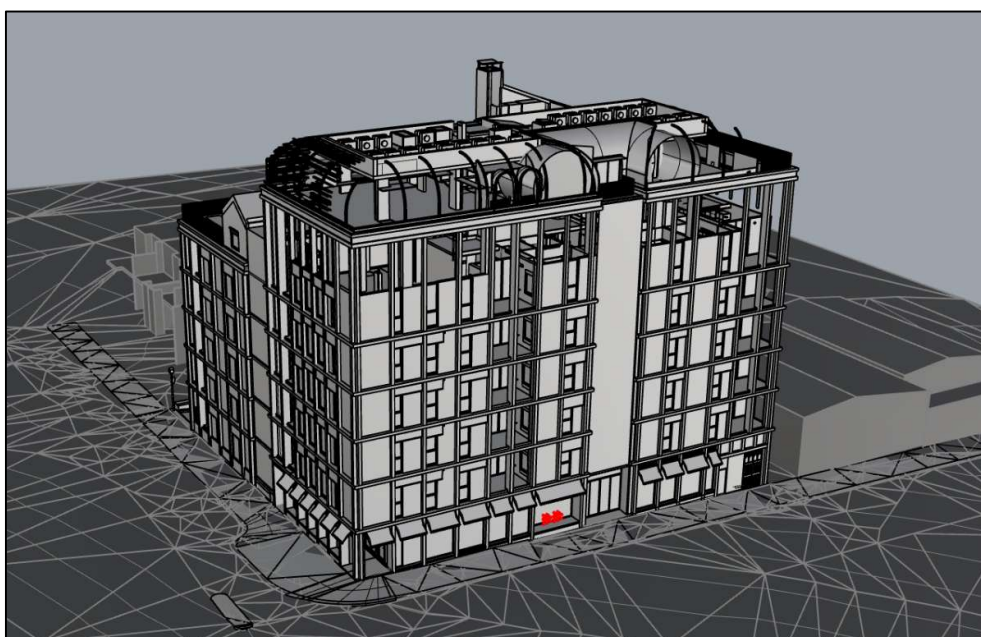


**716 HIGH STREET
THORNBURY**

ENVIRONMENTAL WIND ASSESSMENT

**By
A. Loie**



Report 24145A-DE-EWA03

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1. INTRODUCTION

The proposed development at 716 High Street, Thornbury, will be a 8-storey apartment building on a site on the corner of High Street and Rossmoyne Street, in Thornbury. The location is highlighted in Figure 1.

