7 HARTINGON STREET
NORTHCOTE

ENVIRONMENTAL WIND ASSESSMENT

By

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Report 25132A-DE-EWA00 Rev1

CONTENTS

1. INTRODUCTION

The proposed development at 7 Hartington Street, Northcote, will be a community activity centre to be known as “CHORA” comprising residential buildings, retail tenancies, public outdoor spaces an early learning centre. The site will occupy the current grounds of the Holy Monastery of Axion Estin in Northcote and the site location is shown in Figure 1.

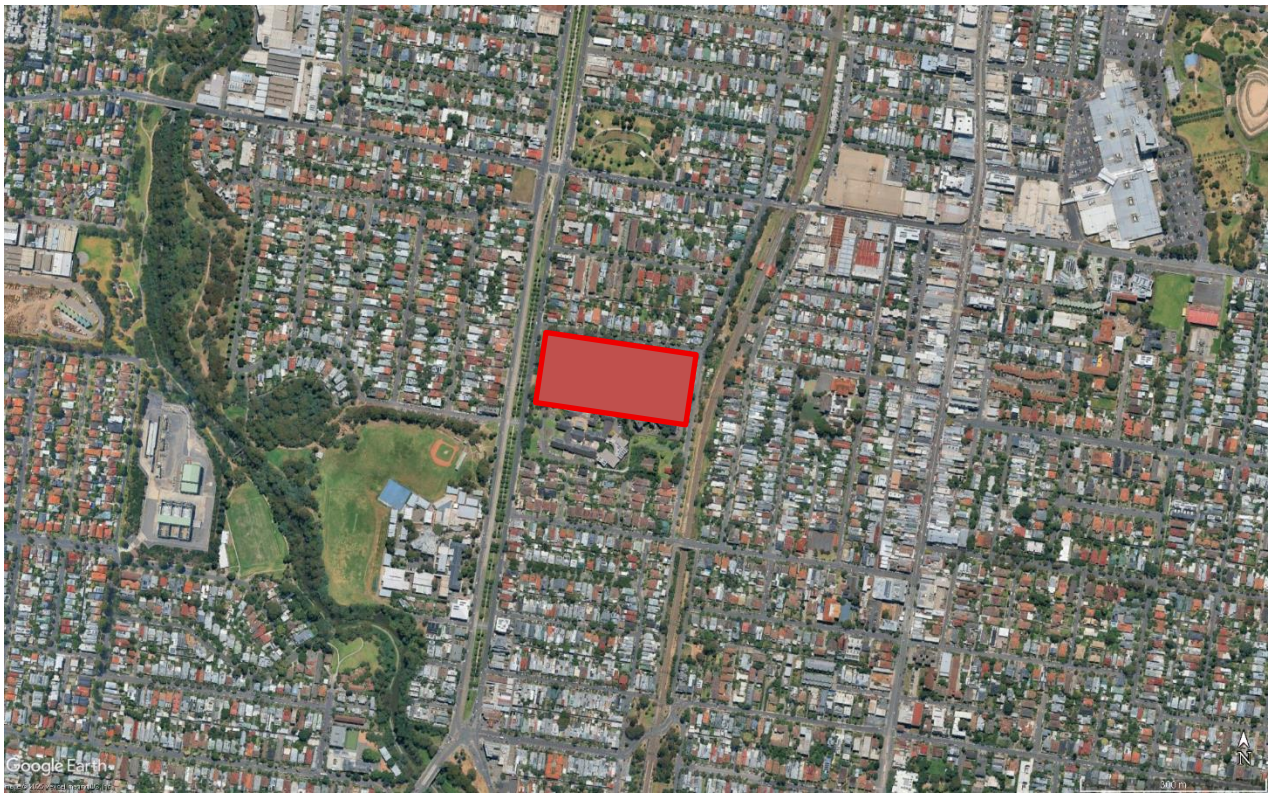

Figure 1: Location of the proposed 7 Hartington Street Development

This assessment was commissioned by Hub Property Group and is based on a review of development plans prepared by KUD Architecture dated 21st August 2025 and only considers current existing surrounds and under construction buildings (i.e. no proposed future buildings). This desktop environmental wind assessment is based on MEL Consultants knowledge of wind flow around buildings and structures from undertaking numerous wind tunnel model studies, no wind tunnel study or modelling has been undertaken for this study.

