented in Tables 1 and 2. The tables provide details of the annual exceedances and mean wind speed for wind comfort, peak wind speed for wind safety, and the result are compared against the recommended wind comfort criteria.

The wind conditions for the Existing Configuration have been provided, where applicable, for comparison purposes.

5.1 Wind Safety Assessment

There are no exceedances of the safety criterion for the Existing and Proposed Configurations for ground level test locations.

The safety criterion was shown to be satisfied on most upper-level terraces, although there were some northern and western corner terraces on or above Level 7 that were shown to have wind conditions that exceeded the safety criterion. It was shown that by applying wind amelioration strategies, such as sealing one open aspect of the terrace, localised screening and/or canopies, the wind conditions at these critical locations could be improved to satisfy the safety criterion.

The annual maximum 3 second gust wind speed from each of the 16 wind directions are presented in polar plots and compared against the safety criterion in Appendix B.

5.2 Wind Comfort Assessment

The assessment of the pedestrian wind comfort for the Existing and Proposed Configurations are summarised diagrammatically as follows:

Figure 4	Existing Configuration
Figures 5a to 5k	Proposed Configuration
Figures 6a to 6d	Proposed Configuration with wind mitigation strategies

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The figures present the pedestrian comfort criteria satisfied using a colour code system, where different colours have been used to represent the wind criteria satisfied at each Test Location.

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5.2.1 Ground Level Streetscapes

The wind conditions for the Proposed Configuration at all Test Locations in the surrounding streetscapes of the development have been shown to satisfy the standing and walking comfort criteria.

5.2.2 Ground Level Building Entrances

For the Proposed Configuration, the wind conditions near the entrances along Glenferrie Road (Test Location 7, 8 and 9) and in the laneway to the east of the development (Test Location 22) have been shown to satisfy the recommended standing criterion or better.

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5.2.3 Upper Levels Terraces

The wind conditions on the terraces up to, and including Level 5 (Test Locations T1 to T6) have been shown to satisfy the walking comfort criterion or better.

It has been shown that the wind conditions on the following terraces exceed the safety criterion:

- the western corners of Level 7 (Test Locations T8 and T9)
- the northern corners of the terrace on Level 9 (Test Locations T11 and T12)
- the southwest corner terrace of Level 13 (Test Location T16)
- the northeast corner terrace of Level 14 (Test Location T15)

Various wind mitigation strategies were tested to improve wind conditions on some of the critical terraces. These wind mitigation strategies and their efficacy have been summarised as follows:

- Level 7 - sealing the northern aspect of the northwest corner terrace (see Figure 6a) was shown to improve the wind conditions on this terrace (Test Location T8) to satisfy the standing comfort criterion and the safety criterion.
- Level 9 - a combination of wind mitigation strategies (e.g. localised screens and/or canopies, see Figure 6b) would produce improved wind conditions at Test Locations T11 and T12 that satisfy the walking comfort criterion or better and the safety criterion.
- Level 13 - sealing the southern aspect of the terrace (see Figure 6c) was shown to produce improved wind conditions on this terrace (Test Location T16) that satisfy the sitting comfort criterion and the safety criterion.
- Level 14 - sealing the northern aspect of the northeast terrace (see Figure 6d) was shown to produce improved wind conditions at Test Location T15 that satisfy the sitting comfort criterion and the safety criterion.

The wind conditions on other terraces tested on Level 7 (Test Location T10), Level 9 (Test Location T13), Level 13 (Test Location T17) and Level 14 (Test Location T14) were shown to satisfy the safety criterion and the walking comfort criterion or better.

Based on the likely similarities of wind conditions to nearby tested terraces, the following recommendations have been made as follows to achieve wind conditions that satisfy the walking comfort criterion or better and the safety criterion:

- the private northwest corner terraces on Levels 7 and 8 would require the northern open aspect to be sealed.
- the private southwest corner terraces on Levels 5 to Level 13 would require the southern open aspect to be sealed.
- the private northeast corner terraces on Levels 14 and 15 would require the northern open aspect to be sealed.

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Table 1: Pedestrian Wind Comfort and Safety – Ground Level Streetscapes

Configuration		Wind Criteria							
		Comfort						Safety	
		Yearly exceedence of given wind speed			Mean wind speed (exceeded 20% of year)	Recommended criterion	Result (compared against Recommended criterion)	Peak wind speed (of all wind directions)	Result (compared against Safety wind speed of 20m/s)
		Sitting (3m/s)	Standing (4m/s)	Walking (5m/s)					
		%	%	%	m/s		Pass/Fail	m/s	Pass/Fail
1	Proposed Configuration	22.2%	7.7%	2.0%	3.1	Walking	Pass	10.9	Pass
	Existing Configuration	19.2%	6.0%	1.6%	3.0	Walking	Pass	12.3	Pass
2	Proposed Configuration	23.0%	8.3%	2.1%	3.2	Walking	Pass	11.2	Pass
	Existing Configuration	32.8%	15.3%	6.0%	3.7	Walking	Pass	15.3	Pass
3	Proposed Configuration	31.3%	17.6%	8.7%	3.8	Walking	Pass	17.1	Pass
	Existing Configuration	32.4%	19.4%	9.7%	3.9	Walking	Pass	18.2	Pass
4	Proposed Configuration	21.1%	8.6%	3.3%	3.1	Walking	Pass	14.3	Pass
	Existing Configuration	26.5%	13.1%	5.7%	3.4	Walking	Pass	15.0	Pass
5	Proposed Configuration	20.8%	7.6%	2.6%	3.0	Walking	Pass	12.5	Pass
	Existing Configuration	39.4%	21.7%	9.9%	4.1	Walking	Pass	15.2	Pass
6	Proposed Configuration	25.2%	10.6%	3.7%	3.3	Walking	Pass	13.6	Pass
	Existing Configuration	15.3%	3.7%	0.6%	2.7	Walking	Pass	9.6	Pass
7	Proposed Configuration	19.8%	6.6%	2.2%	3.0	Standing	Pass	12.6	Pass
	Existing Configuration	26.9%	11.2%	4.3%	3.3	Walking	Pass	14.2	Pass
8	Proposed Configuration	26.8%	11.0%	3.6%	3.3	Standing	Pass	14.2	Pass
	Existing Configuration	28.4%	11.3%	3.5%	3.4	Walking	Pass	12.7	Pass
9	Proposed Configuration	31.3%	13.4%	4.6%	3.6	Standing	Pass	12.6	Pass
	Existing Configuration	22.1%	9.5%	3.6%	3.1	Walking	Pass	13.1	Pass
10	Proposed Configuration	30.6%	13.0%	4.2%	3.5	Walking	Pass	13.7	Pass
	Existing Configuration	23.5%	8.1%	2.1%	3.2	Walking	Pass	11.2	Pass
11	Proposed Configuration	40.0%	22.3%	10.4%	4.1	Walking	Pass	14.6	Pass
	Existing Configuration	24.7%	11.8%	4.6%	3.3	Walking	Pass	13.1	Pass
12	Proposed Configuration	26.5%	11.1%	4.3%	3.4	Walking	Pass	13.2	Pass
	Existing Configuration	23.9%	9.2%	3.1%	3.2	Walking	Pass	12.3	Pass
13	Proposed Configuration	40.9%	23.8%	12.3%	4.3	Walking	Pass	16.6	Pass
	Existing Configuration	27.7%	13.2%	6.1%	3.5	Walking	Pass	13.9	Pass
14	Proposed Configuration	21.1%	9.3%	3.5%	3.1	Walking	Pass	13.4	Pass
	Existing Configuration	19.9%	7.4%	2.1%	3.0	Walking	Pass	12.9	Pass
15	Proposed Configuration	30.1%	16.2%	7.6%	3.7	Walking	Pass	15.3	Pass
	Existing Configuration	17.2%	5.8%	1.5%	2.8	Walking	Pass	11.7	Pass
16	Proposed Configuration	21.7%	7.2%	1.7%	3.1	Walking	Pass	11.2	Pass
	Existing Configuration	12.9%	3.9%	1.2%	2.6	Walking	Pass	12.0	Pass
17	Proposed Configuration	22.1%	7.6%	2.0%	3.1	Walking	Pass	11.2	Pass
	Existing Configuration	10.9%	2.4%	0.5%	2.5	Walking	Pass	10.1	Pass
18	Proposed Configuration	29.2%	12.6%	4.9%	3.5	Walking	Pass	14.1	Pass
	Existing Configuration	24.6%	8.9%	2.6%	3.3	Walking	Pass	12.2	Pass
19	Proposed Configuration	29.7%	13.2%	5.4%	3.5	Walking	Pass	14.1	Pass
	Existing Configuration	19.3%	5.5%	1.1%	3.0	Walking	Pass	10.6	Pass
20	Proposed Configuration	33.1%	15.2%	5.9%	3.7	Walking	Pass	13.5	Pass
	Existing Configuration	24.2%	8.2%	2.1%	3.2	Walking	Pass	11.7	Pass
21	Proposed Configuration	15.3%	4.3%	0.9%	2.7	Walking	Pass	10.5	Pass
	Existing Configuration	16.0%	5.2%	1.1%	2.7	Walking	Pass	10.6	Pass
22	Proposed Configuration	27.1%	11.4%	3.8%	3.4	Walking	Pass	13.5	Pass
	Existing Configuration	24.5%	9.8%	3.0%	3.3	Walking	Pass	12.5	Pass
23	Proposed Configuration	24.9%	9.2%	2.7%	3.3	Walking	Pass	12.7	Pass
	Existing Configuration	30.2%	15.1%	6.9%	3.6	Walking	Pass	15.6	Pass
24	Proposed Configuration	16.1%	4.7%	1.1%	2.8	Walking	Pass	9.8	Pass
	Existing Configuration	10.1%	2.0%	0.3%	2.4	Walking	Pass	9.5	Pass
25	Proposed Configuration	25.5%	12.3%	5.1%	3.3	Walking	Pass	14.6	Pass
	Existing Configuration	26.1%	12.6%	5.1%	3.4	Walking	Pass	14.2	Pass
26	Proposed Configuration	32.5%	17.0%	9.1%	3.8	Walking	Pass	16.4	Pass
	Existing Configuration	31.9%	16.6%	8.0%	3.7	Walking	Pass	15.7	Pass
27	Proposed Configuration	29.7%	18.0%	9.1%	3.8	Walking	Pass	15.4	Pass
	Existing Configuration	31.6%	18.7%	10.0%	3.9	Walking	Pass	16.0	Pass
28	Proposed Configuration	26.7%	11.2%	4.4%	3.3	Walking	Pass	14.5	Pass
	Existing Configuration	22.5%	12.0%	5.3%	3.2	Walking	Pass	14.8	Pass
29	Proposed Configuration	33.9%	18.5%	8.8%	3.9	Walking	Pass	16.2	Pass
	Existing Configuration	29.8%	17.0%	7.9%	3.7	Walking	Pass	15.2	Pass