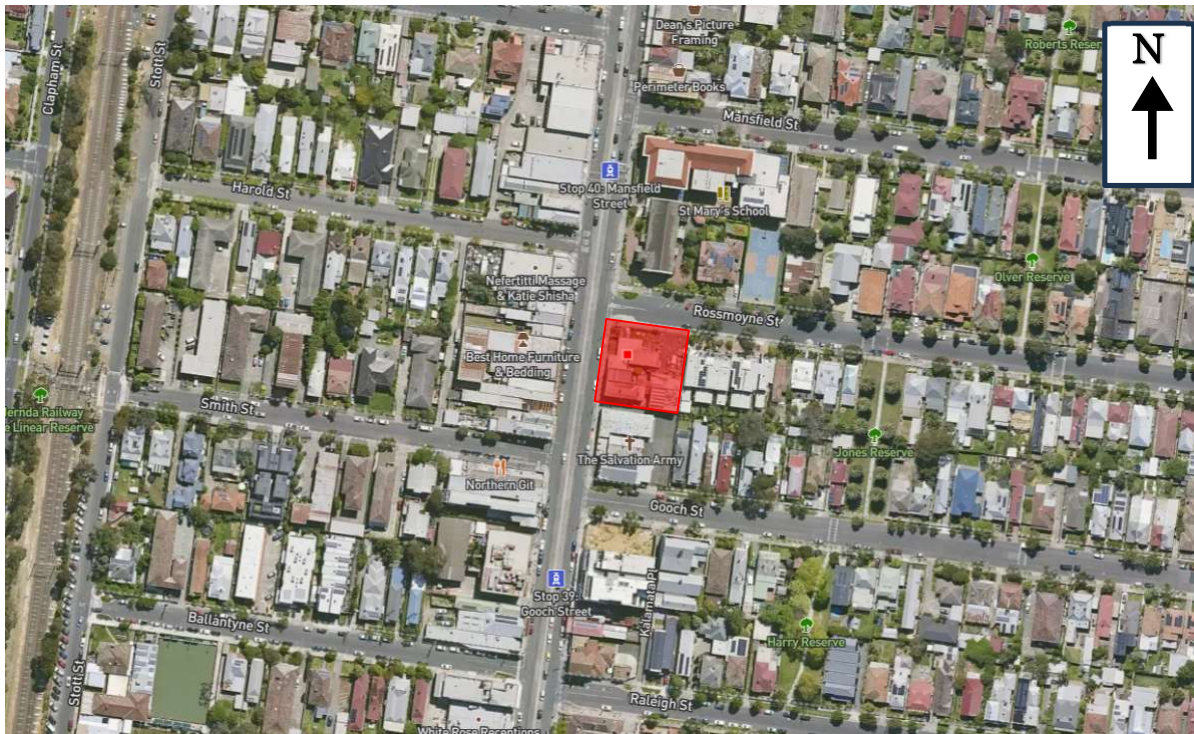


Figure 1: Location of the proposed development at 716 High Street, Thornbury (highlighted in red) [MetroMap]

This assessment was commissioned by Ten Eight Projects and is based on a review of preliminary drawings prepared by AMA Architects listed in Appendix A 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 has been undertaken for this study.

2. THE DEVELOPMENT

The development at 716 High Street will be a 8-storey apartment building with its main entrance located centrally on the north face of the ground floor. The ground level floor plan is presented in Figure 2. On the ground floor there is a designated outdoor dining area at the northeast corner of the site.

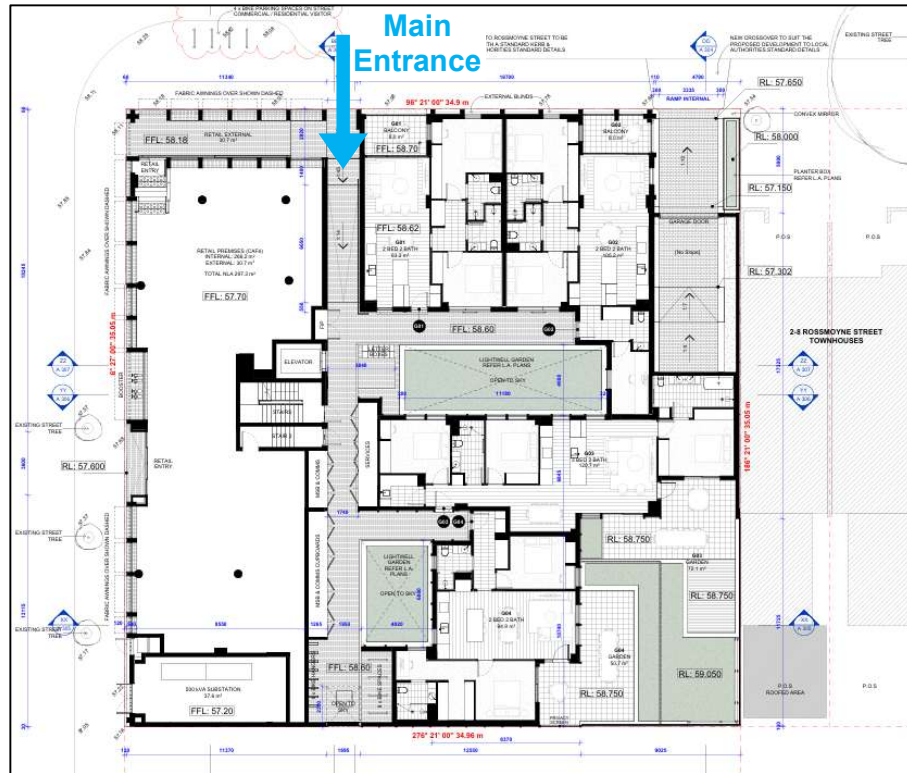


Figure 2: Ground level floor plan.

The floorplates of Levels 1 to 2 (Figure 3) are similar to the ground level. Over Levels 3 to 7 (Figures 4 - 8, respectively) the eastern facade sets back gradually from the east boundary at each level, with this set back used for either rooftops or terraces.