2. THE DEVELOPMENT

The development will comprise a number of purpose built buildings around the periphery of the site, as shown in Figure 2 below. To the east will be a row of 4 level apartment buildings. On the northern boundary will be 3 level townhouses, while on the west side will be an early learning centre and outdoor theatre. The existing monastery will maintain its original built form. The spaces between all the buildings will be outdoor community spaces, plazas and retail.

Architectural renders from various directions of the entire development are shown in Figures 3a – 3d.

Figure 2: Site plan of the 7 Hartington Street development.

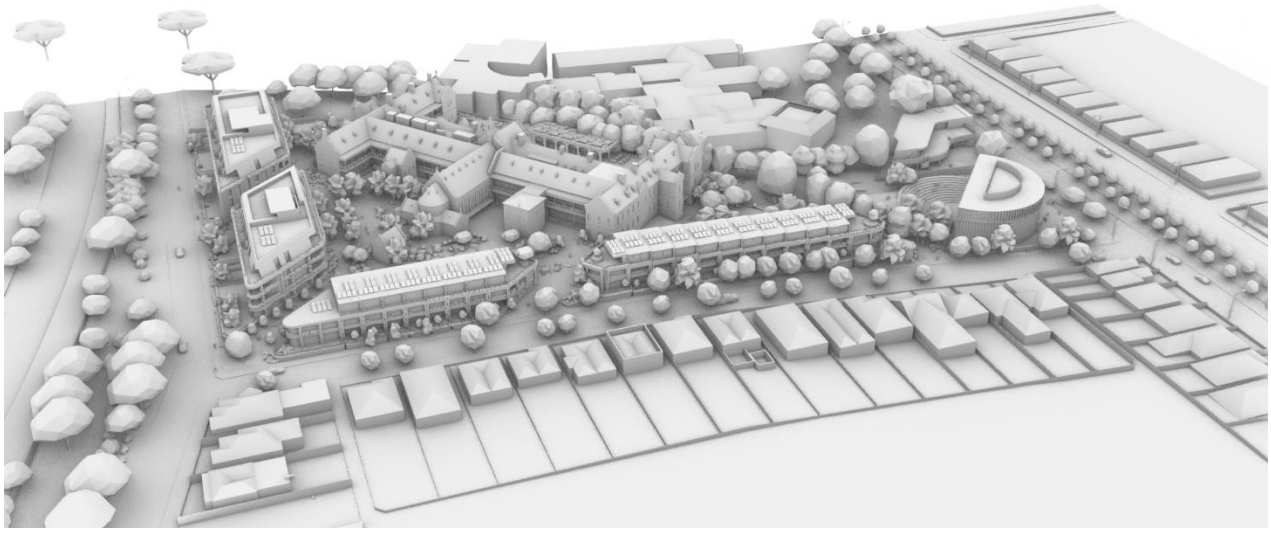

Figure 3a: Northern view architectural render

