



Vipac Engineers and Scientists Limited
279 Normanby Rd, Port Melbourne, VIC 3207, Australia
Private Bag 16, Port Melbourne, VIC 3207, Australia
t. +61 3 9647 9700 | e. melbourne@vipac.com.au
w. www.vipac.com.au | A.B.N. 33 005 453 627 | A.C.N. 005 453 627

ADVERTISED PLAN

40 Rokeby Pty Ltd ATF 40 Rokeby Property Trust

32-50 Rokeby Street, Collingwood

Wind Impact Assessment

**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

30N-23-0521-TNT-71859-2

20 December 2023

Job Title:	32-50 Rokeby Street, Collingwood		
Report Title:	Wind Impact Assessment		
Document Reference:	30N-23-0521-TNT-71859-2		
Prepared For:	40 Rokeby Pty Ltd ATF 40 Rokeby Property Trust Level 5 45 Wangaratta Street, Richmond, VIC 3121 Contact: Alastair Wilson Tel:		Prepared By: Vipac Engineers and Scientists Limited 279 Normanby Rd, Port Melbourne, VIC 3207, Australia Tel: +61 3 9647 9700
Author:	Rumman Islam	This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright	Wind Consultant
	20 Dec 2023		
Reviewer:	Mohamed Zaid		Wind Consultant
	20 Dec 2023		
Issued By:	Rumman Islam		Wind Consultant
	20 Dec 2023		
Revision History:			
<i>Rev. #</i>	<i>Comments / Details of change(s) made</i>	<i>Date</i>	<i>Revised by:</i>
Rev. 00	Original issue	07 Dec 2023	
Rev. 01	Updated drawings	14 Dec 2023	RI
Rev. 02	Minor amendments	20 Dec 2023	RI

NOTE: This report has been prepared solely for the benefit of the client to whom this report is addressed for use herein ("Client") unless otherwise agreed in writing by Vipac Engineers and Scientists Limited ACN 005 453 627 ("Vipac"). Neither the whole of this report or any part of it may be published, duplicated or circulated without the prior written approval of Vipac except as required by law. Vipac does not assume any responsibility or liability for any losses suffered as a result of the publication, duplication or circulation of this report and excludes all liability whatsoever to any third party who may use or rely on the whole, or any part of this report.

Vipac has prepared this report using all reasonable care, skill and due diligence within the time period, budget and resources allocated to Vipac as agreed with the Client. Vipac excludes all liability to the Client whatsoever, whether in whole or in part, for the Client's use or reliance on the report other than for the purposes set out in the report, or any matters outside the agreed scope of the work.

For the purposes of preparing this report, reliance has been placed upon the material, representations, information and instructions provided to Vipac unless otherwise stated in the report. Originals of documents provided have not been required and no audit or examination of the validity of the documentation, representations, information or instructions provided has been undertaken except to the extent otherwise stated in this report. Information and findings contained in this report are based on Vipac's interpretation of data collected.

This document contains commercial, conceptual, engineering and other information that is proprietary to Vipac. The inclusion of this information in the report does not grant the Client any license to use the information without Vipac's prior written permission.

**ADVERTISED
PLAN**

Executive Summary

40 Rokeby Pty Ltd ATF 40 Rokeby Property Trust commissioned Vipac Engineers and Scientists Ltd to prepare a statement of wind effects for the ground level areas adjacent to the proposed development at **32-50 Rokeby Street, Collingwood**. Vipac Engineers and Scientists completed a scaled wind tunnel test in October 2023 on the proposed development at 40-50 Rokeby Street, Collingwood and issued a test report (report reference: 30N-22-0439-TRP-67774-0). The wind tunnel test was conducted based on plans supplied by MA Architects in September 2023. Plans of the updated design were supplied in December 2023 from MA+Co. The updated drawings include the developments at 32-38 Rokeby Street and 40-50 Rokeby Street as a combined application. A comparative study was made with the findings in the October 2023 wind tunnel test report and the updated design. The observations and findings can be summarised as follows:

With proposed design:

- Wind conditions in the ground level footpath areas and access ways would be expected to be within the **walking** comfort criterion.
- Wind conditions at the main entrances would be expected to be within the **standing** comfort criterion.
- Wind conditions at the terraces / balconies would be expected to be within the recommended **walking** comfort criterion; and
- Wind conditions at the rooftop sport court and garden are expected to be within the recommended **walking / standing** comfort criteria.

As a general statement, educating occupants about wind conditions at open terrace/balcony areas during high-wind events and fixing loose, lightweight furniture on the terrace are highly recommended.

The assessments provided in this report have been made based on experience of similar situations in Melbourne and around the world.

Vipac recommends a scaled wind tunnel study be conducted in detail design stage to quantify the wind conditions and determine the proper wind control measures wherever necessary.

**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

Table of Contents

1 Introduction 5

2 Analysis Approach 7

2.1 Site Exposure8

2.2 Regional Wind Climate.....9

2.3 Building Geometry and Orientation 10

2.4 Flow interactions with Adjacent Developments..... 11

2.5 Assessment Criteria 12

 2.5.1 Use of Adjacent Pedestrian Occupied Areas & Recommended Comfort Criteria..... 13

 2.5.2 Terrace / Balcony Recommended Criterion Discussion 13

3 Pedestrian Level Wind Effects..... 16

3.1 Discussion 16

3.2 Assessment..... 18

4 Conclusions 19

 Appendix A Environmental Wind Effects 20

 Appendix B References 21

 Appendix C Drawings List..... 22

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

1 Introduction

Vipac Engineers and Scientists has been commissioned by **40 Rokeby Pty Ltd ATF 40 Rokeby Property Trust** to carry out an appraisal of the pedestrian wind effects at the ground level and the terrace areas of the proposed development at **32-50 Rokeby Street, Collingwood.**

Strong winds in pedestrian areas are frequently encountered in central business districts of cities around the world; including Sydney, Melbourne and Brisbane. Wind characteristics such as the mean speed, turbulence and ambient temperature determine the extent of disturbance to users of pedestrian areas. These disturbances can cause both comfort and safety problems and require careful consideration to mitigate successfully.

This report details the opinion of Vipac as an experienced wind engineering consultancy regarding the wind effects in ground level footpath areas adjacent to the development and terrace areas as proposed. Wind tunnel tests have been performed for the development at 40-50 Rokeby Street and a test report issued in October 2023 (report reference: 30N-22-0439-TRP-67774-0), and the empirical data produced will be taken into consideration. Additionally, Vipac has carried out wind tunnel studies on a large number of developments of similar shape and having similar exposure to that of the proposed development. These serve as a valid reference for the prediction of wind effects.

The proposed development is comprised of 2 office towers with a building height of approximately 50.0m and 53.6m from street level for the southern tower and northern tower respectively. The site is bounded by Rokeby Street to the west, and existing development to other directions. A satellite image of the proposed development site and the western elevation of the building are shown in Figure 1 and Figure 2, respectively.

Updated drawings of the proposed development were supplied to Vipac by **MA+Co** in **December 2023**. A list of drawings supplied is provided in Appendix C of this report.