There are balconies/terraces to the north and west facades of the proposed building over the entire height of the building while there are balconies/terraces facing the southeast corner of the site up to Level 4.

The building elevations are presented in Figures 9 - 12, and these the setbacks discussed above as well as give an indication of terrace locations and balustrade heights.

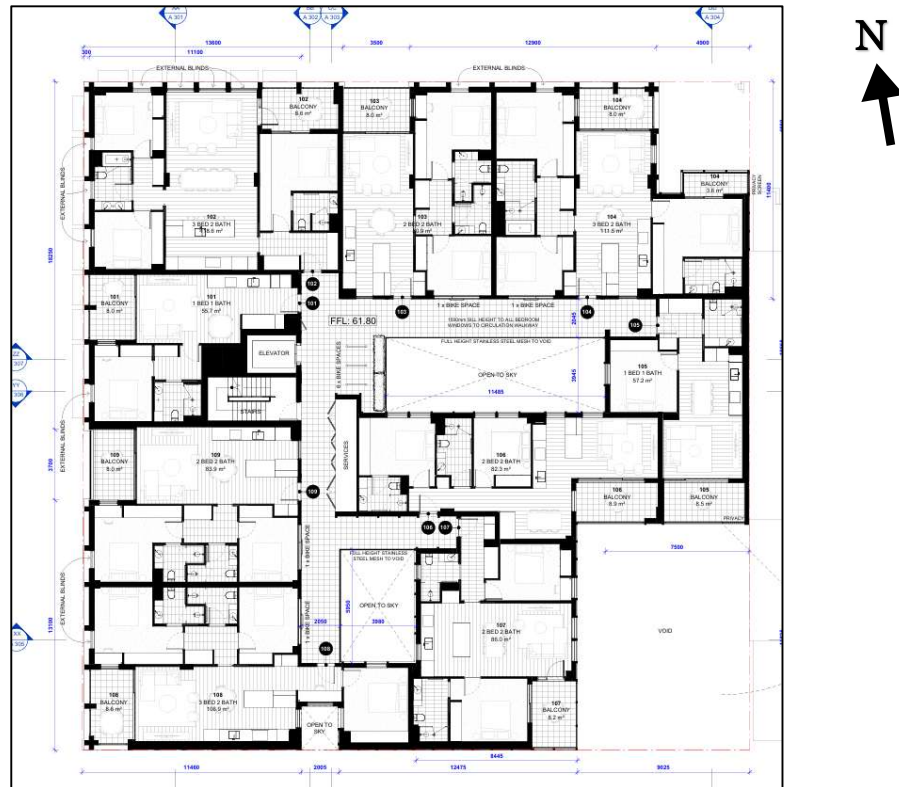


Figure 3: Typical floor plan for Levels 1 to 2 (Level 1 shown).