Figure 3b: Eastern view architectural render

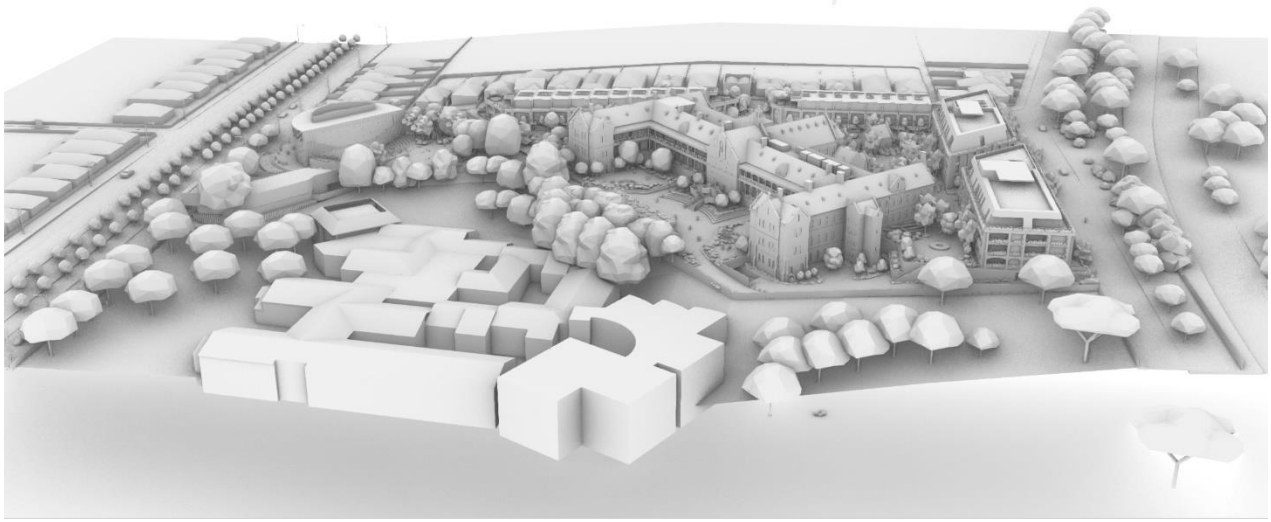

Figure 3c: Southern view architectural render

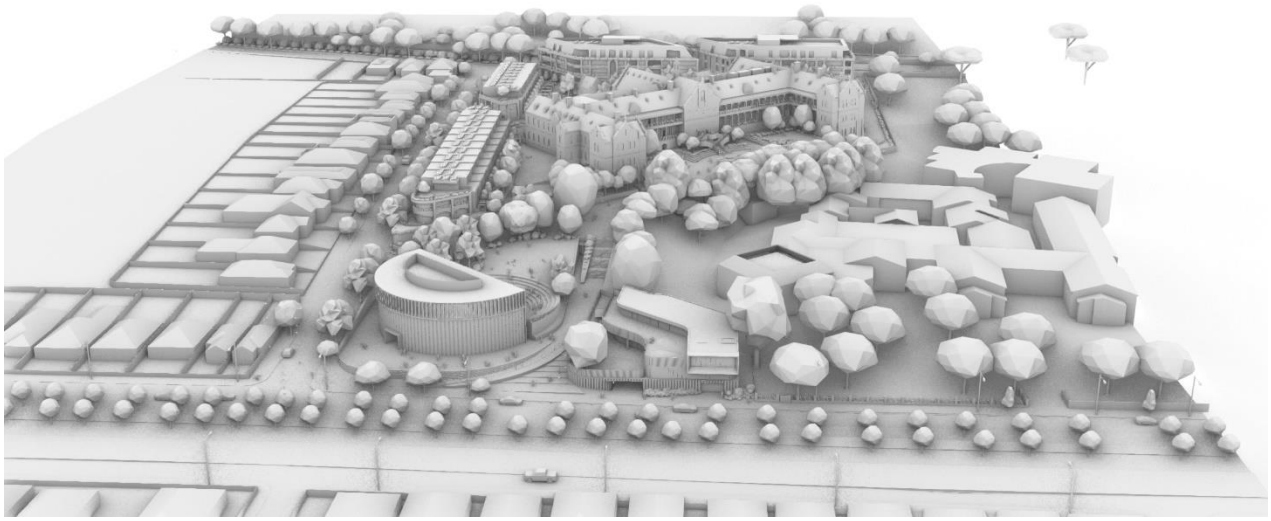

Figure 3d: Western view architectural render

3. WIND ENVIRONMENT AND EXPOSURE

The strongest and most frequent winds in the Melbourne Metropolitan Region come from the north and west sectors with secondary strong winds coming from the south sector; east sector winds are relatively light and infrequent.

The development site is predominantly surrounded by residential buildings with recreation reserves and the Merri Creek reserve nearby.

Based on the above, the site will have exposure to all the wind directions and wind will approach over typically suburban terrain for all the wind directions.