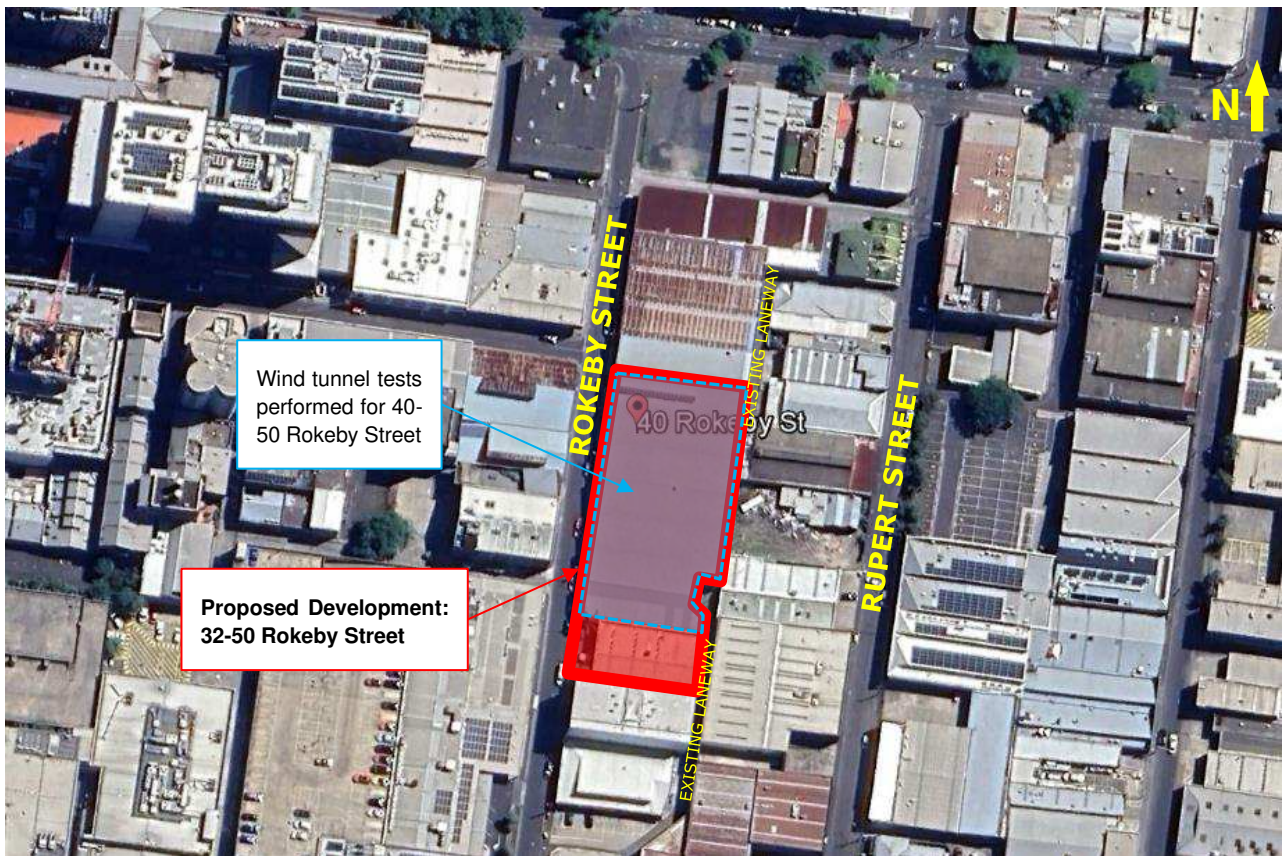


Figure 1: Aerial view of the proposed development site.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any

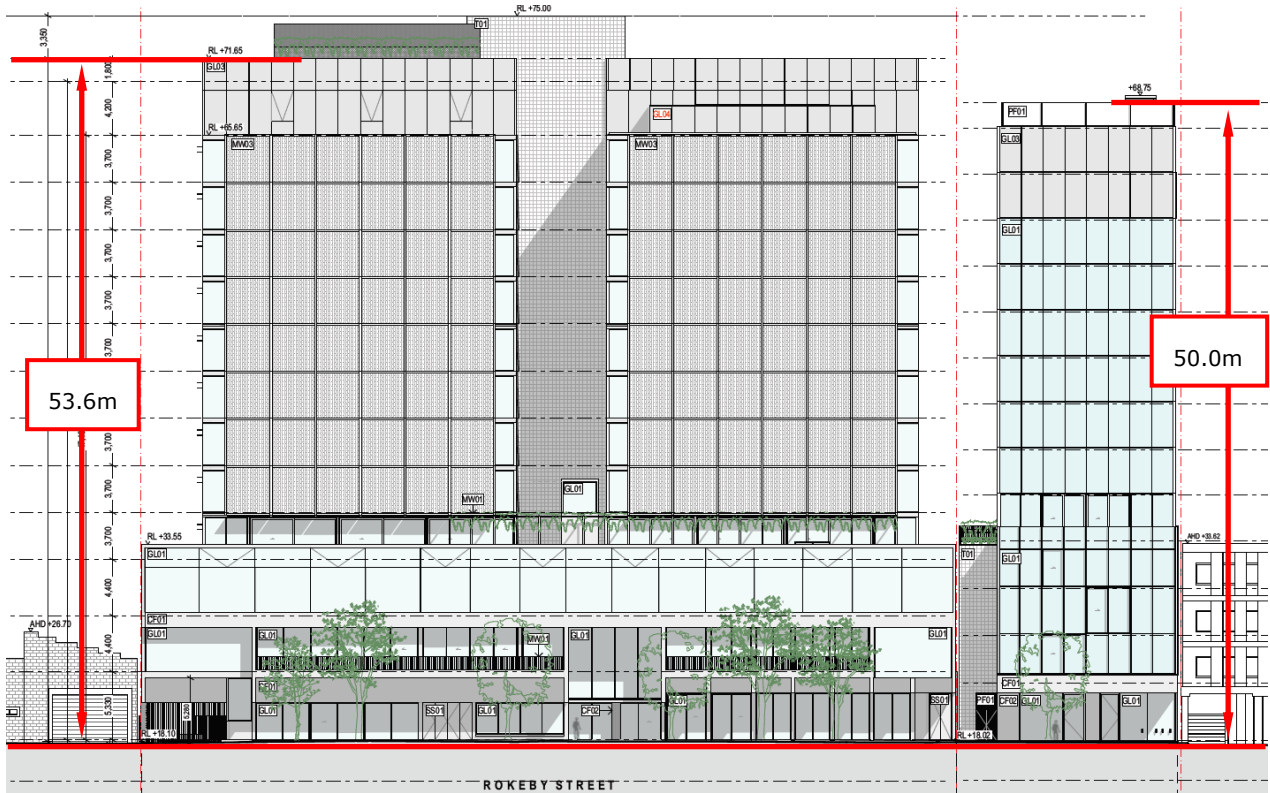


Figure 2: Western elevation the proposed development.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

2 Analysis Approach

In assessing whether a proposed development is likely to generate adverse wind conditions in ground level footpath areas, Vipac has considered the following five main points:

- The exposure of the proposed development to wind.
- The regional wind climate.
- The geometry and orientation of the proposed development.
- The interaction of flows with adjacent developments; and
- The assessment criteria determined by the intended use of the areas affected by wind flows generated or augmented by the proposed development.