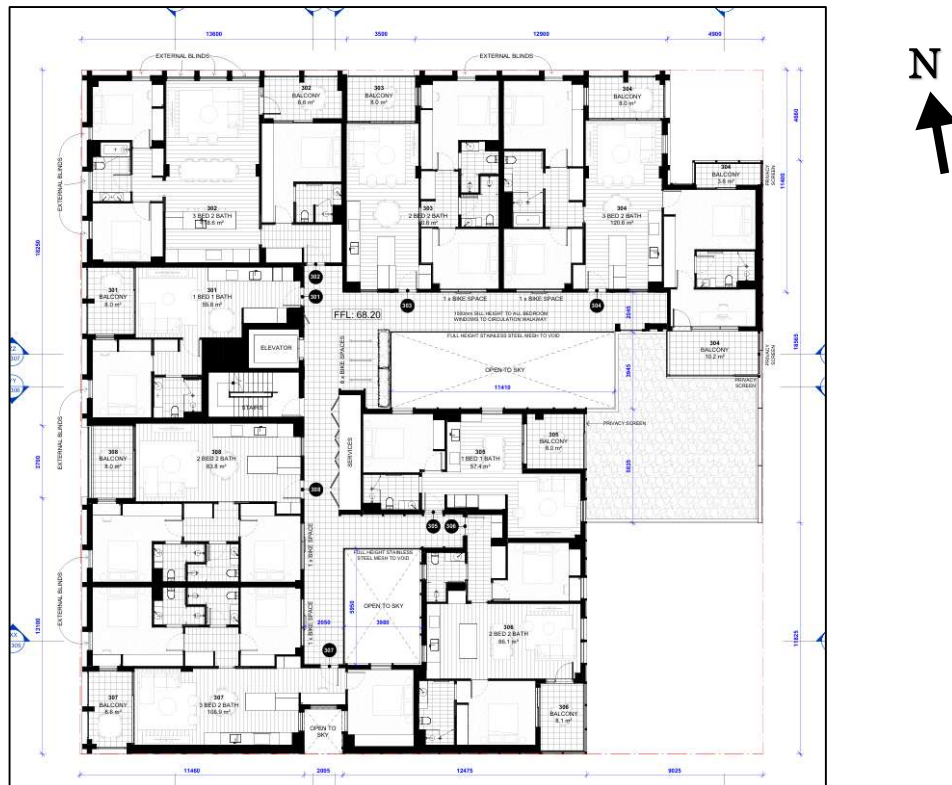


Figure 4: Level 3 floor plan.



Figure 5: Level 4 floor plan.

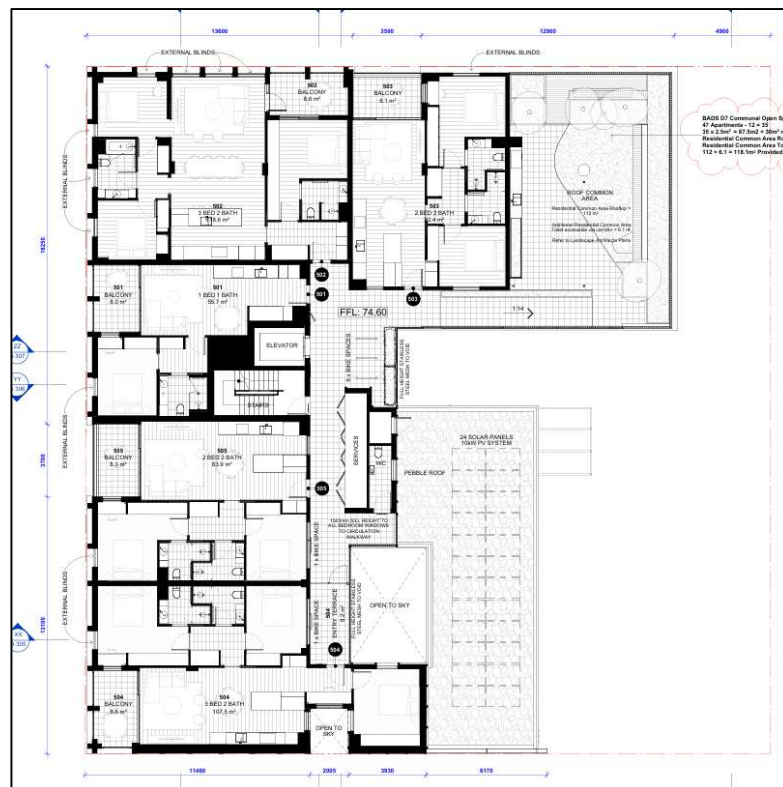


Figure 6: Level 5 floor plan.



Figure 8: Level 7 floor plan.



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Figure 11: South elevation.



Figure 12: West (High Street) elevation.

3. WIND ENVIRONMENT AND EXPOSURE

The strongest and most frequent winds in the Melbourne 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 proposed development is surrounded by 1-2 level high residential housing on either side of High Street. Along High Street there are generally 1-2 level commercial buildings with a few apartment blocks up to 6 levels in height to the north and south of the proposed development. The St. Mary's Catholic Church/Primary School is on the opposite side of Rossmoyne Street to the proposed development and varies in height between 2 to 3 levels.

The topography of the land around the proposed development rises from south to north which would increase the relative height of the buildings to the north and decrease the relative height of the buildings to the south.

Based on the above, the upper levels above the third level (Level 2) of the west, south and east faces of the proposed development would have partial or limited exposure from winds onto their respective faces, while the upper levels above the fourth level (Level 4) of the north face of the proposed development would have more open exposure to wind onto their faces.