The effects of any nearby trees have not been considered in this assessment.

4. ASSESSMENT CRITERIA

The wind safety and comfort criteria that will be applied in this assessment are defined in the Darebin City Planning Scheme clause 58.04-4, Standard D17, defined in Table D6 as follows:

Unsafe wind conditions: Annual maximum 3 second gust wind speed exceeding 20 metres per second with a probability of exceedance of 0.1% considering at least 16 wind directions

Comfortable wind conditions A 'mean wind speed' from all wind directions combined with a 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)

Trees and landscaping should not be used to mitigate wind impacts. This does not apply to sitting areas, where trees and landscaping may be used to supplement fixed wind mitigation elements.

Wind mitigation elements, such as awnings and screens should be located within the site boundary, unless consistent with existing urban context or preferred future development of the area.

The above criteria are pass/fail criteria as they only assess the summation of probabilities of exceedance across all wind directions to determine whether a location passes or fails the threshold criterion i.e. the criteria assess the average wind conditions.

5. RECOMMENDED WIND COMFORT CRITERIA

The following wind comfort criteria are recommended:

Streetscapes	Walking
Building Entrances	Standing
Private Balconies	Walking
Outdoor Plazas	Standing
Outdoor Retail	Sitting

The wind conditions on private outdoor terraces have been recommended to satisfy the walking criterion as these spaces 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 on an unattended terrace.

6. WIND ASSESSMENT

6.1 Townhouses

With overall height of 3 levels (ground + 2) the townhouses will not be expected to generate any significant wind impacts along Hawthorn Road. The wind conditions will increase at the entries to and within the passage separating the east and west wings and also at the east and west ends of the townhouse blocks where conditions would rise to the walking comfort criterion as a result of the funnelling of wind flow between the buildings (which would also affect the corner terraces) and the speed-up effects at the buildings corners.

The wind conditions on the local terraces away from the corners would be expected to meet the standing comfort criterion. The corner terraces on Ground, Level 1 and Level 2 would have higher wind conditions, rising to the walking comfort criterion.

There would also be some localised windier areas arising from the wind flow funnelling between the narrow gaps between the Townhouses and the Monastery and these areas would only be expected to achieve the walking comfort criterion.

Conditions in most other areas other than those noted above would be expected to achieve the standing comfort criterion.

6.2 Apartment Buildings

The 4 level apartment buildings will not be expected to induce significant wind impacts to the surrounding streetscapes as their narrow dimension faces the strong north wind directions while their long dimension faces the light easterly directions. As per the townhouses, the wind conditions will increase between at the entries to and within the passage separating the north and south wings, as well as at the passage between the Townhouses where conditions would be expected to rise to the walking comfort criterion from the funnelling effects between the buildings.

Corner balconies as noted with the Townhouse block would experience higher wind conditions, achieving the walking comfort criterion, as opposed to the inboard balconies (i.e. away from corners) which would achieve the standing and sitting comfort criteria.

Rooftop communal spaces/terraces would experience elements of gustiness and swirling flows arising from the turbulence across the top of the building and conditions would be expected to achieve the standing comfort criterion.

It is also noted that any constricting gaps between the Apartment buildings and the Monastery will have localised higher wind conditions due to the funnelling effects and conditions in these areas would rise to the walking comfort criterion. Otherwise conditions achieve the standing comfort criterion would be achieved in most areas.

6.3 ELC & Theatre

The ELC will be exposed to the strong west sector wind directions but have some protection to the north provided by the Theatre. With the entry away from the corner and being inset from the façade conditions would be expected to achieve the standing criterion.

The Theatre will be exposed to both the strong northerly and westerly wind directions and will induce some speed-up effects as wind flows around the building. Its shape is beneficial, however, and the lower topographical point at this part of the site will be of benefit which will promote the wind to flow more smoothly around and up and over the structure. Conditions at the Theatre entry will achieve the standing comfort criterion, but its location will suffer from a noticeable inrush of wind flow when the doors open.