**ADVERTISED
PLAN**

The pedestrian wind comfort at specific locations of ground level footpath areas may be assessed by predicting the gust and mean wind speeds with a probability of 0.1% and 20% expected at that location. The location may be deemed generally acceptable for its intended use while gust and mean wind speeds are within the threshold values noted in Section 2.5. Where Vipac predicts that a location would not meet its appropriate comfort criterion, the use of wind control devices and/or local building geometry modifications to achieve the desired comfort rating may be recommended. For complex flow scenarios or where predicted flow conditions are well in excess of the recommended criteria, Vipac recommends scale model wind tunnel testing to determine the type and scope of the wind control measures required to achieve acceptable wind conditions.

**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

2.1 Site Exposure

The proposed development is located on a relatively flat terrain. The site is surrounded within an approximately 3.2km radius predominately by low to mid-rise developments, with Melbourne CBD to the west-southwest and Yarra bend to the northeast. A satellite image showing these site surroundings is shown in Figure 3.

Considering the immediate surroundings and terrain, for the purposes of this study, the site of the proposed development is assumed to be within Terrain Category 3 for all wind directions (Figure 3).

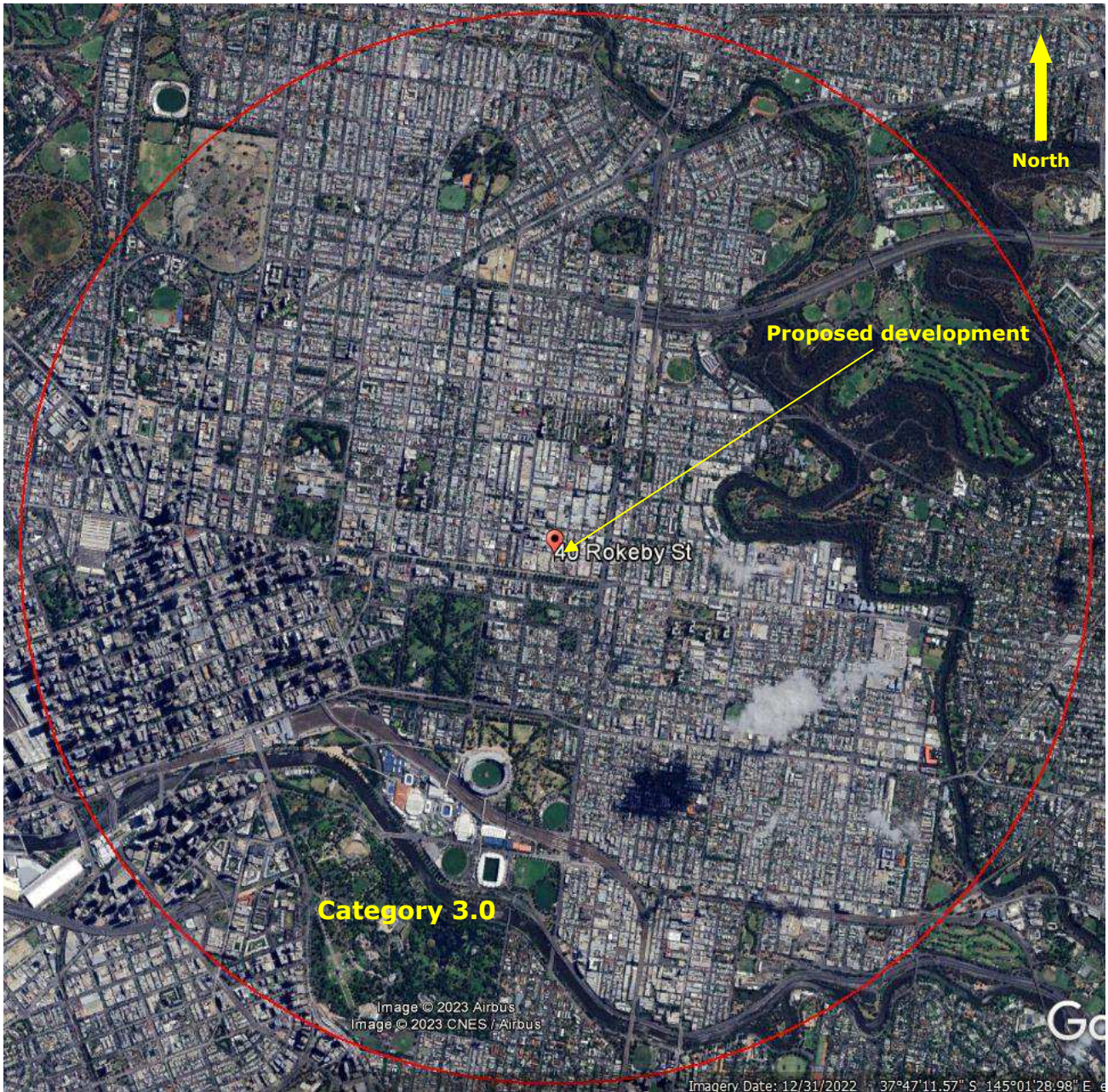


Figure 3: Assumed terrain categories for wind speed estimation.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

2.2 Regional Wind Climate

The mean and gust wind speeds have been recorded in the Melbourne area for over 30 years. This data has been analysed and the directional probability distribution of wind speeds has been determined. The directional distribution of hourly mean wind speed at the gradient height, with a probability of 0.1% of time and 20% of time exceeded are shown in Figure 4. The wind data at this free stream height is common to all Melbourne city sites and may be used as a reference to assess ground level wind conditions at the site.

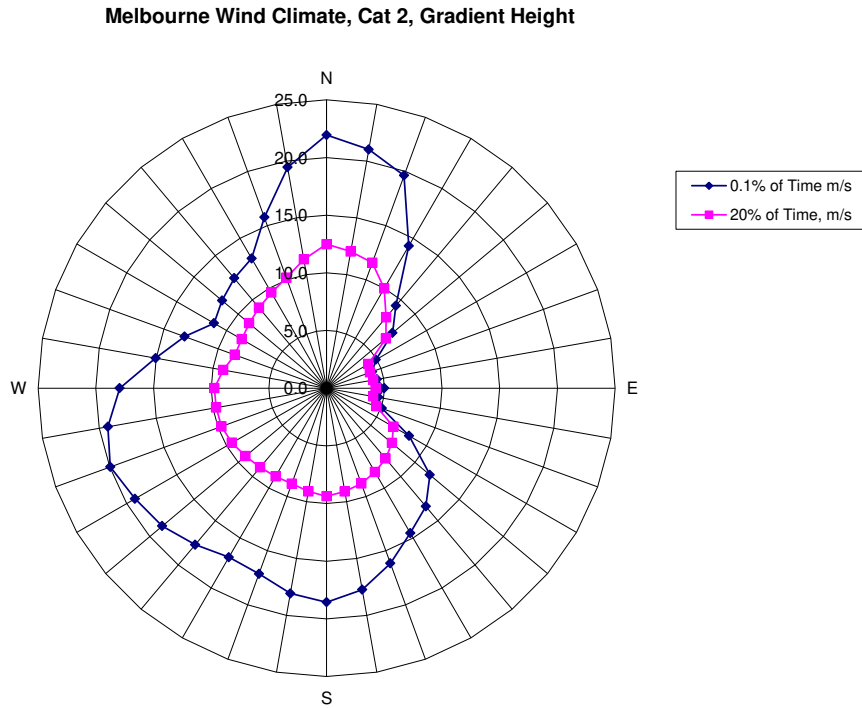


Figure 4: Directional Distribution of Mean Hourly Wind Velocities (m/s) for 0.1% and 20% exceeded at Gradient Height for Melbourne.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

2.3 Building Geometry and Orientation

The proposed development is comprised of two office towers, with a height of 50.0m for the southern tower and 53.6m for the northern tower. The overall plan-form dimensions are approximately 35.5m x 81.6m as shown in Figure 5. The main entrances are located on Rokeby Street and the proposed laneway. The development incorporates tower setbacks from all surrounding street boundaries.