4. ASSESSMENT CRITERIA

The Darebin Planning Scheme defines wind safety and comfort criteria in Clause 58.04-4 for residential/apartment buildings. These criteria are defined as follows:

58.04-4 Wind Impacts Objective

To ensure the built form, design and layout of development does not generate unacceptable wind impacts within the site or on surrounding land.

Standard D17

Development of five or more storeys should:

- *not cause unsafe wind conditions specified in Table D6 in public land, publicly accessible areas on private land, private open space and communal open space; and*
- *achieve comfortable wind conditions specified in Table D6 in public land and publicly accessible areas on private land*

within a distance of half the greatest length of the building, or half the total height of the building measured outwards on the horizontal plane from the ground floor building façade, whichever is greater.

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 the existing urban context or preferred future development of the area.

Table D6 Wind Conditions

Unsafe	Comfortable
<i>Annual maximum 3 second gust wind speed exceeding 20 metres/second with a probability of exceedance of 0.1% considering at least 16 wind directions.</i>	<i>Hourly mean wind speed or gust equivalent mean speed (3 second gust wind speed divided by 1.85), from all wind directions combined with probability of exceedance less than 20% of the time, equal to or less than:</i> • <i>3 metres/second for sitting areas</i> • <i>4 metres/second for standing areas</i> • <i>5 metres/second for walking areas</i>

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
Outdoor dining areas	Sitting
Private Balcony/Terraces	Walking
Residential Common Area	Standing

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 are expected to be on or above the walking criterion, then the proposed development should not have any additional adverse wind effects in these areas.

The wind conditions on private outdoor balconies/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 all terraces/balconies will need to be educated on the wind effects and loose objects should not be left on an unattended terrace/balcony.

6. WIND ASSESSMENT

6.1 High Street

The wind conditions along High Street would be expected to be influenced by downwash from winds incident onto the west facade, northerly winds separating off the northwest corner of higher levels of the proposed development down into High Street, northerly and westerly winds accelerating around the ground level northwest corner, and some southerly winds separating off the southwest corner of higher levels of the building down into High Street. The winds separating off the western corners of the development would be expected to impact wind conditions across High Street more so than along the frontage of the development. The wind conditions would increase with proximity to the High Street/Rossmoyne Street corner.

Based on the above scenario, the wind conditions along High Street would be expected to increase compared to those of the existing conditions but satisfy the walking comfort criterion and the safety criterion. The wind conditions outside the High Street entrances into the retail tenancies would be expected to satisfy the standing comfort criterion and safety criterion.

6.2 Rossmoyne Street

Along Rossmoyne Street the wind conditions would be influenced by the downwash of winds incident onto the northern facade of the proposed building, winds separating off the northern corners of the upper level of the proposed building for winds from the west and east, down into Rossmoyne Street, and winds accelerating around the northwest corner on ground level for westerly and northerly winds. The additional wind flow due to downwash off the northern facade would be expected to flow toward, and accelerate around, the northwest corner at ground level with wind conditions (as noted above) increasing with proximity to corner.

Based on the above scenario, the wind conditions along Rossmoyne Street would be expected to increase compared to those of the existing conditions but satisfy the walking

comfort criterion and the safety criterion. The wind conditions outside the main residential entrance would be expected to satisfy the standing comfort criterion and safety criterion.

6.3 Neighbouring driveway/car park to south

The wind conditions along the driveway and car park to the south of the neighbouring properties would be expected to be influenced by downwash off the south face of the proposed building for winds incident onto it as well as wind flow accelerating into the driveway from flow induced down the west face. The wind conditions would be expected to increase compared to those of the existing would still satisfy the walking comfort criterion and the safety criterion.

6.4 Terraces

The terraces on the west and north faces of the proposed development that are located away from building corners would be expected to be exposed to some direct wind flow but due to being set back from the facade line, restricting cross-space flow, the wind conditions in these spaces would be expected to satisfy standing comfort criterion and the safety criterion.

The terraces at the southwest corners of the proposed development would be subject to localised wind speed up around the corner for westerly and southerly winds. Additionally, the southwest terrace on Level 7 being on the roof would also experience some element of gustiness due to the swirling turbulent flows flowing across the top of the proposed building. The wind conditions on these terraces would be expected to satisfy the walking comfort criterion and safety criterion.