The narrowing of the gap between the Theatre and the ELC will result in a noticeable acceleration of wind flow where conditions would be expected to rise to the walking comfort criterion. Furthermore, the pedestrian access paths to the Theatre from the NE and SW sides will suffer from flow funnelling through them and into the central theatre space, particularly for the west and north sector wind directions. The wind break effect of the Theatre building will generate strong separating flows in the lee of the semi-circular structure resulting in gusty and swirling flows within the amphitheatre. Conditions would likely achieve a combination of standing and sitting comfort, depending upon location within the open seating area and central theatre space.

The ELC outdoor play area will be exposed primarily to the west sector wind directions with some exposure also to a narrow band of northerlies. The low topographical location will be of benefit and allow the wind to flow up and over the building and as such the downwash effects towards ground will be lessened. Nevertheless, even with the high fencing surrounding the ground and play areas, the wind will still be able to flow across the area, speeding up as it flows towards the narrowing gap at the eastern end. Conditions in the outdoor space would be expected to be a mixture of standing and walking comfort, with the latter condition likely to be experienced in the eastern half of the areas.

6.4 Monastery

With the overall built form of the Monastery being maintained the overall wind conditions surrounding the building would be expected to generally be maintained, with the exception that the new narrow gaps between the Apartment Buildings and the Townhouses will create local increases of wind conditions relative to the existing conditions.

The Monastery is relatively tall compared to the surrounding buildings and will induce some downwash to ground level and into the proposed open spaces. Wind conditions at the building corners would be expected to rise to the walking comfort criterion, with other areas away from these corners expected to meet the standing criterion or better.

The wind conditions at the entries would be expected to meet the standing criterion.

6.5 Open Spaces & Plaza

The open spaces and plaza areas within the site amongst the various buildings would generally be expected to achieve the standing and sitting comfort criteria, depending on location, with areas in sheltered areas behind the protection of buildings experiencing improved comfort levels relative to other areas in more exposed areas. Any areas intended for outdoor retail may be required to have local screening incorporated around them (by an operator) to improve the amenity so that it is suitable for the more long term stationary activities. Such screening could incorporate solid elements as well as landscaping and vegetation. Typically a minimum height of 1.5m would be recommended.

6.6 Balconies/Terraces

The wind conditions on the balconies and terraces have been noted in the sections above and would rise to the walking comfort criterion at all corner areas and improve to the standing and sitting criteria away from the building corners. Any improvement to the wind conditions on the terraces would require mitigation solutions such as taller balustrades and/or landscaping and vegetation to ameliorate local wind impacts.

It would be recommended that users be educated on the wind impacts on elevated terraces/balconies and that any objects to be left permanently on the terrace would be tethered/ fixed securely to the terrace and the fixing/ tethers inspected regularly for damage/ corrosion. Any loose items should not be left on the terrace when unattended.

7. CONCLUSIONS

We have assessed the likely environmental wind conditions within the proposed CHORA precinct and activity centre at 7 Hartington Street, Northcote detailed in development plans by KUD Architecture dated 21st August 2025.

It has been assessed that the wind conditions in the pedestrian realm around the development would increase, but still satisfy the walking criterion at a minimum.

Conditions at entries would be expected to achieve the standing comfort criterion or better.

The open spaces and plaza areas within the site would generally be expected to achieve the standing and sitting comfort criteria. Any areas intended for outdoor retail may be required to have local screening incorporated around them (by an operator) to improve the amenity so that it is suitable for the more long term stationary activities. Such screening could incorporate solid elements as well as landscaping and vegetation. Typically a minimum height of 1.5m would be recommended.

The wind conditions on the balconies/terraces would be expected to satisfy the standing criterion with corner terraces experiencing increased conditions meeting the walking comfort. Any improvement to the wind conditions on the terraces would require mitigation solutions such as taller balustrades and/or landscaping and vegetation to ameliorate local wind impacts.

The wind conditions at all areas would satisfy the pedestrian safety criterion.

This assessment only considers external wind conditions and has not considered any flows into or through the internal building or apartment spaces arising from wind induced effects.

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17th November, 2025