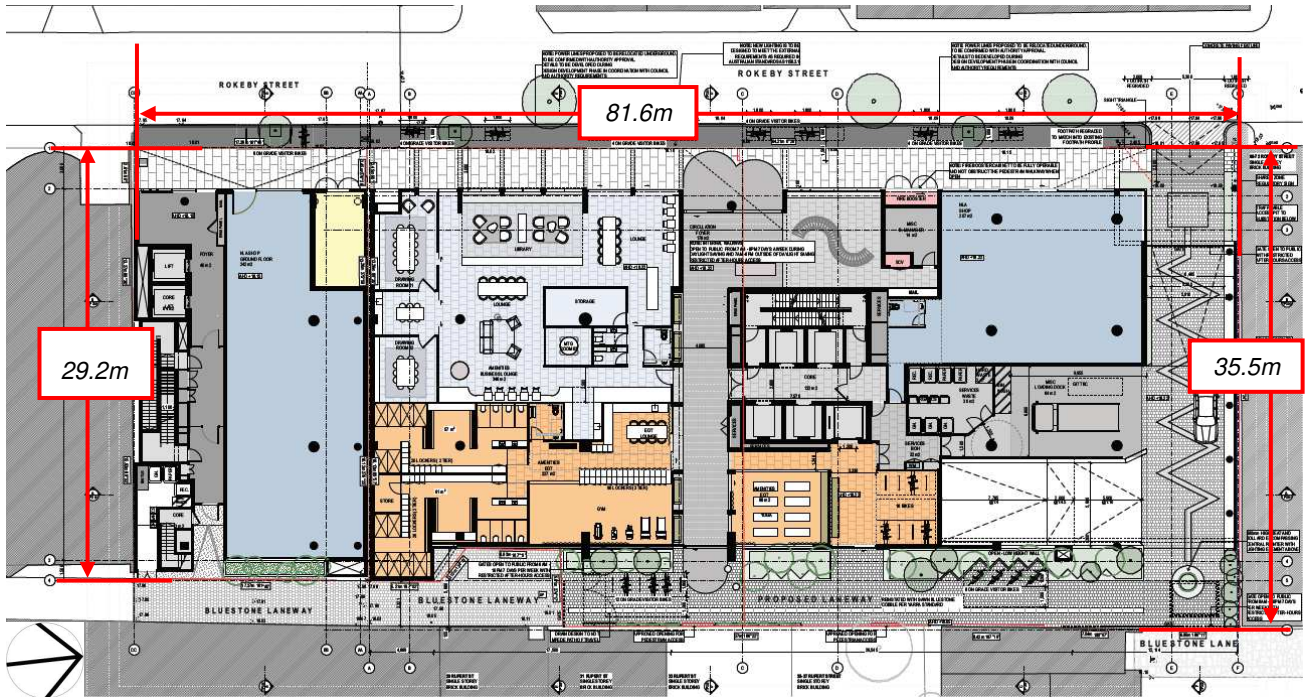


Figure 5: Ground floor plans with the plan-form dimensions overlaid.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

2.4 Flow interactions with Adjacent Developments

The immediately adjacent developments are shown in Figure 6. At ground level, the site is exposed to direct winds from the northerly and westerly directions channelling along Rokeby Street. The building is oriented such that adverse impacts from downwash of west winds is expected at ground level. At the current stage, the development is taller than the surrounding buildings and so is exposed to winds from all directions at the upper levels. There will be a potential future building with a similar height at the south of the site.



Figure 6: Immediately adjacent surroundings and their approximate number of storeys (S).

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

2.5 Assessment Criteria

The following wind comfort criteria detailed in Table 1 were applied in this study.

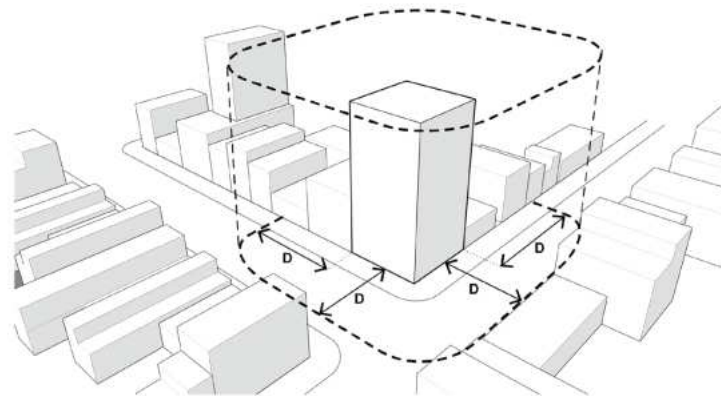
Table 1: Wind Comfort Criteria as per Clause 58.04-4

Unsafe	Comfortable
Annual maximum 3 second gust wind speed exceeding 20m/sec with a probability of exceedance of 0.1% considering at least 16 wind directions.	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: 3m/sec for sitting areas (outdoor cafés) 4m/sec for standing areas (window shopping, queuing) 5m/sec for walking areas (steady steps for most pedestrians)

This criterion specifically calls for the safety criterion to be used to assess infrequent winds (e.g. peak event of $\leq 0.1\%$ of the time); and the perceived pedestrian comfort to be assessed based on frequently occurring winds (e.g. winds that occurs 80% of the time).

In Table 1, the mean wind velocity is defined as the maximum of hourly mean or gust equivalent mean (Gust/1.85)

This criteria specifies that safe and comfortable wind conditions must be achieved in publicly accessible areas within a distance equal to half the longest width of the building measured from all facades or half the overall height of the building, whichever is greater, as shown in Figure 7.



**ASSESSMENT DISTANCE D = GREATER OF:
L/2 (HALF LONGEST WIDTH OF BUILDING) OR
H/2 (HALF OVERALL HEIGHT OF BUILDING)**

Figure 7: Assessment distance

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

2.5.1 Use of Adjacent Pedestrian Occupied Areas & Recommended Comfort Criteria

The following table lists the specific areas adjacent to the proposed development and the corresponding recommended criteria.

Table 2: Recommended application of criteria

Area	Specific location	Recommended Criteria
Public Footpaths, Access ways	Along Rokeby Street and adjacent laneways (proposed and existing) (Figure 8)	Walking
Building Entrances	Main building entrances along Rokeby Street and eastern laneway (Figure 8)	Standing
Outdoor Communal Areas	Levels 03, 04 & 12, and rooftop (Figure 9 and Figure 10)	Walking (See discussion below)
Sports Court	Rooftop of 40-50 Rokeby Street (Figure 10)	Walking

2.5.2 Terrace / Balcony Recommended Criterion Discussion

Vipac recommends as a minimum that terrace areas meet the criterion for walking since:

- these areas are not public spaces;
- the use of these areas is optional, and only intended to be used on fair weather days with calm winds;
- many similar developments in Melbourne and other Australian capital cities experience wind conditions on balconies and elevated deck areas in the vicinity of the criterion for walking.