The terraces that overlook the shared garden at the southeast of the proposed development and are only open to only one aspect and would be expected to have wind conditions that satisfy the standing criterion or better, and the safety criterion. The terraces that overlook the shared garden at the southeast of the proposed development that are open to both south and east aspects, and thus subject to some localised wind speed up

around the building corner and cross-space flow, would be expected to have wind conditions that satisfy the walking comfort criterion and the safety criterion.

The Residential Common Area on Level 5 would subject to some gustiness due to the turbulence created by the articulations of the proposed building around the northeast corner of Level 5. The setting back of the Residential Common Area from the north and east edges of the building and filling the space with landscaping is a good design feature that keeps users away from areas of potential localised wind speed up while also providing shielding to the actual space used for the Residential Common Area. The wind conditions in the Residential Common Area would be expected to satisfy the standing comfort criterion and the safety criterion.

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

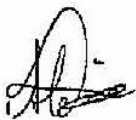
7. CONCLUSIONS

We have assessed the likely environmental wind conditions in the streetscapes surrounding the proposed development at 716 High Street, Thornbury, detailed in drawings by AMA Architects listed in Appendix A.

It has been assessed that the wind conditions in the streetscapes surrounding the proposed development at 716 High Street would satisfy the walking comfort criterion, or better, and the safety criterion. All entrances along Rossmoyne Road and High Street have been assessed to have wind conditions that satisfy the standing comfort criterion and safety criterion. Wind amelioration strategies have been recommended to improve the wind conditions within the designated dining area at the northwest of the proposed development on ground level. Wind tunnel model measurements have been suggested to quantify the wind conditions and develop wind amelioration strategies for the northwest corner dining area.

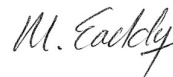
The wind conditions on the terraces on the proposed development have been assessed to satisfy the walking comfort criterion or better and the safety criterion, while the Residential Common Area on Level 5 has been assessed to satisfy the standing comfort criterion and the safety criterion.

Author



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 1 September 2026

Approved by



M. Eaddy RPEV: PE0006965
MEL Consultants Pty Ltd
 1 September 2026

Appendix A – Drawing Register

Drawing #	Rev	Date	Title
A000	C	21/08/26	Cover Sheet
A001	C	21/08/26	Existing Conditions & Demolition Plan
A002	C	21/08/26	Existing Conditions & Demolition Elevations
A101	C	21/08/26	Plan Level Ground
A102	C	21/08/26	Plan Level 1
A103	C	21/08/26	Plan Level 2
A104	C	21/08/26	Plan Level 3
A105	C	21/08/26	Plan Level 4
A106	C	21/08/26	Plan Level 5
A107	C	21/08/26	Plan Level 6
A108	C	21/08/26	Plan Level 7
A109	C	21/08/26	Level 8 GA Plan (Roof)
A111	C	21/08/26	Plan Basement 1
A112	C	21/08/26	Plan Basement 2
A114	C	21/08/26	Diagram: Solar Access Study to Common Area Rooftop
A115	C	21/08/26	Diagram: Site Coverage
A116	C	21/08/26	Diagram: Site Permeability
A117	C	21/08/26	Area Plans
A200	C	21/08/26	Elevation Streetscape High Street
A201	C	21/08/26	Elevation West (High Street)
A202	C	21/08/26	Elevation North (Rossmyrne St)
A203	C	21/08/26	Elevation East
A204	C	21/08/26	Elevation South
A301	C	21/08/26	Section AA
A302	C	21/08/26	Section BB
A303	C	21/08/26	Section CC
A304	C	21/08/26	Section DD
A305	C	21/08/26	Section XX
A306	C	21/08/26	Section YY
A307	C	21/08/26	Section ZZ
A401	C	21/08/26	BADS Compliance Diagrams 01
A402	C	21/08/26	BADS Compliance Diagrams 02
A403	C	21/08/26	BADS Compliance Diagrams 03
A404	C	21/08/26	BADS Compliance Diagrams 04
A501	C	21/08/26	Shadow Diagrams 01
A502	C	21/08/26	Shadow Diagrams 02

Note:

File: 260821 716 High Street Town Planning Drawings_C.pdf