Table 2: Pedestrian Wind Comfort and Safety – Upper Levels Terraces

Configuration		Wind Criteria							
		Comfort						Safety	
		Yearly exceedence of given wind speed			Mean wind speed (exceeded 20% of year)	Recommended criterion	Result (compared against Recommended criterion)	Peak wind speed (of all wind directions)	Result (compared against Safety wind speed of 20m/s)
		Sitting (3m/s)	Standing (4m/s)	Walking (5m/s)					
		%	%	%	m/s		Pass/Fail	m/s	Pass/Fail
T1	Proposed Configuration	23.1%	12.0%	5.6%	3.2	Walking	Pass	14.9	Pass
T2	Proposed Configuration	5.4%	10%	0.2%	2.1	Walking	Pass	9.7	Pass
T3	Proposed Configuration	13.0%	4.9%	15%	2.5	Walking	Pass	11.4	Pass
T4	Proposed Configuration	51.0%	33.6%	19.4%	5.0	Walking	Pass	17.5	Pass
T5	Proposed Configuration	12.2%	2.8%	0.5%	2.6	Walking	Pass	10.4	Pass
T6	Proposed Configuration	36.0%	21.6%	13.2%	4.2	Walking	Pass	18.8	Pass
T7	Proposed Configuration	25.7%	15.9%	8.5%	3.5	Walking	Pass	16.0	Pass
T8	Proposed Configuration	49.0%	35.4%	26.1%	5.8	Walking	Fail	23.3	Fail
	Proposed with sealed northern aspect	27.5%	15.9%	7.4%	3.6	Walking	Pass	13.5	Pass
T9	Proposed Configuration	45.9%	28.3%	16.0%	4.6	Walking	Pass	22.9	Fail
T10	Proposed Configuration	48.2%	30.8%	18.9%	4.9	Walking	Pass	19.9	Pass
T11	Proposed Configuration	42.5%	29.9%	21.0%	5.1	Walking	Fail	24.0	Fail
	Proposed with 1.1m balustrade, 1.5m canopy and 2m wide full height fins	33.5%	20.8%	12.8%	4.1	Walking	Pass	18.8	Pass
T12	Proposed Configuration	49.1%	37.3%	26.3%	5.8	Walking	Fail	24.8	Fail
	Proposed with 1.1m balustrade, 1.5m canopy and 2m wide full height fins	13.4%	5.7%	2.1%	2.4	Walking	Pass	12.6	Pass
T13	Proposed Configuration	23.7%	11.5%	4.8%	3.3	Walking	Pass	15.6	Pass
T14	Proposed Configuration	28.3%	17.1%	9.0%	3.7	Walking	Pass	17.7	Pass
T15	Proposed Configuration	56.8%	42.2%	29.2%	6.1	Walking	Fail	26.4	Fail
	Proposed with sealed northern aspect	12.4%	4.0%	13%	2.5	Walking	Pass	12.2	Pass
T16	Proposed Configuration	51.1%	37.2%	26.2%	5.7	Walking	Fail	24.4	Fail
	Proposed with sealed southern aspect	17.7%	9.8%	5.0%	2.8	Walking	Pass	14.8	Pass
T17	Proposed Configuration	37.1%	21.5%	12.4%	4.1	Walking	Pass	17.9	Pass

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Figure 4 - Summary of wind criteria satisfied in the surrounding streetscapes for the Existing Configuration of the 846-858 Glenferrie Road development.

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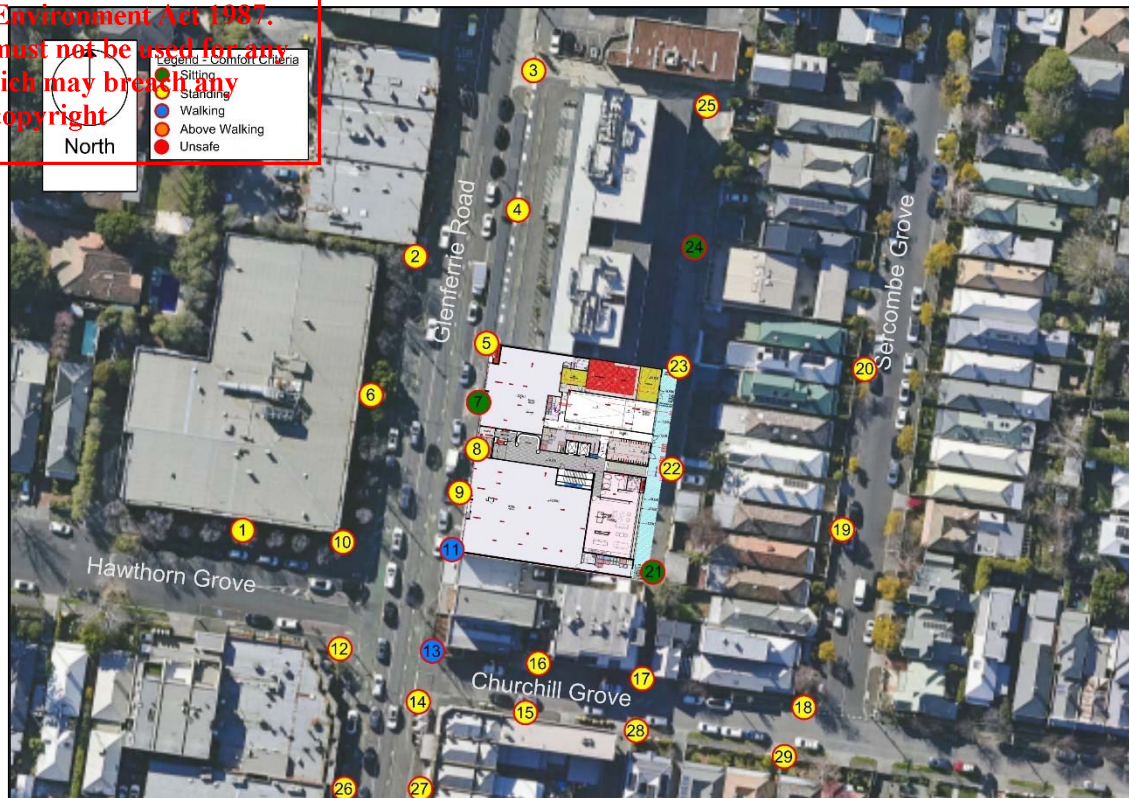


Figure 5a - Summary of wind criteria satisfied in the surrounding streetscapes for the Proposed Configuration of the 846-858 Glenferrie Road development.

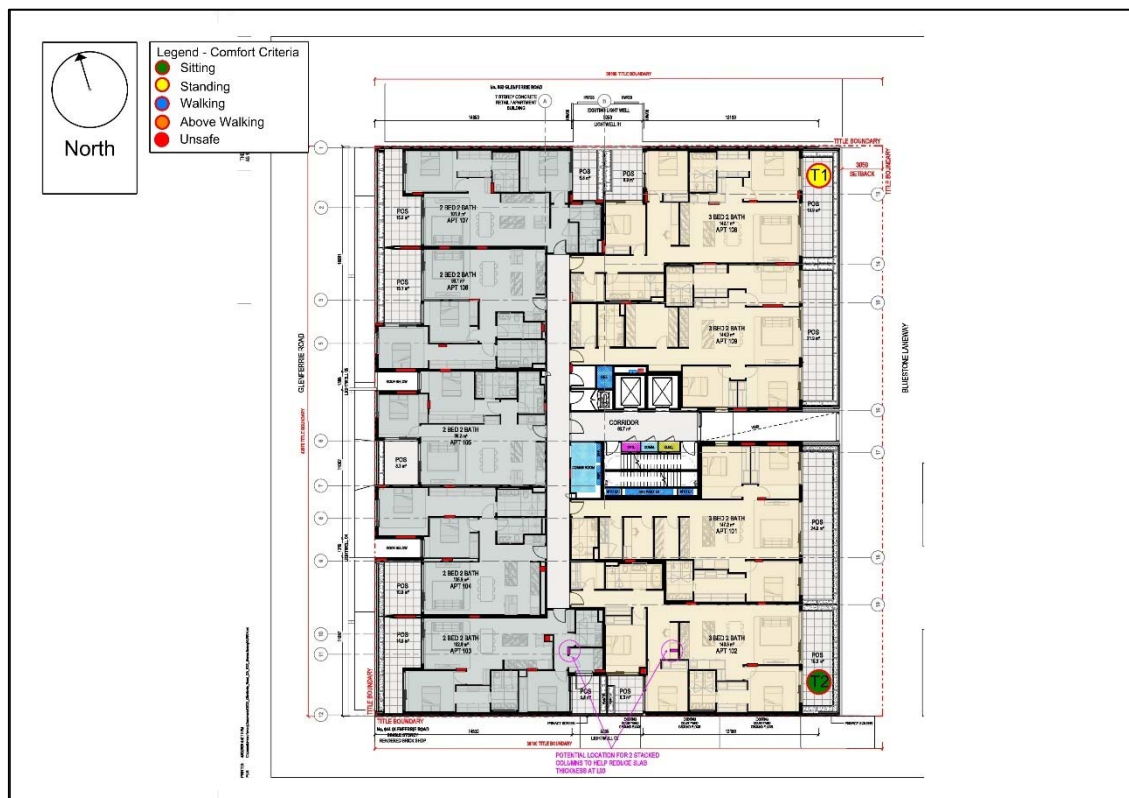


Figure 5b - Summary of wind criteria satisfied on Level 1 of the Proposed Configuration of the 846-858 Glenferrie Road development.

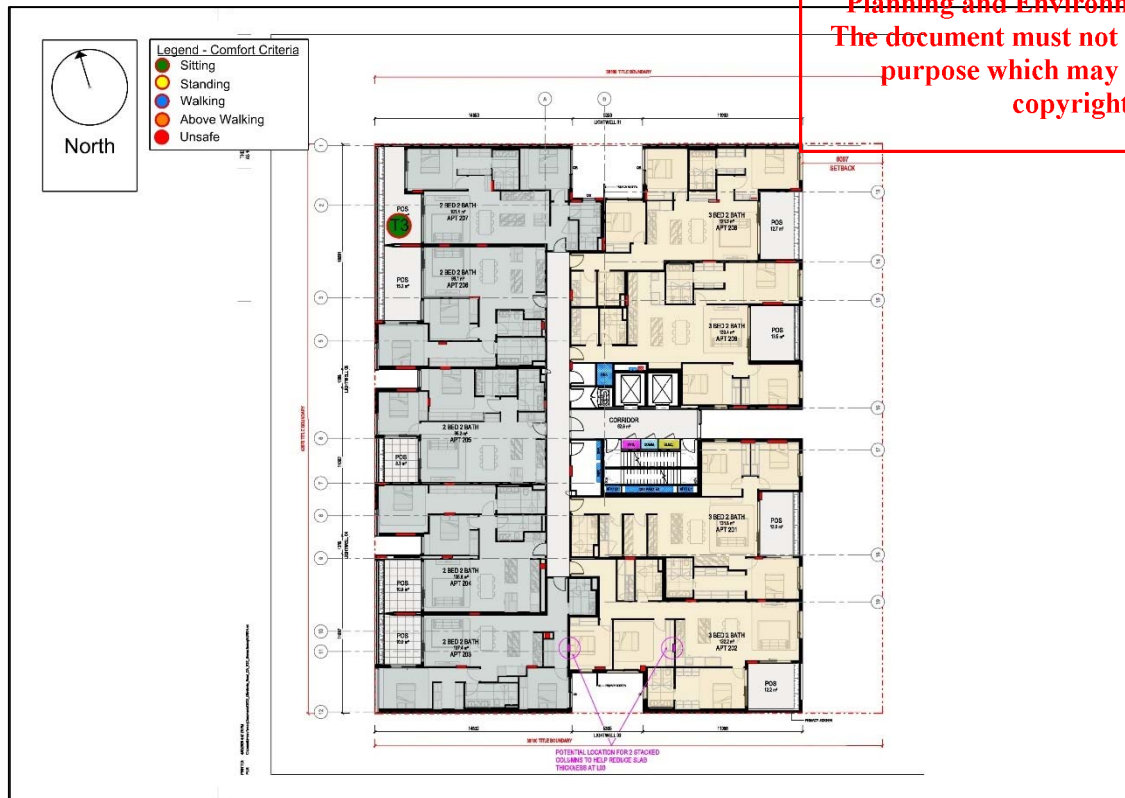


Figure 5c - Summary of wind criteria satisfied on Level 2 of the Proposed Configuration of the 846-858 Glenferrie Road development.

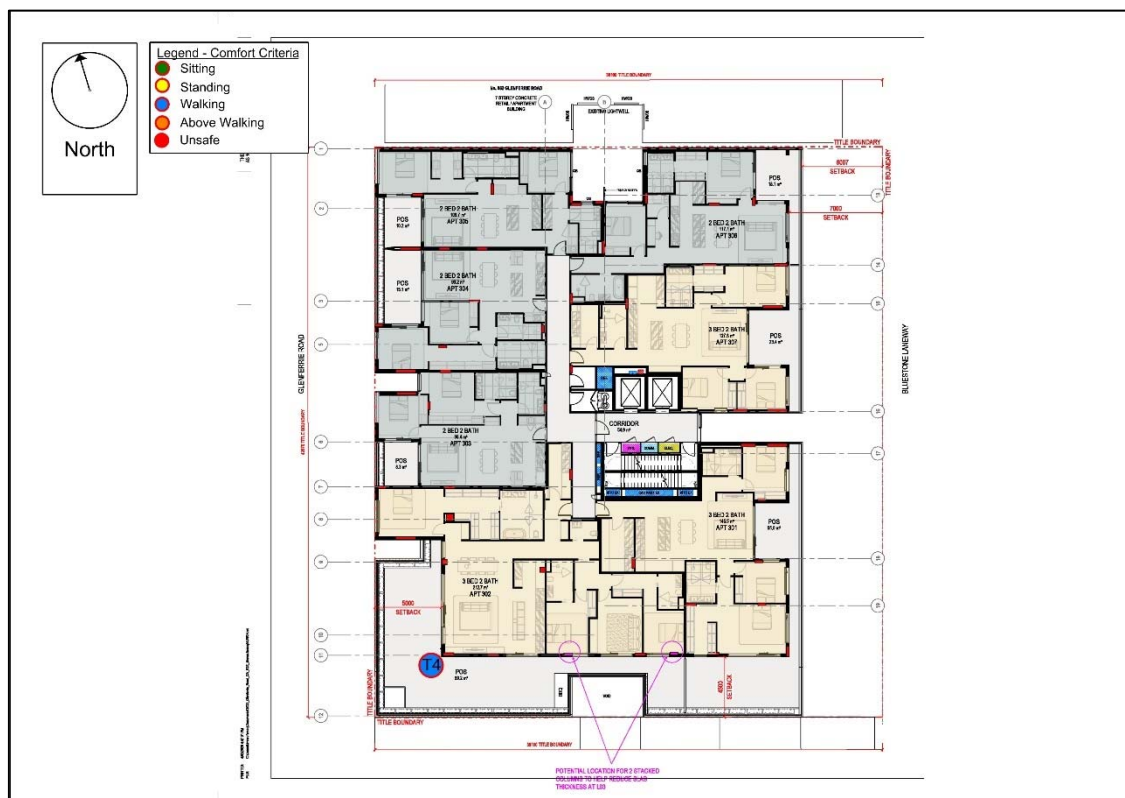


Figure 5d - Summary of wind criteria satisfied on Level 3 of the Proposed Configuration of the 846-858 Glenferrie Road development.

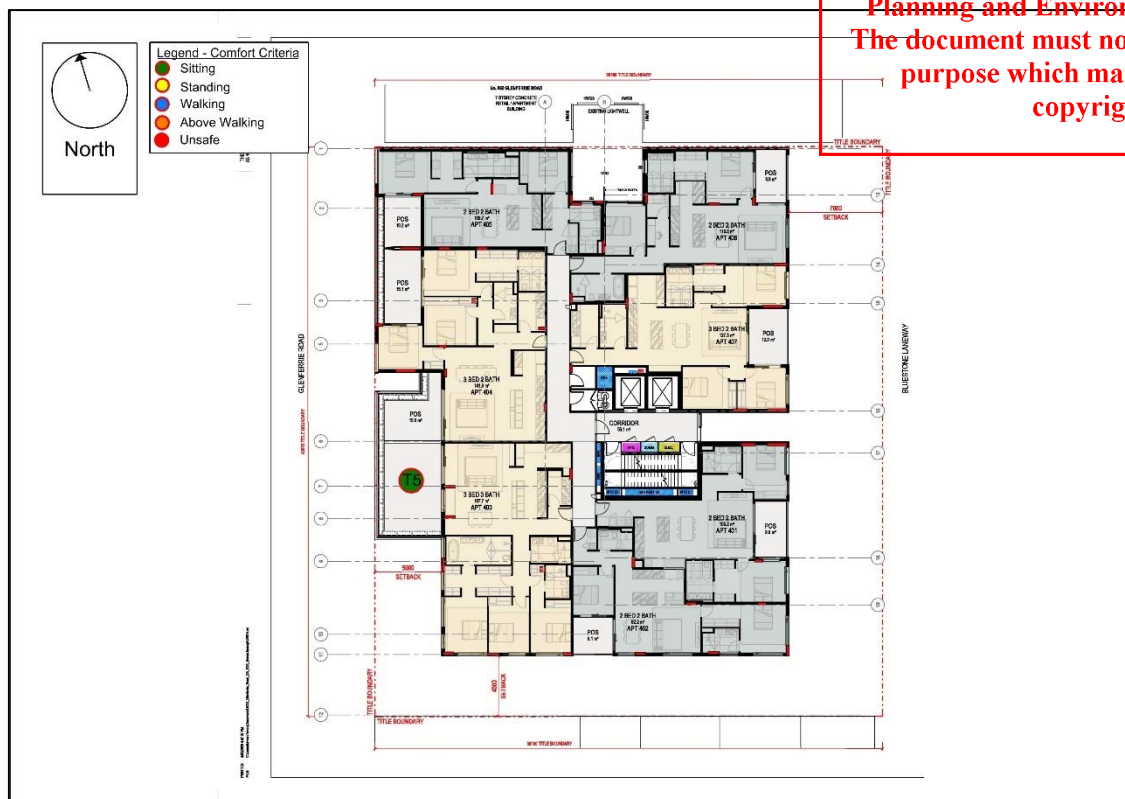


Figure 5e - Summary of wind criteria satisfied on Level 4 of the Proposed Configuration of the 846-858 Glenferrie Road development.

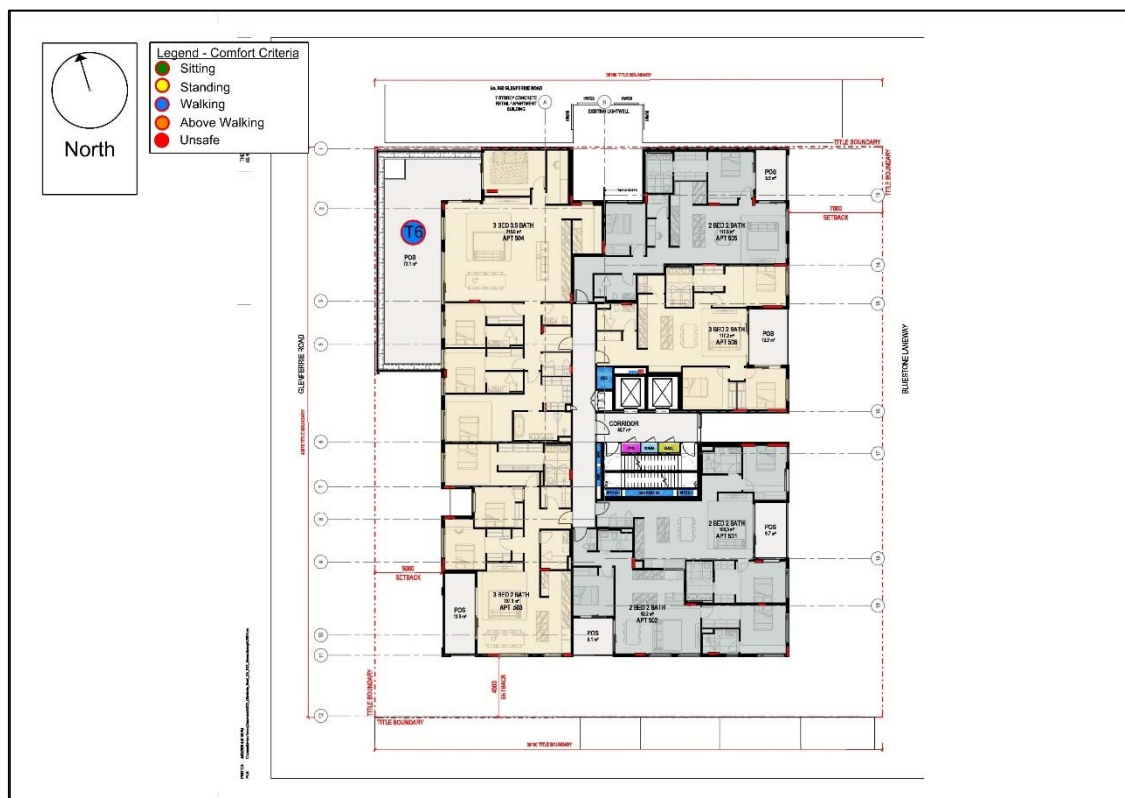


Figure 5f - Summary of wind criteria satisfied on Level 5 of the Proposed Configuration of the 846-858 Glenferrie Road development.

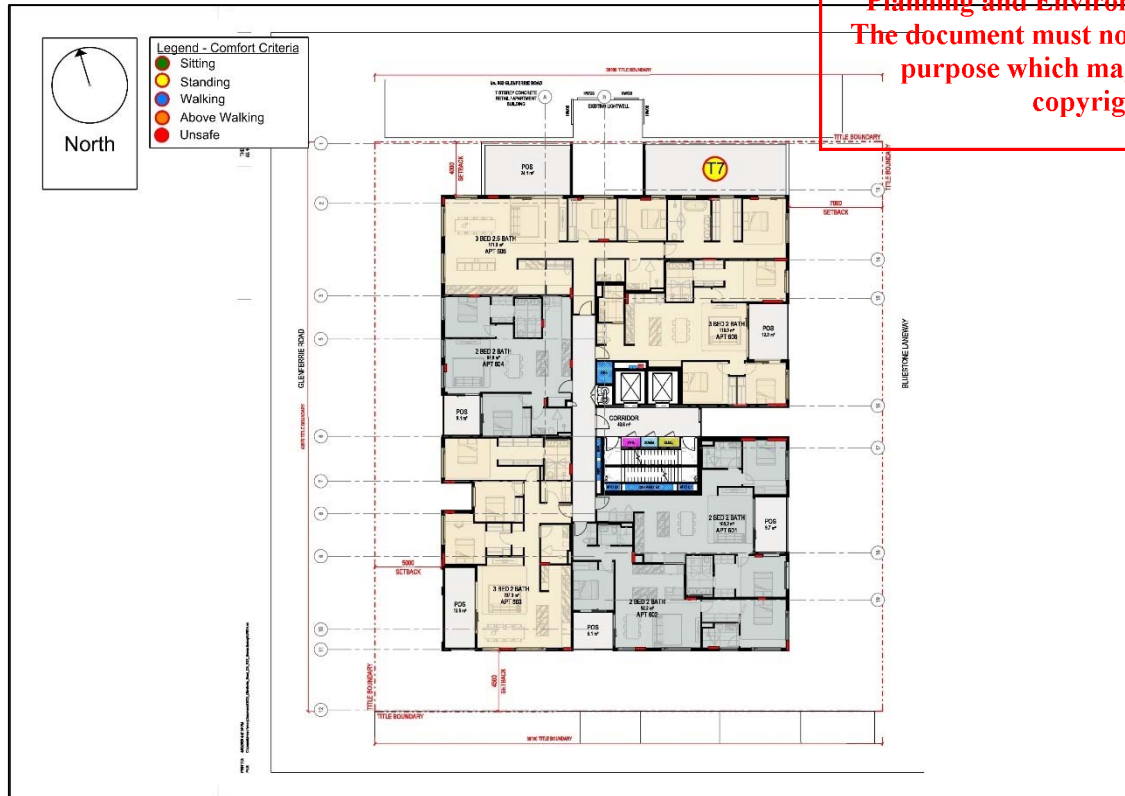


Figure 5g - Summary of wind criteria satisfied on Level 6 of the Proposed Configuration of the 846-858 Glenferrie Road development.

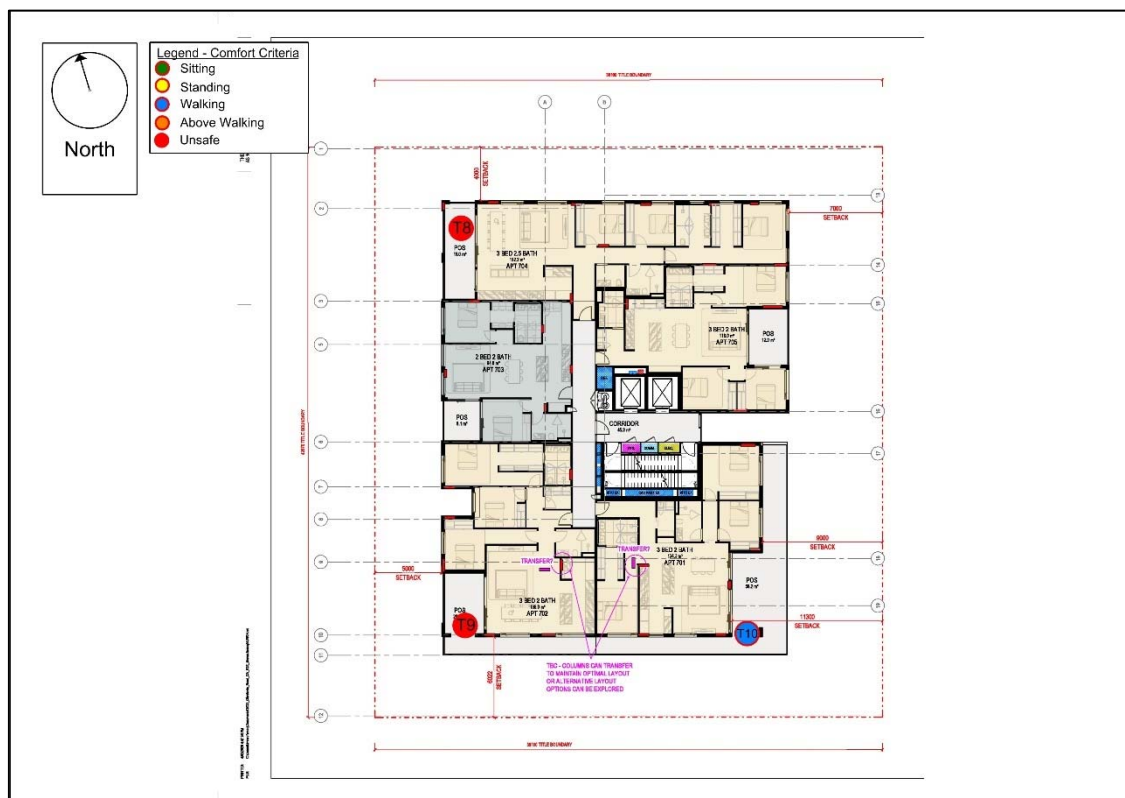


Figure 5h - Summary of wind criteria satisfied on Level 7 of the Proposed Configuration of the 846-858 Glenferrie Road development.

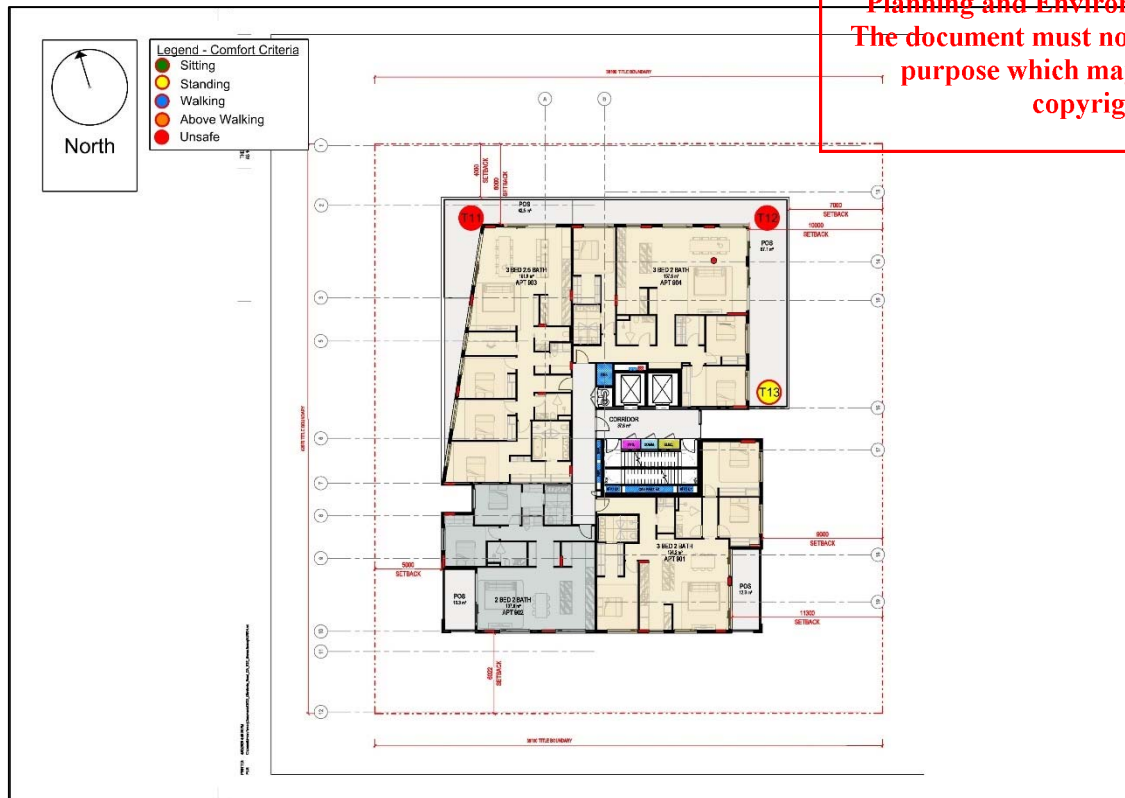


Figure 5i - Summary of wind criteria satisfied on Level 9 of the Proposed Configuration of the 846-858 Glenferrie Road development.

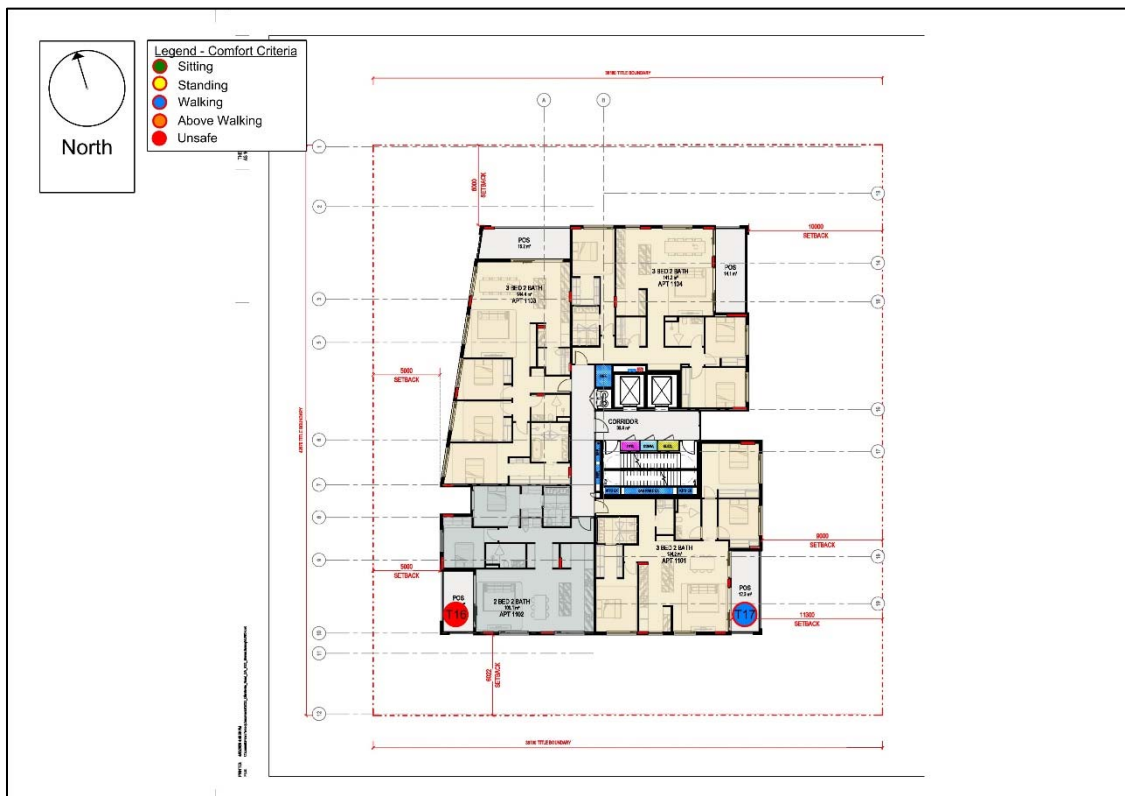


Figure 5j - Summary of wind criteria satisfied on Level 13 of the Proposed Configuration of the 846-858 Glenferrie Road development.

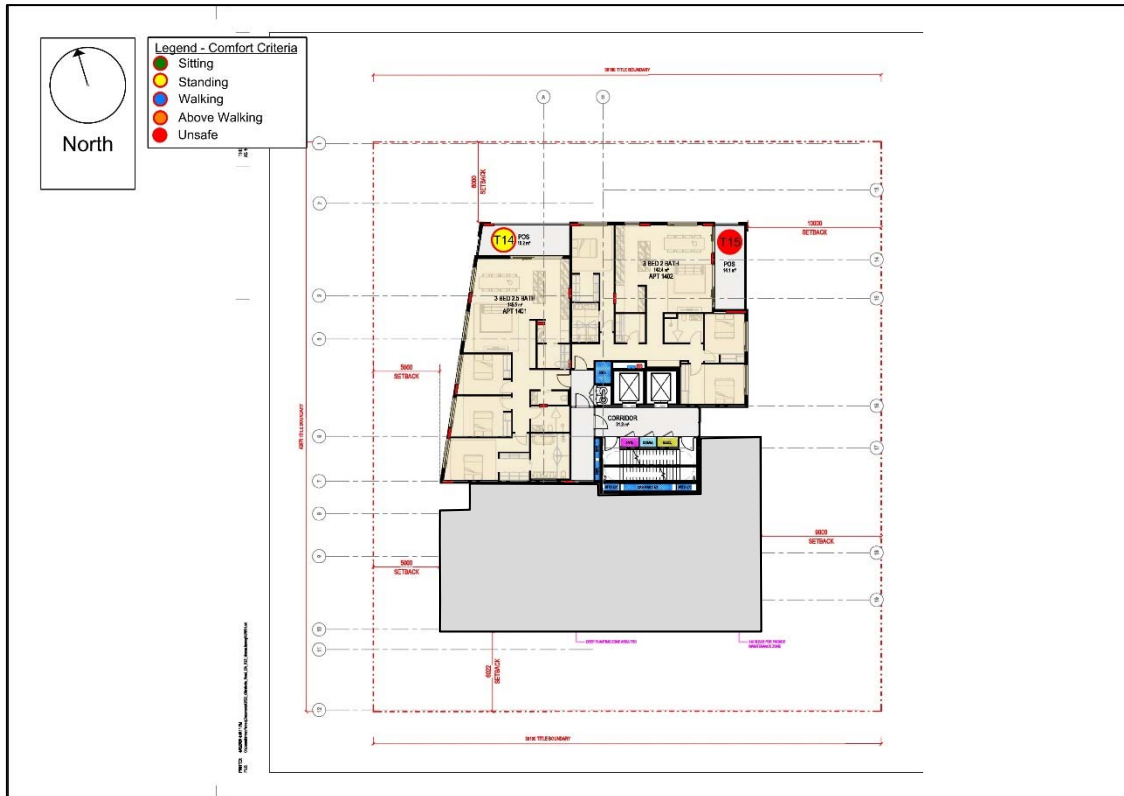


Figure 5k - Summary of wind criteria satisfied on Level 14 of the Proposed Configuration of the 846-858 Glenferrie Road development.

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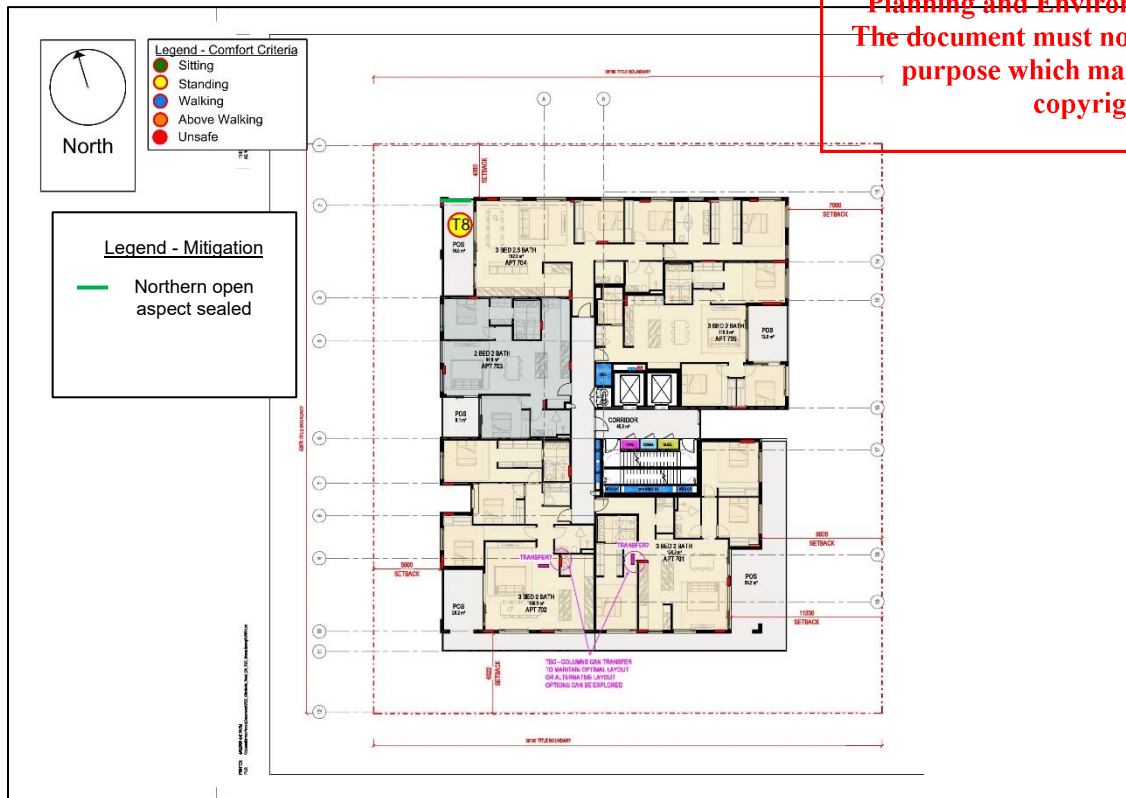


Figure 6a - Summary of wind criteria satisfied on Level 7 of the Proposed Configuration of the 846-858 Glenferrie Road development with wind mitigation.

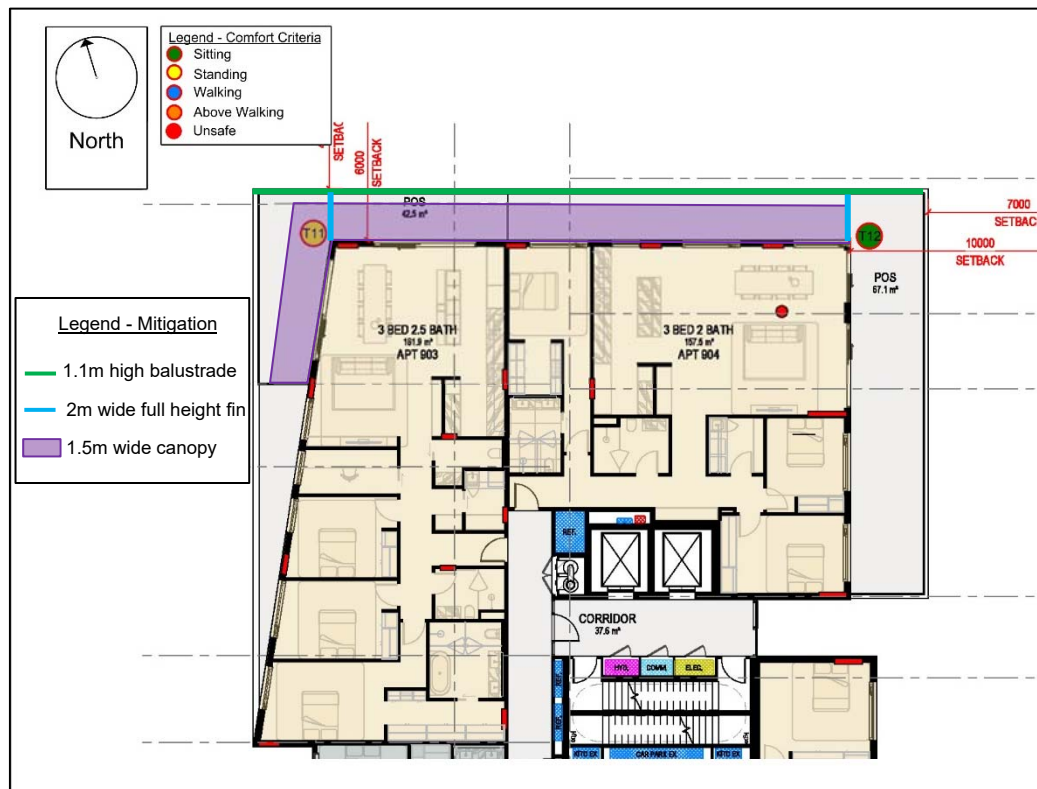


Figure 6b - Summary of wind criteria satisfied on Level 9 of the Proposed Configuration of the 846-858 Glenferrie Road development with wind mitigation.

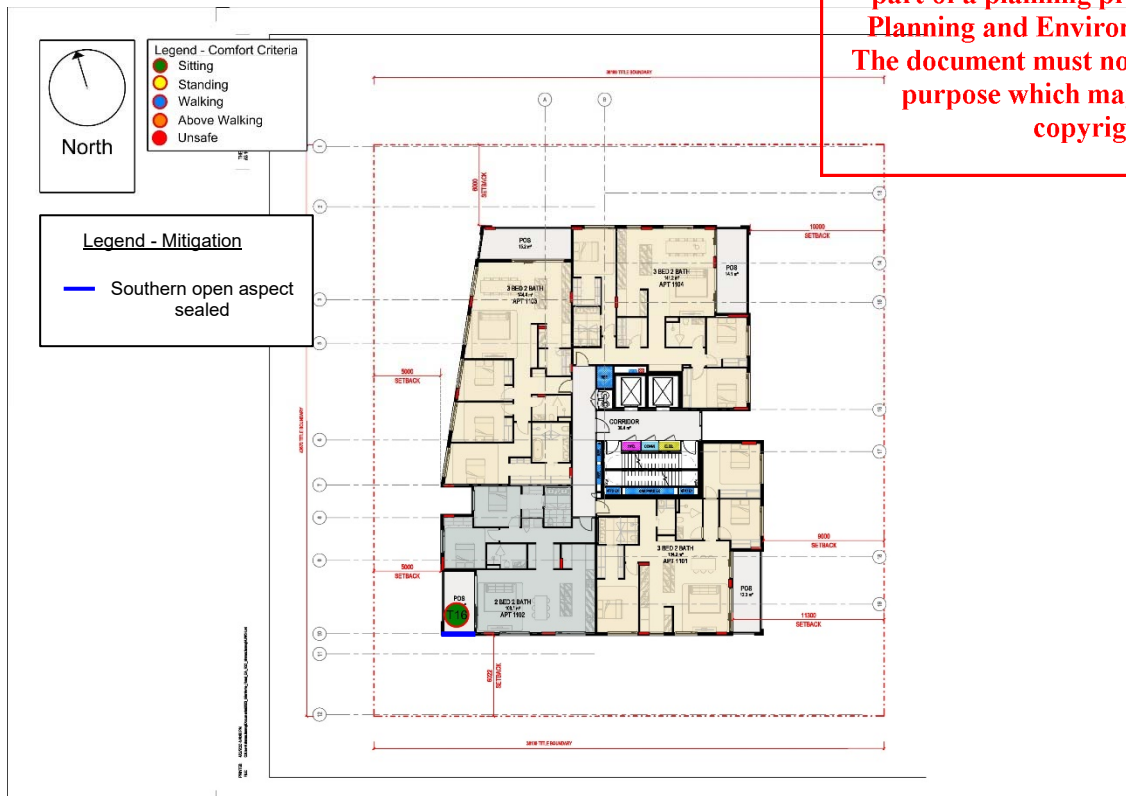


Figure 6c - Summary of wind criteria satisfied on Level 13 of the Proposed Configuration of the 846-858 Glenferrie Road development with wind mitigation.

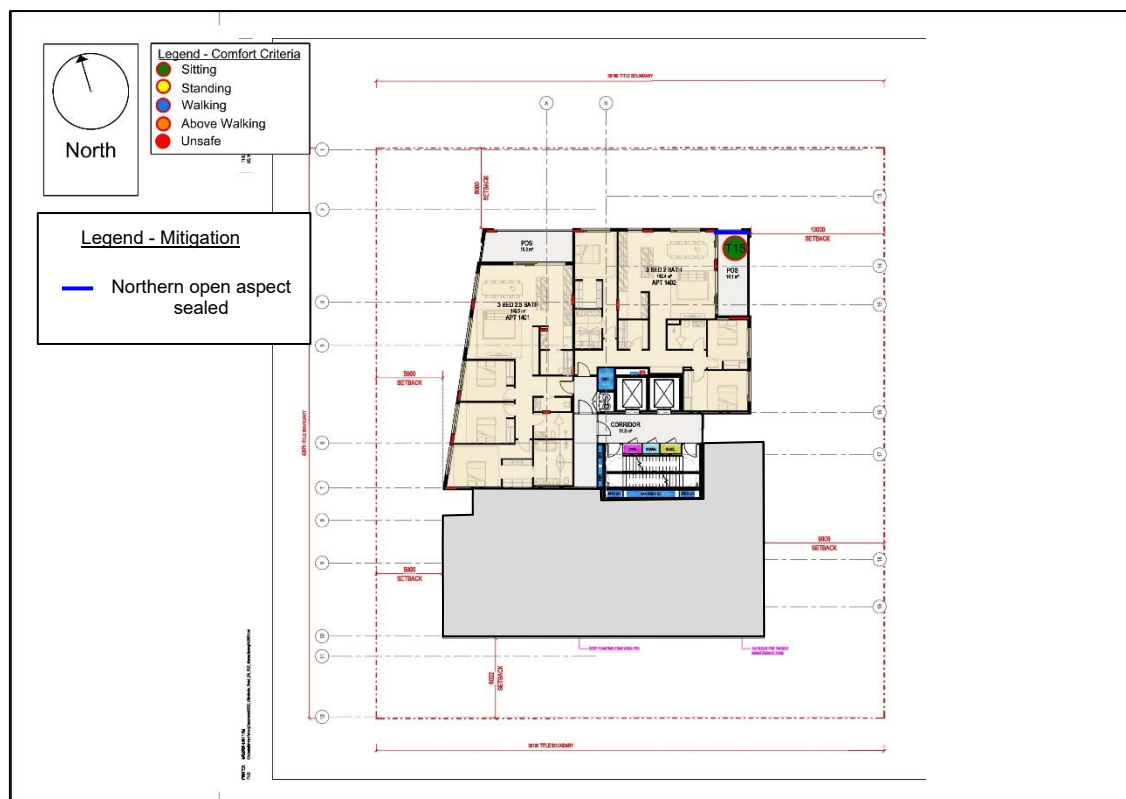


Figure 6d - Summary of wind criteria satisfied on Level 14 of the Proposed Configuration of the 846-858 Glenferrie Road development with wind mitigation.

REFERENCES

1. W. H. Melbourne, Criteria for environmental wind conditions, Journal of Industrial Aerodynamics, Volume 3, 1978, pp. 241-249
2. W. H. Melbourne, Wind environment studies in Australia, Journal of Industrial Aerodynamics, Volume 3, 1978, pp. 201-214

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APPENDIX A – VELOCITY AND TURBULENCE PROFILES

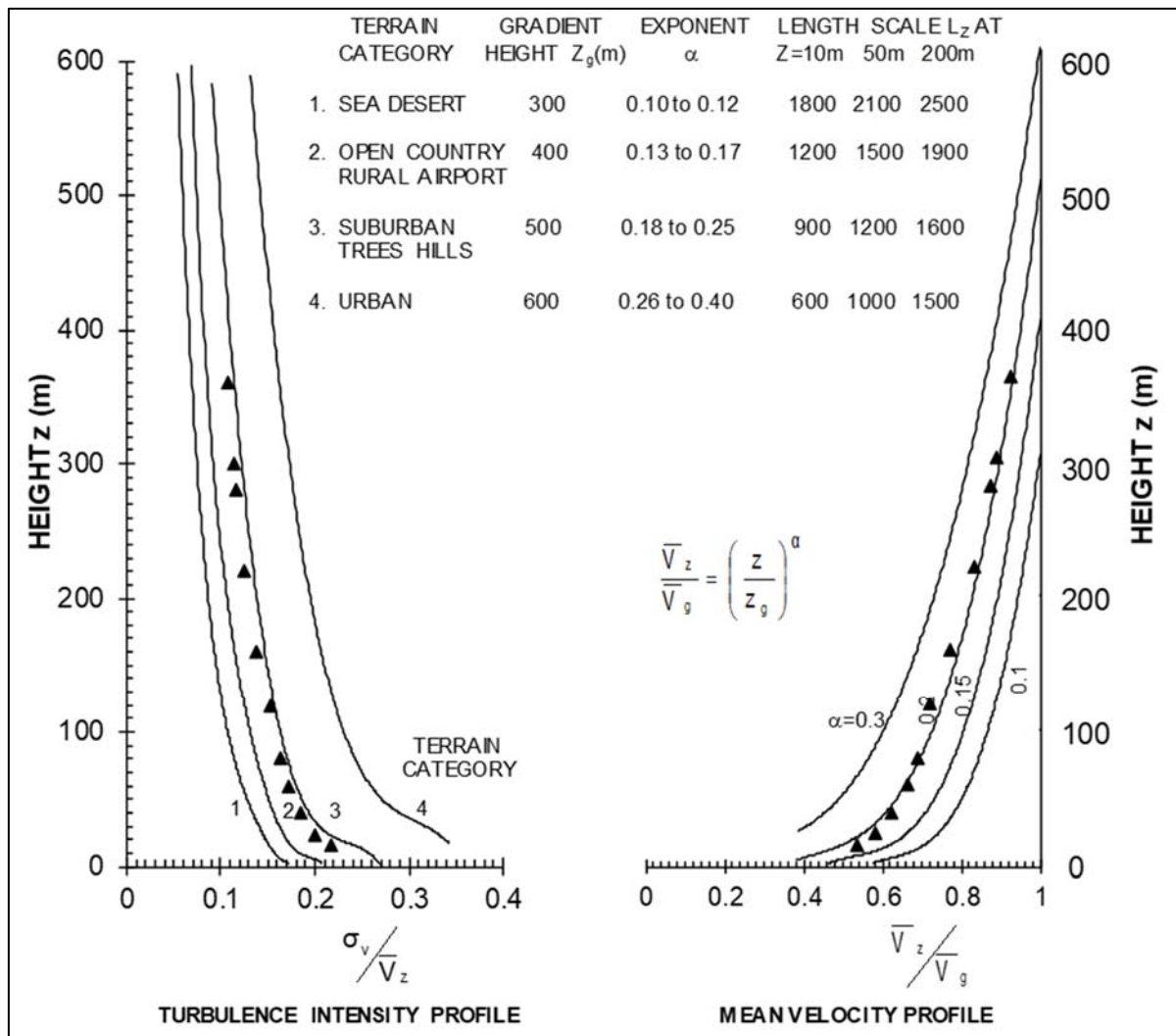


Figure A1 -1/400 scale TC3 boundary layer turbulence intensity and mean velocity profiles in the MEL Consultants Boundary Layer Wind Tunnel 4.8m x 2.2m working section, scaled to full scale dimensions.

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APPENDIX B – PEDESTRIAN SAFETY PLOTS

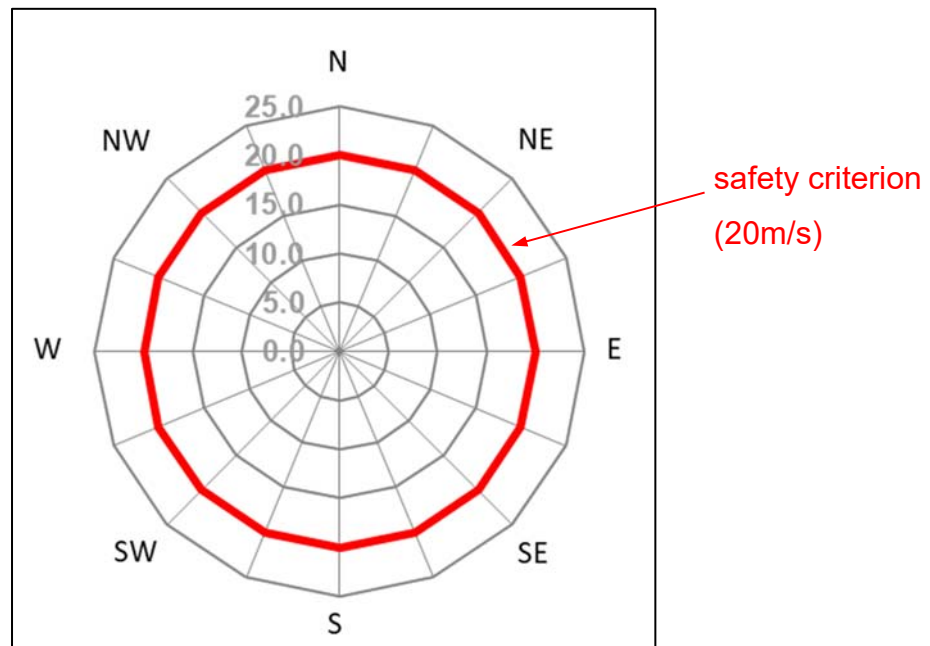


Figure B1 – Environmental wind safety criterion for Melbourne Region based on local 3 second peak gust wind speed

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