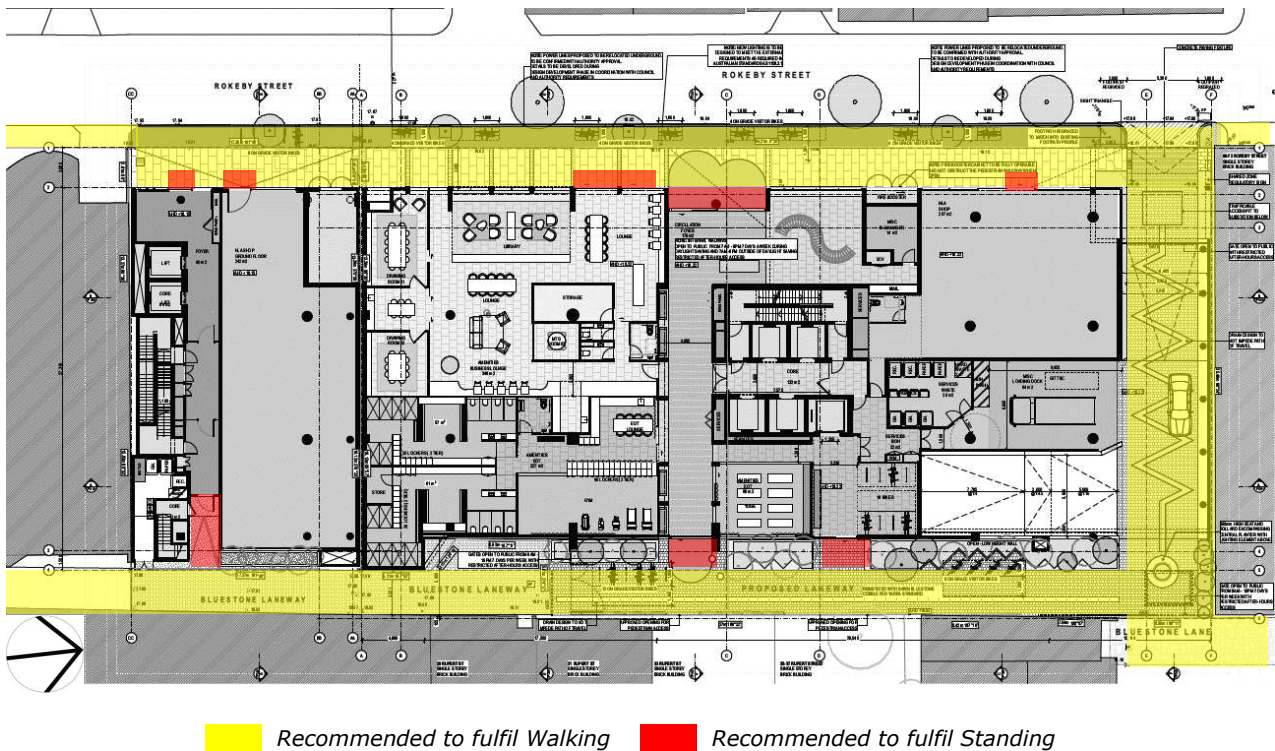
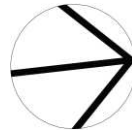
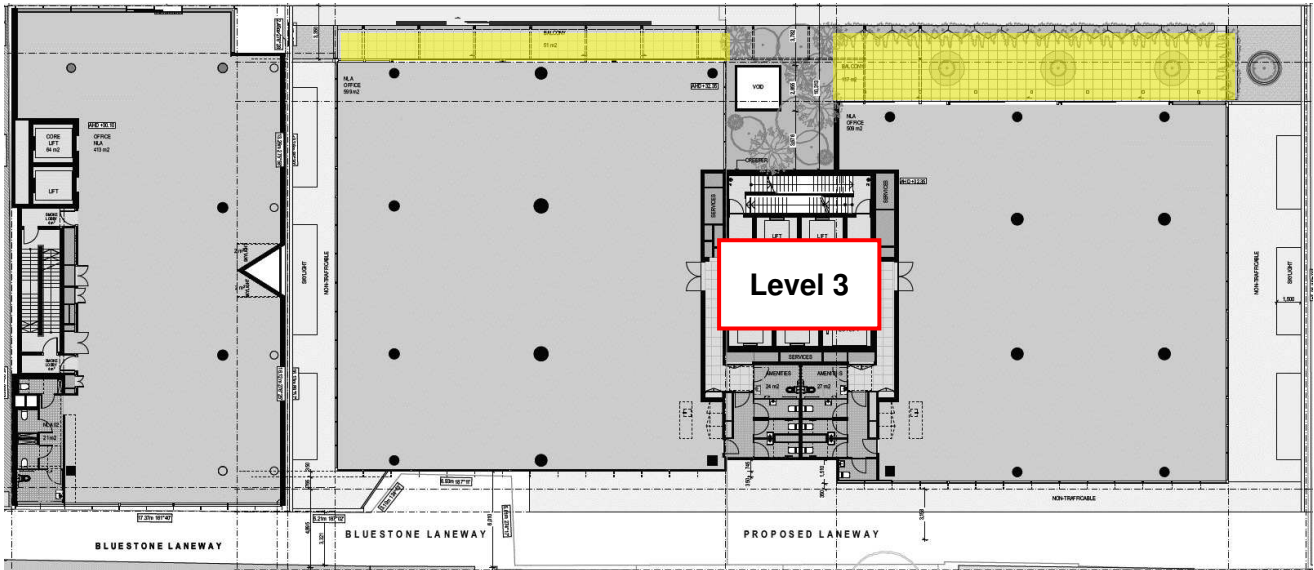


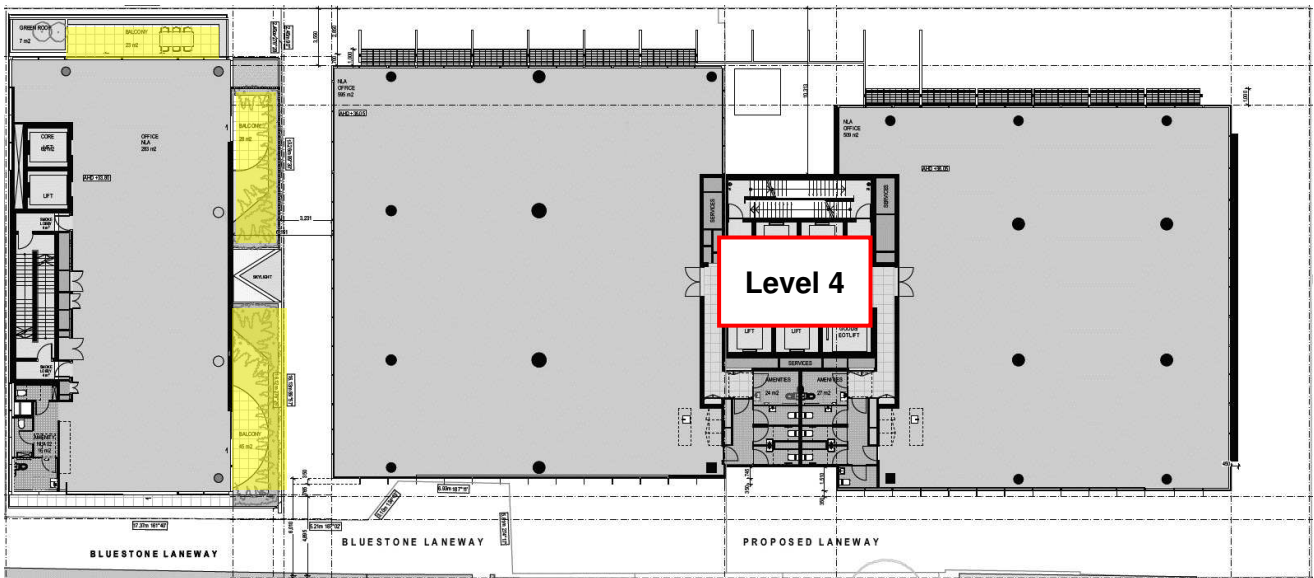
Figure 8: Ground floor plan with recommended wind criteria overlaid.

**ADVERTISED
PLAN**

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright



**ADVERTISED
PLAN**




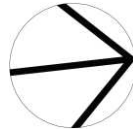
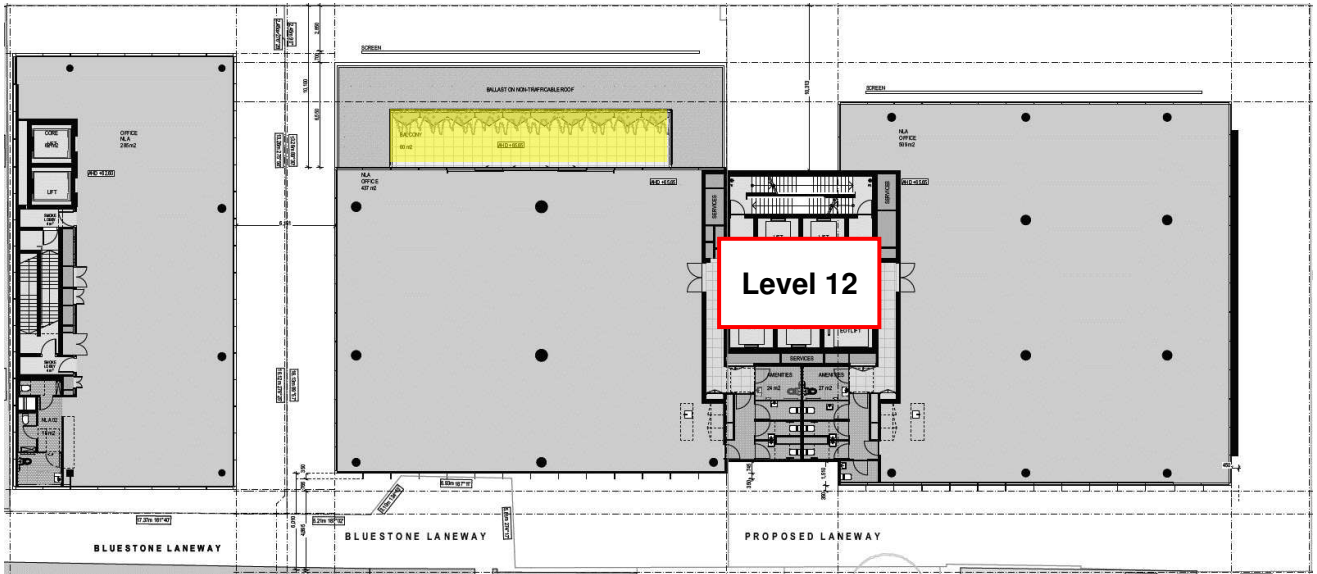
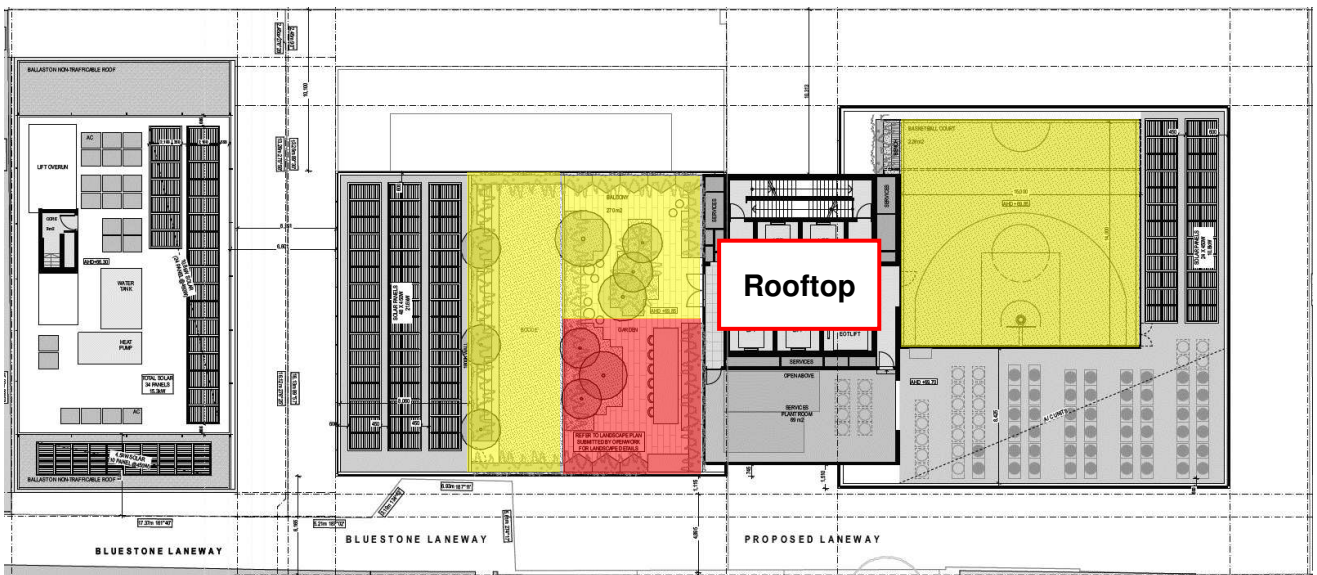
 Recommended to fulfil Walking

Figure 9: Level 3 (top) and Level 4 (bottom) floor plans with the recommended wind criteria overlaid.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright



ADVERTISED PLAN



Recommended to fulfil Walking Recommended to fulfil Standing

Figure 10: Level 12 (top) and rooftop (bottom) floor plans with the recommended wind criteria overlaid.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

3 Pedestrian Level Wind Effects

3.1 Discussion

Through a comparative analysis, it was determined that there are no significant massing changes to the December 2023 design compared to the design used for wind tunnel testing for 40-50 Rokeby Street. As such the findings from the test report produced in October 2023 (report reference: 30N-22-0439-TRP-67774-0) will be taken into consideration for the assessment of the combined 32-50 Rokeby Street development. More specifically, the results for Configuration 2 will be considered. This is the configuration with likely future developments within the next 5 years, and the development on 32-38 Rokeby Street had been included during these tests.

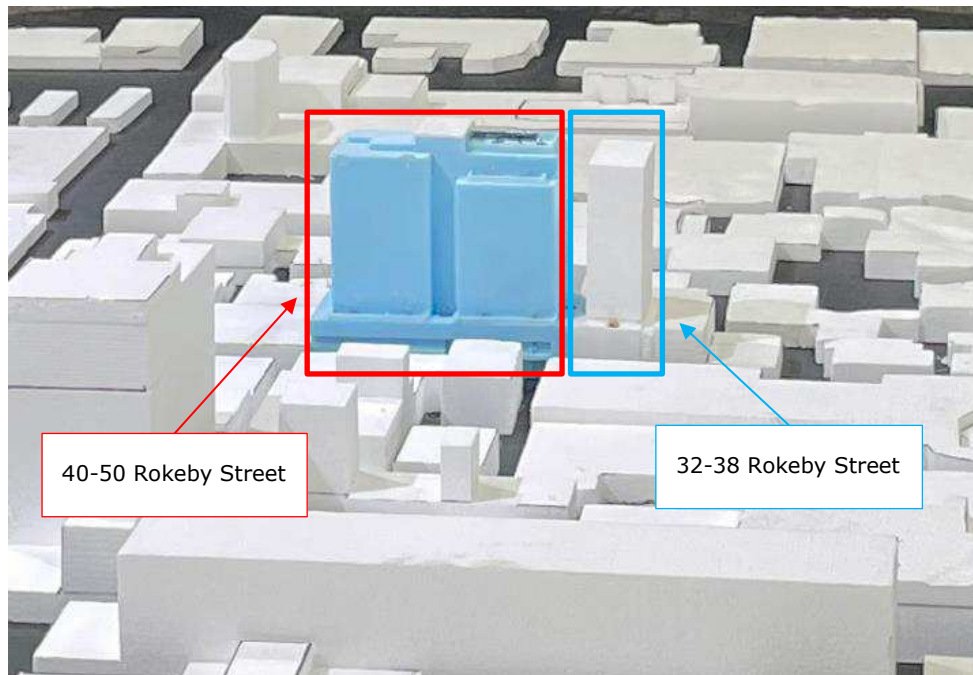


Figure 11: Close-up image of Configuration 2 during the wind tunnel tests in October 2023 indicating the combined development of 32-50 Rokeby Street.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

The development at 32-38 Rokeby Street was constructed based on drawings received by MA Architects dated 31st January 2023. The key difference between this and the updated design is on the ground level – the January 2023 design features a ground floor setback from the Rokeby Street boundary by 0.8m, whereas the December 2023 design features a 3m setback.

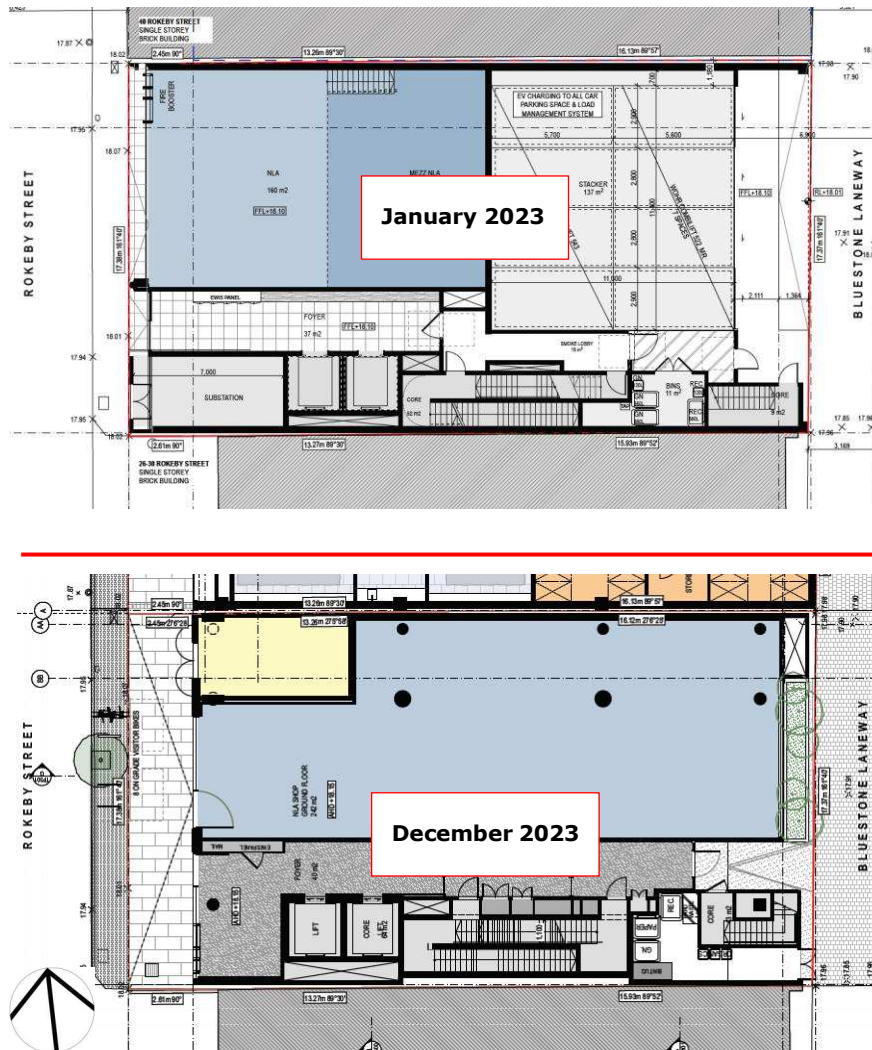


Figure 12: Comparison of ground floor plans of 32-38 Rokeby Street (top: January 2023; bottom: December 2023).

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

ADVERTISED PLAN

3.2 Assessment

Ground Level

All pedestrian footpaths and accessways measured windspeeds within the recommended walking comfort criterion for Configuration 2. As such, no recommendations for wind amelioration are provided for these areas.

All main building entrances for 40-50 Rokeby Street measured windspeeds within the recommended standing comfort criterion for Configuration 2. As the location of the entrances have not changed, no recommendations for wind amelioration are provided for these areas.

The areas immediately adjacent to 32-38 Rokeby Street on the bluestone laneway and along Rokeby Street measured winds within the standing comfort criterion for Configuration 2. As the entrance along the bluestone laneway is setback from the articulated façade, and the entrances along Rokeby Street are shielded by the building above, wind conditions are expected to be better for these locations. As such, no recommendations for wind amelioration are provided for these areas.

Terraces

With 1.2m high solid balustrades along the perimeter, wind speeds on the level 3 balconies on 40-50 Rokeby Street were measured to be within the recommended walking comfort criterion (standing comfort criterion for most locations) for Configuration 2. The updated drawings have retained the 1.2m high solid balustrades. As such, no recommendations for wind amelioration are provided for these areas.

The level 4 balconies of 32-38 Rokeby Street were not assessed during the wind tunnel tests of 40-50 Rokeby Street in October 2023. The western balcony has small dimensions and 1.2m high solid balustrades proposed along the perimeter. As such, wind speeds are expected to be well within the recommended walking comfort criterion.

The northern balconies may experience elevated wind levels as they are located at the channelling point between the 2 tower forms. However, in consideration of their small dimensions and 1.2m high solid balustrades and proposed landscaping along the perimeter, wind speeds are expected to be within the recommended walking comfort criterion.

With 1.5m high solid balustrades along the perimeter, wind speeds on the level 12 balcony on 40-50 Rokeby Street were measured to be within the recommended walking comfort criterion for Configuration 2. The updated drawings have proposed 2m high solid balustrades on this terrace. As such, no recommendations for wind amelioration are provided for these areas.

With 1.8m high solid balustrades along the perimeter and pergola structure, wind speeds on the southern rooftop balcony at 40-50 Rokeby Street were measured to be within the recommended walking / standing comfort criteria (standing/sitting comfort criteria for most locations) for Configuration 2. The updated drawings have removed the pergola structure, however, have retained the 1.8m high solid balustrades as well as reduced the extent of the activated area. As such, wind speeds are expected to be within the recommended walking / standing comfort criteria.

The basketball court has been moved to the north in the updated drawings, an area which has not been assessed during the wind tunnel tests. However, in consideration of the 1.8m high solid balustrades along the perimeter, and the lift overrun and services room, wind speeds are expected to be within the recommended walking comfort criterion.

Vipac recommends a scaled wind tunnel study be conducted in detail design stage to quantify the wind conditions and determine the proper wind control measures wherever necessary.

**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

4 Conclusions

An appraisal of the likely wind conditions at the pedestrian ground level and balcony areas of the proposed development at **32-50 Rokeby Street, Collingwood** has been made.

Vipac has carefully considered the form and exposure of the proposed development, nominated criteria for various public areas according to their function and referred to past experience to produce our opinion of likely wind conditions. A comparative study was made with the findings in the October 2023 wind tunnel test report and the updated design.

The findings of this study can be summarised as follows:

With proposed design:

- Wind conditions in the ground level footpath areas and access ways would be expected to be within the **walking** comfort criterion;
- Wind conditions at the main entrances would be expected to be within the **standing** comfort criterion;
- Wind conditions at the terraces / balconies would be expected to be within the recommended **walking** comfort criterion; and
- Wind conditions at the rooftop sport court and garden are expected to be within the recommended **walking / standing** comfort criteria.

As a general statement, educating occupants about wind conditions at open terrace/balcony areas during high-wind events and fixing loose, lightweight furniture on the terrace are highly recommended.

The assessments provided in this report have been made based on experience of similar situations in Melbourne and around the world.

Vipac recommends a scaled wind tunnel study be conducted in detail design stage to quantify the wind conditions and determine the proper wind control measures wherever necessary.

This Report has been Prepared

For

40 Rokeby Pty Ltd ATF 40 Rokeby Property Trust

By

VIPAC ENGINEERS & SCIENTISTS PTY LTD.

**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

Appendix A Environmental Wind Effects

Atmospheric Boundary Layer

As wind flows over the earth it encounters various roughness elements and terrain such as water, forests, houses and buildings. To varying degrees, these elements reduce the mean wind speed at low elevations and increase air turbulence. The wind above these obstructions travels with unattenuated velocity, driven by atmospheric pressure gradients. The resultant increase in wind speed with height above ground is known as a wind velocity profile. When this wind profile encounters a tall building, some of the fast-moving wind at upper elevations is diverted down to ground level resulting in local adverse wind effects.

The terminology used to describe the wind flow patterns around the proposed development is based on the aerodynamic mechanism, direction and nature of the wind flow.

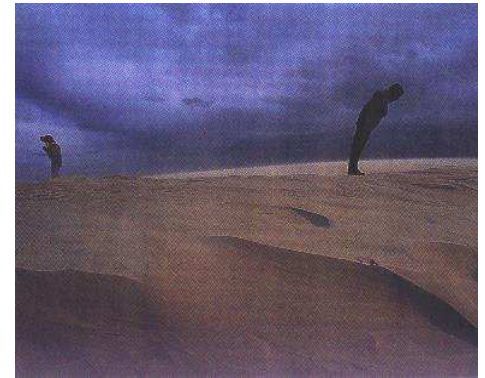
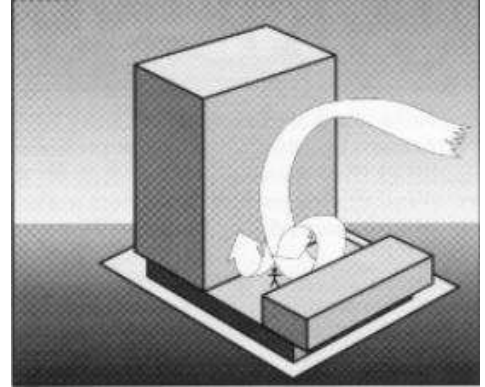
Downwash – refers to a flow of air down the exposed face of a tower. A tall tower can deflect a fast-moving wind at higher elevations downwards.

Corner Accelerations – when wind flows around the corner of a building it tends to accelerate in a similar manner to airflow over the top of an aeroplane wing.

Flow separation – when wind flowing along a surface suddenly detaches from that surface and the resultant energy dissipation produces increased turbulence in the flow. Flow separation at a building corner or at a solid screen can result in gusty conditions.

Flow channelling – the well-known “street canyon” effect occurs when a large volume of air is funnelled through a constricted pathway. To maintain flow continuity the wind must speed up as it passes through the constriction. Examples of this might occur between two towers, in a narrowing street or under a bridge.

Direct Exposure – a location with little upstream shielding for a wind direction of interest. The location will be exposed to the unabated mean wind and gust velocity. Piers and open water frontage may have such exposure.



**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

Appendix B References

- [1] *Structural Design Actions, Part 2: Wind Actions*, Australian/New Zealand Standard 1170.2:2021
- [2] *Wind Effects on Structures* E. Simiu, R Scanlan, Publisher: Wiley-Interscience
- [3] *Architectural Aerodynamics* R. Aynsley, W. Melbourne, B. Vickery, Publisher: Applied Science Publishers

**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

Appendix C Drawings List

Drawings received: **December 2023**

DRAWING LIST

TP001	COVER SHEET
TP005	EXISTING SITE CONDITIONS / SURVEY
TP020	AREA SCHEDULE
TP050	EXISTING SITE PLAN / DEMO PLAN
TP051	EXISTING STREETSCAPE ELEVATIONS
TP090	FINISHES
TP100	SITE PLAN
TP110	B03 PLAN
TP111	B02 PLAN
TP112	B01 PLAN
TP113	GROUND PLAN
TP114	L01 PLAN
TP115	L02 PLAN
TP116	L03 PLAN
TP117	L04 PLAN
TP118	L05 PLAN
TP119	L06 PLAN
TP120	L07 PLAN
TP121	L08 PLAN
TP122	L09 PLAN
TP123	L10 PLAN
TP124	L11 PLAN
TP125	L12 PLAN
TP126	ROOF PLAN (ROOFTOP)
TP127	ROOF PLAN (LIFT OVERRUN)
TP200	PROPOSED STREETSCAPE ELEVATION
TP201	DETAIL ELEVATIONS
TP202	DETAIL ELEVATIONS
TP250	1:50 DETAIL ELEVATIONS
TP300	SECTIONS
TP301	SECTIONS
TP302	SECTIONS
TP900	SHADOW DIAGRAMS
TP901	SHADOW DIAGRAMS
TP902	SHADOW DIAGRAMS
TP903	SHADOW DIAGRAMS
TP910	PHYSICAL MATERIAL SAMPLES

ADVERTISED PLAN

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright