
Statement of Environmental Effects

*16 Dwelling Houses
2 Bullecourt Avenue
Milperra*

Client

Mirvac Residential (NSW)
Developments Pty Ltd

Issued

3/10/2024



Western Sydney Office
Level 4, LPC House,
Suite 4.05, 3 Fordham Way,
Oran Park, NSW 2570
Tel: (02) 4351 2233
beveridgewilliams.com.au

BW
Beveridge Williams

Client: Mirvac Residential (NSW) Developments Pty Ltd
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Version: C
Prepared by: Isaac Camilleri
Checked by: Isaac Camilleri
Project Manager: Shane Gray
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A	Draft for Pre-DA	29/08/2024	IC
B	Final for Pre-DA	30/08/2024	IC
C	Final For DA Lodgement	3/10/2024	IC

Acknowledgment

Beveridge Williams acknowledges the Traditional Custodians of the land on which we live/work and recognise their continuing connection to Country. We pay our respect to Elders past, present and emerging and extend that respect to all Aboriginal and Torres Strait Islander peoples.

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- Appendix C:** Acoustic Assessment prepared by Renzo Tonin & Associates, dated 20.09.2022 Ver 6
- Appendix D:** Heritage Impact Assessment by Extent Heritage, dated September 2024, Final 0.2
- Appendix E:** Estimated Development Cost by Mirvac, dated 18/06/2024
- Appendix F:** Waste Management Plan by Mirvac, dated 17/09/2024
- Appendix G:** BASIX Certificate No. 1763491M, prepared by Efficient Living, dated 9/09/2024
- Appendix H:** Landscape Plans prepared by Green Tree Design, Rev. B, dated 21/08/2024
- Appendix I:** Architectural Plans by Mirvac, Rev. C, dated 6/09/2024



Figure 1: Aerial Photograph

1 INTRODUCTION

1.1 Overview

Beveridge Williams has been engaged by Mirvac Residential (NSW) Developments Pty Ltd (Mircav) to prepare the Statement of Environmental Effects (SEE) for the construction of 16 residential dwellings at 2 Bullecourt Avenue, Milperra.

This SEE details the necessary information for the proposal to be assessed by the consent authority, including a description of the site, its surrounds, and in accordance with Section 4.15 of the *Environmental Planning and Assessment Act 1979* (The Act), an assessment of the proposal against the relevant matters for consideration and planning controls. It has been prepared in accordance with Section 24 of the *Environmental Planning & Assessment Regulation 2021* (EP&A Reg) for the purposes of:

- demonstrating that the environmental impacts of the development have been considered; and
- outlining steps to be undertaken to protect the environment or to lessen any expected harm to all environments.

The SEE concludes that the proposed development is acceptable in that it is consistent with relevant planning controls and will have minimal environmental impacts that can be satisfactorily managed and mitigated and warrants Council's support.

1.2 Accompanying Documentation

The following documents accompany, and should be read in conjunction with, this SEE:

- **Appendix A:** – Proposed Plan of Subdivision by Beveridge Williams, Ver. E, dated 1/10/2024
- **Appendix B:** – Voluntary Planning Agreement between Canterbury-Bankstown Council, Western Sydney University and Mirvac
- **Appendix C:** – Acoustic Assessment prepared by Renzo Tonin & Associates, dated 20.09.2022 Ver 6
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2 SITE & DEVELOPMENT CONTEXT

2.1 Site Description & Locality

The site is in Milperra which is a suburb 24km southwest of Sydney central business district and is in the local government area (LGA) of Canterbury Bankstown. Milperra is bordered by the Georges River and features several parks and reserves including Bankstown Golf Course. The local area consists of a mix of residential, commercial, educational, recreation and industrial land uses.

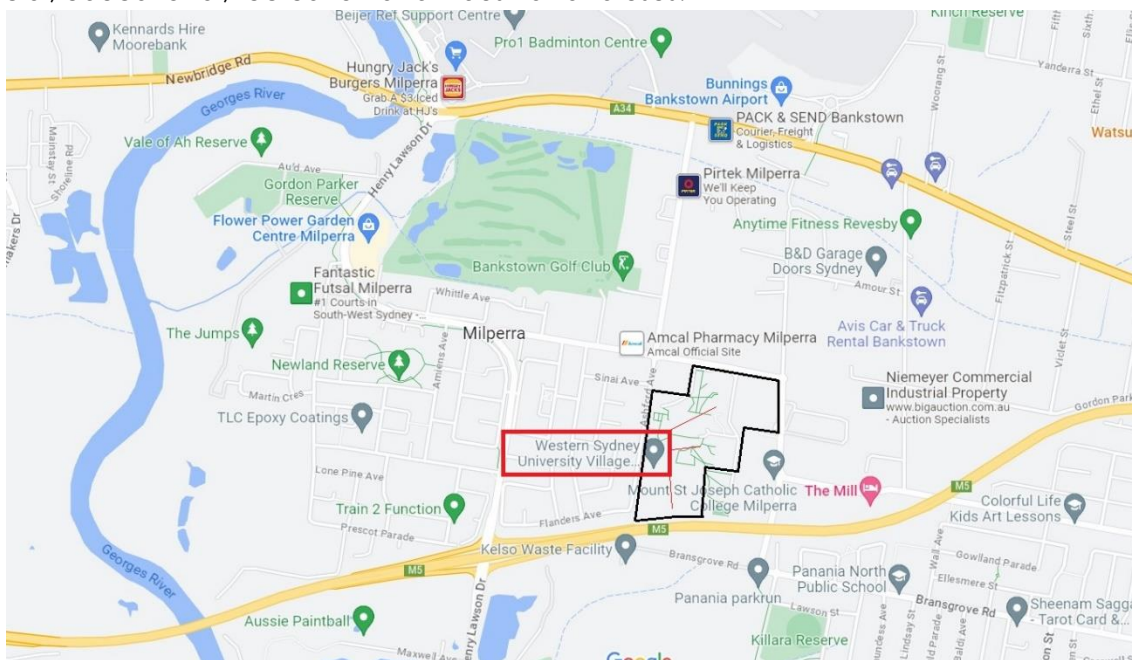


Figure 2: Locality Map
Source: Google Maps

2.2 Site Description

The site is currently identified as Lot 2 in DP1291984 and Lot 1 in DP101147 with a street address of 2 & 2A Bullecourt Avenue Milperra.

The site has an area of 19.62 ha and is bounded by Bullecourt Avenue to the north, Horsley Road to the east, M5 Motorway to the south and Ashford Avenue to the west. Adjoining the northwestern corner of the site is a council owned hockey/soccer field and the Mount St Joseph's Catholic School occupies a large

area adjoining the western boundaries with frontage to Horsely Road. The northeastern corner of the site contains a large area of protected remnant Cumberland Plain Woodland (excluded from the development area). The site falls from the northeastern corner down to the southwestern corner.

A Development Application has been lodged over the site for an 18 lot subdivision (Refer to **Appendix A**). This application is currently under consideration by Council and proposes to create Lot 1000 to 1017. Specifically, this DA only relates to Lots 1001 to 1016 proposed under this DA. No works are proposed on the residue Lot 1000 or 1017 as part of this Development Application.

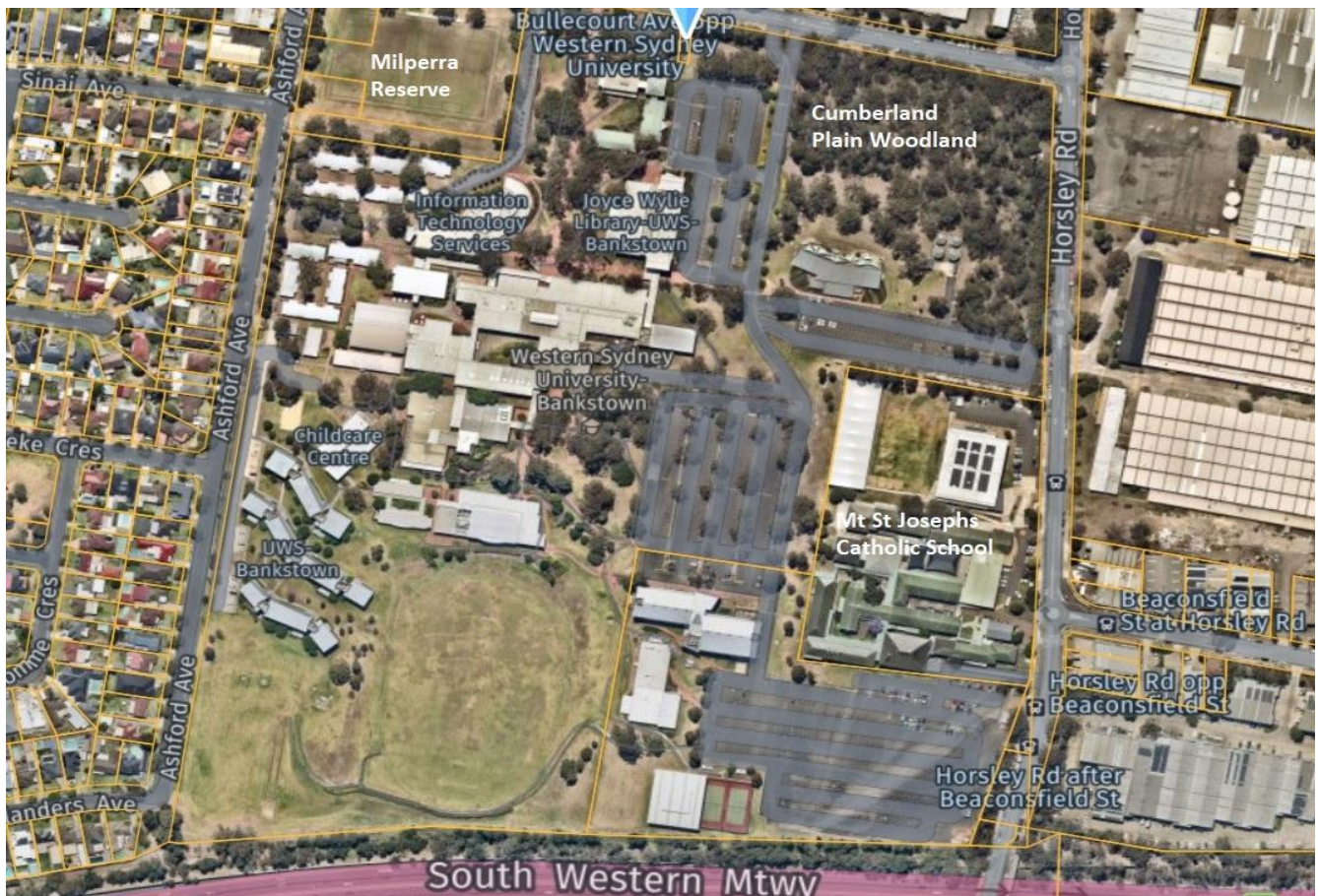


Figure 3: University Campus and Adjoining Sites
Source: Nearmap (24/10/2023)

2.3 History of the Site

The development site has subject to numerous applications recently, including;

- Development Application 1512/2023 was approved on 31 May 2024 which permitted the demolition of buildings, roads and ancillary structures on the site, to facilitate future residential development. Demolition works are anticipated to commence in the coming months.
- Planning Proposal 2021-5837 was gazetted on 14 June 2024 and approved the Western Sydney University Milperra Site to be rezoned to facilitate residential development.
- A Development Application has been lodged and is currently under consideration. This DA seeks consent for an 18 lot subdivision, with two residue lot proposed and 16 lots fronting Ashford Avenue. The 16 lots proposed will accommodate the 16 dwellings proposed under this Development Application.

3 THE PROPOSAL

The proposal seeks consent for the construction of 16 dwelling houses on 16 individual lots, being Lots 1001 to 1016. The dwellings will all be two storey and have direct frontage to Ashford Avenue. Vehicular access to all the dwellings will be via driveways connecting to Ashford Avenue.

The front and rear yards will be extensively landscaped, with suitable trees planted (from the Cumberland Plain Community) in the front and rear yards to provide shade and temperature control in these outdoor areas as well as improve the amenity of the site.

The proposal does not seek consent for subdivision, but rather relies on the Development Application lodged prior to this for the subdivision and civil component. However, the construction of the dwellings is intended to commence prior to the registration of the subdivision, once bulk earthworks have occurred. In terms of certainty and sequencing, no objection is raised to the below condition being imposed;

Prior to issue of an Occupation Certificate
“Land Registration

Prior to any use, occupation or issue of Occupation Certificate for the development, proof of registration of the subdivision of the land approved by Development Consent DA/2024/XXX with the NSW LRS must be presented to the Principal Certifying Authority for this development.”

The application will not be staged, with a Part Construction Certificate intended to be issued for each respective dwelling house, this provides the mechanism for each dwelling to have their own respective Construction Certificate and Occupation Certificate.

4 STATUTORY CONSIDERATIONS

4.1 Legislative Framework and Permissibility

Proposed developments are assessed in accordance with various legislative requirements. Development rules have a hierarchy, starting with legislation and then stepping down to various types of plans, codes, policies, and guidelines. The Acts and regulations are the highest level followed by State and regional rules (SEPPs, REPs etc) and Local Environmental Plans (LEPs). The Development Control Plans provide development guidelines and support the aims and objectives of the LEP.

4.2 Environmental Planning and Assessment Act 1979

The proposal is being undertaken as development requiring consent as per Part 4 of the EP&A Act. The EP&A Act is the governing legislation for development assessment in New South Wales. It governs matters such as planning administration, planning instruments, development assessments, building certification, infrastructure finance, appeals and enforcement. It outlines the development process and details different types of development applications.

The EP&A Act requires consideration of a proposal in relation to its impacts on the environment. To determine impacts and the merit of a proposed development, Section 4.15 of the EP&A Act outlines matters for consideration that are to be addressed. This includes consideration of the relevant environmental planning instruments, development control plans, any planning agreements, regulations as well as the likely impacts of the development, suitability of the site, submissions, and the public interest. These have been summarised in the table below, along with consideration of them in relation to the proposed development.

Table 1: Section 4.15 (1) Matters for Consideration

Section 4.15 (1) matter	Consideration
(a) The provisions of:	

i. any environmental planning instrument, and	Relevant environmental planning instruments (EPIs), including the SEPP (Biodiversity and Conservation) 2021, SEPP (Resilience and Hazard) 2021, SEPP (Transport and Infrastructure) 2021, SEPP (Sustainable Buildings) 2022 and Canterbury-Bankstown LEP 2023, have been considered in detail in Section 0 , below.
ii. any draft environmental planning instrument that is or has been placed on public exhibition and details of which have been notified to the consent authority (unless the Director General has notified the consent authority that the making of the draft instrument has been deferred indefinitely or has not been approved), and	No draft environmental planning instruments are applicable to this proposal.
iii. any development control plan, and	The Canterbury-Bankstown Development Control Plan 2023 has been considered in detail in Section 4.4 , below.
iiia. any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter into under section 7.4, and	The Voluntary Planning Agreement has been considered in Section 4.5 of this report.
iv. the regulations (to the extent that they prescribe matters for the purposes of this paragraph),	The regulations have been considered in relation to their respective Acts, as relevant to the proposal.
(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,	Potential impacts arising from the development have been considered in detail in Section 4.6 , below.
(c) the suitability of the site for the development,	The site is considered to be suitable for the proposed development as the proposal complies with key development controls including permissibility, height, setbacks, site coverage, etc. Further, there are minimal adverse impacts to adjoining properties.
(d) any submissions made in accordance with this Act or the regulations,	To be considered by the consent authority following exhibition of the DA.
(e) the public interest.	The proposal is consistent with the overall development intention of the area and represents orderly and economic development of land. To this extent, it is in the public interest.

4.3 Provisions of Environmental Planning Instruments (EPIs)

The following EPIs are applicable to the site and have been considered in the preparation of this development application. The EPIs include the relevant State Environmental Planning Policies (SEPPs). The Department of Planning and Environment (DPE) consolidated the 45 SEPPs into 11 new thematic SEPPs which commenced on 1 March 2022.

4.3.1 State Environmental Planning Policy (Biodiversity and Conservation) 2021

The *State Environmental Planning Policy (Biodiversity and Conservation) 2021* (BC SEPP) consolidates many former State Environmental Planning Policies (SEPPs) and Regional Environmental Plans (REPs) related to the environment. The chapter relevant to this development is Chapter 6;

Chapter 6 – Water Catchments

The subject site is located within the catchment draining to the Georges River system and as such the provisions of the deemed SEPP apply. The broad aim of the deemed SEPP is to ensure the impact of urban development on the Georges River is minimised by considering catchment management, water quality and quantity, and protection and management of environmentally sensitive areas, flora and fauna and wetland habitats.

This DA seeks approval for the construction of dwelling houses. Appropriate sediment control and erosion measures will be implemented during the construction phase to ensure there is no adverse impacts on the Georges River system.

Operationally, the dwelling houses will drain to rain water tanks which will provide water reuse in the dwelling to toilets and the laundry. The overflow from the rain water tank will then disperse to a temporary stormwater basin (via a stormwater easement at the front of the lots) which will provide water quality improvement in accordance with Council's specifications.

4.3.2 State Environmental Planning Policy (Resilience and Hazard) 2021

Chapter 4 Remediation of Land

This chapter provides a statewide framework for the remediation of contaminated land throughout the state. The remediation of land is promoted where required to reduce risk to human health.

Clause 4.6(1)(a) of the SEPP requires the consent authority to consider whether the land is contaminated before they consent to the carrying out of any development on land. If the land is contaminated the consent authority is to be satisfied that the site is fit for the intended purpose in its contaminated state, or if it can become fit for its intended purpose after remediation.

A Detailed Site Investigation, a Supplementary Stage 2 Detailed Site Investigation and a Remedial Action Plan have been prepared and lodged with the preceding subdivision application. These reports detailed that while the subject site does currently have contamination, once the land occupied by Lots 1001 to 1016 are remediated as part of the preceding subdivision works. They will be suitable for the intended use, being residential accommodation.

4.3.3 State Environmental Planning Policy (Transport and Infrastructure) 2021

Chapter 2 Infrastructure

This chapter provides a statewide framework for the effective delivery of infrastructure across the state, by providing a consistent planning regime statewide and ensuring development does not have an adverse impact upon infrastructure.

As the site has frontage/is adjacent to a classified road (M5 – South Western Motorway), Section 2.119 *Development with frontage to classified road* is applicable to this development. The requirements of this clause have been satisfied as;

- a) Safe, vehicular access to the land has been provided by an alternate road and not the classified road.
- b) No vehicular access from the site is proposed to the Classified Road. No smoke will be emitted from the site, with construction measures proposed to mitigate the impact of dust. Direct access to the Classified Road is not proposed and the increase in traffic volume arising from this development is not anticipated to impact the ongoing efficiency of the classified road.

Section 2.120 *Impact of Road Noise or vibration on non-road development* is also applicable to this development as the proposal is to be used for residential accommodation and the site is adjacent to a freeway that has an average daily vehicle trip that exceeds 20,000 vehicles. Please refer to the submitted Acoustic Report, which confirms that the dwellings will be able to limit the impacts of road noise through suitable mitigation measures, primarily through design measures which have been incorporated into the design of the dwellings.

4.3.4 State Environmental Planning Policy (Sustainable Buildings) 2022

Chapter 2 Standards for residential development - BASIX

This chapter provides a statewide framework for the design and delivery of sustainable buildings throughout the state. This is achieved through ensuring buildings have a reduced reliance on greenhouse gas emissions, minimisation of mains-supplied potable water and enhancing the thermal performance of buildings.

A BASIX Certificate has been prepared in accordance with the relevant regulations for the 16 dwelling houses and has been provided with the application. Therefore, the requirements of this SEPP have been met.

4.3.5 Canterbury-Bankstown Local Environmental Plan 2023

The relevant components of the Canterbury-Bankstown Local Environmental Plan 2023 and associated mapping have been considered below;

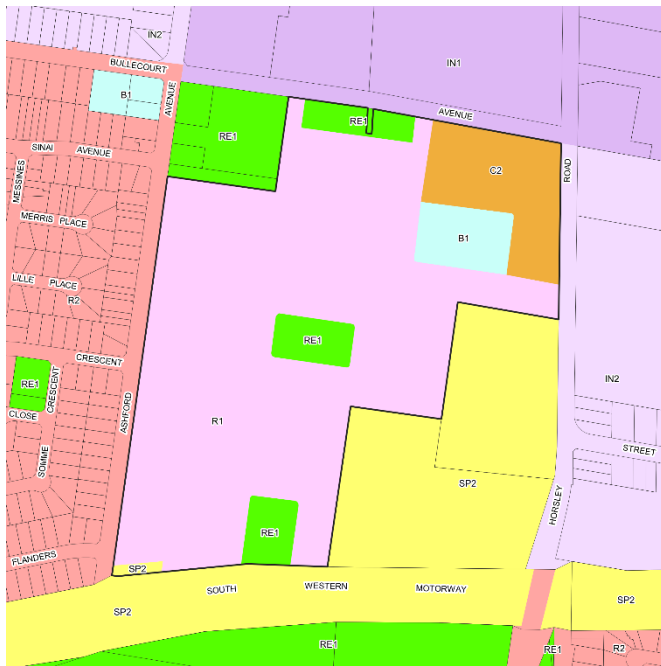


Figure 4: Land Zoning

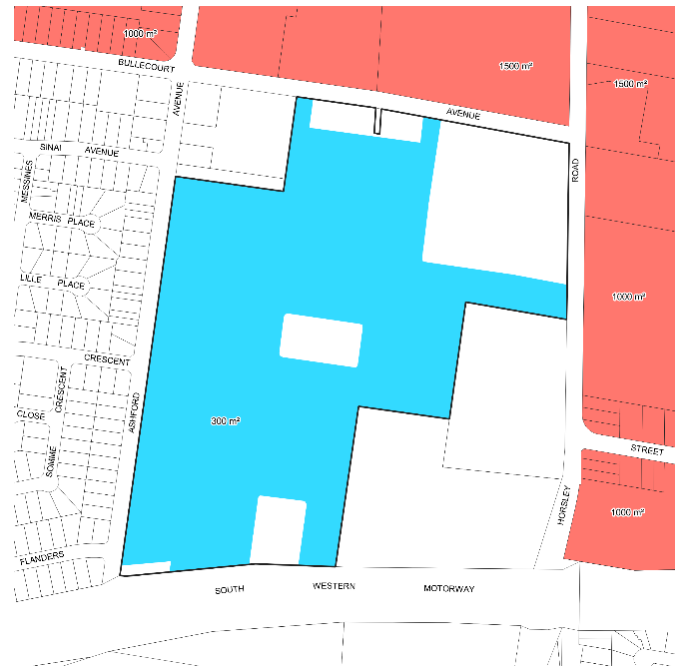


Figure 5: Minimum Lot Size

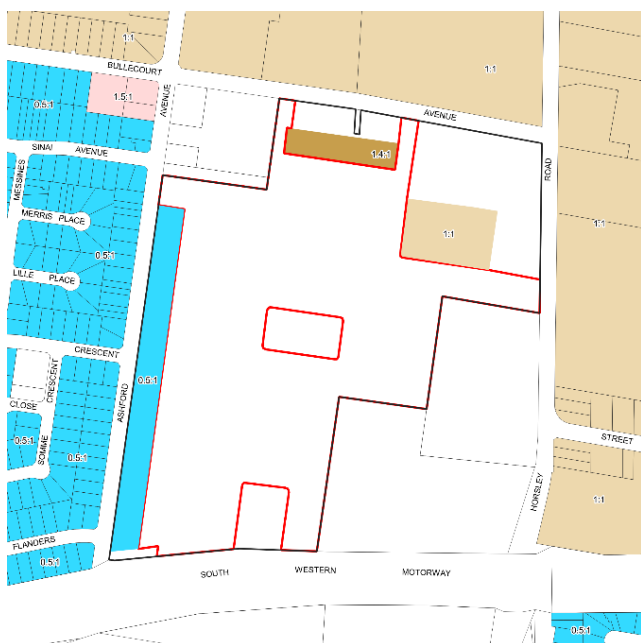




Figure 10: Terrestrial Biodiversity

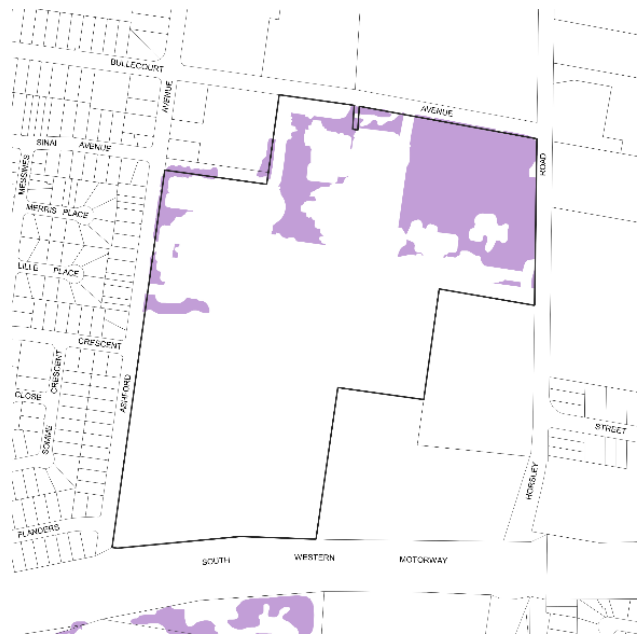


Figure 11: Biodiversity Values

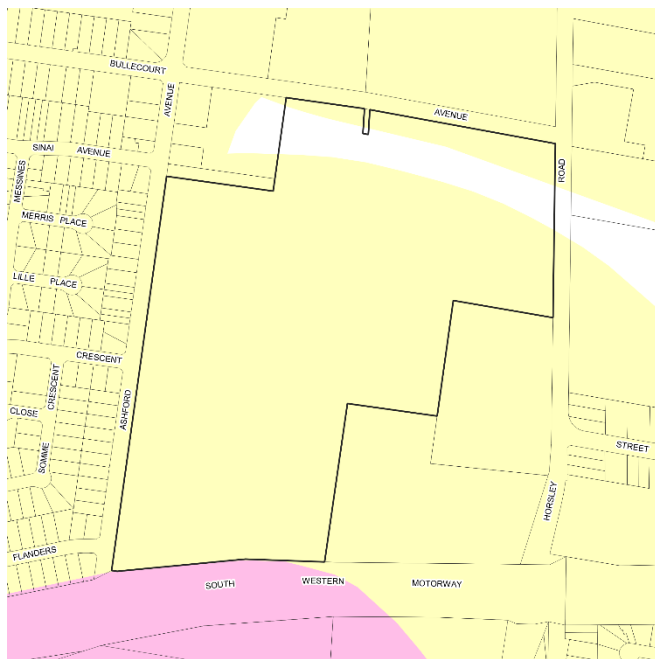


Figure 12: Acid Sulfate Soils



Figure 13: Special Provisions Map

Table 2: LEP Summary of Provisions

CLAUSE	REQUIREMENT	COMMENT
1.3	Land to which Plan applies <i>This Plan applies to the land identified on the Land Application Map.</i>	The site is located within the area subject to the Canterbury-Bankstown Local Environmental Plan 2023.
1.6	Consent Authority <i>The consent authority for the purposes of this Plan is (subject to the Act) the Council.</i>	The consent authority for this application will be Canterbury-Bankstown Council.
2.3	Zone Objectives and Land Use Table	The proposal satisfies the relevant zone objectives as it is providing for residential dwelling in a manner and context that

	<p>Dwelling houses are a permissible land use in the R1 General Residential zone, with the applicable objectives being;</p> <ul style="list-style-type: none"> • To provide for the housing needs of the community. • To provide for a variety of housing types and densities. • To enable other land uses that provide facilities or services to meet the day to day needs of residents. • To allow development that is of a scale and nature that provides an appropriate transition to adjoining land uses. 	<p>compliments the surrounding areas, with no adverse impacts arising from the development.</p> <p>The development is permissible as at completion of the development, there will be a dwelling house per lot, therefore the land use is a dwelling house, which is permitted in the R1 General Residential Zone.</p>
4.1B	<p>Minimum lot sizes and special provisions for certain dwellings</p> <p>(2) Development consent must not be granted to development on land specified in Column 1 of the table to this subclause for a purpose specified in Column 2 unless—</p> <p>(a) the lot is at least the size specified in Column 3, and</p> <p>(b) the width of the lot at the front building line is at least the width specified in Column 4.</p>	<p>The proposal is for dwelling houses adjoining Ashford Avenue, within Area 8. Any dwelling house adjoining Ashford Avenue is to have a lot size of 300m². All lots exceed 300m² and therefore satisfy this clause.</p>
4.3	<p>Height of Buildings</p> <p>(2) The height of a building on any land is not to exceed the maximum height shown for the land on the Height of Buildings Map.</p>	<p>The Height of Building for this portion of the site subject to this application is 9m. This 9m height limit is not exceeded, with individual lot heights provided below;</p> <p>Lot 1001: 6.715m Lot 1002: 7.583m Lot 1003: 6.715m Lot 1004: 6.715m Lot 1005: 6.715m Lot 1006: 7.583m Lot 1007: 6.715m Lot 1008: 7.583m Lot 1009: 6.715m Lot 1010: 6.715m Lot 1011: 7.583m Lot 1012: 6.965m Lot 1013: 6.785m Lot 1014: 6.955m Lot 1015: 6.955m Lot 1016: 6.715m</p>
4.4	<p>Floor Space Ratio</p> <p>The maximum floor space ratio for a building on any land is not to exceed the floor space ratio shown for the land on the Floor Space Ratio Map.</p>	<p>The Floor Space Ratio for the portion of the site subject to this application is 0.5:1. This Floor Space Ratio is not exceeded, with individual lot FSRs provided below;</p> <p>Lot 1001: 0.494:1 Lot 1002: 0.477:1 Lot 1003: 0.48:1 Lot 1004: 0.494:1 Lot 1005: 0.48:1 Lot 1006: 0.477:1 Lot 1007: 0.497:1</p>

		Lot 1008: 0.477:1 Lot 1009: 0.48:1 Lot 1010: 0.494:1 Lot 1011: 0.477:1 Lot 1012: 0.463:1 Lot 1013: 0.463:1 Lot 1014: 0.46:1 Lot 1015: 0.46:1 Lot 1016: 0.48:1
4.5	Calculation of Floor Space Ratio and Site Area <i>This clause clarifies/provides guidance on the classification of the site area in relation to determining Floor Space Ratio.</i>	As the dwellings are located on proposed lots and are reliant upon the preceding subdivision, the proposed lot areas have been considered for the determination of FSR. I.e. Lot 1001 has a site area of 384.9m ² , it has a GFA of 190m ² , therefore the FSR is 0.494.
5.10	Heritage Conservation <i>is required to be considered due to the proximity of nearby heritage listed items.</i> <i>Subclause (5) states that the consent authority may require a heritage assessment before granting consent to any development on land that is in the vicinity of land where a heritage item is located or on land within a heritage conservation area.</i>	The site is not heritage listed or contain an item of heritage significance; however, the site is bounded by a locally listed heritage item: <i>Milperra Soldier Settlement (former) Item No.218</i> which relates to the street alignment of the former Milperra Soldiers Settlement. The development does not intend any works within the Ashford Avenue frontage, as all facilitating works are proposed as part of the preceding subdivision.
6.1	Acid Sulphate Soil <i>This clause sets out requirements for sites that are mapped as being subject to Acid Sulphate Soils.</i>	All the dwellings are mapped as being subject to Class 5 Acid Sulphate Soil. No earthworks which will lower the water table to below 1m AHD is proposed.
6.2	Earthworks <i>This clause sets out requirements associated with earthworks, to ensure no detrimental impact arises from earthworks.</i>	The proposal is reliant upon the preceding subdivision which among other works includes bulk earthworks, the creation of level building pads and retaining walls. Therefore, no earthworks are required through this application.
6.3	Stormwater Management and Water Sensitive Urban Design <i>This clause sets out requirements associated with minimising the impact of urban stormwater on the environment.</i>	The proposal is reliant upon the preceding subdivision which will provide a basin for water quality and quantity control.

6.9	<p>Essential Services</p> <p><i>Development consent must not be granted to development unless the consent authority is satisfied that the following services that are essential for the development are available or that adequate arrangements have been made to make them available when required—</i></p> <ul style="list-style-type: none"> • (a) the supply of water, • (b) the supply of electricity, • (c) the disposal and management of sewage, • (d) stormwater drainage or on-site conservation, • (e) waste management, • (f) suitable vehicular access. 	<p>Development consent can be granted to the development as suitable arrangements have been made for all services as;</p> <p>a) potable water connections will be provided to each lot via the preceding subdivision.</p> <p>b) electricity connections will be provided to each lot via the preceding subdivision.</p> <p>c) sewer connections will be provided to each lot via the preceding subdivision</p> <p>d) a drainage easement and associated pit will be provided for each lot via the preceding subdivision</p> <p>e) suitable bin storage areas are provided behind the building line, with Councils domestic waste service to serve the site</p> <p>f) suitable vehicular access to the dwellings are provided from Ashford Avenue via a sealed all weather access driveway, which meets Australian Standards.</p>
6.34 or Addition al Use Clause?	<p>Development at 2 and 2A Bullecourt Avenue, Milperra</p> <p><i>(2) Development consent must not be granted to development for the purposes of residential accommodation on land to which this clause applies that will result in more than 430 dwellings on the land.</i></p>	<p>This application only proposes 16 dwelling houses, which results in the total for the entire site being 16 dwellings. This is below the upper limit of 430 dwellings for the site.</p>

4.4 Canterbury-Bankstown Development Control Plan 2023

Canterbury Bankstown Development Control Plan 2023 (CBDCP) provides detailed guidelines for development on land in the Canterbury Bankstown Local Government Area. The following Parts of the CBDCP are relevant to the proposed development:

4.4.1 Chapter 3.3 Waste Management

The aims of the chapter are to ensure that waste is managed in an effective way to maximise waste reduction and increase recycling. A Waste Management Plan is to address construction waste with an objective to maximise resource recovery and manage waste in line with legislative requirements.

A Waste Management Plan must accompany the development application and must:

- (a) Identify all waste likely to result from the demolition, and opportunities for reuse of materials.
- (b) Reuse or recycle salvaged materials on-site where possible.
- (c) Allocate an area for the storage of materials for use, recycling and disposal (giving consideration to slope, drainage, location of waterways, stormwater outlets, vegetation, and access and handling requirements).
- (d) Provide separate collection bins or areas for the storage of residual waste.
- (e) Clearly sign post the purpose and content of the bins and storage areas.
- (f) Implement measures to prevent damage by the elements, odour and health risks, and windborne litter.

(g) Minimise site disturbance and limit unnecessary excavation.

The Waste Management Plan submitted with the DA addresses the relevant considerations under this part.

4.4.2 Chapter 4 – Development in the Vicinity of Places of Heritage Significance

Section 1 – Development in the Vicinity of Places of heritage Significance		
Control	Proposal	Compliance
	Subdivision	
1.1 The design of development must: (a) respond to the setting, setbacks, form, scale and style of nearby places of heritage significance; (b) maintain significant views to and from the place of heritage significance; (c) ensure adequate setbacks from the site of the place of heritage significance to retain its visual setting; (d) retain original or significant landscape features that are associated with the place of heritage significance or that contribute to its setting; (e) use materials, finishes and colours selected to avoid strong contrast with the place of heritage significance in order to retain its visual importance or significance.	<p>The relevant heritage item is the alignment of Ashford Avenue, being one of the original roads of the "Former Milperra Solider Settlement Scheme". This item has significance as all that remains is the streets with their original names and alignments.</p> <p>The proposal will not affect the road alignment or road names, therefore the heritage significance of Ashford Avenue is not impacted upon by the proposed development.</p>	Yes

4. Residential

4.1 Height in Storeys		
Control	Proposal	Compliance
C1. The maximum number of storeys is as follows: a. 9m LEP height - 2 storeys b. 11m LEP height - 3 storeys	The portion of the site subject to this application is limited to a height of 9m, as per the LEP. All the dwellings are two storey, which is permitted.	Yes
4.2 Dwelling Design		
Control	Proposal	Compliance
C1. Dwellings must be designed to be consistent with the controls in the Table 5 .	The controls in Table 5 of the DCP have been assessed below, please refer to the Table 5 – Compliance Assessment below.	Yes
C2 0m side setback controls for attached dwellings are as follows: a. Permitted for a maximum length of 21 metres on the ground floor. b. Permitted for a maximum length of 16 metres for the 2nd and 3rd storey. c. All eaves and gutters will be contained within the lot boundary of the associated dwelling.	No attached dwellings proposed, all dwellings are detached.	N/A
C3. Dwellings are required to have their main orientation towards the primary street or open space. This control excludes Studio Dwellings. Front pedestrian entrances to all dwellings must be visible from the primary street.	All lots have their main orientation to the primary street, in this instance the primary street frontage is Ashford Avenue.	Yes
C4. Front building facades must be articulated. This articulation may include front porches, entries, wall indents, changes in finishes, balconies, and verandas.	All the dwellings have an articulated façade, this articulation is achieved through a combination of porches, first floor balconies, entry features and variations in building materials and colour.	Yes
C5. For two and three storey developments, side walls (where not attached to another development) must be articulated if the wall has a continuous length greater than 10m. <i>Note: Articulation is taken to mean a change in the use of materiality or consistent change in building form along the continuous length of a wall.</i>	On a single side elevation, the dwellings have a continuous length of wall more than 10m in length, these dwellings have provided sufficient articulation by providing different materials/colours and varying windows.	Yes

4.2 Dwelling Design		
Control	Proposal	Compliance
C6. Dwellings that face two frontages or a street and a public space must address both frontages using verandas, windows, or other similar modulating elements.	All the lots(except 1014 & 1015) only have a single frontage, being Ashford Avenue, which is appropriately addressed through the building design. Lot 1014 & 1015 address the future public walkway through windows, different colours, materials and building elements facing the walkway.	Yes
C7. Garage doors must comply with <i>Chapter 3.2 Residential Lots</i> , C6 to ensure garage doors do not detract from the amenity of the streetscape	All the lots that have a frontage of 12m, have garages door widths of 4.8m. Lot 1012 and Lot 1013 both have lot widths of 10m, with garage door widths of 2.5m.	Yes
C8. Driveways should have a maximum width of 3m at the front boundary. Where double garages are proposed, driveway must have maximum width of 4m at the street boundary.	All lots that have a double garage have a crossover width of 4m, while Lot 1012 and 1013 have a single garage have a crossover width of 3m.	Yes
C9. Within a DA proposing two(2) or more residential dwellings, it is accepted to provide less than the required quantum of landscaped area per dwelling if the average landscaped area across the residential dwellings is the minimum stipulated within <i>Table 5</i> for that type of residential dwelling, and: a. 35% tree canopy coverage to the street is provided, including all lots with primary frontage to the street. b. Landscaping should consist of a mix of high canopy trees, and low under-storey planting. Note: The average applies to the lots that form part of a single DA that proposes construction for the dwellings.	Despite this application proposing multiple dwelling, this clause is not relied upon as each lot provides an appropriate amount of open space.	Yes
C10. A planted area of at least 1m x 0.5m is to be provided in the laneway setback for each lot with the remainder used for garage access, rear gates and temporary bin storage.	No dwellings adjacent to a laneway are proposed under this application.	N/A
C11. Fences forward of the front building line have a maximum height of 1.1m.	No front fencing is proposed.	N/A
C12. On corner lots 1.8m high fences to rear gardens should not exceed 50% of the lot boundary. The materials and design of fences is to be of high quality- such as battens or pickets.	No corner lots are being constructed upon under this application.	N/A
C13. Where a run of attached dwellings is proposed on narrow lots (less than 7.5m wide), driveways should be paired and limited to provide maximal opportunity for street parking and promote the retention of existing trees.	No attached dwellings are proposed under this application.	N/A

4.2 Dwelling Design

Control	Proposal	Compliance
C14. Where a run of attached dwellings is proposed, a large canopy tree should be provided in the parking lane.	No attached dwellings are proposed under this application.	N/A
C15. All services should be concealed within the streetscape and should not detract from the visual amenity of streets. Bin enclosures should be set back from the front boundary, behind landscaping or letterboxes. Refer to <i>Figure 14</i> for an example of a well-designed bin enclosure forward of the front building line.	All services for the lots are concealed and not visible from the streetscape. The bin storage areas are located in the side yard of the dwellings.	Yes
C16. Where a double garage is proposed, the upper-level building line must extend forward over the line of the garage doors.	The dwellings that contain a double garage provide either balconies or solid walls forward/over the garage, which reduces the visual dominance of the garage door.	Yes
C17. Dwellings can provide an articulation zone as follows: a. 1.5 metres beyond front building line and a maximum of 25% of lot width. b. This zone permits additional building elements within this zone such as entry features and porticos, balconies, decks, verandas, blade walls and bay windows c. An awning, other feature over a window including sun shading devices are not included in the 25% maximum area as defined in this clause.	A majority of the dwellings articulation elements encroach into the front setback. They are all within 1.5m of the dwelling's building line and have a width less than 3m.	Yes

Table 5 – Compliance Assessment

Site	Minimum Primary frontage setback	Minimum Secondary frontage setback	Minimum Side Setback	Minimum Rear Setback	Min Private Open Space	Min Landscape Area (% of Lot)
DCP Control	5.5m	2m	0.9m	Ground Floor: 4m First Floor: 6m	24m ² (min dimension of 3m)	25%
Lot 1001	6.5m	Not a corner lot	1.06m & 0.92m	G.F: 8.47m F.F: 11.58m	137.68m ²	47.98%
Lot 1002	6.85m	Not a corner lot	1.06m & 0.92m	G.F: 8.12m F.F: 11.17m	133.48m ²	47.57%
Lot 1003	6.5m	Not a corner lot	1.06m & 0.92m	G.F: 8.47m F.F: 11.5m	137.68m ²	48.09%
Lot 1004	6.5m	Not a corner lot	1.06m & 0.92m	G.F: 8.47m F.F: 11.47m	137.68m ²	48.12%
Lot 1005	6.5m	Not a corner lot	1.06m & 0.92m	G.F: 8.47m F.F: 11.5m	137.68m ²	48.06%

Table 5 – Compliance Assessment						
Site	Minimum Primary frontage setback	Minimum Secondary frontage setback	Minimum Side Setback	Minimum Rear Setback	Min Private Open Space	Min Landscape Area (% of Lot)
Lot 1006	6.85m	Not a corner lot	1.06m & 0.92m	G.F: 8.12m F.F: 11.17m	133.48m ²	48.02%
Lot 1007	6.5m	Not a corner lot	1.01m & 0.97m	G.F: 8.47m F.F: 11.47m	137.68m ²	48.11%
Lot 1008	6.85m	Not a corner lot	1.06m & 0.92m	G.F: 8.12m F.F: 11.17m	133.48m ²	47.59%
Lot 1009	6.5m	Not a corner lot	1.06m & 0.92m	G.F: 8.47m F.F: 11.5m	137.68m ²	48.09%
Lot 1010	6.5m	Not a corner lot	1.06m & 0.92m	G.F: 8.47m F.F: 11.47m	137.68m ²	47.99%
Lot 1011	6.85m	Not a corner lot	1.06m & 0.92m	G.F: 8.12m F.F: 11.17m	133.48m ²	47.62%
Lot 1012	5.5m	Not a corner lot	1.4m & 0.92m	G.F: 8.1m F.F: 11.1m	111.03m ²	54.78%
Lot 1013	5.5m	Not a corner lot	1.4m & 0.92m	G.F: 8.1m F.F: 11.1m	111.03m ²	54.59%
Lot 1014	7.775m	Not a corner lot	0.92m & 2.15m	G.F: 6.49m F.F: 9.56m	113.86m ²	47.02%
Lot 1015	7.775m	Not a corner lot	2.15m & 0.92m	G.F: 6.49m F.F: 9.56m	113.86m ²	47.01%
Lot 1016	8m	Not a corner lot	1.06m & 0.92m	G.F: 6.97m F.F: 10m	119.68m ²	45.67%

4.3 Landscape and Private Open Space		
Control	Proposal	Compliance
C1. Provide landscaped area and private open space as required by Table 5 .	The controls in Table 5 of the DCP have been assessed above, please refer to the Table 5 – Compliance Assessment above. All proposed dwellings meet and exceed the minimum requirements for landscaping and Private Open Space.	Yes
C2. Landscaped Area located behind the rear of the principal dwelling is to have a minimum width dimension of 1.5m, noting: a. Private open spaces are to be provided behind the front building line and directly accessible from the primary living area, unless the lots are subject to noise mitigation requirements or are rear loaded lots that have south-facing Private Open Space.	The landscape area at the rear of the site has dimensions that exceed 1.5m in all directions. The private open space is located in the rear yards/alfresco's, which are all directly accessible from the kitchen/living areas of the dwellings.	Yes

4.3 Landscape and Private Open Space

Control	Proposal	Compliance
b. Private open space may be located within the front setback of frontloaded lots, if this location results in improved acoustic attenuation. Private open space may be located within the front setback of rear loaded lots, if this location results in improved solar access to the Private Open Space.		
C3. The principal private open space is to be provided behind the front building line.	All the Principal private Open Spaces are located within the rear yards.	Yes
C4. A minimum of one (1) locally indigenous tree must be provided within the front setback and one (1) tree in the rear setback, capable of a height of at least 6m height and 4m canopy spread at maturity. Pot size at planting should be min 75L. Trees provided within front setbacks are to be exclusively from the species listed in Table 4.	Landscape Plans detail the planting of two trees, one in the rear setback and one in the front setback. Selected Pot Sizes will be 75L and species will be indigenous.	Yes
C5. Despite C2 above, where attached dwellings and Attached Dwellings houses are provided with a lot width of less than 6m, a tree only needs to be provided in the front setback of every second dwelling.	It is assumed that this control relates to C4. However, as this application is for dwelling houses on lots with widths greater than 6m, this control is not applicable.	N/A
C6. Landscaping for attached dwellings is as follows: a. For lots less than 200m ² , minimum allocation of site area for landscaping is 15% of the total site area. b. For lots equal to or greater than 200m ² -250m ² , minimum 20% of total site area. c. For lots greater than 250m ² , minimum 25% of total site area.	This is not applicable as this proposal is for dwelling houses, not attached dwellings.	N/A
C7 To ensure that each dwelling has a positive interface with the streetscape, each lot must have the following: a. 40% of the area forward of the front building line must contain landscaped area. This percentage excludes the provision of a pedestrian path to connect to the street footpath.	All lots have a front landscaped area that exceeds 40%.	Yes

4.3 Landscape and Private Open Space

Control	Proposal	Compliance																																																																																										
	<table><tr><th colspan="5">FRONT LANDSCAPED AREA SCHEDULE</th></tr><tr><th>Lot Number</th><th>Frontyard Area</th><th>Landscaped Frontyard Area</th><th>Landscaped Frontyard (min 40%)</th><th>Complies (min 40%)</th></tr><tr><td>1001</td><td>82.45 m²</td><td>38.95 m²</td><td>47.24%</td><td>Yes</td></tr><tr><td>1002</td><td>87.77 m²</td><td>42.41 m²</td><td>48.32%</td><td>Yes</td></tr><tr><td>1003</td><td>83.99 m²</td><td>40.60 m²</td><td>48.34%</td><td>Yes</td></tr><tr><td>1004</td><td>82.47 m²</td><td>39.21 m²</td><td>47.55%</td><td>Yes</td></tr><tr><td>1005</td><td>84.01 m²</td><td>40.49 m²</td><td>48.20%</td><td>Yes</td></tr><tr><td>1006</td><td>87.87 m²</td><td>44.31 m²</td><td>50.42%</td><td>Yes</td></tr><tr><td>1007</td><td>84.21 m²</td><td>40.80 m²</td><td>48.46%</td><td>Yes</td></tr><tr><td>1008</td><td>87.78 m²</td><td>42.51 m²</td><td>48.42%</td><td>Yes</td></tr><tr><td>1009</td><td>84.01 m²</td><td>40.59 m²</td><td>48.31%</td><td>Yes</td></tr><tr><td>1010</td><td>82.46 m²</td><td>39.00 m²</td><td>47.30%</td><td>Yes</td></tr><tr><td>1011</td><td>87.87 m²</td><td>42.33 m²</td><td>48.17%</td><td>Yes</td></tr><tr><td>1012</td><td>59.18 m²</td><td>37.37 m²</td><td>63.15%</td><td>Yes</td></tr><tr><td>1013</td><td>57.30 m²</td><td>36.70 m²</td><td>64.05%</td><td>Yes</td></tr><tr><td>1014</td><td>84.95 m²</td><td>43.61 m²</td><td>51.33%</td><td>Yes</td></tr><tr><td>1015</td><td>84.95 m²</td><td>43.66 m²</td><td>51.39%</td><td>Yes</td></tr><tr><td>1016</td><td>102.02 m²</td><td>49.31 m²</td><td>48.33%</td><td>Yes</td></tr></table>	FRONT LANDSCAPED AREA SCHEDULE					Lot Number	Frontyard Area	Landscaped Frontyard Area	Landscaped Frontyard (min 40%)	Complies (min 40%)	1001	82.45 m²	38.95 m²	47.24%	Yes	1002	87.77 m²	42.41 m²	48.32%	Yes	1003	83.99 m²	40.60 m²	48.34%	Yes	1004	82.47 m²	39.21 m²	47.55%	Yes	1005	84.01 m²	40.49 m²	48.20%	Yes	1006	87.87 m²	44.31 m²	50.42%	Yes	1007	84.21 m²	40.80 m²	48.46%	Yes	1008	87.78 m²	42.51 m²	48.42%	Yes	1009	84.01 m²	40.59 m²	48.31%	Yes	1010	82.46 m²	39.00 m²	47.30%	Yes	1011	87.87 m²	42.33 m²	48.17%	Yes	1012	59.18 m²	37.37 m²	63.15%	Yes	1013	57.30 m²	36.70 m²	64.05%	Yes	1014	84.95 m²	43.61 m²	51.33%	Yes	1015	84.95 m²	43.66 m²	51.39%	Yes	1016	102.02 m²	49.31 m²	48.33%	Yes	
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C8. Exceptions to landscaped area in front setback: a. 3 storey attached dwellings are required to have a minimum of 20% of the area forward of the front building line to contain landscaped area. b. 2 storey attached dwellings are required to have a minimum of 25% of the area forward of the front building line to contain landscaped area. Landscaping should consist of a mix of high canopy trees, and low under-storey planting.	Not applicable.	N/A																																																																																										
C9. Any residential subdivision or development directly adjacent to land identified as C2 Environmental Conservation Zone land, must be supported by a Vegetation Management Plan (VMP). The aim of the VMP is to ensure conditions imposed within Appendix A: Matters to be addressed in Cumberland Plain Woodland Management (CI Environmental Conservation zoned land) are imposed as conditions of any consent that may be issued.	Not applicable	N/A																																																																																										

4.3 Landscape and Private Open Space

Control	Proposal	Compliance
Note: See Appendix B - Glossary of Terms for definition of "Landscaped Area" and "Private Open space"		

4.4 Solar Access

Control	Proposal	Compliance
C1. Provide at least 3 hours' solar access to a window of the primary living areas and 50% of the required principal private open space between 8.00am and 4.00pm on 21 June.	As detailed in Figure 8 below, all dwellings are able to achieve the minimum requirement of 3 hours of solar access on the winter solstice to the Private Open Space. All dwellings are able to achieve 3 hours of solar access to the window of the primary living area, being either the kitchen/dining rooms or the living room between 8am and 11am or 1pm and 4pm, depending on the individual dwelling design and their respective locations.	Yes
C2. Maintain at least 3 hours solar access to windows of primary living areas and 50% of the required principal private open space between 8.00am and 4.00pm on 21 June to adjacent dwellings.	As detailed in C1 above all dwellings are able to comply and have been considered as a group. It is noted that Lot 1001 and Lot 1016 may impact/be impacted upon future stages of the development. However, as these lots and potential future lots have the same orientation, it is anticipated future compliance will be achieved.	Yes
C3. Where the lot width is 6m or less, the minimum period of solar access on the 21 st of June between 8am and 4pm is required to be 2 hours.	No lots have a width of 6m or less.	N/A

Exception: Where dwellings have a north - south alignment with private open space to the south and the street to the north, solar access is not required to the principal private open space. A veranda, porch or balcony should be provided to the northern street facing side to enable a person to sit in the sun.

SOLAR COVERAGE IN POS											*NOTE : CALCULATIONS OF SOLAR COVERAGE IN ACCORD WITH THE DCP MIN 3 HRS OF 50% OF THE POS FROM 8:00AM - 4:00PM
O_Lot No	O_House Type	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	Solar Compliance*
1001	WS-29b_221O-F5	131.8 m²	134.8 m²	127.5 m²	118.8 m²	108.3 m²	93.52 m²	75.3 m²	51.2 m²	40.2 m²	Yes
1002	WS-28b_220AR-F3	124.3 m²	126.5 m²	119.6 m²	106.0 m²	89.0 m²	69.34 m²	39.7 m²	0.0 m²	0.0 m²	Yes
1003	WS-28b_220AR-F7	121.9 m²	127.1 m²	119.0 m²	104.0 m²	89.5 m²	69.60 m²	38.4 m²	0.0 m²	0.0 m²	Yes
1004	WS-29b-221O-F1	120.6 m²	124.5 m²	119.5 m²	106.5 m²	90.2 m²	70.64 m²	38.4 m²	0.0 m²	0.0 m²	Yes
1005	WS-28b-220AR-F8	120.5 m²	124.6 m²	119.5 m²	106.0 m²	90.2 m²	70.92 m²	38.7 m²	0.0 m²	0.0 m²	Yes
1006	WS-28b-220AR-F2	116.6 m²	121.1 m²	117.2 m²	103.6 m²	87.3 m²	68.16 m²	37.5 m²	0.0 m²	0.0 m²	Yes
1007	WS-29b_221O-F4	119.7 m²	122.5 m²	117.3 m²	105.5 m²	88.8 m²	68.88 m²	37.4 m²	0.0 m²	0.0 m²	Yes
1008	WS-28b-220AR-F3	116.9 m²	121.4 m²	117.4 m²	103.5 m²	87.4 m²	68.08 m²	37.5 m²	0.0 m²	0.0 m²	Yes
1009	WS-28b-220AR-F8	119.9 m²	124.1 m²	117.9 m²	105.3 m²	89.0 m²	69.18 m²	38.1 m²	0.0 m²	0.0 m²	Yes
1010	WS-29b_221O-F5	120.5 m²	125.1 m²	120.6 m²	107.0 m²	90.6 m²	70.79 m²	38.5 m²	0.0 m²	0.0 m²	Yes
1011	WS-28b_220AR-F2	116.7 m²	121.6 m²	118.1 m²	104.0 m²	87.9 m²	68.18 m²	38.3 m²	0.0 m²	0.0 m²	Yes
1012	WS-24_217G-F1	91.9 m²	102.4 m²	97.5 m²	87.7 m²	72.9 m²	57.36 m²	32.6 m²	0.0 m²	0.0 m²	Yes
1013	WS-24_217G-F11	104.9 m²	104.6 m²	99.1 m²	89.0 m²	73.4 m²	58.15 m²	32.7 m²	0.0 m²	0.0 m²	Yes
1014	WS-30_219H-F6	106.0 m²	108.2 m²	105.2 m²	96.2 m²	74.4 m²	59.56 m²	30.5 m²	0.0 m²	0.0 m²	Yes
1015	WS-30_219H-F5	107.5 m²	108.1 m²	104.4 m²	97.6 m²	88.9 m²	75.30 m²	57.7 m²	18.8 m²	29.8 m²	Yes
1016	WS-28b-220AR-F8	109.1 m²	115.6 m²	103.3 m²	91.1 m²	72.5 m²	51.97 m²	14.2 m²	0.0 m²	0.0 m²	Yes

Figure 14: Solar Coverage extract from Architectural Plans

4.5 Parking		
Control	Proposal	Compliance
C1. Vehicle circulation across the subject site is to comply with AS2890.1 .	Vehicular access and parking to and from the driveway/garage complies with the relevant standards.	Yes
C2. All dwellings are to provide at least one covered off-street car parking space.	All dwellings provide a minimum of one parking space behind the building line, being within the garage, which is covered.	Yes
C3. Garage doors are to have the following minimum setbacks as stipulated in Table 6 .	All the dwellings have a garage setback of 7.8m or more from Ashford Avenue. Lots 1012 and 1013 have a 6.5m garage setback. This complies with the requirements of Table 6.	Yes
C5. Where garage doors present to a primary road, Garage doors are also to be setback at least 1m behind from primary front building line.	All the garages are setback 1m behind the primary building line of the dwelling. It is noted for Lot 1014 and 1015 that the primary building line is on the first floor which overhangs the garage and reduces its visual dominance.	Yes
C6. Detached garages should be complimentary to the colour scheme of the dwelling.	The colours chosen for the garages are recessive and complimentary to the dwelling.	Yes
C7. On allotments with two (2) street frontages, car parking can be located on either frontage but not on both. Where possible locate car parking to rear laneways.	No corner lots proposed.	N/A
C8. Vehicle Footway Crossings to all new residential lots must be designed to reduce the impact of new driveways on existing street trees along Ashford Avenue.	This is reliant on the preceding DA, as all driveway cutouts are being provided with the subdivision application.	Yes

4.5 Parking		
Control	Proposal	Compliance
C9. Any vehicular crossing should have a maximum width of 3.5m at the street boundary.	The dwellings with a single garage have a crossover width of 3m, while the double garages have a width of 4m, which is permitted by Control 4.2 (C8).	Yes

C4 Street type	Setback from street boundary
Primary Road boundary	5.5m
Secondary Road boundary	1m
Laneway	0.5m

Table 6: Garage Setbacks

4.6 Energy		
Control	Proposal	Compliance
C1. Development Applications for redevelopment within the B1 Zone are to be submitted with documentation confirming that the building(s) will be capable of supporting a <i>Base Building National Australian Built Environment Rating System (NABERS) Energy Commitment Agreement</i> of 5.5 stars with the NSW Office of Environment and Heritage.	All the dwellings are proposed on the R1 zoned portion of the site.	N/A
C2. This NABERS Energy Commitment Agreement must be formalised prior to the issue of any construction certificate being issued for the approved development.	No NABERS Commitment is required for this application.	N/A
C3. The use, location and placement of photovoltaic solar panels is to consider the potential permissible buildings on adjacent properties.	All the dwellings are proposed to have solar panels, which are all orientated to the north and will receive optimal sunlight.	Yes
C4. Proposals for new buildings, alterations and additions and major tree plantings should aim to maintain the solar access of existing photovoltaic solar panels having regard to the performance of, efficiency, economic viability and reasonableness of their location.	Solar access to the Solar Panels will not be impacted upon by tree plantings with access maintained.	Yes

4.7 Sustainability		
Control	Proposal	Compliance
C1. The provision of EV charging infrastructure within the public domain is encouraged where practicable.	No works within the public domain are proposed through this application.	N/A
C2. In the event the provision of EV charging infrastructure cannot be provided, adequate space and electricity connections for battery storage and electric vehicle charging services should be provided to futureproof for future implementation of EV charging stations. This provision must include utility infrastructure capable of at least 480 volts and 100 amps to facilitate future EV charging infrastructure.	No works within the public domain are proposed through this application.	N/A
C3. All new developments must incorporate cool pavement solutions with a three-year Solar Reflectance Index (SRI) greater than 50 across at least 75% of street carriageways and footpaths.	No works within the public domain are proposed through this application.	N/A
C4. All new development must incorporate porous pavement solutions across at least 75% of street carriageways and footpaths.	No works within the public domain are proposed through this application.	N/A
C5. In addition to meeting relevant minimum legislated building requirements (BASIX), individual home designs are to incorporate at least two of the following passive cooling approaches: a. Envelope design (including thermal zoning) b. Natural cooling sources, or c. Hybrid cooling systems.	The dwellings encourage natural cooling systems as cross ventilation is facilitated.	Yes
C6. Each dwelling must install (or be designed to facilitate the installation of) a solar PV array, inverter and battery system sufficiently large to provide enough renewable energy to balance its predicted energy use over a year.	The dwellings are able to facilitate the installation of a solar PV array, inverter and battery system as the current Solar Panel system can be retrofitted in necessary.	Yes
C7. All residential developments are to have roofing materials installed with compliant three-year Solar Reflectance Index (SRI): a. Roofs pitched less than 15°: three-year SRI greater than 64 b. Roofs pitched greater than 15°: three-year SRI greater than 34 c. The incorporation of solar PV panels into the design is an acceptable deviation from the specifications.	Solar panels have been incorporated into the design of the dwellings.	Yes
C8. All public domain lighting should be powered by a PV and battery system	No works within the public domain are proposed through this application.	N/A
C9. All new residential developments must be designed to accommodate future capability to be completely offset by renewable energy i.e. reach net zero carbon emissions.	The proposal can be retrofitted if required to achieve net zero carbon emissions. The dwelling has been designed to have reduced reliance on electricity for heating and cooling.	Yes

4.5 Consideration of the Voluntary Planning Agreement

A Voluntary Planning Agreement has been executed by Canterbury-Bankstown Council, Western Sydney University and Mirvac Residential (NSW) Developments Pty Ltd. This document administers commitment from Mirvac Residential (NSW) Developments Pty Ltd and Western Sydney University towards the delivery of development contributions, works in kind and land dedication required in association with the development of the broader WSU site.

The VPA commitments that need to be addressed in conjunction with these 16 dwellings are provided below.

- Local Roads (Item 5): No Local Roads are being dedicated under these dwellings, these dwellings will utilise an existing public road for access.
- Undergrounding of Powerlines (Item 12): The powerlines that are forward of the proposed dwellings will be relocated underground as part of the subdivision works. However, the wording of the VPA states that it must be undergrounded prior to the Final OC of the dwelling along Ashford Avenue.
- Ashford Avenue – Footpath (Item 13): The footpaths that are forward of the proposed allotments will be constructed prior to the Occupation Certificates being released for these dwellings. This is to reduce the likelihood of damage occurring during construction. In this regard, a bond is deemed to be an appropriate measure to secure these works.
- Affordable Housing Contribution (Item 15): This amount is payable under the 16-lot subdivision application.

Therefore, the VPA requirements for these dwellings have/can be met.

4.6 The Likely Impact of the Development

The proposed development only relates to proposed Lots 1001 to 1016 being created pursuant to the Stage 1 Development Application, which was lodged prior to this application, therefore only this area and sites opposite this area has been considered for likely impacts of the development. The residue portion of the site will be dealt with via future development applications.

The following matters are the likely impacts of the development:

4.5.1 Context and Setting

The proposed development is located on land zoned as R1 General Residential land and is directly opposite R2 Low Density Residential zoned land. The proposal consists of residential dwellings on their own lots of land, the bulk, scale, massing and height of the proposal is consistent with the dwellings on the western side of Ashford Avenue

4.5.2 Access and Traffic

For this development, access to the proposed dwelling houses will only be required from Ashford Avenue, as these lots all have frontage to Ashford Avenue and do not require alternate access.

4.5.3 Utilities

Utilities are available to the site and arrangements satisfactory to each service authority will be made for the provision of services.

4.5.4 Heritage

Council's mapping shows no known items of heritage significance on the site; however, the adjoining street network is identified as an item of local heritage significance. The item is the *Milperra Soldier Settlement*

(former) which relates to the street alignment of the former Milperra Soldiers Settlement. As previously mentioned, a Statement of Heritage Significance was prepared to address the nearby heritage significance and to identify if there was anything for consideration on the site. The heritage consultant confirmed that the development of this site, would have minimal impact upon the heritage significance of the item.

The assessment further added that there was a low risk of Aboriginal artefacts being found on the site due to the site's highly disturbed history. The assessment does recommend that if in the event an artefact is uncovered works should cease and an Aboriginal Heritage Impact Permit (AHIP) may be required.

The Statement of Heritage Impact by Extent Heritage Advisors is attached for reference as **Appendix D**.

4.5.5 Visual Amenity

The development will have visual impact upon the Ashford Avenue streetscape, however this development is seen as an improvement upon the streetscape as it adds to the architectural and visual interest of the street. Further, the proposal is compliant in terms of setbacks, FSR, height, overshadowing, etc, therefore it is considered that the impacts arising from the dwelling houses are acceptable.

4.5.6 Acoustic Amenity

The construction works will be limited to standard site working hours, being Monday-Friday 7am to 6pm and Saturday 7am to 5pm, with no work to be conducted on Sunday or Public Holidays. As such, the proposed works are not expected to have an impact upon adjoining properties. Once the construction is completed and dwellings occupied, there will be no ongoing impacts.

An acoustic report has been prepared to assess the impacts of road noise on the future residential dwellings, subject to the implementation of the recommendations of the report, the dwellings can successfully mitigate the impacts of road noise, primarily from the M5 Motorway.

4.5.7 Economic Impact in the Locality

The proposal will have a beneficial impact upon the economy by providing employment and purchasing of materials during the construction phase of the dwelling houses.

4.5.8 Erosion and Sediment Control

Appropriate erosion and sedimentation measures will be implemented during the construction works to ensure all materials are captured and retained on site. Details are provided separately under an Erosion and Sediment Control Plan which has been submitted with the application and addresses erosion and sediment control.

4.6 The Suitability of the Site for the Development

The site is suitable for this development, being dwelling houses given the zoning of the site and that the site is adjacent to existing residential development. There are no natural impediments or limitations that would hinder this development. All required services are available at the site, which will be extended to service this development, with suitable capacity available.

4.7 Any Submissions Made in Accordance with this Act or the Regulations

Public participation is addressed under Schedule 1 of the Act for advertised development and other notifiable development. The consent authority must ensure a development application is advertised/notified in accordance with this clause and any relevant development planning instrument

and/or development control plan. Given the nature of the proposal it is considered that notification will be required in this instance. If any submissions are received, they will be addressed by Council, alternatively they can be provided to the applicant for a response.

4.8 The Public Interest

The public's interest is considered best served when proposed development adheres to the relevant development controls. The proposed development is consistent with the relevant development controls in accordance with the Canterbury-Bankstown Local Environmental Plan 2023 and the Canterbury-Bankstown Development Control Plan 2023. There are no adverse impact arising from the development which would negatively impact the public or adjoining properties.

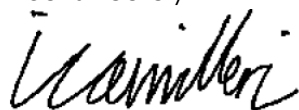
5 CONCLUSION

This SEE has been prepared to support the DA for the construction of 16 residential dwellings on Proposed Lot 1001 to 1016 created pursuant to the Stage 1 Subdivision Development Application at 2 Bullecourt Avenue, Milperra.

The concept of sustainable development recognises the link and importance of social, economic, and environmental factors. The proposal has been planned in a manner to recognise ecologically sustainable development principles and is considered to incorporate satisfactory stormwater drainage and erosion control. It is considered the proposed development is unlikely to have any significant adverse impacts on the environment and will not decrease environmental quality for future generations.

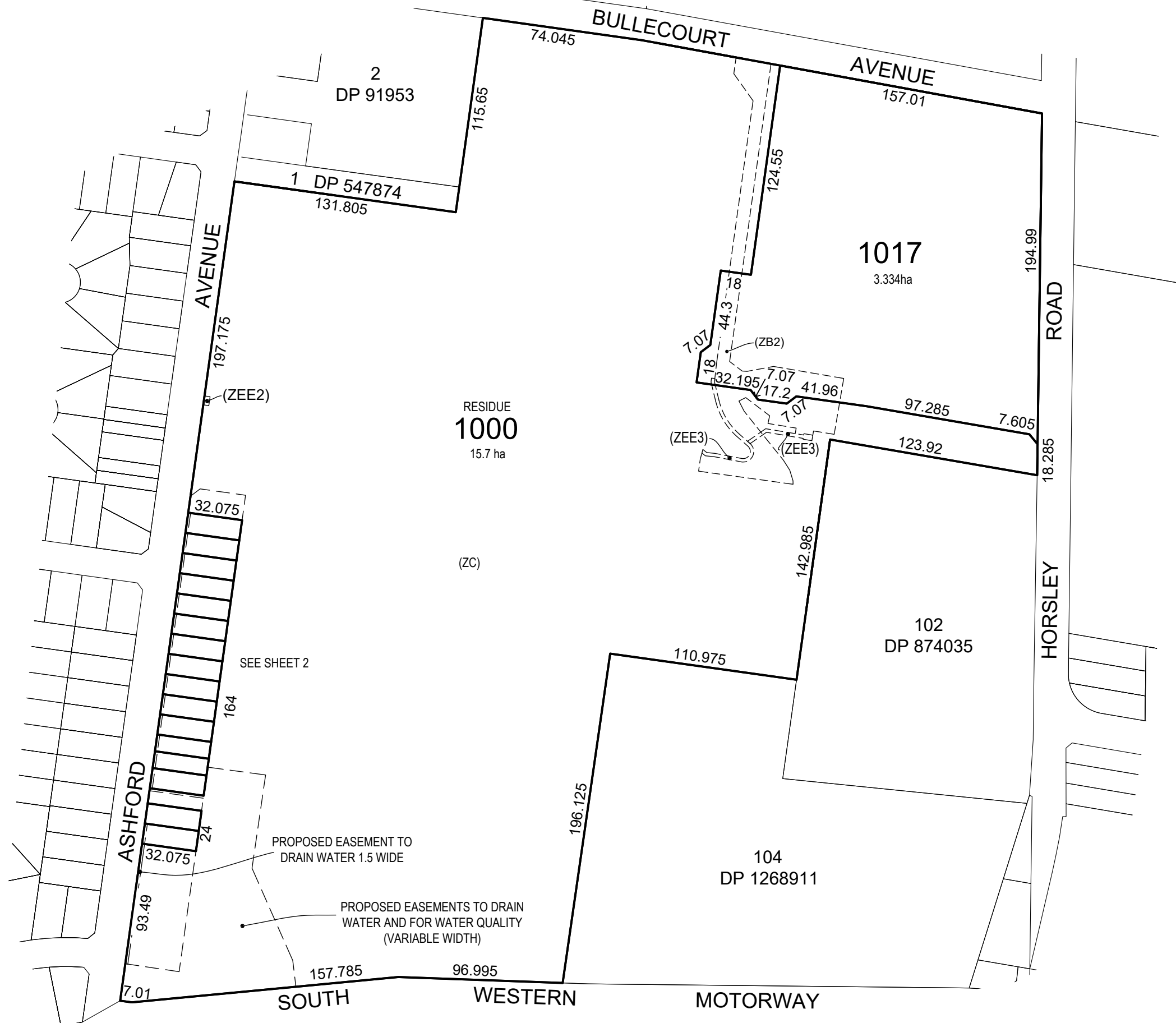
It is recommended that the proposed development be supported by Canterbury-Bankstown Council through the issue of a favourable determination.

Your sincerely



Isaac Camilleri
Senior Town Planner
BEVERIDGE WILLIAMS

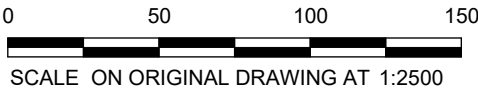
APPENDIX A: PROPOSED PLAN OF SUBDIVISION



MGA
SCIMS

NOTE
- DIMENSIONS AND AREAS ARE SUBJECT TO FINAL
DESIGN AND SURVEY

- (ZB2) RIGHT OF CARRIAGE WAY VARIABLE WIDTH
(DP1236474) (TO BE RELEASED)
(ZC) EASEMENT FOR SERVICES VARIABLE WIDTH
(WHOLE OF LOT) (DP1268911) (TO BE
RELEASED PRIOR TO THIS SUBDIVISION)
(ZEE2) EASEMENT FOR ELECTRICITY AND OTHER
PURPOSES (DP1144378)
(ZEE3) EASEMENT FOR ELECTRICITY AND OTHER
PURPOSES 2 & 3.3 WIDE (DP1236474) (TO BE
RELEASED)



VER	BY	AMENDMENTS	DATE
A	BC	ORIGINAL ISSUE	16-02-2024
B	BC	AMENDMENT TO LOT LAYOUT	28-02-2024
C	SG	AMENDMENT TO DRAINAGE EASEMENTS	24-05-2024
D	BC	ADDED LOT 1017	26-08-2024
E	BC	AMENDMENT TO DRAINAGE EASEMENTS	01-10-2024

BW Beveridge Williams
Development and Infrastructure Consultants

(02) 46255055 www.beveridgewilliams.com.au

CLIENT:



DETAILS:

PLAN OF PROPOSED SUBDIVISION OF
LOT 2 DP1291984 AND LOT 1 DP101147
2 BULLECOURT AVENUE, MILPERRA
(STAGE 1)

ORIGINAL
SCALE
1:2500

SHEET SIZE
A3

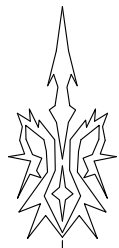
SURVEYOR:	BC
DRAWN:	DH
CHECKED:	BC
SURVEY DATE:	N/A
CAD REFERENCE:	2301879(1)-PS

SHEET 1 OF 2

PROJECT No.
2301879

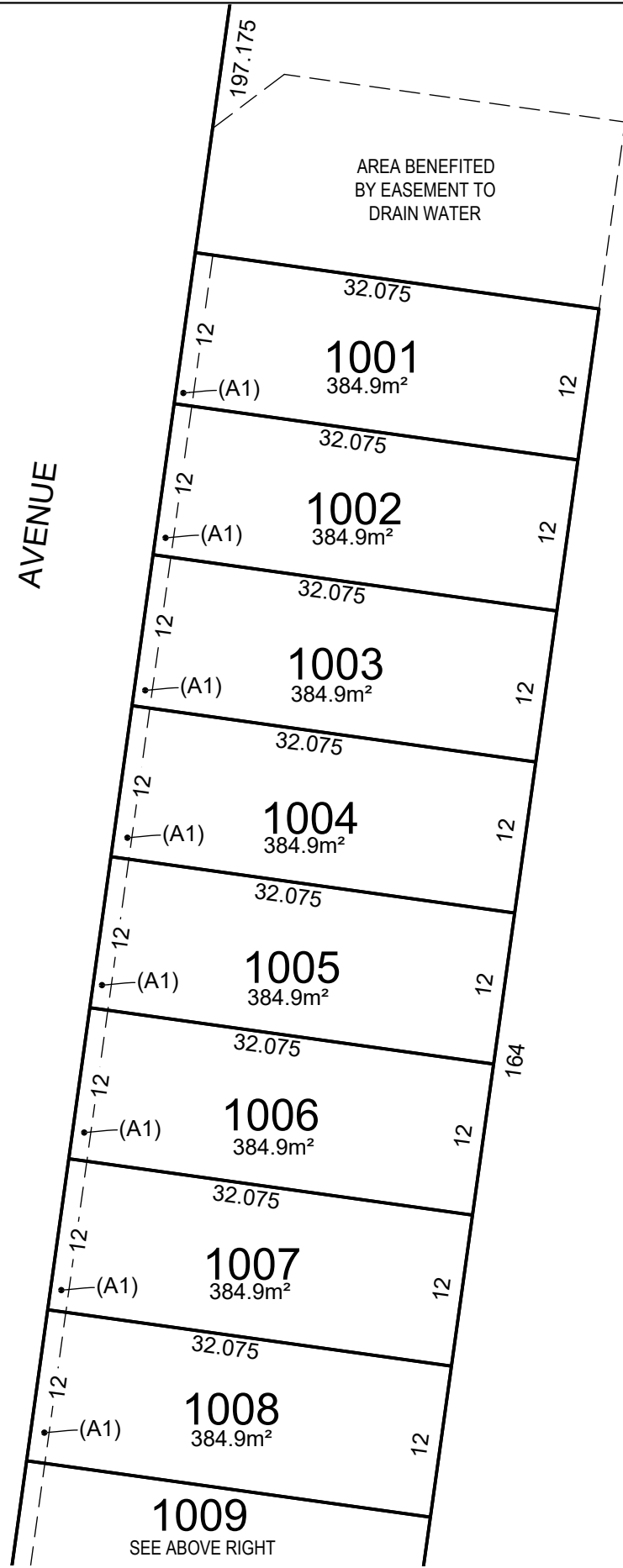
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2301879(1)-PS

VERSION
E

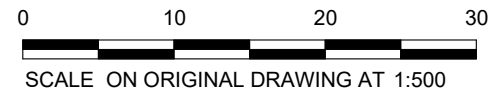
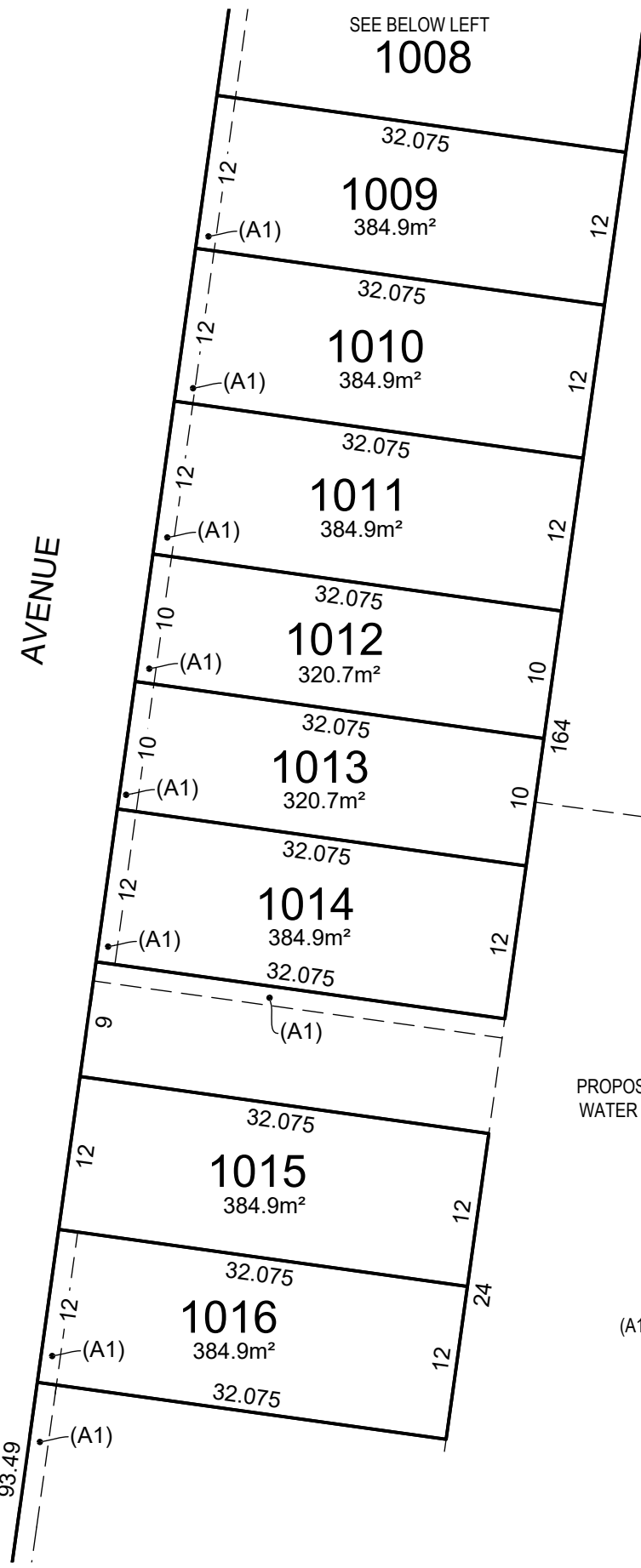


MGA
SCIMS

ASHFORD
AVENUE



ASHFORD
AVENUE



(A1) PROPOSED EASEMENT TO DRAIN WATER 1.5 WIDE

VER	BY	AMENDMENTS	DATE
A	BC	ORIGINAL ISSUE	16-02-2024
B	BC	AMENDMENT TO LOT LAYOUT	28-02-2024
C	SG	AMENDMENT TO DRAINAGE EASEMENTS	24-05-2024
D	BC	ADDED LOT 1017	26-08-2024
E	BC	AMENDMENT TO DRAINAGE EASEMENTS	01-10-2024

**Beveridge Williams**
Development and Infrastructure Consultants
(02) 46255055 www.beveridgewilliams.com.au

CLIENT:



DETAILS:
PLAN OF PROPOSED SUBDIVISION OF
LOT 2 DP1291984 AND LOT 1 DP101147
2 BULLECOURT AVENUE, MILPERRA
(STAGE 1)

ORIGINAL
SCALE
1:500

SHEET SIZE
A3

SURVEYOR:	BC
DRAWN:	DH
CHECKED:	BC
SURVEY DATE:	N/A
CAD REFERENCE:	2301879(1)-PS
SHEET 2 OF 2	

PROJECT No. 2301879
DRAWING REF. 2301879(1)-PS
VERSION E

APPENDIX B: VOLUNTARY PLANNING AGREEMENT



Canterbury-Bankstown Council

Mirvac Residential (NSW) Developments Pty Ltd

Western Sydney University

Voluntary Planning Agreement

2 and 2a Bullecourt Avenue, Milperra
WSU Bankstown Campus

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Date

Parties

Canterbury-Bankstown Council ABN 45 985 891 846 of 66-72 Rickard Road,
Bankstown NSW 2200 (**Council**)

Mirvac Residential (NSW) Developments Pty Ltd ABN 29 609 513 135 of Level 28,
200 George Street, Sydney NSW 2000 (**Developer**)

Western Sydney University ABN 53 014 069 881 of Locked Bag 1797, Penrith NSW
2651 (**Landowner**)

Background

- A The Landowner owns the Land.
 - B The Developer and the Landowner prepared the Planning Proposal seeking the Instrument Change, which includes a rezoning of the Land.
 - C The Developer intends to carry out the Development following the Instrument Change.
 - D The Developer has made an offer to enter into this Agreement with Council for the provision of Development Contributions in connection with the Planning Proposal and the Development.
 - E The combined agreed value of the Development Contributions offset is \$3,462,458.54.
 - F Council has accepted the offer to enter into this Agreement. The Parties wish to formalise that arrangement by entering into this Agreement in accordance with section 7.4 of the Act.
-

Agreed terms

1 Definitions and interpretation

1.1 Definitions

Terms used in this Agreement have the following meanings:

Act	the <i>Environmental Planning and Assessment Act 1979</i> (NSW).
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Affordable Housing Contribution	means the payment of a Monetary Contribution to Council for affordable housing purposes, as described in Part C of Schedule 2 .
Agreed Contribution Value	<p>means the estimated value for each Development Contribution as identified in Column 3 of Schedule 2, and to be indexed quarterly as follows:</p> <p>(a) in respect of a Development Contribution comprising the Dedication Land, the Milperra Community Contribution and the Affordable Housing Contribution – indexed in accordance with the Consumer Price Index (All Groups Sydney) published by the Australian Bureau of Statistics on and from the date of this Agreement,</p> <p>(b) in respect of a Development Contribution comprising a Works in Kind or a payment of Monetary Contribution in lieu – indexed in accordance with the Producer Price Index (Output of Construction Industry) published by the Australian Bureau of Statistics on and from the date of this Agreement.</p>
Agreement	this voluntary planning agreement, including any schedules and annexures.
Approval	includes an approval, consent, licence, permission or the like.
Approved Deferred Works	means those Works in Kind that Council approves to defer under clause 7.9 .
Authority	means, in respect of a particular context or circumstance, each Federal, State or Local Government, semi-Government, quasi-Government or other body or authority, statutory or otherwise, including but not limited to any court or tribunal, having jurisdiction and responsibility in respect of that context or circumstance.

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Bank Guarantee	<p>means an irrevocable and unconditional undertaking without any expiry or end date in favour of Council to pay an amount or amounts of money to Council on demand issued by:</p> <p>(a) one of the following trading banks:</p> <ul style="list-style-type: none"> (i) Australia and New Zealand Banking Group Limited; (ii) Commonwealth Bank of Australia; (iii) Macquarie Bank Limited; (iv) National Australia Bank Limited; (v) St George Bank Limited; (vi) HSBC Bank Australia Limited; (vii) Westpac Banking Corporation, or <p>(b) any other financial institution approved by Council in its absolute discretion.</p>
Business Day	<p>a day on which banks are open for business generally in Sydney, and which is not a Saturday, Sunday or bank or public holiday in Sydney and specifically excluding 27, 28, 29, 30 and 31 December.</p>
Certificate of Final Completion	<p>means a certificate in writing issued by Council to the Developer to effect that, in the reasonable opinion of Council, the Works in Kind to which the certificate relates have been completed by the Developer in accordance with this Agreement.</p>
Certificate of Practical Completion	<p>means a certificate in writing issued by Council to the Developer to the effect that, in the reasonable opinion of Council, construction of a Works in Kind is complete, except for minor omissions and defects:</p> <ul style="list-style-type: none"> (a) which do not prevent the Works in Kind from being reasonably capable of being used for their intended purpose; and (b) the rectification of which will not prejudice the convenient use of the Works in Kind.
Claim	<p>includes a claim, demand, remedy, suit, injury, damage, loss, cost, liability, action, proceeding or right of action.</p>
CLM Act	<p>means the <i>Contaminated Land Management Act 1997</i> (NSW).</p>
Contamination	<p>has the same meaning as in the CLM Act.</p>

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Construction Certificate	has the same meaning given to that expression in the Act.
Dedication	means transfer to Council for no cost in accordance with this Agreement. Dedicate has the same meaning.
Dedication Land	means the Local Roads Land, SP2 Infrastructure (Drainage) Land and RE1 Public Recreation Zoned Land.
Defect	has the meaning given to that expression in clause 8.1(a) .
Defects Liability Period	with respect to: <ul style="list-style-type: none">(a) an item of the Works in Kind other than one referred to in paragraph (b) below, means 12 months from the date the particular Works in Kind is subject to a Certificate of Practical Completion issued in accordance with clause 7.6(c)(i); and(b) items 4, 5, 6, 10 and 11 in Schedule 2, means the period beginning on the date the particular Works in Kind is subject to a Certificate of Practical Completion issued in accordance with clause 7.6(c)(i) and ending on the date the Occupation Certificate for the Dwelling on the 401st Residential Lot in the Development is issued, or if less than 401 Residential Lots are approved in the Development, the date the Occupation Certificate for the last Residential Lot in the Development is issued.
Defects Liability Security	means Security in the amount of \$144,654.03, which is equal to 2.5% of the Agreed Contributions Value of the Works in Kind, Indexed quarterly in accordance with the Consumer Price Index (All Groups Sydney) published by the Australian Bureau of Statistics on and from the date of this Agreement.
Defects Notice	has the meaning given to that expression in clause 8.1(a) .
Deferred Works	has the meaning given to that expression in clause 7.9(a) .
Deferred Works Security	has the meaning given to that expression in clause 14.4(a) .

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Development	the development (within the meaning of the Act) of the Land authorised by a Development Consent and permitted as a consequence of the Instrument Change, which, at the date of this Agreement, is proposed to involve the construction of up to 430 residential dwellings and provision of local open space, a neighbourhood centre and drainage facilities.
Development Consent	has the same meaning given to that expression in the Act and includes any development consents granted by Council in respect of the Development.
Development Contributions	the contributions to be provided by the Landowner and Developer in accordance with clause 5 and Schedule 2 .
Dwelling	has the same meaning as in the LEP.
Explanatory Note	The explanatory note prepared pursuant to section 205 of the Regulation and attached at Annexure D .
General Security	means Security in the amount of \$581,968.53, which is equal to 2.5% of the Agreed Contributions Value of the Development Contributions, indexed quarterly in accordance with the Consumer Price Index (All Groups Sydney) published by the Australian Bureau of Statistics on and from the date of this Agreement.
Instrument Change	means an amendment to the LEP as a consequence of the Planning Proposal, which is given effect by the publication of a new LEP in the NSW Government Gazette.
Insurance Bond	<p>means an irrevocable and unconditional undertaking:</p> <ul style="list-style-type: none">(a) by an Insurance Company which is an eligible financial institution for the purposes of Treasury Circular NSW TC14/01 dated 24 January 2014 as amended, supplemented or substituted from time to time; and(b) on terms acceptable to Council, in Council's absolute discretion, <p>to pay the face value of that undertaking (being such amount as is required under this Agreement) on demand.</p>
Land	means Lot 105 DP1268911 and Lot 1 DP101147, situated at 2 and 2a Bullecourt Avenue, Milperra and currently known as the Western Sydney University Bankstown Campus, including any land created as a result of the subdivision or consolidation of that land.

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LEP	means the Canterbury-Bankstown Local Environmental Plan 2023 (NSW).
Local Roads Land	that part of the Land that is proposed to be Dedicated as public road, as indicatively shown marked 'Local Road' on the plan at Annexure A .
Maintain	in relation to a Works in Kind, means keep in a good state of repair and working order to Council's satisfaction, and includes repair of any damage and removal of any graffiti to the works.
Maintenance Period	<p>(a) in relation to a Works in Kind not referred to in (b), means the period commencing on the date the Council issues a Certificate of Practical Completion in respect of the work and ending on the date the Occupation Certificate for the Dwelling on the 401st Residential Lot in the Development is issued or if less than 401 Residential Lots are approved in the Development, the date the Occupation Certificate for the last Residential Lot in the Development is issued, and</p> <p>(b) in relation to a Works in Kind comprising a drainage or bioretention work means a period of 5 years commencing on the date the Council issues a Certificate of Practical Completion in respect of the work.</p>
Milperra Community Contribution	the payment of a Monetary Contribution to Council for the purpose of the Milperra Community Centre or other community facilities in the Milperra region as described in Part C of Schedule 2 .
Monetary Contribution	means the payment of an amount to Council, including an amount paid in lieu of carrying out an item of Works in Kind that is equivalent to the Agreed Contribution Amount for that item.
Occupation Certificate	has the same meaning given to that expression in the Act.
RE1 Public Recreation Zoned Land	that part of the Land that is proposed to be Dedicated to Council for public open space, that is proposed to be or that is zoned RE1 Public Recreation under the LEP and as shown marked 'Proposed Public Open Space' on the plan at Annexure A .
Part 6 Certificate	means a certificate under Part 6 of the Act.

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Party	a party to this Agreement, including their successors and assigns.
Planning Proposal	means the planning proposal made pursuant to section 3.33 of the Act submitted by the Sydney South Planning Panel to the Department of Planning and Environment on 17 February 2022 and given reference number PP-2021-5837.
Practical Completion	in respect of a Works in Kind, occurs when the Council has issued a Certificate of Practical Completion for the Works in Kind.
Public Domain Work Permit	means an approval issued by Council under the <i>Roads Act 1993</i> and/or <i>Local Government Act 1993</i> pursuant to which a developer is authorised to carry out works within, on, under or above any land owned by Council (including roads).
Register	the Torrens title register maintained under the <i>Real Property Act 1900</i> (NSW).
Regulation	the <i>Environmental Planning and Assessment Regulation 2021</i> (NSW).
Release Land	has the meaning given to that expression in clause 13.2(a) .
Residential Accommodation	has the meaning given to that expression in the <i>Standard Instrument—Principal Local Environmental Plan</i> .
Residential Lot	means a lot that forms part of the Land to be created by registration of a plan of subdivision, strata plan or strata plan of subdivision, and is intended to be developed or used for Residential Accommodation, excluding any Service Lots or Super Lots.
Security	means <ul style="list-style-type: none">(a) a Bank Guarantee; or(b) a bond agreed to by Council, including an Insurance Bond.

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Service Lot	means a Lot that is created for one or more of the following purposes: <ul style="list-style-type: none"> (a) to be dedicated or otherwise transferred to an Authority (including to Council); (b) any public utility undertaking within the meaning of the <i>Standard Instrument—Principal Local Environmental Plan</i>; (c) open space, recreation, environmental conservation, drainage or riparian land management; or (d) a road, but does not include a Super Lot.
Site Audit Report	has the same meaning as in the CLM Act.
Site Audit Statement	has the same meaning as in the CLM Act.
SP2 Infrastructure (Drainage) Land	that part of the Land that is proposed to be Dedicated as drainage reserve, as indicatively shown on the plan at Annexure C .
Strata Certificate	has the same meaning given to that expression in the <i>Strata Schemes Development Act 2015</i> .
Subdivision Certificate	has the same meaning given to that expression in the Act.
Subdivision Works Certificate	has the same meaning given to that expression in the Act.
Super Lot	means a Lot which, following the registration of a plan of subdivision, is intended for further subdivision (including strata and community title subdivision) for Residential Accommodation, but does not include a Service Lot.
Works in Kind	each of the works to be carried out as specified in Column 2 of Part B of Schedule 2 .

1.2 Interpretation

In this Agreement, unless the context clearly indicates otherwise:

- (a) a reference to a statute, ordinance, code or other law includes regulations and other instruments under it and consolidations, amendments, re-enactments or replacements of any of them;
- (b) the singular includes the plural and vice versa;
- (c) the word "person" includes a firm, a body corporate, an unincorporated association or an authority;

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- (d) a reference to a person includes a reference to the person's executors, administrators, successors, substitutes (including, without limitation, persons taking by novation) and assigns;
- (e) a reference to anything (including, without limitation, any amount) is a reference to the whole and each part of it and a reference to a group of persons is a reference to all of them collectively, to any two or more of them collectively and to each of them individually;
- (f) "include" or "including" when introducing a list of items does not limit the meaning of the words to which the list relates to those items or to items of a similar kind;
- (g) a reference to a body, whether statutory or not which ceases to exist or whose powers or functions are transferred to another body is a reference to the body which replaces it or which substantially succeeds to its powers or functions;
- (h) no rule of construction applies to the disadvantage of a Party because that Party was responsible for the preparation of this Agreement;
- (i) any capitalised term used, but not defined in this Agreement, will have the meaning ascribed to it under, and by virtue of, the Act;
- (j) headings are inserted for convenience only and do not affect the interpretation of this Agreement;
- (k) if the day on which any act, matter or thing is to be done under this Agreement is not a Business Day, the act, matter or thing must be done on the next Business Day;
- (l) a reference in this Agreement to dollars or \$ means Australian dollars and all amounts payable under this Agreement are payable in Australian dollars;
- (m) a reference in this Agreement to any agreement, deed or document is to that agreement, deed or document as amended, novated, supplemented or replaced; and
- (n) a reference to a clause, part schedule or attachment is a reference to a clause, part, schedule or attachment of or to this Agreement.

2 Planning agreement under the Act

- (a) The Parties agree that this Agreement is a planning agreement within the meaning of section 7.4 of the Act.
- (b) **Schedule 1** of this Agreement summarises the requirements for planning agreements under section 7.4 of the Act and the ways in which this Agreement addresses those requirements.

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3 Application of this Agreement

This Agreement applies to the:

- (a) Land;
- (b) Instrument Change; and
- (c) Development.

4 Operation of this Agreement

- (a) **Clauses 1, 2, 3, 4, 13, 16, 17, 18, 19 and 21.1** operate and are effective and binding on the Parties on and from the date of this Agreement.
- (b) The Parties agree that the balance of the terms of this Agreement operate and are effective and binding on the Parties on and from the date the Instrument Change is made.
- (c) Notwithstanding **clause 4(b)**, the Parties agree that the Landowner and Developer are not bound by this Agreement to deliver the Development Contributions unless:
 - (i) the Instrument Change is made;
 - (ii) a Development Consent or Development Consents (as necessary) is or are granted for the Development; and
 - (iii) the Development is physically commenced in accordance with section 4.53 of the Act.

5 Contributions to be made under this Agreement

- (a) Subject to this Agreement and in accordance with **Schedule 2**, the Developer and the Landowner (as applicable) are to deliver the Development Contributions, comprising the:
 - (i) Dedication of the Dedication Land;
 - (ii) carrying out, completion and maintenance of the Works in Kind or, in respect of Works in Kind items 7, 12 and 14, the provision of a Monetary Contribution in lieu in accordance with **clause 7.8** and subject to agreement from the Council; and
 - (iii) provision of the Milperra Community Contribution and the Affordable Housing Contribution.
- (b) The Parties acknowledge and agree that the Agreed Contribution Value in respect of a Works in Kind or Dedication Land:
 - (i) constitutes the agreed value of the public benefit of a Development Contribution required to be made under this Deed irrespective of the cost to the Developer of making the Development Contribution, and

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- (ii) does not serve to define the monetary extent of the Developer's obligation to make the Development Contribution to which the Agreed Contribution Value relates.

6 Dedication of Dedication Land

6.1 Delivery of the Dedication Land

The Landowner is to Dedicate the Dedication Land specified in **Part A of Schedule 2**, by the time specified in **Column 4 of Part A of Schedule 2**, in accordance with **clause 6.2**, **clause 6.3** and **clause 6.4**.

6.2 Dedication process

- (a) The Landowner must take all steps necessary, and may be assisted by the Developer in the taking of such steps, to give effect to the Dedication of the Dedication Land to Council in accordance with the timing specified in **clause 6.1** by:
 - (i) in the case of the RE1 Public Recreation Zoned Land and SP2 Infrastructure (Drainage) Land, either:
 - (A) preparing and registering a deposited plan (or more than one deposited plan) which has the effect of Dedicating the RE1 Public Recreation Zoned Land and SP2 Infrastructure (Drainage) Land to Council as a public reserve or a drainage reserve (as applicable) in accordance with section 49 of the *Local Government Act 1993* (NSW); or
 - (B) arranging the electronic conveyance of the RE1 Public Recreation Zoned Land and SP2 Infrastructure (Drainage) Land to Council for \$1.00, including:
 - (1) preparing and registering a deposited plan (or more than one deposited plan) to create the RE1 Public Recreation Zoned Land and SP2 Infrastructure (Drainage) Land as separate parcels;
 - (2) procuring all necessary consents to facilitate the transfer of the RE1 Public Recreation Zoned Land and SP2 Infrastructure (Drainage) Land to Council; and
 - (3) coordinating the electronic conveyance of the RE1 Public Recreation Zoned Land and SP2 Infrastructure (Drainage) Land to Council via Property Exchange Australia Ltd (PEXA) or another applicable electronic lodgement network operator;
 - (ii) in the case of the Local Roads Land, preparing and registering a deposited plan (or more than one deposited plan) which has the effect of Dedicating the Local Roads Land to Council as public road in accordance with section 9 of the *Roads Act 1993*; and

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- (iii) taking any other necessary action to give effect to the transfer of the title of the Dedication Land to Council.
- (b) The Dedication Land is taken to be Dedicated to Council for the purposes of this Agreement when the relevant deposited plan or electronic conveyance has been registered.
- (c) To the extent permitted by law, Council must promptly do all things reasonably required by the Landowner to facilitate the registration of a deposited plan or plans to create the Dedication Land, including but not limited to issuing a Subdivision Certificate.
- (d) Subject to the requirements under this **clause 6.2**, Council agrees that it will accept the Dedication Land free of all encumbrances and interests other than any easements or interests approved in writing by Council required by any authority or utility service provider or required under any Development Consent.
- (e) To assist in Council's consideration of any easements or interests referred to in **clause 6.2(d)**, the Developer is provide to Council on request a plan or other document showing the location and terms of any easements and interests.
- (f) The Developer is responsible for paying any costs and expenses, including those incurred by Council, associated with the Dedication of the Dedication Land to Council.

6.3 Site Audit Report and Site Audit Statement

Before Dedicating the Dedication Land to Council, the Developer, at its cost, is to obtain and provide to Council a Site Audit Report and Site Audit Statement stating that the Dedication Land is suitable for the purpose for which the Dedication Land is required to be dedicated under this Agreement without being subject to compliance with an environmental management plan.

6.4 Completion of SP2 Infrastructure (Drainage) prior to Dedication

Before Dedicating the Dedication Land comprising item 3 of **Schedule 2** to Council, the Developer is to have obtained a Certificate of Practical Completion in respect of Works in Kind item 10 of **Schedule 2**.

6.5 Indemnity

The Developer indemnifies and agrees to keep indemnified Council against all Claims made against Council as a result of any Contamination on or emanating from the Dedication Land but only in relation to Contamination that existed on or before the date that the Dedication Land is transferred or dedicated to Council or compulsorily acquired by Council pursuant to this Agreement, but only in circumstances where the Council is of the view, acting reasonably, that the Site Audit Report and Site Audit Statement has not been properly prepared in accordance with the applicable industry standards.

7 Carrying out and delivery of Works in Kind

7.1 Design of Works in Kind

- (a) The Developer may not commence construction of a Works in Kind unless the Works in Kind is designed and approved in accordance with this clause.
- (b) The Developer must, promptly after the date of the Development Consent applicable to the relevant Works in Kind, prepare plans and specifications for the Works in Kind having regard to:
 - (i) the relevant Development Consent;
 - (ii) applicable Council standards (except to the extent such standards are varied by the relevant Development Consent); and
 - (iii) applicable Australian standards.
- (c) Before commencing the design of the Works in Kind contribution items 4, 6, 7, 10 and 14, the Developer is to request Council to provide the Developer with Council's design requirements for the works.
- (d) Upon receipt of the Developer's request, Council may:
 - (i) initially request the Developer to provide a written proposal concerning the design of the Works in Kind, including preliminary concept designs, to assist Council in determining and notifying the Developer of its requirements, and subsequently request the Developer to submit the plans and drawings of the Works in Kind to Council for approval; or
 - (ii) request the Developer to submit the plans and drawings of the works to Council for approval.
- (e) The Developer is to prepare:
 - (i) plans and drawings of the Works in Kind in accordance with the Council's design requirements provided to the Developer under **clause 7.1(d)**, and
 - (ii) in respect of Works in Kind items 7 and 14, an estimate of the costs of construction of those items to those plans and drawings prepared and certified by an independent and suitably qualified and registered quantity surveyor, showing that the estimated costs of construction is not less than the Agreed Contribution Value,and submit the plans and drawings and cost estimate to the Council for approval.
- (f) Subject to **clause 7.1(g)**, Council may reasonably require the Developer to make any change to the plans and drawings of the Works in Kind that it reasonably considers necessary or desirable as a precondition to approving the plans and drawings, and the Developer is to make any such change.

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- (g) In respect of Works in Kind items 7 and 14, the Developer is not required to make any change requested under **clause 7.1(f)** if such change will result in an increase in the estimated cost of the relevant Works in Kind exceeding the Agreed Contribution Value for that item, as certified by an independent and suitably qualified and registered quantity surveyor.
- (h) Council is to inform the Developer in writing when it approves the plans and drawings of the Works in Kind.
- (i) The Developer is not to make any application for any Approval relating to the Works in Kind contribution items 4, 6, 7, 10 and 14 unless Council has approved the plans and drawings of the Works in Kind under this clause.
- (j) For the basin design components relating to the Works in Kind contribution items 4 and 10, the Developer agrees to:
 - (i) install gross pollutant traps at the end of each drainage line shown on the plan at **Annexure C**, and ensure that vehicular access to the gross pollutant traps is available in all weather conditions;
 - (ii) when it lodges an application for a Subdivision Works Certificate for those items, provide to Council for Council's approval a maintenance plan for the maintenance of the drainage and bioretention basins shown on the plan at **Annexure C** which includes (without limitation) details of the following matters:
 - (A) requirements for works-as-executed plans,
 - (B) life cycle plans and maintenance plans for individual assets including the following details:
 - (1) device model and brand (if applicable),
 - (2) characteristics of the 'upstream' area (e.g. pollution, volume of water) and how the device meets these,
 - (3) simplified diagram of the device functions,
 - (4) useful life,
 - (5) preventative maintenance and frequency,
 - (6) in respect of gross pollutant traps, adherence to the 'Guidelines for the Maintenance of Stormwater Treatment Measures' published by Water NSW,
 - (7) reactive maintenance,
 - (8) data sheets for gross pollutant traps,
 - (9) warranties;
 - (iii) maintain the drainage and bioretention basins shown on the plan at **Annexure C** for a period of 5 years from the Practical Completion of those Works in Kind in accordance with the maintenance plan approved by Council under **clause 7.1(j)(ii)**; and

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- (iv) at the completion of the maintenance period referred to in **clause 7.1(j)(iii)**, undertake testing to determine whether there has been an unacceptable reduction in the infiltration capacity of the drainage and bioretention basins.
- (k) The Developer acknowledges and agrees that if an unacceptable reduction in the infiltration capacity of the drainage and bioretention basins is identified under **clause 7.1(j)(iv)**, the Developer must either:
 - (i) undertake work to restore the infiltration capacity of the drainage and bioretention basins, within the approved footprint, to the capacity level at Practical Completion of those Works in Kind; or
 - (ii) subject to Council's agreement, pay to Council an amount agreed in lieu of carrying out the work identified in **clause 7.1(k)(i)**, to allow Council to carry out the work.
- (l) Prior to the issue of an Occupation Certificate in respect of a Residential Lot, the Developer is to ensure that the Residential Lot is supplied with an appropriate rainwater tank fitted in accordance with the *BASIX Interim Rainwater Harvesting System Guidelines*.

7.2 Carrying out of Works in Kind

- (a) The Developer must:
 - (i) carry out the Works in Kind:
 - (A) in a good and workmanlike manner; and
 - (B) in accordance with the plans and drawings prepared and approved by Council under **clause 7.1**; and
 - (ii) bring the Works in Kind to Practical Completion by the time specified in **Column 4 of Part B of Schedule 2**.
- (b) The Developer is to ensure that anything necessary for the proper performance of its obligations under this Agreement relating to the provision of the Works in Kind is supplied or made available for that purpose.
- (c) The Developer is to use all reasonable endeavours to ensure that, in providing the Works in Kind:
 - (i) all necessary measures are taken to protect people and property;
 - (ii) unnecessary interference with the passage of people and vehicles is avoided; and
 - (iii) nuisances and unreasonable noise and disturbances are prevented.
- (d) The Developer is not to obstruct, interfere with, impair or damage any public road, public footpath, public cycleway or other public thoroughfare, or any pipe, conduit, drain, watercourse or other public utility or service on any land in connection with the Works in Kind unless authorised in writing by Council or any relevant Authority.

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- (e) The Developer warrants to Council that:
 - (i) it has obtained all Approvals and has complied with all laws and applicable industry standards in relation to the Works in Kind;
 - (ii) it accepts that, if any aspect of the Works in Kind do not comply with this Agreement, Council is entitled to require the Developer to cease the Works in Kind and to pursue its rights and remedies relating to the non-compliance under this Agreement and, subject to this Agreement, at law or in equity; and
 - (iii) the Works in Kind, when completed, are to be fit for purpose.
- (f) The Developer is to procure in favour of Council from the appropriate person engaged in relation to the Works in Kind, any warranty reasonably required by Council relating to the design, construction, supervision, inspection, testing or certification of the Works in Kind.

7.3 Damage to assets & property

- (a) The Developer must immediately notify Council in writing of any loss or damage that occurs in respect of a Council asset of which it becomes aware while carrying out the Works in Kind.
- (b) The Developer must replace or fix any Council asset the Developer loses or damages while carrying out the Works in Kind in accordance with any requirements of Council.
- (c) If an audit, inspection or test of the Works in Kind shows that:
 - (i) the Works in Kind do not conform to the location, design, specifications, materials or finishes approved by Council under this Agreement; or
 - (ii) damage has occurred to a Council asset or the property of another person in connection with the Works in Kind,

Council may give the Developer a notice in writing requiring it to take corrective action to bring the Works in Kind into conformity or repair the damage, as the case requires.
- (d) Without limiting any other remedies available to Council under this Agreement, if the Developer does not comply with Council's requirements under subclause (c), Council may take the action required of the Developer and recover Council's costs of so doing from the Developer.

7.4 Entry onto land

- (a) The Developer is responsible for obtaining all necessary rights to lawfully enter and occupy land, and provide the Works in Kind.
- (b) Upon receiving not less than 15 Business Days prior written notice from the Developer, and subject to the requirements of any laws including the *Crown Land Management Act 2016*, Council is to allow the Developer, to enter, occupy, and use Council owned or controlled land specified in the

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notice at any reasonable time if the occupation or use of the land by the Developer is reasonably necessary for the Works in Kind.

- (c) Council is not required to allow the Developer to enter, occupy and use any Council owned land that is used for public purposes unless and until the Developer has paid any applicable fee or rent, as approved by Council, for that purpose.
- (d) Upon receiving not less than 15 Business Days prior notice from Council, the Developer is to provide Council with safe and unhindered access at any reasonable time to any land on which the Works in Kind are being, or have been, provided.
- (e) Council must comply with the Developer's reasonable safety requirements while on any land on which the Works in Kind are being provided.

7.5 Audit, inspection and testing of Works in Kind

- (a) Council may undertake an audit, inspection or test of the Works in Kind at any reasonable time for any purpose related to this Agreement upon giving not less than 15 Business Days prior notice to the Developer.
- (b) The Developer is to provide Council with any assistance that is reasonably required by Council to enable Council to undertake any audit, inspection or test of the Works in Kind.
- (c) If an audit, inspection or test reasonably shows that particular action must be taken in relation to the Works in Kind, the Developer is to:
 - (i) take the action in the manner, and within the time, the Council reasonably requires, and
 - (ii) provide evidence to the Council that the action has been taken.
- (d) If an audit, inspection or test shows that the Works in Kind have not been provided in accordance with this Agreement, the Developer is to pay any costs incurred by the Council in connection with the audit, inspection or test.
- (e) If the Council reasonably decides that a further and more detailed audit, inspection or test of the Works in Kind is required, the Council may determine an approved fee in that regard and the Developer is to pay to the Council the fee so approved.

7.6 Completion of Works in Kind

- (a) When the Developer is of the reasonable opinion that any item of the Works in Kind is substantially complete, the Developer must notify Council in writing requesting Council to inspect the Works in Kind.
- (b) Council must inspect the relevant Works in Kind promptly following, and within 15 Business Days of Council receiving, the notice under **clause 7.6(a)**.

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- (c) Council must, within 15 Business Days of completing its inspection of the Works in Kind (and in any event, no later than 20 Business Days after receipt of the notice under **clause 7.6(a)**), provide the Developer with:
 - (i) a Certificate of Practical Completion; or
 - (ii) a written notice specifying that it is of the opinion that the Works in Kind has not been completed to the extent to enable the issuing of a Certificate of Practical Completion, in which case it must set out all the matters that Council reasonably considers must be completed in order for a Certificate of Practical Completion to be issued.
- (d) If the Council does not provide the Developer with a notice under **clause 7.6(c)** within the specified timeframe, the Developer can send a further notice to the Council and if the Council does not respond within a further 5 Business Days, then the Works in Kind the subject of the Developer's notice under **clause 7.6(a)** will be deemed to have been the subject of a Certificate of Practical Completion on the date nominated in the Developer's notice.
- (e) The Developer:
 - (i) must correct any defects or finalise any incomplete work specified by Council under **clause 7.6(c)(ii)**, within the agreed time as reasonably nominated by the Developer, or if no time is nominated and agreed, within 10 Business Days after the Developer receives the notice issued under **clause 7.6(c)(ii)** from Council. Once complete, the provisions of **clauses 7.6(a)–7.6(c)** will apply; or
 - (ii) if it does not agree with the matters set out in Council's notice issued under **clause 7.6(c)(ii)**, must notify Council that a dispute has arisen and **clause 16** of this Agreement will apply.
- (f) Within 21 days after the issuing of a Certificate of Practical Completion, the Developer is to rectify any minor omissions or defects in the Works in Kind which did not prevent the issuing of the Certificate of Practical Completion and thereby complete the Works in Kind.

7.7 Works-As-Executed Plan

- (a) No later than 21 days after Practical Completion of all of a Works in Kind, the Developer is to submit to Council a full Works-As-Executed-Plan for the Works in Kind in a format agreed to by Council.
- (b) The Developer, being the copyright owner in the Works-As-Executed Plan, assigns the copyright in the Works-As-Executed Plan to Council free of Cost to Council.
- (c) If the Developer is not the copyright owner of the Work-As-Executed Plan, the Developer is to promptly procure the assignment of the copyright of the Works-As-Executed Plan to Council free of cost to Council.

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7.8 Alternative method of delivering Works in Kind

- (a) In respect of items 7 and 14 in **Schedule 2**, subject to obtaining Council's prior written agreement to accept Monetary Contributions in lieu of those items, the Developer may decide, at any time prior to the issue of a Construction Certificate and/or Public Domain Work Permit (whichever is applicable) to pay to Council a Monetary Contribution in the amount of the Agreed Contribution Value of the item, in lieu of carrying out that item.
- (b) In respect of item 12 in **Schedule 2**, if, after having consulted with the Council and Ausgrid, the Council is satisfied that the Developer is unable to obtain Ausgrid approval for the undergrounding of the powerlines, then in lieu of carrying out that item the Developer is to pay to Council a Monetary Contribution in the amount of the Agreed Contribution Value of the item and the Council may apply that Monetary Contribution towards undergrounding of power lines in Milperra.
- (c) If the Developer decides to pay a Monetary Contribution in lieu of carrying out Works in Kind in accordance with **clause 7.8(a)**, or is required to pay a Monetary Contribution in accordance with **clause 7.8(b)**, the Developer must:
 - (i) give Council not less than 15 Business Days written notice of its intention to pay a Monetary Contribution; and
 - (ii) transfer funds in the amount of the Monetary Contribution to Council by the time that the relevant item of Works in Kind was required to have been completed under this Agreement, provided Council has provided the Developer with sufficient details necessary to arrange the transfer of funds.
- (d) A Monetary Contribution is made for the purposes of this Agreement when cleared funds are deposited and credited by means of electronic funds transfer into a bank account nominated by Council.
- (e) If a tax invoice is required by law to be provided to the Developer by Council, the Developer is not required to pay the Monetary Contribution identified in its notice issued in accordance with **clause 7.8(c)(i)** until Council has given the Developer a tax invoice for the amount of the relevant Monetary Contribution.
- (f) If the Developer decides or is required to pay, and pays, a Monetary Contribution in lieu of carrying out Works in Kind in accordance with this clause, the Developer will not be considered to be in breach of this Agreement as a result of a failure to achieve Practical Completion of the Works in Kind by the time for Practical Completion of those Works in Kind as specified in **Column 4 of Part B of Schedule 2**.

7.9 Deferral of Works in Kind

- (a) Notwithstanding any other provision of this Agreement, if the Developer forms the view at any time that it is unable to deliver an item or items of Works in Kind (**Deferred Works**) by the time specified in **Column 4 of**

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Part B of Schedule 2, then the Developer may seek Council's approval to defer the relevant Works in Kind by providing written notice to Council:

- (i) identifying the relevant Works in Kind that the Developer proposes to defer;
 - (ii) identifying the anticipated time for completion of the relevant Works in Kind; and
 - (iii) if the Developer seeks to reduce the Deferred Works Security from the default amount equal to the Agreed Contribution Value of the relevant Works in Kind, the Developer must provide reasons for that request including any evidence of the cost of achieving completion of the Deferred Works to support the reduction in the Deferred Works Security.
- (b) Within 15 Business Days of the Developer providing the notice under **clause 7.9(a)**, Council must give the Developer a written notice stating whether or not it consents to the deferral of the Deferred Works, the revised date for completion and any reduction in the Deferred Works Security. In determining whether it consents to the deferral of the Deferred Works, the revised date for completion and any reduction in the Deferred Works Security, Council must act reasonably however **clause 16** does not apply to any such determination.
- (c) If Council consents to the deferral of the Deferred Works and receives from the Developer the Deferred Works Security in the amount identified in Council's notice provided under **clause 7.9(b)**, then:
- (i) the time for completion of the Approved Deferred Works under this Agreement will be taken to be the revised date for completion approved by Council;
 - (ii) the Developer will not be considered to be in breach of this Agreement as a result of a failure to achieve Practical Completion of the Approved Deferred Works by the time for Practical Completion of those Works in Kind as specified in **Column 4 of Part B of Schedule 2**; and
 - (iii) if applicable, any relevant Subdivision Certificate or Strata Certificate may be issued notwithstanding that the time for Practical Completion of the Approved Deferred Works was required prior to the issue of a Subdivision Certificate or Strata Certificate in **Column 4 of Part B of Schedule 2**.
- (d) If the Approved Deferred Works do not achieve Practical Completion by the revised completion date, then:
- (i) Council may call on the Deferred Works Security in accordance with **clause 11.2**; and

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- (ii) no further Part 6 Certificates or Strata Certificates may be issued for the Development until the Approved Deferred Works achieve Practical Completion.
- (e) The Developer may request a further deferral of Approved Deferred Works by following the procedures in this **clause 7.9**.

7.10 Maintenance of Works in Kind after Practical Completion

In respect of the following items of Works in Kind:

- (a) Open Space Embellishment (item 4 in **Schedule 2**),
- (b) Local Roads (item 5 in **Schedule 2**),
- (c) Shared Cycleway (item 6 in **Schedule 2**),
- (d) SP2 Infrastructure (Drainage) (item 10 in **Schedule 2**),
- (e) Local Road Footpaths (item 11 in **Schedule 2**)

the Developer is to Maintain the works during the Maintenance Period to the Council's satisfaction and in accordance with any requirements notified by the Council to the Developer in a Certificate of Practical Completion, and in respect of a Works in Kind comprising a drainage or bioretention work, in accordance with the maintenance plan approved by Council under **clause 7.1(j)(ii)**.

8 Defects Liability

8.1 Defects Notice

- (a) Where a Certificate of Practical Completion has been issued for all or any part of the Works in Kind pursuant to **clause 7.6(c)(i)**, but the relevant part of the Works in Kind is incomplete, has minor omissions or defects (which did not prevent the issuing of a Certificate of Practical Completion) or contains any other defect, being a defect which:
 - (i) adversely affects, or is likely to adversely affect, the appearance, structural integrity, functionality or the ordinary use and/or enjoyment of the relevant part of the Works in Kind; or
 - (ii) will require maintenance or rectification works to be performed on the Works in Kind as a result of the existence of the defect,

(Defect), Council may issue a defects notice (**Defects Notice**) to the Developer concerning that part of the Works in Kind, but only within the Defects Liability Period.
- (b) A Defects Notice must contain the following information:
 - (i) the nature and extent of the Defect, omission or incomplete work;
 - (ii) the specific details of the work Council requires the Developer to carry out in order to rectify the Defect, omission or incomplete work;and

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- (iii) the time within which the Defect, omission or incomplete work must be rectified (which must be a reasonable time having regard to the nature of the Defect, omission or incomplete work).

8.2 Developer to rectify Defects

- (a) The Developer must:
 - (i) procure the performance of the work required to rectify the Defects, omission or incomplete work contained within a Defects Notice after receipt of the Defects Notice; or
 - (ii) serve a notice on Council that it disputes the matters set out in the Defects Notice.
- (b) The Developer must follow the procedure set out in **clauses 7.6(a)–7.6(d)** in respect of the satisfaction of the Defects Notice except that:
 - (i) all references to '*is substantially complete*' is to be a reference to '*has been rectified in accordance with the Defects Notice*'; and
 - (ii) all references to '*Certificate of Practical Completion*' is a reference to '*Certificate of Final Completion*'.
- (c) Where the Developer serves notice on Council in accordance with **clause 8.2(a)(ii)**, **clause 16** of this Agreement will apply.
- (d) Council takes possession and ownership of the Works in Kind at 4:00pm on the later of:
 - (i) the end of the Defects Liability Period for the Works in Kind; or
 - (ii) the date Council issues a Certificate of Final Completion in accordance with this clause.

9 Affordable Housing Contribution

- (a) The Developer is to pay to Council the Affordable Housing Contribution specified in **Column 3** of item 15 in **Schedule 2**, before the timing specified in **Column 4** of item 15 in **Schedule 2**.
- (b) The amount of the Affordable Housing Contribution is to be indexed from the date of this Deed until the date of payment in accordance with the following formula:

$$A = B \times C/D$$

where:

A = the indexed amount of the Affordable Housing Contribution, which shall not be less than the amount of Affordable Housing Contribution as at the date of this Agreement;

B = the amount of the Affordable Housing Contribution as at the date of this Agreement;

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C = the Index most recently published before the date of payment; and

D = the Index most recently published before the commencement date of this Agreement.

In this **clause 9(b)**, Index means the Consumer Price Index (All Groups - Sydney) as published by the Australian Bureau of Statistics, or any replacement index published from time to time.

- (c) The Affordable Housing Contribution is made for the purposes of this Agreement when Council receives the full amount of the contribution payable under this Agreement by unendorsed bank cheque or deposit by means of an electronic funds transfer of cleared funds into a bank account nominated by Council.

10 Milperra Community Centre Contribution

- (a) The Developer is to pay to Council the Milperra Community Centre Contribution as specified in **Column 3** of item 16 in **Schedule 2**, before the timing specified in **Column 4** of item 16 in **Schedule 2**.

- (b) The amount of the Milperra Community Contribution is to be indexed from the date of this Deed until the date of payment in accordance with the following formula:

$$A = B \times C/D$$

where:

A = the indexed amount of the Milperra Community Contribution, which shall not be less than the amount of Milperra Community Contribution as at the date of this Agreement;

B = the amount of the Milperra Community Contribution as at the date of this Agreement;

C = the Index most recently published before the date of payment; and

D = the Index most recently published before the commencement date of this Agreement.

In this **clause 10(b)**, Index means the Consumer Price Index (All Groups - Sydney) as published by the Australian Bureau of Statistics, or any replacement index published from time to time.

- (c) The Milperra Community Centre Contribution is made for the purposes of this Agreement when the Council receives the full amount of the contribution payable under this Agreement by unendorsed bank cheque or by deposit by means of an electronic funds transfer of cleared funds into a bank account nominated by the Council.

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11 Breach of obligations

11.1 Notice of breach

If the Council reasonably considers that the Developer is in breach of any obligation under this Agreement, it may give a written notice to the Developer:

- (a) specifying the nature and extent of the breach,
- (b) requiring the Developer to:
 - (i) rectify the breach if it reasonably considers it is capable of rectification, or
 - (ii) pay compensation to the reasonable satisfaction of the Council in lieu of rectifying the breach if it reasonably considers the breach is not capable of rectification,
- (c) specifying the period within which the breach is to be rectified or compensation paid, being a period that is reasonable in the circumstances.

11.2 Failure to comply with notice of breach

- (a) If the Developer fails to fully comply with a notice referred to in **clause 11.1**, the Council may, without further notice to the Developer and notwithstanding any other remedy it may have under this Agreement, under any Act or otherwise at law or in equity, call-up the General Security, the Defects Liability Security or the Deferred Works Security, as appropriate, and apply it to remedy the Developer's breach.
- (b) If the Developer fails to comply with a notice given under **clause 11.1** relating to the provision or rectification of Works in Kind under this Agreement, the Council may also step-in and remedy the breach and may enter, occupy and use any land owned or controlled by the Developer and any equipment on such land for that purpose.

11.3 Recovery of costs by Council

- (a) Any costs incurred by the Council in remedying a breach in accordance with **clause 11.2** may be recovered by the Council by either or a combination of the following means:
 - (i) by calling-up and applying the General Security, the Defects Liability Security or the Deferred Works Security, as appropriate, provided by the Developer under this Agreement, or
 - (ii) as a debt due in a court of competent jurisdiction.
- (b) For the purpose of **clause 11.3(a)**, the Council's costs of remedying a breach the subject of a notice given under **clause 11** include, but are not limited to:
 - (i) the costs of the Council's employees, agents and contractors reasonably incurred for that purpose,

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- (ii) all fees and charges necessarily or reasonably incurred by the Council in remedying the breach, and
- (iii) all legal costs and expenses reasonably incurred by the Council, by reason of the breach.

11.4 Exercise of Council's rights at law or in equity

- (a) Nothing in this **clause 11** prevents the Council from exercising any rights it may have at law or in equity in relation to a breach of this Agreement by the Developer, including but not limited to seeking relief in an appropriate court.

11.5 Enforcement in a court of competent jurisdiction

- (a) Without limiting any other provision of this Agreement and subject to complying with the procedures in **clause 16**, the Parties may enforce this Agreement in any court of competent jurisdiction.
- (b) For the avoidance of doubt, nothing in this Agreement prevents:
 - (i) a Party from bringing proceedings in the Land and Environment Court to enforce any aspect of this Agreement or any matter to which this Agreement relates, or
 - (ii) a party exercising any function under the Act or any other Act or law relating to the enforcement of any aspect of this Agreement or any matter to which this Agreement relates.

12 Application of s7.11, s7.12 and s7.24 of the Act to the Development and benefits under this Agreement

- (a) This Agreement does not exclude the application of sections 7.11, 7.12 and 7.24 of the Act to the Land and the Development.
- (b) Certain benefits under this Agreement are to be taken into consideration under section 7.11(6) of the Act to the extent stated in **clause 12(c)**.
- (c) Council accepts the provision of certain Dedication Land, Works in Kind and the Milperra Community Contribution identified in **Schedule 2** as a material public benefit and agrees that these will be offset against contributions required to be made under sections 7.11 of the Act in connection with the development of the Land but only up to the amounts and for the public purposes specified in **Column 5 of Schedule 2**.

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13 Registration of this Agreement

13.1 Registration

- (a) The Landowner represents and warrants that it is the registered proprietor of the Land.
- (b) The Landowner agrees that it will procure the registration of this Agreement in the relevant folios of the Register for the Land in accordance with section 7.6 of the Act.
- (c) On the date of this Agreement, the Landowner must deliver to Council:
 - (i) the written irrevocable consent of each person who:
 - (A) has an estate or interest in the Land; or
 - (B) is seized or possessed of an estate or interest in the Land; and
 - (ii) an instrument in registrable form requesting registration of this Agreement on the title to the Land duly executed by the registered proprietor of the Land.
- (d) The Developer is to do such things as are necessary to enable the lodgement and registration of this Agreement to occur electronically through PEXA or another applicable electronic lodgement network operator in accordance with **clause 13.1(b)**.

13.2 Release and discharge of Agreement

- (a) Council agrees to provide the Landowner and Developer with a release and discharge of this Agreement with respect to a lot or lots forming part of the relevant Land or any lot created or to be created on subdivision of the Land (or part of the Land) (**Release Land**):
 - (i) on satisfaction by the Landowner or Developer (as applicable) of the obligation to provide the Dedication Land, Monetary Contributions, and Affordable Housing Contributions relevant to that Release Land; and
 - (ii) on:
 - (A) satisfaction by the Developer of the obligation to complete a Works in Kind relevant to that Release Land and provision of the Defects Liability Security for that Works in Kind; or
 - (B) where Council has consented to the deferral of a Works in Kind under **clause 7.9** relevant to that Release Land, the Developer has provided any Deferred Works Security required to be provided with respect to the Approved Deferred Works.
- (b) Council agrees to do all things reasonably required by the Landowner or Developer to, following a request to release this Agreement from the Release Land:

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- (i) release and discharge this Agreement with respect to the Release Land; and
 - (ii) execute the relevant documents to enable the Landowner or Developer to remove the notation of this Agreement from the relevant folio(s) of the Register in respect of the Release Land, as soon as practicable after receiving a request from the Landowner or Developer to do so,
- upon Council being satisfied that:
- (iii) the Landowner and Developer have satisfied all of their obligations under this Agreement in respect of the Release Land; and
 - (iv) the Landowner and Developer are not otherwise in default of their obligations under this Agreement.

14 Security and enforcement

14.1 Compulsory Acquisition

- (a) If the Landowner does not procure the Dedication of the Dedication Land in accordance with **clause 6**, the Landowner agrees that Council may compulsorily acquire all or part of the Dedication Land that has not been Dedicated in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991* (NSW) for the amount of \$1.00 without having to follow the pre-acquisition procedure under the Just Terms Act.
- (b) The Parties acknowledge and agree that:
 - (i) **clause 14.1(a)** is an agreement between the Developer and Council for the purpose of section 30 of the *Land Acquisition (Just Terms Compensation) Act 1991* (NSW); and
 - (ii) all relevant matters concerning the compulsory acquisition and the compensation to be paid for the acquisition are agreed.
- (c) If, as a result of the acquisition referred to in **clause 14.1(a)**, Council is required to pay compensation to any person other than the Landowner or Developer, the Landowner and Developer are to reimburse Council that amount, upon a written request being made by Council, or Council can call on the General Security.
- (d) The Landowner and Developer indemnify and keep indemnified Council against all Claims made against Council as a result of any acquisition by Council of the whole or any part of the Dedication Land except if, and to the extent that, the Claim arises because of Council's negligence or default.
- (e) The Landowner and Developer are to promptly do all things necessary, and consents to Council doing all things necessary, to give effect to this **clause 14.1**, including without limitation:

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- (i) signing any documents or forms,
- (ii) giving land owner's consent for lodgement of any Development Application, and
- (iii) paying Council's costs arising under this **clause 14.1**.

14.2 General Security

- (a) The Developer is to provide the General Security to Council:
 - (i) before the Developer obtains a Construction Certificate for any part of the Development or before the Developer commences any part of the Works in Kind, whichever occurs first; or
 - (ii) at such other time agreed in writing by Council.
- (b) Council is to hold the General Security as security for the Developer performing its obligations under this Agreement other than an obligation to which the Defects Liability Security or the Deferred Works Security applies.
- (c) Despite any other provision of this Agreement, Council, in its absolute discretion, may refuse to allow the Developer to enter, occupy or use any land owned or controlled by Council or refuse to provide the Developer with any plant, equipment, facilities or assistance relating to the carrying out of the Development if the Developer has not provided the General Security to Council in accordance with this Agreement.
- (d) Council is to release and return the General Security or any unused part of it to the Developer within 14 days of all of the following having occurred:
 - (i) all Monetary Contributions including the Affordable Housing Contribution have been paid to Council;
 - (ii) all Dedication Land has been Dedicated to Council; and
 - (iii) all Works in Kind have reached Practical Completion and the Developer has provided the Defects Liability Security to Council for the Works in Kind.
- (e) The Developer may provide Council with a replacement General Security at any time.
- (f) On receipt of a replacement General Security, Council is to release and return the replaced General Security to the Developer.
- (g) If Council calls-up the General Security or any portion of it, Council may give the Developer a written notice requiring the Developer to provide a further or replacement General Security to ensure that the amount of General Security held by Council equals the amount Council is entitled to hold under this Agreement.
- (h) The Developer is to ensure that the General Security provided to Council is at all times maintained to the full current indexed value.

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14.3 Defects Liability Security

- (a) The Developer is to deliver the Defects Liability Security to Council before the commencement of the Defects Liability Period to secure the Developer's obligations in relation to the Defects Liability Period for Works in Kind.
- (b) Council is to release and return the Defects Liability Security, or any remaining part, to the Developer within 30 days after the end of the Defects Liability Period if, at that time, the Developer is not in breach of an obligation under this Agreement to which the Defects Liability Security relates.

14.4 Deferred Works Security

- (a) In the event that the Developer and Council agree to defer any Works in Kind under **clause 7.9**, the Developer must deliver to Council a Bank Guarantee for the amount equivalent to the Agreed Contribution Value of the relevant Works in Kind, or any lesser amount specified in Council's notice provided under **clause 7.9(b) (Deferred Works Security)**.
- (b) The Developer may replace the Deferred Works Security provided by it at any time, provided that the amount of that replacement is not less than that which is required to be provided under this Agreement. On receipt of a replacement Deferred Works Security, Council must immediately release the Deferred Works Security being replaced and return it to the Developer.
- (c) Council must release the Deferred Works Security or the relevant part of the Deferred Works Security to the Developer within 20 Business Days of:
 - (i) it issuing, or being deemed to have issued, a Certificate of Practical Completion for the relevant part of the Approved Deferred Works in accordance with **clause 7.6**; or
 - (ii) the Developer satisfying any of its obligations under this Agreement by paying a Monetary Contribution to Council in accordance with **clause 7.8** in respect of Approved Deferred Works.

15 Indemnities and Insurance

15.1 Risk

The Landowner and Developer performs this Agreement at their own risk and their own cost.

15.2 Release

The Landowner and Developer release Council from any Claim they may have against Council arising in connection with the performance of their obligations under this Agreement except if, and to the extent that, the Claim arises because of Council's negligence or default.

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15.3 Indemnity

The Landowner and Developer indemnify Council from and against all Claims that may be sustained, suffered, recovered or made against Council arising in connection with the performance of their obligations under this Agreement except if, and to the extent that, the Claim arises because of Council's negligence or default.

15.4 Insurance

- (a) The Developer is to take out and keep current to the satisfaction of Council the following insurances in relation to the Works in Kind until the Works in Kind are completed in accordance with this Agreement:
 - (i) contract works insurance for the full replacement value of the Works in Kind (including the cost of demolition and removal of debris, consultants' fees and authorities' fees), to cover the Developer's liability in respect of damage to or destruction of the Works in Kind;
 - (ii) public liability insurance for at least \$20,000,000.00 for a single occurrence, which covers Council, the Developer, the Landowner and any subcontractor of the Developer, for liability to any third party; and
 - (iii) workers compensation insurance as required by law.
- (b) If the Developer fails to comply with **clause 15.4(a)**, Council may effect and keep in force such insurances and pay such premiums as may be necessary for that purpose and the amount so paid shall be a debt due from the Developer to Council and may be recovered by Council as it deems appropriate including:
 - (i) by calling upon the General Security provided by the Developer to Council under this Agreement, but not before giving reasonable prior notice of Council's intention to do so; or
 - (ii) recovery as a debt due in a court of competent jurisdiction.
- (c) The Developer is not to commence any Works in Kind unless it has first provided to Council satisfactory written evidence of all of the insurances specified in **clause 15.4(a)**.

16 Dispute Resolution

16.1 Dispute

If any dispute arises out of this Agreement, then the Parties must resolve that dispute in accordance with this **clause 16** and a Party to the Agreement must not commence any court or arbitration proceedings, except where a Party seeks urgent interlocutory relief. Any referral or undertaking of the dispute resolution process as set out in this **clause 16** does not suspend any other obligations of the Parties' under this Agreement.

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16.2 Expert determination

- (a) This **clause 16.2** applies to a dispute between any of the Parties to this Agreement concerning a matter arising in connection with this Agreement that can be determined by an appropriately qualified expert if:
 - (i) the Parties to the dispute agree that it can be so determined; or
 - (ii) the Chief Executive Officer of the professional body that represents persons who appear to have the relevant expertise to determine the dispute gives a written opinion that the Dispute can be determined by a member of that body.
- (b) A dispute to which this clause applies is taken to arise if one Party gives another Party a notice in writing specifying particulars of the dispute.
- (c) If a notice is given under **clause 16.2(b)**, the Parties are to meet within 10 Business Days of the notice in an attempt to resolve the dispute.
- (d) If the dispute is not resolved within a further 20 Business Days, the dispute is to be referred to the President of the NSW Law Society to appoint an expert for expert determination.
- (e) The expert determination is binding on the Parties except in the case of fraud or misfeasance by the expert.
- (f) Each Party is to bear its own costs arising from or in connection with the appointment of the expert and the expert determination.
- (g) The Parties are to share equally the costs of the President, the expert, and the expert determination.

16.3 Mediation

- (a) This **clause 16.3** applies to any dispute arising in connection with this Agreement other than a dispute to which **clause 16.2** applies.
- (b) Such a dispute is taken to arise if one Party gives another Party a notice in writing specifying particulars of the dispute.
- (c) If a notice is given under **clause 16.3(b)**, the Parties are to meet within 14 days of the notice in an attempt to resolve the dispute.
- (d) If the dispute is not resolved within a further 20 Business Days, the Parties are to mediate the dispute in accordance with the Mediation Rules of the Law Society of New South Wales published from time to time and are to request the President of the Law Society to select a mediator.
- (e) If the dispute is not resolved by mediation within a further 20 Business Days, or such longer period as may be necessary to allow any mediation process which has been commenced to be completed, then the Parties may exercise their legal rights in relation to the dispute, including by the commencement of legal proceedings in a court of competent jurisdiction in New South Wales.

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- (f) Each Party is to bear its own costs arising from or in connection with the appointment of a mediator and the mediation.
- (g) The Parties are to share equally the costs of the President, the mediator, and the mediation.

16.4 Court proceedings

If the dispute is not resolved within 80 Business Days after notice is given under **clause 16.2(b)** or **16.3(b)** then any Party which has complied with the provisions of this **clause 16** may in writing terminate any dispute resolution process undertaken under this **clause 16** and may then commence court proceedings in relation to the dispute.

16.5 Not use information

The Parties acknowledge the purpose of any exchange of information or documents or the making of any offer of settlement under this **clause 16** is to attempt to settle the dispute. No Party may use information or documents obtained through any dispute resolution process undertaken under this **clause 16** for any purpose other than in an attempt to settle the dispute.

16.6 No prejudice

This **clause 16** does not prejudice the right of a Party to institute court proceedings for urgent injunctive or declaratory relief in relation to any matter arising out of or relating to this Agreement.

17 Notices

17.1 Delivery

Any notice, consent, information, application or request that must or may be given or made to a Party under this Agreement is only given or made if it is in writing and sent in one of the following ways:

- (a) delivered or posted to that Party at its address set out below; or
- (b) emailed to that Party at its email address set out below.

Council

Attention:	Matthew Stewart – Chief Executive Officer
Address:	Canterbury-Bankstown Council
	PO Box 8
	Bankstown NSW 1885
Phone Number:	9707 9524
Email Address:	matthew.stewart@cbc.city.nsw.gov.au

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Developer

Attention: Theo Zotos
Address: Level 28, 200 George Street, Sydney, NSW
2000
Phone Number: (02) 9080 8062
Email Address: theo.zotos@mirvac.com

Landowner

Attention: Bill Parasiris
Address: Western Sydney University
Locked Bag 1797
Penrith NSW 2651
Phone Number: (02) 4570 1859
Email Address: B.Parasiris@westernsydney.edu.au

17.2 Change of Details

If a Party gives the other Party 10 Business Days' notice of a change of its address or email address, any notice, consent, information, application or request is only given or made by that other Party if it is delivered, posted or electronically sent to the latest address or email address.

17.3 Giving of Notice

Subject to **clause 17.4**, any notice, consent, invoice, information, application or request is to be treated as given or made at the following time:

- (a) if it is delivered by process server, when it is served at the relevant address; or
- (b) if it is sent by registered post, seven Business Days after it is posted; or
- (c) if it is sent by email, as soon as the email has been sent to the correct email address and the recipient has received the email without error.

17.4 Delivery outside of business hours

If any notice, consent, information, application or request is delivered on a day that is not a Business Day, or if on a Business Day, after 5.00 pm on that day in the place of the Party to whom it is sent, it is to be treated as having been given or made at the beginning of the next Business Day.

18 Approvals and consent

Except as otherwise set out in this Agreement, and subject to any statutory obligations, a Party may give or withhold an approval or consent to be given under this Agreement in that Party's absolute discretion and subject to any

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conditions determined by the Party. A Party is not obliged to give its reasons for giving or withholding consent or for giving consent subject to conditions.

19 Assignment and dealings

- (a) The Landowner or Developer may not sell, transfer, assign or novate or similarly deal with its right, title or interest in the Land (if any) or rights or obligations under the terms of this Agreement, or allow any interest in them to arise or be varied, in each case, without Council's consent and unless, prior to any such sale, transfer, assignment, charge, encumbrance or novation, the Landowner or Developer (as applicable):
 - (i) at no cost to Council, first procures the execution by that person of a deed of novation or assignment with Council in favour of Council by which that person agrees to be bound by the Agreement as if they were a party to the original Agreement;
 - (ii) Council has given written notice to the Developer or the Landowner (as the case may be) stating that it reasonably considers that the purchaser, transferee, assignee or novatee, is reasonably capable of performing its obligations under this Agreement; and
 - (iii) satisfies Council that it is not in material breach of this Agreement.
- (b) The Landowner and Developer acknowledge and agree that notwithstanding any breach by it of **clause 19(a)**, they remain liable to fully perform their obligations under this Agreement unless and until they have complied with their obligations under **clause 19(a)** or Council gives the Landowner or Developer (as the case may be) a written release from compliance with that clause in its absolute discretion.

20 Termination of this Agreement

This Agreement terminates when all obligations under the Agreement have been satisfied.

21 General

21.1 Legal Costs

- (a) The Developer agrees to pay Council's costs associated with reviewing, preparing, negotiating, amending, executing, stamping, registration and removal of registration of this Agreement and any document related to this Agreement within 5 business days of a written demand by Council for such payment.
- (b) The Developer is also to pay to Council Council's reasonable costs and disbursements arising from the ongoing administration and of enforcing

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this Agreement (including remedying any breach or default by the Developer or Landowner of their obligations under this Agreement) within 7 days of a written demand by Council for such payment.

21.2 Entire Agreement

This Agreement constitutes the entire agreement of the Parties about its subject matter and supersedes all previous agreements, understandings and negotiations on that subject matter.

21.3 Further Acts

Each Party must promptly execute all documents and do all things that another Party from time to time reasonably requests to affect, perfect or complete this Agreement and all transactions incidental to it.

21.4 Governing law and jurisdiction

This Agreement is governed by the law of New South Wales. The Parties submit to the non-exclusive jurisdiction of its Courts and Courts of appeal. The Parties will not object to the exercise of jurisdiction by those Courts on any basis.

21.5 No Fetter

Nothing in this Agreement shall be construed as requiring Council to do anything that would cause it to be in breach of any of its obligations at law, and without limitation, nothing shall be construed as limiting or fettering in any way the exercise of any statutory discretion or duty.

21.6 Representations and warranties

The Parties represent and warrant that they have power to enter into this Agreement and comply with their obligations under the Agreement and that entry into this Agreement will not result in the breach of any law.

21.7 Severability

- (a) The Parties acknowledge that under and by virtue of section 7.4(4) of the Act, any provision of this Agreement is not invalid by reason only that there is no connection between the Development and the object of the expenditure of any money required to be paid by that provision.
- (b) The Parties agree that to the extent permitted by law, this Agreement prevails to the extent of its inconsistency with any law.
- (c) If a clause or part of a clause of this Agreement can be read in a way that makes it illegal, unenforceable or invalid, but can also be read in a way that makes it legal, enforceable and valid, it must be read in the latter way.
- (d) If any clause or part of a clause is illegal, unenforceable or invalid, that clause or part is to be treated as removed from this Agreement, but the rest of this Agreement is not affected.

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21.8 Modification

No modification of this Agreement will be of any force or effect unless it is in writing and signed by the Parties to this Agreement and is in accordance with the provisions of the Act.

21.9 Waiver

- (a) The fact that a Party fails to do, or delays in doing, something the Party is entitled to do under this Agreement, does not amount to a waiver of any obligation or exercise of a right of, or breach of obligation by, another Party.
- (b) A waiver by a Party is only effective if it is in writing.
- (c) A written waiver by a Party is only effective in relation to the particular obligation, right or breach in respect of which it is given. It is not to be taken as an implied waiver of any other obligation, right or breach or as an implied waiver of that obligation, right or breach in relation to any other occasion.
- (d) A single or partial exercise or waiver by a Party of a right relating to this Agreement does not prevent any other exercise of that right or the exercise of any other right.
- (e) A Party is not liable for any loss, cost or expense of any other Party caused or contributed to by the waiver, exercise, attempted exercise, failure to exercise or delay in the exercise of a right.

21.10 Relationship of Parties

This Agreement is not intended to create a partnership, joint venture or agency relationship between Council and the Developer.

21.11 Further Steps

Each Party must promptly do whatever any other Party reasonably requires of it to give effect to this Agreement and to perform its obligations under it.

21.12 Explanatory Note

Pursuant to section 205(5) of the Regulation, the Parties agree that the Explanatory Note is not to be used to interpret this Agreement.

21.13 Counterparts

This Agreement may be executed in any number of counterparts. All counterparts taken together constitute one instrument.

21.14 Rights cumulative

Except as expressly stated otherwise in this Agreement, the rights of a Party under this Agreement are cumulative and are in addition to any other rights of that Party.

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21.15 Electronic execution

(a) Each Party:

- (i) consents to this Agreement being signed by electronic signature by the methods set out in **clause 21.15(c)**;
- (ii) agrees that those methods validly identify the person signing and indicates that person's intention to sign this Agreement;
- (iii) agrees that those methods are reliable as appropriate for the purpose of signing this Agreement; and
- (iv) agrees that electronic signing of this Agreement by or on behalf of a Party by those methods indicates that Party's intention to be bound.

(b) If this Agreement is signed on behalf of a legal entity, the persons signing warrant that they have the authority to sign.

(c) For the purposes of **clause 21.15(a)**, the methods are:

- (i) insertion of an image (including a scanned image) of the person's own unique signature onto the Agreement; or
- (ii) insertion of the person's name onto the Agreement; or
- (iii) use of a stylus or touch finger or a touch screen to sign the Agreement,

provided that in each of the above cases, words to the effect of '*Electronic signature of me, [insert full name], affixed by me, or at my direction, on [insert date]*' are also included on the Agreement; or

- (iv) use of a reliable electronic signing platform (such as DocuSign or AdobeSign) to sign the Agreement; or
- (v) as otherwise agreed in writing between the Parties.

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Schedule 1

Section 7.4 Requirements

The parties acknowledge and agree that the table set out below provides for certain terms, conditions and procedures for the purpose of this Agreement complying with the Act.

Table 1 – Requirements under section 7.4 of the Act

Requirement under the Act	This Agreement
Planning instrument and/or development application – (section 7.4(1))	
The Developer has:	
(a) sought a change to an environmental planning instrument.	(a) Yes
(b) made, or proposes to make, a Development Application.	(b) Yes
(c) entered into an agreement with, or is otherwise associated with, a person, to whom paragraph (a) or (b) applies.	(c) No
Description of land to which this Agreement applies – (section 7.4(3)(a))	The Land as defined in clause 1.1.
Description of development to which this Agreement applies – (section 7.4(3)(b))	The Development as defined in clause 1.1.
The scope, timing and manner of delivery of contributions required by this Agreement – (section 7.4(3)(c))	See Schedule 2.
Applicability of sections 7.11 and 7.12 of the Act – (section 7.4(3)(d))	The application of sections 7.11 and 7.12 of the Act are not excluded in respect of the Land and the Development.
Applicability of section 7.24 of the Act – (section 7.4(3)(d))	The application of section 7.24 of the Act is not excluded in respect of the Development.

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Requirement under the Act	This Agreement
Consideration of benefits under this Agreement if section 7.11 applies – (section 7.4(3)(e))	See clause 12(b).
Mechanism for dispute resolution – (section 7.4(3)(f))	See clause 16.
Enforcement of this Agreement – (section 7.4(3)(g))	See clauses 13 and 14.
No obligation to grant consent or exercise functions – (section 7.4(10))	See clauses 18 and 21.5.

Development Contributions

[illegible]

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Column 1 Item No. (Shown on Annexure A)	Column 2 Development Contribution	Column 3 Agreed Contribution Value	Column 4 Timing	Column 5 Contribution Offset
	iii. circa 4,722m ² of land marked 'Southern Open Space' on the plan at Annexure A.	\$3,300,000	Residential Lot. Prior to the release of a Subdivision Certificate or Strata Certificate for a plan that when registered would create the 401 st Residential Lot, or if less than 401 Residential Lots are approved in the Development, prior to the release of the Subdivision Certificate or Strata Certificate for the plan that when registered would create the last Residential Lot in the Development.	Nil
2.	Local Roads i. Dedication of approximately 14,088m ² of the Land to Council, being an area with a length of approximately 770m and width of 18m, as	Not applicable	Prior to the release of a Subdivision Certificate or Strata Certificate for a plan that when registered	Nil

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Column 1 Item No (Shown on Annexure A)	Column 2 Development Contribution	Column 3 Agreed Contribution/Value	Column 4 Timing	Column 5 Contribution Offset
	<p>shown on the plan and noted as "Local Road" at Annexure A.</p> <p>ii. Dedication of approximately 33,110m² of the Land to Council, being an area with a length of approximately 1,925m and general width of 17.2m, as shown on the plan and noted as "Local Road-Minor" at Annexure A.</p>	Not applicable	<p>would create a Residential Lot that directly fronts that road.</p> <p>Prior to the release of a Subdivision Certificate or Strata Certificate for a plan that when registered would create a Residential Lot that directly fronts that road.</p>	Nil
3.	<p>SP2 Infrastructure (Drainage)</p> <p>Dedication of approximately 668m² of SP2 Infrastructure (Drainage) land to Council</p>	\$230,000	<p>Prior to the release of the Subdivision Certificate or Strata Certificate for a plan that when registered would create the 401st Residential Lot for the Development, or if less than 401 Residential Lots are approved in the Development, prior to the release of the</p>	Nil

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Column 1 Item No. (shown on Annexure A)	Column 2 Development Contribution	Column 3 Agreed Contribution Value	Column 4 Timing	Column 5 Contribution Offset
			Subdivision Certificate for or Strata Certificate for the plan that when registered would create the last Residential Lot in the Development.	

Part B – Works in Kind

Column 1 Item No. (shown on Annexure A)	Column 2 Development Contribution	Column 3 Agreed Contribution Value	Column 4 Timing	Column 5 Contribution Offset
4.	Open Space Embellishment Embellishment of the RE1 Public Recreation Zoned Land, comprising the following works: (a) pathways (in all); (b) children's playground equipment, in the	\$1,542,495	Practical Completion of embellishment of the part of the RE1 Public Recreation Zoned Land shown as 'Northern Open Space' and 'Southern Open Space' in Annexure A must be reached prior to the Dedication of the relevant portion of the Dedication Land and issue of the first Occupation Certificate	Nil

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Column 1 Item No. (shown on Annexure A)	Column 2 Development Contribution	Column 3 Agreed Contribution Value	Column 4 Timing	Column 5 Contribution Offset
	<p>Central Open Space only;</p> <p>(c) outdoor fitness equipment, in the Central Open Space or Southern Open Space only;</p> <p>(d) sheltered picnic tables, in the Central Open Space only;</p> <p>(e) seating (in all);</p> <p>(f) landscaping and turf (in all); and</p> <p>(g) kick around play, in the Southern Open Space only.</p> <p>Where applicable, works shall be designed generally in accordance with the indicative bioretention and basin plans provided in</p>		<p>for the first dwelling fronting the relevant part of the RE1 Public Recreation Zoned Land.</p> <p>Practical Completion of embellishment of the part of the RE1 Public Recreation Zoned Land shown as the 'Central Open Space' in Annexure A must be reached prior to the earlier of the issue of an Occupation Certificate for the:</p> <p>a) 50th Dwelling in the Development; or</p> <p>b) the first Dwelling fronting the Central Open Space Land.</p> <p>Maintenance, testing and any restoration work of drainage and bioretention basins to be carried out in accordance with timing specified in clauses 7.1(j)(iii), 7.1(j)(iv) and 7.1(k).</p>	

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Column 1 Item No. (shown on Annexure A)	Column 2 Development/Contribution	Column 3 Agreed Contribution Value	Column 4 Timing	Column 5 Contribution/Offset
	Annexure C.			
5.	Local Roads Construction of all proposed "Local Roads" (collector roads) as shown on the plan at Annexure A, in accordance with all relevant Council and road engineering standards (unless otherwise agreed between Council and the Developer).	\$1,963,100	Practical Completion must be reached prior to the Dedication of the relevant portion of the Dedication Land and in any event prior to the release of a Subdivision Certificate or Strata Certificate for a plan that when registered would create a Residential Lot that directly fronts that road.	Nil
6.	Shared Cycleway Construction of a shared cycleway along the roads marked "Local Roads" on the plan at Annexure A.	\$235,350	Practical Completion must be reached prior to the release of an Occupation Certificate for any dwelling fronting the cycleway.	\$235,350 Roads and traffic
7.	Milperra Reserve Embellishment Upgrades to Milperra Reserve (being 121-121A Ashford Avenue, Milperra (Lots 1 – 3 DP91953) of a standard that is consistent	\$1,041,921	Prior to the release of a Subdivision Certificate or Strata Certificate for a plan that when registered would create the 401 st Residential Lot, or if less than 401 Residential Lots are approved	\$1,041,921 Open space and recreational facilities

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Column 1: Item No. (shown on Annexure A)	Column 2: Development Contribution	Column 3: Agreed Contribution Value	Column 4: Timing	Column 5: Contribution Offset
	<p>with the 'Neighbourhood Sportsground' category as outlined in Council's <i>Generic Plan of Management for Community Land and Crown Land</i>, specifically consisting of the following:</p> <p>(a) new lawn/turf and irrigation to expand the footprint of the existing playing area to allow for more sporting codes such as soccer/rugby etc (currently set up for hockey);</p> <p>(b) basic seating around the periphery of the playing area;</p> <p>(c) rubbish bins;</p> <p>(d) lighting;</p> <p>(e) shaded seating (under trees);</p>		<p>In the Development, prior to the release of the Subdivision Certificate or Strata Certificate for the plan that when registered would create the last Residential Lot in the Development.</p>	

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Column 1 Item No. (shown on Annexure A)	Column 2 Development/Contribution	Column 3 Agreed Contribution Value	Column 4 Timing	Column 5 Contribution Offset
	<p>(f) upgrade to amenities (toilets etc);</p> <p>(g) drinking fountains;</p> <p>(h) some areas of shade trees on the periphery of the playing fields; and</p> <p>(i) landscaping treatments, including paths to better integrate Milperra Reserve with the Land.</p>			
8.	<p>Remnant Vegetation Works</p> <p>Works as required under the ecological assessment to be undertaken by or on behalf of the Developer in respect of that part of the Land zoned C2 Environmental</p>	N/A	<p>Prior to the release of a Subdivision Certificate or Strata Certificate for a plan that when registered would create the 401st Residential Lot, or if less than 401 Residential Lots are approved in the Development, prior to the release of the Subdivision</p>	Nil

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Column 1 Item No (shown on Annexure A)	Column 2 Development/Contribution	Column 3 Agreed Contribution Value	Column 4 Timing	Column 5 Contribution Offset
	Conservation including, where appropriate, replanting and signage works. Full details of any works on the Land zoned C2 Environmental Conservation is to be included as part of a development application lodged in respect of the Development.		Certificate or Strata Certificate for the plan that when registered would create the last Residential Lot in the Development.	
9.	Not used	N/A	N/A	N/A
10.	SP2 Infrastructure (Drainage) Embellishment of the SP2 Infrastructure (Drainage) Land and carrying out of the works and maintenance specified in clauses 7.1(i) and 7.1(k).	\$154,000	Practical Completion must be reached prior to the Dedication of the relevant portion of the Dedication Land and in any event prior to the release of the Subdivision Certificate or Strata Certificate for a plan that when registered would create the 401 st Residential Lot for the Development, or if less than 401 Residential Lots are approved in the Development, prior to the release of the Subdivision Certificate or	Nil

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Column 1: Item No. (Shown on Annexure A)	Column 2: Development Contribution	Column 3: Agreed Contribution Value	Column 4: Timing	Column 5: Contribution Offset
			Strata Certificate for the plan that when registered would create the last Residential Lot in the Development. Maintenance, testing and any restoration work to be carried out in accordance with timing specified in clauses 7.1(i)(iii), 7.1(j)(iv) and 7.1(k).	
11.	Local Roads – Footpaths Provide new footpaths along bus routes, on one side of the road. Refer to Local Roads – Footpaths, as indicatively shown on the plan at Annexure A.	\$94,140	Practical Completion must be reached prior to the release of an Occupation Certificate for any Dwelling fronting the relevant footpath.	Nil
12.	Undergrounding of Powerlines Undergrounding of approximately 545 metres of powerlines along Ashford Avenue subject to obtaining any required Ausgrid	\$597,655	Practical Completion must be reached prior to the release of an Occupation Certificate for the final Dwelling along Ashford Avenue.	Nil

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Column 1 Item No. (shown on Annexure A)	Column 2 Development Contribution	Column 3 Agreed Contribution Value	Column 4 Timing	Column 5 Contribution Onset
	approvals Refer to Undergrounding of Powerlines, as indicatively shown on the plan at Annexure A.			
13.	Ashford Avenue – Footpath Construction of a 1.2m wide footpath and landscaping along approximately 545 metres of the eastern side of Ashford Avenue. Refer to Footpath, as indicatively shown on the plan at Annexure A.	\$98,100	Practical Completion must be reached prior to the release of an Occupation Certificate for any Dwelling fronting the footpath.	\$98,100
14.	Cycleway Construction of circa 110m of cycleway connections to Panania Station to promote the use active and public transport for future residents and the broader Milperra community.	\$59,400	Practical Completion must be reached prior to the release of the Subdivision Certificate or Strata Certificate for a plan that when registered would create the 201 st Residential Lot for the Development.	\$59,400 Roads and transport

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Part C – Monetary Contributions

Column 1 Item No.	Column 2 Development Contribution	Column 3 Agreed Contribution Value	Column 4 Timing	Column 5 Contribution Offset
15.	Affordable Housing Contribution Payment of a monetary contribution for the provision of affordable housing in appropriate locations within the Canterbury-Bankstown Local Government Area.	\$5,300,180	The amount of \$12,326 per Dwelling is to be paid prior to the release of a Subdivision Certificate or Strata Certificate for a plan that when registered would create the relevant Residential Lot for that Dwelling. In the event less than 430 Dwellings are approved in the Development, the balance of the Affordable Housing Contribution is to be paid within 15 Business Days of the release of the Subdivision Certificate or Strata Certificate for the plan that when registered would create the Residential Lot for the last Dwelling in the Development and in any event, prior to the issuing of the Occupation Certificate for the last Dwelling in the Development.	Nil
16.	Milperra Community Contribution	\$392,400	Prior to the release of any Subdivision Certificate or Strata Certificate for a plan	\$392,400

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Column 1 Item No.	Column 2 Development Contribution	Column 3 Agreed Contribution Value	Column 4 Timing	Column 5 Contribution Offset
	Payment of a monetary contribution for repair and renovation to the Milperra Community Centre (128 Ashford Ave, Milperra) or other community facilities in the Milperra region.		that when registered would create the 201 st Residential Lot.	

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Execution

Executed as an agreement.

Executed by Canterbury-Bankstown
Council by its duly appointed officer in
the presence of:)
)
)

Witness

PATRICK LEBON

Name of Witness (print)

Officer

Matthew Genart.

Name of Officer (print)

Executed by Mirvac Residential (NSW))
Developments Pty Ltd pursuant to)
section 127 of the Corporations Act 2001:)

DocuSigned by:

Vicki Vordis

Company Secretary/Director

Vicki Vordis

Name of Company Secretary/Director
(print)

DocuSigned by:

Marina Rofe

301FDDB14CEE405...

Director

Marina Rofe

Name of Director (print)

Corrs Chambers Westgarth

Executed pursuant to section 23 of the)
Western Sydney University Act 1997 by)
.....)
as a delegate of Western Sydney
University ABN 53 014 069 881 acting
lawfully under delegated authority and in
the presence of:

DocuSigned by:

Katherine Stanton

A9B51D7E05EE466

Witness

Katherine Stanton

Name of Witness (print)

Building R1, Yarramundi Road, Richmond NSW 2753

Address of Witness

DocuSigned by:

Bill Parasiris

205FB6528444A4A4

Delegate

Bill Parasiris

Name of Delegate (print)

Vice-President Infrastructure and Commercial

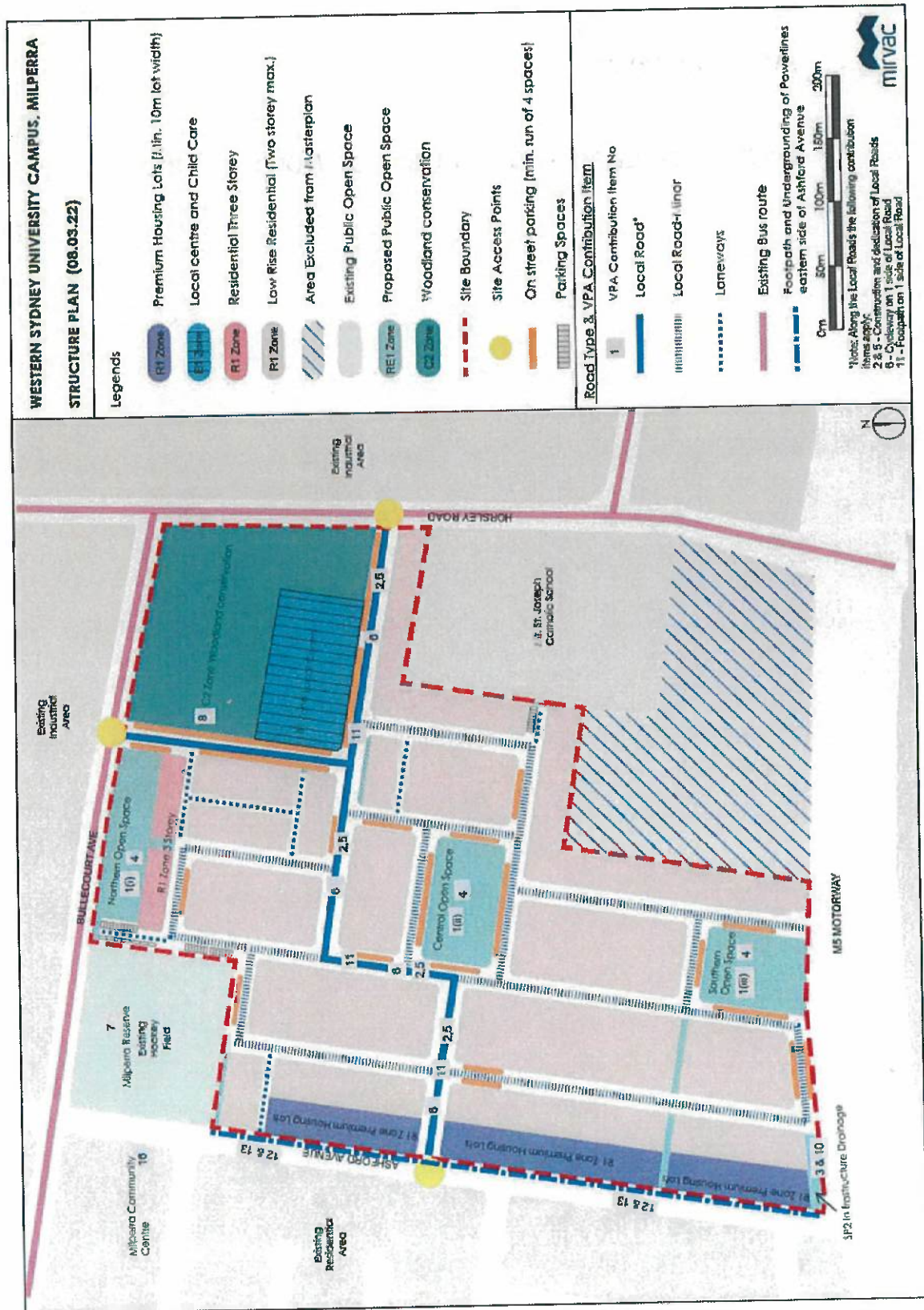
Office held

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Annexure A

Dedication Land and locations of Works in Kind

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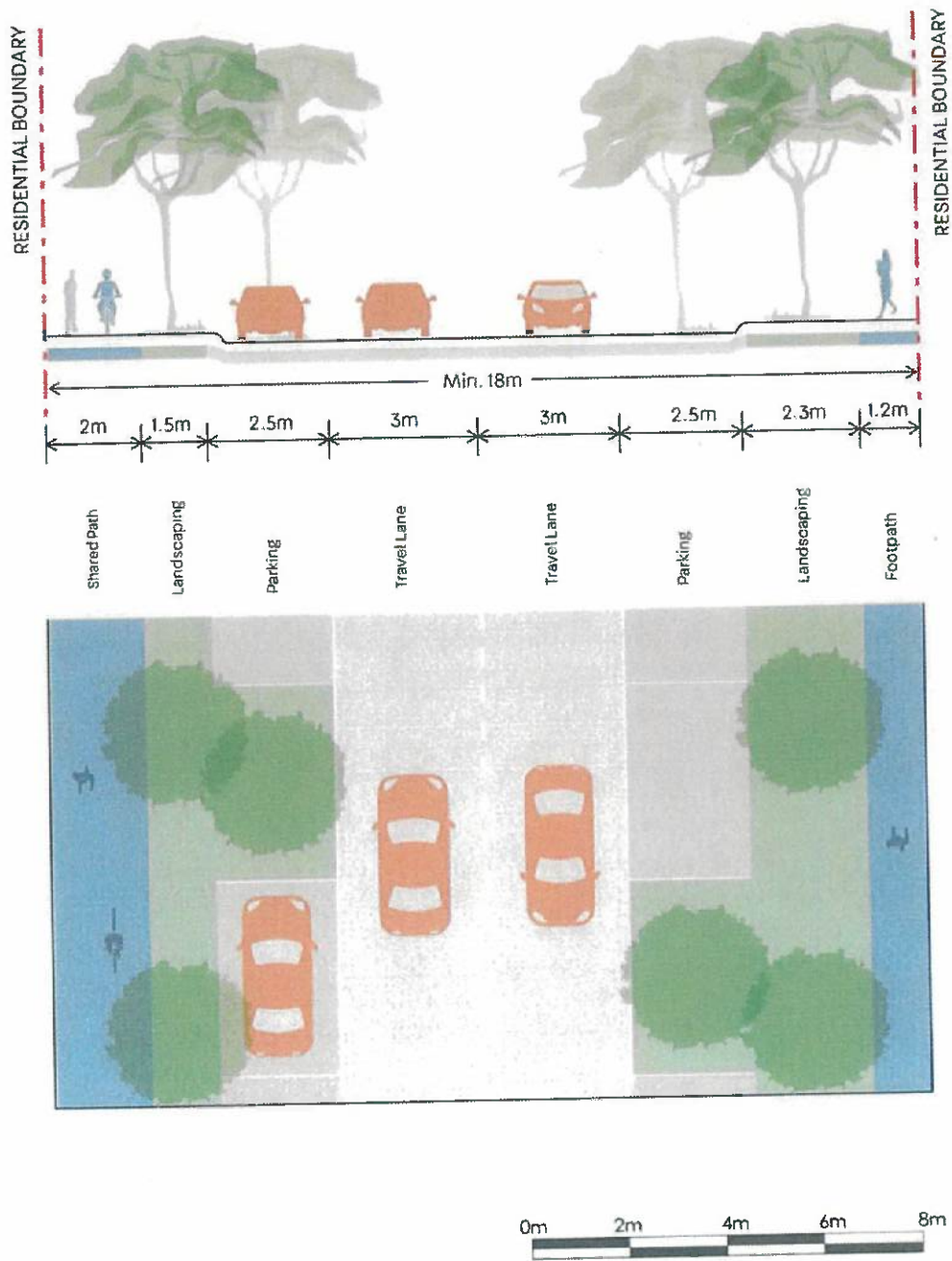
Corrs Chambers Westgarth

Annexure B

Road Reserve Design Requirements

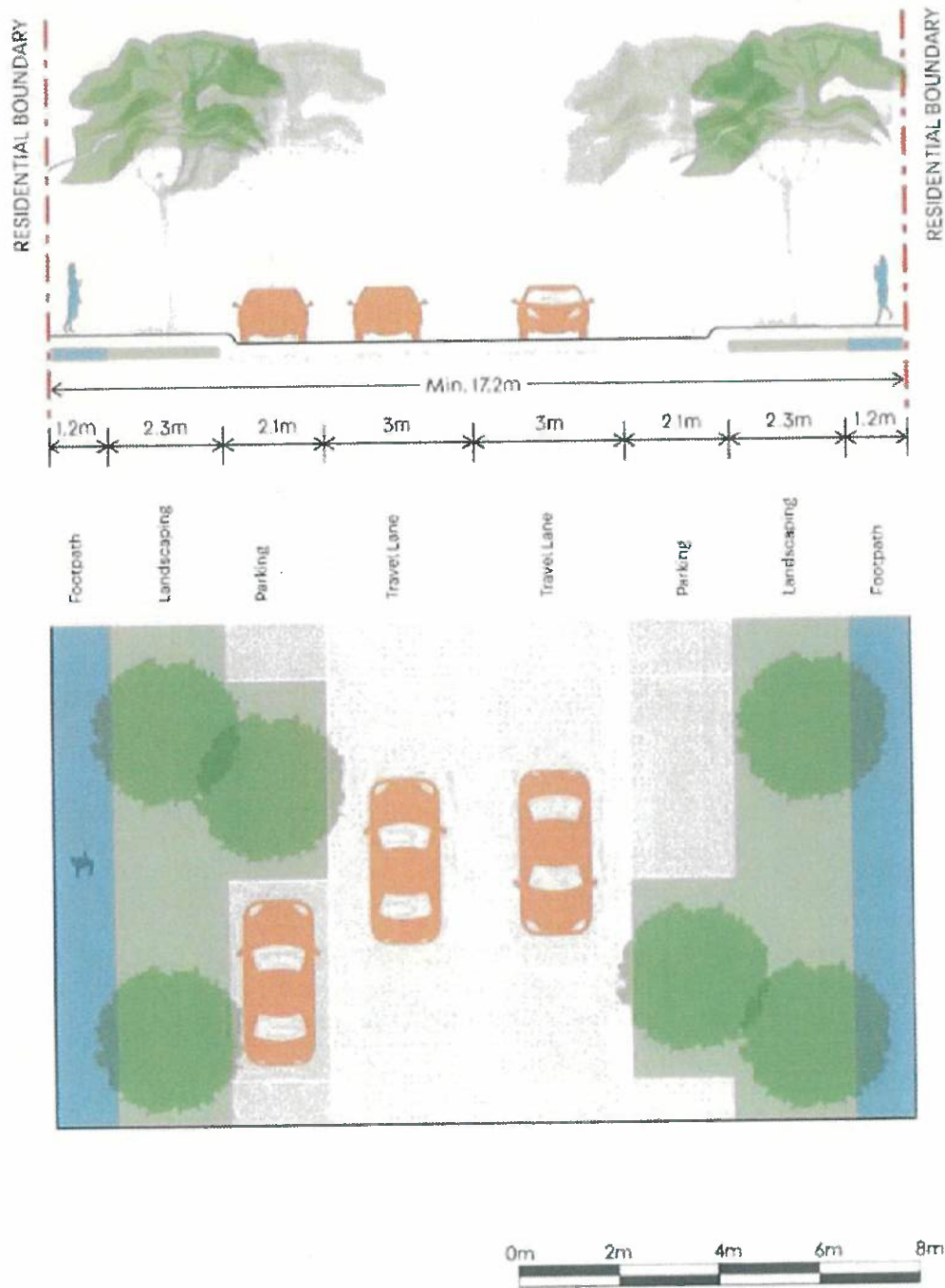
Corrs Chambers Westgarth

Local Road Cross-section



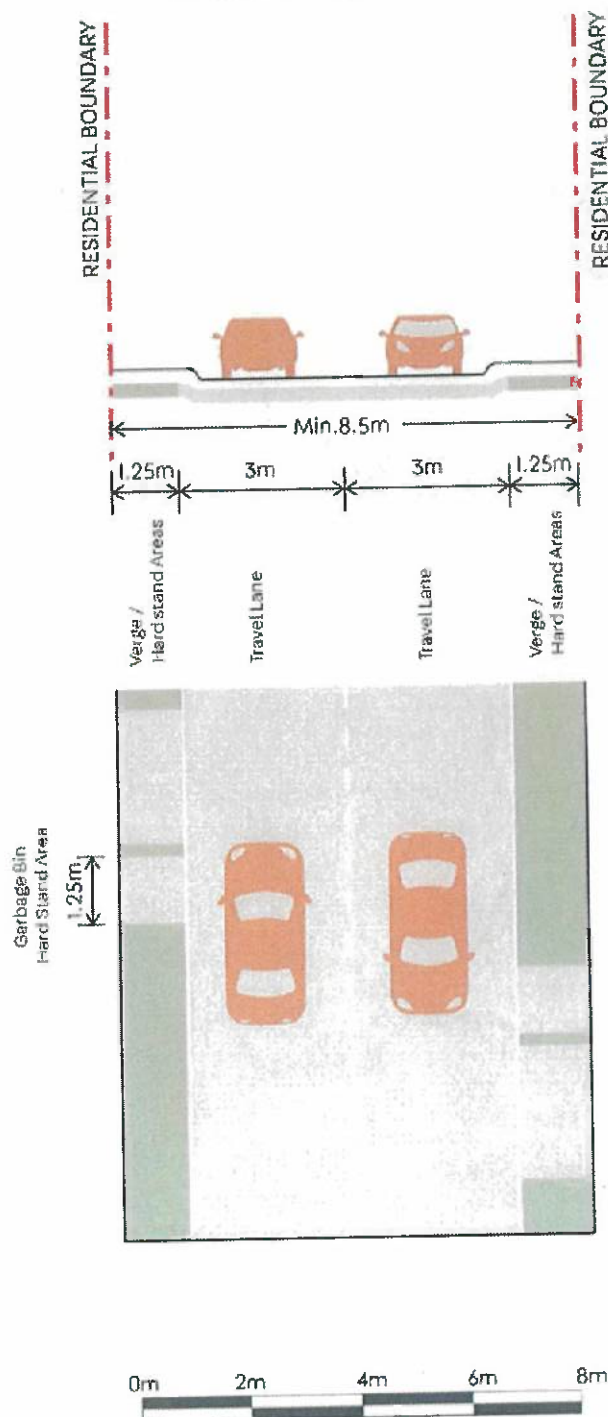
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Minor Local Road Cross-section



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Laneway Cross-section

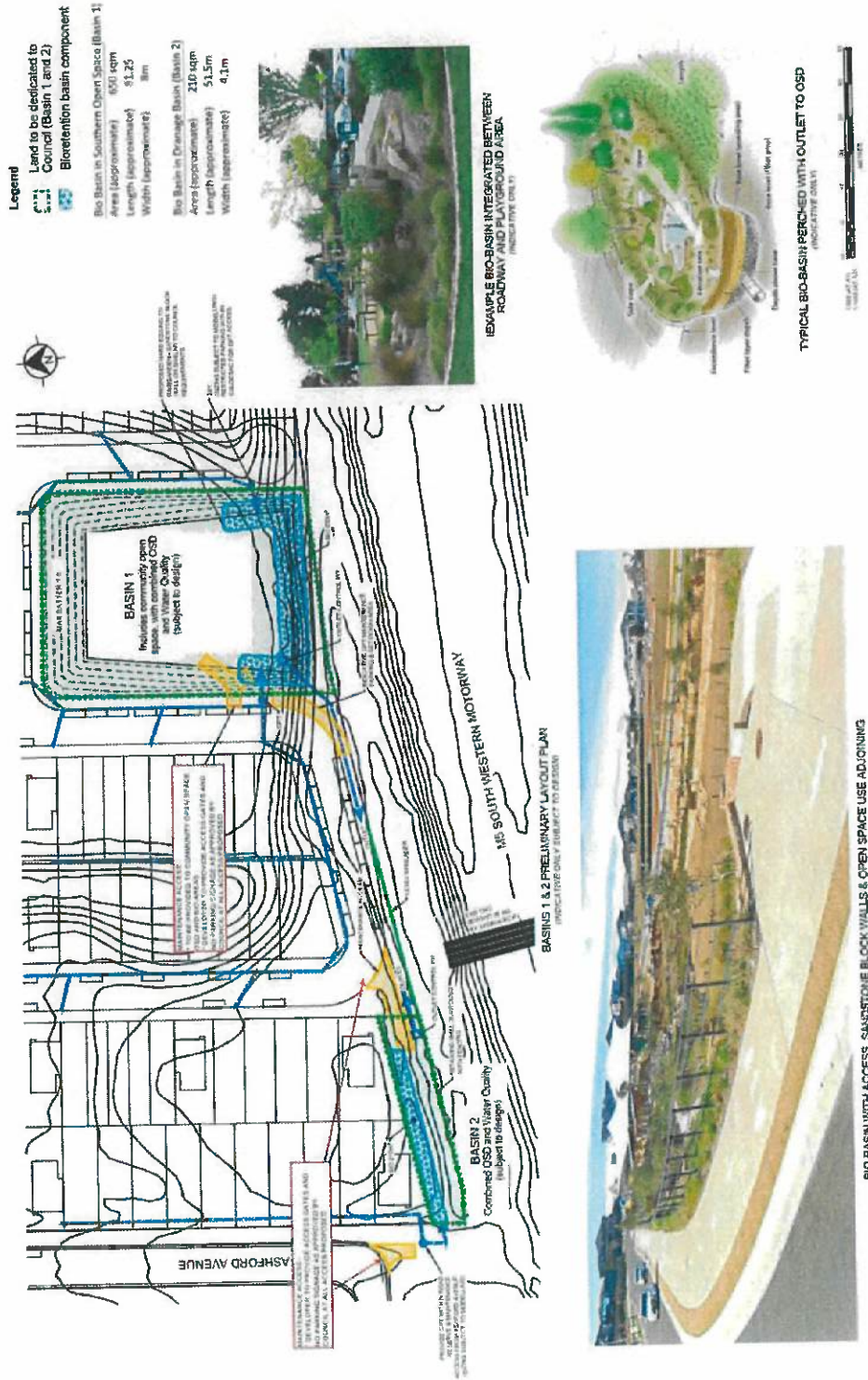


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Annexure C

Bioretention and Drainage Basins Plans

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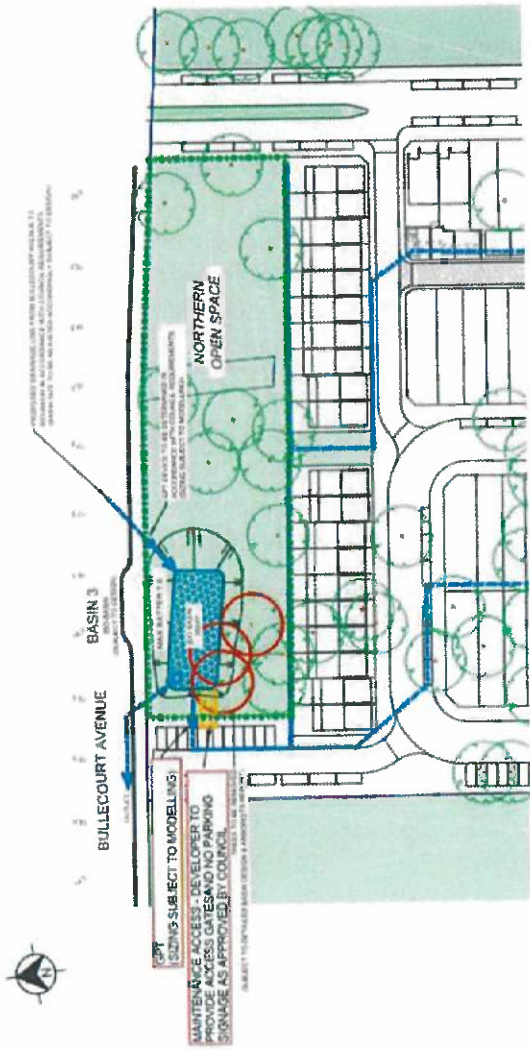


J. WYNNDHAM PRINCE
110709-02-SK007
Rev B 140423

Client: **WSU MILPERRA**
PRELIMINARY BASIN 1 & 2 LAYOUTS
INDICATIVE ONLY

Basin 1 located in Southern Open Space (refer to Annexure A plan)
Basin 2 located in SP2 Infrastructure (Drainage) Land (refer to Annexure A plan)

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Basin 3 located in Northern Open Space (refer to Annexure A plan)

- Legend
- Land to be dedicated to Council (Basin 3)
 - Basin/basin component

Bio Basin in Northern Open Space	
Area (approximate)	350 sqm
Length (approximate)	28.6m
Width (approximate)	12.5m

110709-02-SH006
Rev B 14/04/23



Client

WSU MILPERRA
PRELIMINARY BASIN 3 LAYOUT
INDICATIVE ONLY

J. WYNDHAM PRINCE

Basin 3 located in Northern Open Space (refer to Annexure A plan)

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Annexure D

Explanatory Note

Section 205 of the *Environmental Planning and Assessment Regulation 2021*

Summary of Objectives, Nature and Effect of the Draft Planning Agreement

Objectives of the Planning Agreement

The objective of the Planning Agreement is to provide for the delivery of public benefits in connection with the Development by requiring the Developer and the Landowner (as applicable) to:

- dedicate the Dedication Land to the Council for public purposes including roads, drainage and public recreation;
- deliver infrastructure, facilities and services including roads, embellishment of open space and provision of cycleways as Works in Kind; and
- provide for the payment of Monetary Contributions of \$5,300,180 and \$392,400 (to be indexed in accordance with the CPI) by the Developer to be applied towards the provision of affordable housing in appropriate locations within the Canterbury-Bankstown local government area and the repair and renovation of the Milperra Community Centre (or other community facilities in the Milperra region), respectively.

Nature of the Planning Agreement

The Planning Agreement is a planning agreement under section 7.4(1) of the Act. The Planning Agreement is a voluntary agreement under which Development Contributions (as defined in clause 1.1 of the Planning Agreement) are made by the Developer for various public purposes (as defined in section 7.4(2) of the Act).

The details, staging and timing of these Development Contributions are set out in Schedule 2 of the Planning Agreement.

Effect of the Planning Agreement

The Planning Agreement:

- is in connection with an amendment to the LEP relating to the Planning Proposal prepared by the Developer and Landowner and submitted by the Sydney South Planning Panel to the Department of Planning and Environment on 17 February 2022 (Planning Portal Ref: PP-2021-5837);
- relates to the carrying out of the Development (as defined in clause 1.1 of the Planning Agreement) on the Land by the Developer;

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- does not exclude the application of sections 7.11, 7.12 and 7.24 of the Act to the Land and the Development;
- is to be registered on the title to the Land;
- imposes restrictions on the Parties transferring the Land or part of the Land or assigning, or novating an interest under the agreement; and
- provides for the delivery of Development Contributions by the Developer and the Landowner (as applicable) comprising the:
 - dedication of the Dedication Land;
 - carrying out, completion and maintenance of Works in Kind; and
 - provision of Monetary Contributions.

Assessment of the Merits of the Planning Agreement

The Planning Purposes Served by the Planning Agreement

The Planning Agreement:

- promotes and co-ordinates the orderly and economic use and development of the land to which it applies;
- provides increased opportunity for public involvement and participation in environmental planning and assessment of the Development; and
- provides for additional monetary contributions by the Developer to the Council to be used for public purposes, in addition to other development contributions under section 7.11 or section 7.12 and section 7.24 of the Act required for the proposed Development on the land to which it applies.

How the Planning Agreement Promotes the Public Interest

The Planning Agreement sets out arrangements for the delivery of infrastructure, facilities and services to meet the needs of the Development.

The Planning Agreement promotes the public interest by promoting the objects of the Act as set out in section 1.3 of the Act and through the provision of the public benefits outlined above.

For Planning Authorities

Development Corporations – How the Planning Agreement Promotes its Statutory Responsibilities

N/A

Other Public Authorities – How the Planning Agreement Promotes the Objects (if any) of the Act under which it is Constituted

N/A

Councils – How the Planning Agreement Promotes the Principles for Local Government Contained in Chapter 3 of the *Local Government Act 1993*

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The Planning Agreement promotes the principles for local government by:


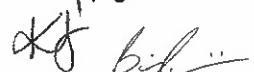
- demonstrating that the Council is acting fairly, ethically and without bias in the interests of the local community;
- keeping the local and wider community informed about Council activities; and
- ensuring the provision of adequate, equitable and appropriate services and facilities for the community and ensuring that those services and facilities are managed efficiently and effectively.

All Planning Authorities – Whether the Planning Agreement Conforms with the Authority's Capital Works Program

Yes. The proposed contributions are consistent with the community infrastructure identified in the Council's Planning Agreements Policy and aligns with Council's Capital Works Program.

All Planning Authorities – Whether the Planning Agreement specifies that certain requirements must be complied with before a construction certificate, occupation certificate or subdivision certificate is issued

Yes. Certain Development Contributions are required to be delivered prior to the issuing of an Occupation Certificate for a relevant stage of the Development.

APPENDIX C: ACOUSTIC ASSESSMENT

MILPERRA WSU PLANNING PROPOSAL

Acoustic Assessment

Mirvac Residential Developments (NSW)

TL127-01F04 Acoustic Report (r6)

Document details

Detail	Reference
Doc reference:	TL127-01F04 Acoustic Report (r6)
Prepared for:	Mirvac Residential Developments (NSW)
Address:	Level 28, 200 George Street Sydney NSW 2000
Attention:	Theo Zotos

Document control

Date	Revision history	Non-issued revision	Issued revision	Prepared	Instructed	Authorised
23.01.2020	Report draft issued to client for review	-	0	N. Aziz	N. Tselios	D. Suwandi
24.01.2020	Report issued to client for review	-	1	N. Aziz	N. Tselios	D. Suwandi
03.02.2020	Final report issued to client	-	2	N. Aziz	N. Tselios	D. Suwandi
06.02.2020	Final report issued with minor revision to the sports ground	-	3	N. Aziz	N. Tselios	D. Suwandi
11.08.2022	Updated report with industrial noise assessment	-	4	S. Khan	-	T. Taylor
15.09.2022	Updated report with additional comments	-	5	S. Khan	-	T. Taylor
20.09.2022	Updated report with additional comments	-	6	S. Khan	-	T. Taylor

Important Disclaimer:

The work presented in this document was carried out in accordance with the Renzo Tonin & Associates Quality Assurance System, which is based on Australian Standard / NZS ISO 9001.

This document is issued subject to review and authorisation by the Team Leader noted by the initials printed in the last column above. If no initials appear, this document shall be considered as preliminary or draft only and no reliance shall be placed upon it other than for information to be verified later.

This document is prepared for the requirements of our Client referred to above in the 'Document details' which are based on a specific brief with limitations as agreed to with the Client. It is not intended for and should not be relied upon by a third party and no responsibility is undertaken to any third party without prior consent provided by Renzo Tonin & Associates. The information herein should not be reproduced, presented, or reviewed except in full. Prior to passing on to a third party, the Client is to fully inform the third party of the specific brief and limitations associated with the commission.

In preparing this report, we have relied upon, and presumed accurate, any information (or confirmation of the absence thereof) provided by the Client and/or from other sources. Except as otherwise stated in the report, we have not attempted to verify the accuracy or completeness of any such information. If the information is subsequently determined to be false, inaccurate, or incomplete then it is possible that our observations and conclusions as expressed in this report may change.

We have derived data in this report from information sourced from the Client (if any) and/or available in the public domain at the time or times outlined in this report. The passage of time, manifestation of latent conditions or impacts of future events may require further examination and re-evaluation of the data, findings, observations, and conclusions expressed in this report.

We have prepared this report in accordance with the usual care and thoroughness of the consulting profession, for the sole purpose described above and by reference to applicable standards, guidelines, procedures, and practices at the date of issue of this report. For the reasons outlined above, however, no other warranty or guarantee, whether expressed or implied, is made as to the data, observations and findings expressed in this report, to the extent permitted by law.

The information contained herein is for the purpose of acoustics only. No claims are made, and no liability is accepted in respect of design and construction issues falling outside of the specialist field of acoustics engineering including and not limited to structural integrity, fire rating, architectural buildability, and fit-for-purpose, waterproofing and the like.

Supplementary professional advice should be sought in respect of these issues.

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1 Introduction

Renzo Tonin & Associates was engaged to conduct an environmental noise assessment of existing road traffic, and commercial and industrial premises to support the redevelopment of Western Sydney University (WSU) Milperra Campus.

The proposed development is approximately 430 low-rise residential houses, including an associated childcare, community facility and open spaces. The site adjoins the existing Mount St Joseph High School, and a section of the University site (south-eastern corner) is to be sold to the school.

This report quantifies the impact of external noise on the site (road traffic and industrial noise). In addition, operational noise from the proposed childcare centre, playground and sports ground are examined.

The noise impacts have been assessed in accordance with the requirements of the relevant guidelines as specified below and assessed in detail in the respective report sections.

Noise source	Guideline/Policy/Standard	Section
Road traffic and industrial noise impacts	State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) (Used for Road traffic noise impacts) Development in Rail Corridors and Busy Roads - Interim Guideline (December 2008) (Used for Road traffic noise impacts) Australian Standard AS2107:2016 Acoustics - Recommended design sound levels and reverberation times for building interiors (Used for industrial noise impacts)	Section 4 and 5
Childcare centre	Association of Australasian Acoustical Consultants (AAAC) Guideline for Child Care Centre Acoustic Assessment (AAAC Guideline)	Section 6
Playground and sports ground <ul style="list-style-type: none"> Mount St Joseph School Playground Milperra Reserve 	NSW EPA Noise Guideline for Local Government (NGLG)	Section 7

The work documented in this report was carried out in accordance with the Renzo Tonin & Associates Quality Assurance System, which is based on Australian Standard / NZS ISO 9001. APPENDIX A contains a glossary of acoustic terms used in this report.

2 Project description

2.1 Site description and development overview

The site is bound by industrial premises to the east of the site on the opposite side of Horsley Road (Heatcraft Australia, etc.) and to the north on the opposite side of Bullecourt Avenue (Southern Steel Cash & Carry, etc.) with existing residential dwellings to the west on the opposite side of Ashford Avenue. There are also commercial/retail premises as well as existing sports ground (Milperra Reserve) to the north-west near the intersection of Ashford and Bullecourt Avenues. There is also an existing school and its proposed expansion on the south-eastern corner of the site (see Figure 1) and a childcare (Western Sydney University Early Learning) on the eastern part of the site. Regarding road traffic, the subdivision is subject to the road traffic along the M5 Motorway to the south.

Figure 1: Subject site



Figure 2: Milperra WSU Masterplan



2.2 Assessment methodology

In order to assess the potential noise impact on the subdivision site, the following methodology was used:

- Determine existing road traffic noise levels impacting on-site.
- Determine the extent of noise impacts at proposed residential lots using the results of the noise monitoring and predictive noise modelling.

- Identify where road traffic noise intrusion onto the site may exceed the relevant criteria.
- Identify industrial noise impacts on proposed residential lots using the results of the attended and unattended noise monitoring.
- Using the results of the noise monitoring and predictive noise modelling to determine the extent of noise impact at residential lots from playground, sports ground, and childcare.
- Identify where playground, sports ground or childcare noise intrusion onto the site may exceed the relevant criteria.
- Where external noise levels are predicted to exceed the noise criteria, in-principal recommendations are provided for building envelope design to achieve internal noise criteria.

2.3 Reference material

The following documentation was referenced for this report:

- Milperra WSU Masterplan package prepared by Mirvac [ref: Milperra WSU Masterplan-NewPark-Rev 4b2-28-07-2021-17.2m roads per CB dated 28 July 2021]
- Information on the children outdoor play area capacity provided in an email from WSU Early Learning [ref: RE WSU Early Learning Bankstown - Information Request for Acoustic Assessment.msg]

3 Existing noise environment

Long-term noise monitoring was conducted at the subject site between Wednesdays 27 November and Monday, 13 December 2019 in order to determine existing ambient noise levels from road traffic, industrial activity, and school playground. The long-term noise monitoring methodology is detailed in APPENDIX B., and noise level-vs-time graphs of the data are included in APPENDIX C.

The section below details the results of traffic and ambient noise conditions. In addition, a survey of the impact of existing industrial noise in the vicinity of the site was undertaken. This is detailed in section 5.

3.1 Noise measurement location

The long-term measurement locations are outlined in Table 1 and shown in Figure 3.

Table 1: Noise monitoring locations

ID	Location	Description
Long-term noise monitoring		
L1	WSU Oval South	The noise monitor was located on the southern boundary of the Masterplan and approximately 27m to the north of the closest lane of the M5 Motorway. The noise environment was dominated by road traffic from the M5 Motorway to the south. It is advised that the noise monitor was located behind the existing noise barrier in the free field.
L2	WSU East Parking - Horsley Road	The noise monitor was located on the eastern boundary of the Masterplan and approximately 9m to the west of Horsley Road. The noise environment was dominated by road traffic from the Horsley Road to the east. It is advised that the noise monitor was located in the free field.
L3	WSU Entrance - Bullecourt Avenue	The noise monitor was located on the northern boundary of the Masterplan and approximately 9m to the south of Bullecourt Avenue. The noise environment was dominated by road traffic and industrial premises from the Bullecourt Avenue to the north. It is advised that the noise monitor was located in the free field.
L4	Mount St Joseph School Sports Field	The noise monitor was located on the north boundary of the existing school adjacent to the Masterplan. It was located approximately 11m to the north of the school's sports field. The noise environment was dominated by school activities and distant road traffic from the Horsley Road to the east. It is advised that the noise monitor was located in the free field.
L5	WSU Village Entrance - Ashford Avenue	The noise monitor was located on the western boundary of the Masterplan and approximately 11m to the east of Ashford Avenue. The noise environment was dominated by road traffic from the Ashford Avenue to the west. It is advised that the noise monitor was located in the free field.

Figure 3: Long-term noise monitoring locations



3.2 Long-term noise measurement results and discussion

Results from long-term noise monitoring are presented in Table 2 below.

Table 2: Long-term noise monitoring results

Monitoring location	L _{A90} background noise levels			L _{Aeq} ambient noise levels	
	Day ¹	Evening ¹	Night ¹	Day ²	Night ²
L1 - WSU Oval South	52	50	43	60	57
L2 - WSU East Parking - Horsley Road	49	45	41	64	59
L3 - WSU Entrance - Bullecourt Avenue	53	47	39	70	65
L4 - Mount St Joseph School Sports Field	43	44	39	57	50
L5 - WSU Village Entrance - Ashford Avenue	52	50	43	59	57

Notes: 1. Day: 07:00-18:00, Evening: 18:00-22:00, Night: 22:00-07:00
 2. Day: 7:00am to 10:00pm; Night: 10:00pm to 7:00am

The noise environment at logger locations L2 and L3 were dominated by road traffic and subjectively the noise emission from the industrial facilities from across the roads are deemed not to contribute to the existing measured L_{Aeq}. Therefore, further assessment against the NSW EPA NPfl is not deemed necessary.

4 Road traffic noise assessment noise impact study

4.1 State Environmental Planning Policy (Infrastructure) 2007 noise limits

In NSW, the SEPP (Infrastructure) 2007, also known as the ISEPP, commenced on 1 January 2008 to facilitate the effective delivery of infrastructure across the state. The aim of the policy includes identifying the environmental assessment category into which different types of infrastructure and services development fall and identifying matters to be considered in the assessment of development adjacent to particular types of infrastructure.

Clause 102 of the ISEPP states as follows:

102 Impact of road noise or vibration on non-road development

- 1. This clause applies to development for any of the following purposes that is on land in or adjacent to the road corridor for a freeway, a tollway or a transitway or any other road with an annual average daily traffic volume of more than 40,000 vehicles (based on the traffic volume data published on the website of the RTA) and that the consent authority considers is likely to be adversely affected by road noise or vibration:*
 - a building for residential use,*
 - a place of public worship,*
 - a hospital,*
 - an educational establishment or childcare centre.*
- 2. Before determining a development application for development to which this clause applies, the consent authority must take into consideration any guidelines that are issued by the Director-General for the purposes of this clause and published in the Gazette.*
- 3. If the development is for the purposes of a building for residential use, the consent authority must not grant consent to the development unless it is satisfied that appropriate measures will be taken to ensure that the following LAeq levels are not exceeded:*
 - in any bedroom in the building--35 dB(A) at any time between 10 pm and 7am,*
 - anywhere else in the building (other than a garage, kitchen, bathroom, or hallway) -- 40 dB(A) at any time.*
- 4. In this clause, "freeway", "tollway" and "transitway" have the same meanings as they have in the Roads Act 1993.*

4.1.1 ISEPP Guideline

To support the ISEPP, the NSW Department of Planning released the *Development in Rail Corridors and Busy Roads – Interim Guideline* (December 2008). The Guideline assists in the planning, design, and assessment of developments in, or adjacent to, major transport corridors in terms of noise, vibration and air quality.

The Guideline clarifies the time period of measurement and assessment. As stated in the Guideline in Section 3.4 'What Noise and Vibration Concepts are Relevant' and Table 3.1 of Section 3.6.1, noise measurements are determined over the following relevant time periods:

- Daytime 7am - 10pm $L_{Aeq(15hr)}$
- Night-time 10pm - 7am $L_{Aeq(9hr)}$

L_{Aeq} is the Equivalent Continuous Noise Level and accounts for both the level of fluctuating noise and the number of noise events over the time period. The noise criteria nominated in the ISEPP are internal noise levels with windows and doors closed and the requirements are stated in the following table.

Table 3: ISEPP internal road traffic noise criteria

Internal space	Time period	Noise metric	Internal criteria [^]
Bedrooms	7am - 10pm	$L_{Aeq(15hrs)}$	40*
	10pm - 7am	$L_{Aeq(9hrs)}$	35
Other Habitable Rooms	Any Time	$L_{Aeq(15hrs)}$ and $L_{Aeq(9hrs)}$	40

Notes: ^ With windows and doors closed.

* Whilst not specified in the ISEPP, daytime criteria for bedrooms are set to 40dB(A), as per the other habitable rooms.

The Guideline in Section 3.6.1 'Airborne Noise' states as follows:

"If internal noise levels with windows or doors open exceed the criteria by more than 10dB(A), the design of the ventilation for these rooms should be such that occupants can leave windows closed, if they so desire, and also to meet the ventilation requirements of the Building Code of Australia."

As noise modelling is undertaken for external locations, the above criteria and guidelines have been used to establish equivalent external noise criteria. This external noise criterion is used to determine which building facades may require specific acoustic treatment to meet the requirements of the ISEPP. External goals have been calculated based on nominal 10dB(A) reduction through an open window to a free-field position. Windows open to 5% of floor area in accordance with the NCC 2019 requirements.

Table 4: ISEPP road and rail traffic noise criteria for new residential development

Room	Location	$L_{Aeq, 15hr}$ Day 7am - 10pm	$L_{Aeq, 9hr}$ Night 10pm - 7am
Living rooms*	Internal, windows closed	40	40
	Internal, windows open	50	50
	External free field (allowing windows to remain open) ^	60	60

Room	Location	L _{Aeq} , 15hr Day 7am - 10pm	L _{Aeq} 9hr Night 10pm - 7am
Bedrooms*	Internal, windows closed	40	35
	Internal, windows open	50	45
	External free field (allowing windows to remain open) ^	60	55

Notes:

* Requisite for 40,000AADT Roads only under ISEPP 2007.

^ ISEPP Guideline states that where internal noise criteria are exceeded by more than 10dB(A) with windows open mechanical ventilation is required. External goals have been calculated based on nominal 10dB(A) reduction through an open window to a free-field position. Windows open to 5% of floor area in accordance with the National Construction Code (NCC) 2019 requirements.

4.2 Noise sources

Road traffic noise sound power levels were determined from the noise monitoring results. The following L_{Aeq}(9hrs) sound power levels were used, which were validated to both logger locations in the noise modelling.

Table 5: Road traffic noise 9-hour equivalent sound power levels PWL/metre (re 1 Picowatt)

Noise source	Overall dB(A)	Octave band centre frequency - Hz								
		31.5	63	125	250	500	1k	2k	4k	8k
M5 Motorway	91	94	98	93	84	87	88	83	71	63
Horsley Road	73	73	77	73	64	67	68	62	51	43
Ashford Avenue	71	72	76	71	62	65	66	61	50	41
Bullecourt Avenue	78	78	82	78	69	72	73	67	56	48

4.3 Prediction methodology

The noise propagation calculations were carried out in accordance with ISO9613 as implemented by CadnaA computer modelling program (version 2020). The software considers sound radiation patterns, acoustic shielding and potential reflections from intervening building elements, and noise attenuation due to distance.

The noise prediction model was run for two (2) different receiver heights, 1.5m above ground level for ground floor and 4.5m above ground level for 1st floor.

The measured night-time road traffic noise levels indicate a greater impact and therefore, noise predictions were assessed to night-time criteria as compliance with the more stringent night-time criteria will result in compliance during the day.

4.4 Road traffic noise prediction results

The noise prediction results are set out in a graphical format in APPENDIX D of this report. The contour maps in APPENDIX D show that noise levels at some facades on the boundary of the Masterplan do not comply with the ISEPP noise limits. Noise control treatments to mitigate road traffic noise are discussed in Section 8.

5 Industrial noise impact study

In order to ensure that noise from pre-existing industrial development is considered in the design of new dwellings a survey of industrial noise at the site was undertaken.

5.1 Condition from the Department of Planning

Department of Planning's has made the following comment with respect to acoustics:

- f. Address potential noise impacts from nearby industrial uses, and if there are significant impacts outline how these impacts will be mitigated by the future residential development.*

5.2 Internal noise level goals

AS2107:2016 internal noise goals will be adopted in setting noise targets for new residential development in areas impacted by industrial noise.

In Section 5 and Table 1 of the Australian Standard 2107 states the recommended A-weighted sound pressure level ranges for the design of the spaces in buildings.

The noise criteria nominated in the Australian Standard 2107 are internal noise levels with windows and doors closed and the requirements are stated in the following table. The table below presents target internal noise levels within dwellings based on AS2107 because of external industrial noise intrusion.

Table 6: AS2107 internal noise criteria

Type of occupancy	Internal space	Internal criteria (L _{Aeq})
Houses and apartments in suburban areas	Sleeping Areas	35
	Living Areas	40
	Apartment Common Areas	50

5.2.1 Equipment Used for Noise Assessment

Sound level measurements were undertaken in general accordance with AS1055.1-1997 "Acoustics – Description and Measurement of Environmental Noise" using an NTi Audio Type XL2 precision sound level analyser which is a class 1 instrument having accuracy suitable for field and laboratory use. Statistical noise levels were acquired in both overall and octave band frequencies. The instrument was calibrated prior and after measurements using a Bruel & Kjaer Type 4231 calibrator. No significant drift in calibration was observed. All instrumentation complies with IEC 61672 (parts 1-3) 'Electroacoustics - Sound Level Meters' and IEC 60942 'Electroacoustics - Sound calibrators' and carries current NATA certification (or if less than 2 years old, manufacturers certification).

5.2.2 Noise Measurement results

As part of this noise assessment, short term attended noise measurements were undertaken during the early morning of Wednesday, 27 July 2022, in order to determine the industrial noise contribution on the future residential development. The measurement locations were 1.5m above the ground level on 6 different locations around Western Sydney University (WSU) Milperra Campus.

A summary of measured L_{Aeq} noise levels is presented in below Table 7 and Table 8 for specified locations shown in Figure 4.

To assist, the L_{Aeq} noise levels presented in below Table 7 compares industrial noise contribution measured on Wednesday, 27 July 2022 and Night-time traffic noise levels as documented in Table 2.

Figure 4: Short-term noise monitoring locations



Table 7: Industrial noise levels (L_{Aeq}) compared to traffic noise levels (L_{Aeq})

Measurement Location number	Measurement Location description	Date/time	Industrial noise levels (L_{Aeq})	Traffic noise levels at Night (L_{Aeq})	Comment
S1	South-east corner of WSU Oval (Approximately 30m from South-Western Motor Way)	27/07/2022 01:11-01:26	N/A	57	L_{Aeq} was driven by traffic noise from South-Western Motorway. No industrial activity from 260-270 Horsley Road, Milperra was seen/heard. These industrial sites are approximately within 150m of location S2.
S2	In WSU carpark 2 near Mount St Joseph School, 273 Horsley Road (Approximately 8m away from Horsley Road)	27/07/2022 01:37-01:52	N/A	59	L_{Aeq} was driven by distinct traffic noise from South-Western Motorway. No industrial activity from 260-270 Horsley Road, Milperra was seen/heard. These industrial sites are approximately within 150m of location S2.
S3	On WSU footpath facing Southern Steel Cash and Carry, 319 Horsley Rd, Milperra (Approximately 5m away from Bullecourt Avenue and 54m away from the Southern Steel Cash and Carry, building roller door)	27/07/2022 01:59-02:14	48	65	L_{Aeq} was mostly driven by distinct traffic noise from South-Western Motorway and Bullecourt Avenue. Activities associated within the Southern Steel Cash and Carry, 319 Horsley Road building such as lifting long and heavy structural steel pipes and unloading them on the truck($53L_{Amax}$) and truck moving($53L_{Amax}$) can be faintly heard at locations S3 and S4.
S4	In WSU carpark 1 (Approximately 35m from Bullecourt Avenue and 75m away from the Southern Steel Cash and Carry, building roller door)	27/07/2022 02:17-02:32	48	65	L_{Aeq} was mostly driven by distinct traffic noise from South-Western Motor Way and Bullecourt Avenue. Activities associated within the Southern Steel Cash and Carry, 319 Horsley Road building such as lifting long and heavy structural steel pipes and unloading them on the truck($53L_{Amax}$) and truck moving($53L_{Amax}$) can be faintly heard at locations S3 and S4.
S5	In WSU carpark 1 (Approximately 35m from Bullecourt Avenue and 86m away from the Southern Steel Cash and Carry, building roller door)	27/07/2022 02:34-02:49	47	65	L_{Aeq} was mostly driven by distinct traffic noise from South-Western Motorway and Bullecourt Avenue. Some of the traffic noise from South-Western Motorway was masked by
S6	On WSU west footpath facing 150 Ashford Ave, Milperra (Approximately 5m from Ashford Avenue)	27/07/2022 02:55-03:10	N/A	57	L_{Aeq} was driven by distinct traffic noise from South-Western Motorway and Ashford Avenue. This measurement was taken to determine noise from industrial sites located to the north of WSU Milperra campus.

Table 8 represents an additional measurement that was recorded to determine the noise from the mechanical plant associated with the Southern Steel Cash and Carry, 319 Horsley Road building breaking out from the roller door which is located on the opposite side of Bullecourt Avenue.

Table 8: L_{Aeq} noise measurement result for mechanical plant associated with the Southern Steel Cash and Carry, 319 Horsley Road

Measurement Location number	Measurement Location description	Date/time	Measured L_{Aeq}	Comment
S7	Standing 5m from the industrial building roller door on opposite side of Bullecourt Avenue	27/07/2022 03:11-03:26	46	L_{Aeq} was driven by mechanical plant associated with the Southern Steel Cash and Carry, 319 Horsley Road building.

5.2.3 Discussion

Based on the above, road traffic noise levels are higher than industrial noise levels at the site.

- In above mentioned Table 7, measured noise levels at locations S1(south of WSU Milperra Campus) S2(east of WSU Milperra Campus) and S6(west of WSU Milperra Campus) demonstrates no activity from the industrial sites that are in proximity.
- Noise levels at locations S3(i.e., $48L_{Aeq}$), S4(i.e., $48L_{Aeq}$) and S5(i.e., $47L_{Aeq}$), demonstrates noise levels that are well below the measured traffic noise level (i.e., $65L_{Aeq}$). Noting that there were activities associated within the Southern Steel Cash and Carry, 319 Horsley Road building such as lifting long and heavy structural steel pipes and unloading them on the truck($53L_{Amax}$) and truck moving($53L_{Amax}$) were recorded.
- Noise from 319 Horsley Road building roller door (which is located on the opposite side of Bullecourt Avenue to WSU Campus) is lower than the road traffic noise levels on Bullecourt Road.

Overall, the industrial noise levels are much lower with respect to road traffic noise levels and hence, façade systems detailed in Section 8 are sufficient to address road noise and industrial noise intrusion.

Provided that the recommendations in section 8 are adopted, by road traffic noise and industrial noise will be attenuated such that suitable internal noise levels within dwellings will be achieved.

6 Childcare noise emission study

6.1 AAAC Guideline

The AAAC has issued a 'Guideline for Child Care Acoustic Assessment (2010)' (AAAC Guideline). The guideline contains the following suggested levels when assessing noise from a childcare centre.

Residential Receptors

Outdoor play area

For outdoor play of more than 2 hours per day, the Leq, 15min noise level emitted from the outdoor play area shall not exceed the background noise level by more than 5dB.

It is reasonable to allow a higher level of noise impact for a shorter duration of outdoor play. For outdoor play of up to 2 hours total per day, noise shall not exceed the background noise level by more than 10dB.

The background noise level used for the noise criteria of this assessment is based on noise monitoring location L2 at Horsley Road on daytime.

6.2 Noise sources

Noise measurements of outdoor play were attempted but due to the bushfire situation at the time, the time when the children is allowed to be outside was restricted and therefore, this created a timing issue; and hence, the noise emission from the childcare centre is predicted as below.

The sound power levels recommended in the AAAC Guideline have been used in the noise calculations for the outdoor play areas. The AAAC Guideline gives a range of noise levels for different age groups of children playing as shown in Table 9.

Table 9: AAAC Sound power levels for groups of 10 children playing (dB re 10⁻¹² watts)

Number of children	Sound Power Level dB(A)
10 children ages 0 to 2 years	77 to 80
10 children aged 2 to 3 years	83 to 87
10 children aged 3 to 6 years	84 to 90

By way of explanation the "sound power level" is not the same as the "sound pressure level". The "sound power level" is the source emission strength analogous to the wattage of a light bulb (a higher wattage producing a higher light intensity at any distance). Having established the sound power level of children at play, the sound pressure level then decreases with distance and is further reduced by interposed acoustic barriers.

Experience with other childcare centres shows that if one were to adopt the highest values in Table 9 for calculations, this predicts noise levels that are too high compared with the measured noise levels. Instead, if the logarithmic average of the highest and lowest values is used, this results in a realistic assessment for children engaged in active play. Taking the logarithmic average is skewed towards the higher values as shown in the following table:

Table 10: Adopted sound power levels for groups of 10 children in active play (dB re 10^{-12} watts)

Number of children	Sound Power Level dB(A)
10 children ages 0 to 2 years	78.8
10 children aged 2 to 3 years	85.4
10 children aged 3 to 6 years	88.0

In respect of groups of children engaging in passive play (ie. sandpit, seated activities, etc.) the lower range in Table 9 above are applicable.

The sound power levels are then scaled to take into consideration the actual number of children at the subject development in each age group to enable prediction of noise levels to receiver locations. The following assumptions are made:

1. There are 8 children 0-2yo, 8 children 2-3yo, and 18 children 3-6yo in the outdoor active play area. There are 8 children 0-2yo, 8 children 2-3yo, and 17 children 3-6yo in the outdoor passive play area. The plan of management must ensure that these numbers are not exceeded.
2. In the outdoor passive play area the lower range of sound power levels in Table 9 are adopted, and in the active play area the higher range in Table 11 are adopted. The plan of management must ensure that the type of play in the outside play area is controlled by staff supervision and by ensuring that there is no active play equipment in the outside passive play area.

Table 11 shows the sound power levels used in the calculations, when converted for the appropriate number of children in each age group.

Table 11: Sound power levels of children (dB re 10^{-12} watt)

Number of children	Sound Power Level dB(A)
8 children 0-2yo in the active play area and 8 children 0-2yo in the passive play area	81
8 children 2-3yo in the active play area and 8 children 2-3yo in the passive play area	88
18 children 3-6yo in the active play area and 17 children 3-6yo in the passive play area	94

Children between the aged of 0 to 3 years are modelled at a height of 1.0m and older children are modelled at a height of 1.2m.

6.3 Prediction methodology

The noise propagation calculations were carried out in accordance with ISO9613 as implemented by CadnaA computer modelling program (version 2020). The software considers sound radiation patterns, acoustic shielding and potential reflections from intervening building elements, and noise attenuation due to distance.

The noise prediction model was run for two (2) different receiver heights, 1.5m above ground level for ground floor and 4.5m above ground level for 1st floor at the nearest residential boundary on the western and eastern side of the childcare external area. The following figure shows the receiver locations closest to the childcare based on the subdivision masterplan.

Figure 5: Childcare receiver locations



6.4 Childcare noise prediction results

Based on the childcare capacity, noise source levels, and the above prediction methodology, the predicted noise impacts at the receiver locations are presented in the following table.

Table 12: Predicted $L_{Aeq, 15min}$ noise levels, dB(A)

Receiver locations	Predicted $L_{Aeq, 15min}$ noise level dB(A)	Noise criteria (dBA)
R1 - Western lots		
Ground Floor	47	54

Receiver locations	Predicted $L_{Aeq, 15min}$ noise level dB(A)	Noise criteria (dBA)
First Floor	50	54
R2 - Eastern lots		
Ground Floor	26	54
First Floor	29	54

The noise prediction results indicate that the childcare noise demonstrates compliance at all receivers and no noise mitigation measures are necessary.

7 School playground and sports ground noise emission study

7.1 NSW EPA Noise Guideline for Local Government (NGLG) intrusiveness criterion

In the absence of specific noise criteria stipulated by the consent authority, reference is made to the NSW *Noise Guide for Local Government* (NGLG). According to the NGLG, the intrusiveness of a noise source may generally be considered acceptable if the equivalent continuous (energy-average) A-weighted level of noise from the source (represented by the L_{Aeq} descriptor) does not exceed the background noise level measured in the absence of the source by more than 5dB(A). The intrusiveness criterion is summarised as follows:

- $L_{Aeq,15minute} \leq \text{Rating background level (RBL) plus 5dB(A)}$

The allowable $L_{Aeq,15minute}$ noise emission from a development is therefore dependant on the background noise level in an area without the subject development in operation. The background noise levels at time which the development is to operate therefore need to be quantified.

7.2 Noise sources

The noise levels obtained from the noise logger at logger location L4 have been used to calculate the sound power levels of Mount St Joseph school's playground. It is assumed that the same power levels are generated at Milperra Reserve sports ground. The following table presents the resulting sound power levels.

Table 13: Sound power level of typical activity at playground and sports ground (dB re 10^{-12} watts)

Noise source	Overall dB(A)	Octave band centre frequency - Hz								
		31.5	63	125	250	500	1k	2k	4k	8k
Milperra Reserve (L _w per sq. metre)	57	64	65	61	58	55	52	48	43	38
Mt St Joseph playground (L _w per sq. metre)	61	68	69	65	62	59	55	51	46	42

7.3 Prediction methodology

The noise propagation calculations were carried out in accordance with ISO9613 as implemented by CadnaA computer modelling program (version 2020). The software considers sound radiation patterns, acoustic shielding and potential reflections from intervening building elements, and noise attenuation due to distance.

The noise prediction model was run for two (2) different receiver heights, 1.5m above ground level for ground floor and 4.5m above ground level for 1st floor. The following figure shows the receiver locations closest to the school playground and sports ground based on the subdivision masterplan. The

background noise level used for the noise criteria of this assessment is based on noise monitoring location L4 at Mount St Joseph school for receiver locations R3 and R4 and noise monitoring location L3 at Bullecourt Avenue for receiver locations R5 and R6. It is assumed that the playground operates until 6:00pm and the sports ground operate until 10:00pm.

See Appendix E.

Figure 6: School playground and sports ground receiver locations



7.4 Playground and sports ground noise prediction results and recommendations

Based on the playground and sports ground noise levels and the above prediction methodology, the predicted noise impacts at the receiver locations are presented in the following table.

Table 14: Predicted $L_{Aeq, 15min}$ Noise Levels, dB(A)

Receiver Locations	Predicted $L_{Aeq, 15min}$ noise level dB(A)	Noise criteria (dBA)
R3 - North side of school playground		
Ground Floor	54	48
First Floor	56	48
R4 - West side of school playground		
Ground Floor	61	48

Receiver Locations	Predicted $L_{Aeq, 15min}$ noise level dB(A)	Noise criteria (dBA)
First Floor	60	48
R5 - South side of Milperra Reserve sports ground		
Ground Floor	51	45
First Floor	52	45
R6 - East side of Milperra Reserve sports ground		
Ground Floor	48	45
First Floor	54	45

Notes: **Bold** indicates exceedance.

The noise prediction results indicate that there are exceedances at all receiver locations and noise mitigation measures are deemed necessary.

Recommended noise controls are:

- For dwellings adjacent to the School playground:
 - Build 2.1m fences at the boundary between the residential lots and Mount St Joseph school and
 - Glazing treatments as per Appendix E.
- For dwellings adjacent to the sports field:
 - Glazing treatments as per Appendix E.

8 Noise control treatment recommendations

The noise modelling identified areas where the external noise goals were not met. Therefore, the affected areas of residential dwellings are to be designed to meet the relevant internal noise criteria.

The following provides in-principal noise control recommendations to reduce noise intrusion for residential premises. The recommendations are based on several assumptions relating to the built form. The advice provided here is in respect of acoustics only. Supplementary professional advice should be sought in respect of fire ratings, structural design, buildability, fitness for purpose and the like.

8.1 Building setbacks and layout

Dwellings constructed in road traffic noise affected areas can be designed so that their layouts minimise noise in living and sleeping areas. Less sensitive rooms (such as kitchens, laundries, and bathrooms) are recommended to be placed on the side of the building fronting the nearest noise source (being the road).

8.2 Indicative building construction

Based on the noise modelling, and in accordance with internal noise criteria set out in Section 4.1, recommendations for building element constructions are presented for the following room types. It is assumed that non-habitable rooms are separated from habitable spaces by doors (i.e., doors to studies, laundries, and ensuites/bathrooms etc.).

Table 15: Room parameters

Room	Item	Description
Bedroom	Dimensions (L x W x H)	Indicatively 3m x 3m x 2.7m or larger.
	Surface finishes	Carpeted floors with underlay, plasterboard walls and ceiling, and bed
Living room	Dimensions (L x W x H)	7m x 5m x 2.7m
	Surface finishes	Timber or tiled floors, plasterboard walls and ceiling
Lounge	Dimensions (L x W x H)	6m x 4m x 2.7m
	Surface finishes	Carpeted floors with underlay, plasterboard, and ceiling

The required acoustic treatment categories are presented graphically in APPENDIX F. The acoustic treatment corresponding to each category is specified in Table 16.

Table 16: Acoustic constructions for treatment categories (ISEPP)

Category	Room	Construction element	Indicative treatment	
Category 1 (Alternative ventilation not required)	Bedrooms and adjoining ensuites	Windows/glazed doors*	Less than 4m ² = R _w 24 4m ² – 8m ² = R _w 27	No specific glass thickness required 6mm float glass with acoustic seals
		Walls/roof/ceiling	Standard constructions	
	Lounge/living rooms	Windows/glazed doors*	Less than 8m ² = R _w 29 8m ² – 16m ² = R _w 32	6mm float glass with acoustic seals 6.38mm laminated glass with acoustic seals
		Timber doors	35mm solid core timber - acoustic seals	
		Walls/roof/ceiling	Standard constructions	
Category 2 (Alternative ventilation required)	Bedrooms and adjoining ensuites	Windows/glazed doors*	Less than 2m ² = R _w 24 2m ² – 4m ² = R _w 27 4m ² – 8m ² = R _w 30	No specific glass thickness required 6mm float glass with acoustic seals 6.38mm laminated glass with acoustic seals
		Walls/roof/ceiling	Standard constructions	
	Lounge/living rooms	Windows/glazed doors*	Less than 4m ² = R _w 29 4m ² – 8m ² = R _w 32 8m ² – 16m ² = R _w 35	6mm float glass with acoustic seals 6.38mm laminated glass with acoustic seals 10.38mm laminated glass with acoustic seals
		Timber doors	40mm solid core timber - acoustic seals	
		Walls/roof/ceiling	Standard constructions	
Category 3 (Alternative ventilation required)	Bedrooms and adjoining ensuites	Windows/glazed doors*	Less than 2m ² = R _w 27 2m ² – 4m ² = R _w 30 4m ² – 8m ² = R _w 33	6mm float glass with acoustic seals 6.38mm laminated glass with acoustic seals 10.38mm laminated glass with acoustic seals
		Roof/ceiling	Standard constructions	
		Walls	R _w 46	Brick veneer construction, standard internal plasterboard with R1.5 wall batts Or Reverse brick veneer construction, external metal or FC cladding with R1.5 wall batts Or Metal studs with 1 layer of 16mm fire-rated plasterboard inside, metal or FC external cladding, R1.5 wall batts
	Lounge/living rooms	Windows/glazed doors*	Less than 4m ² = R _w 32 4m ² – 8m ² = R _w 35 8m ² – 16m ² = R _w 38	6.38mm laminated glass with acoustic seals 10.38mm laminated glass with acoustic seals Heavy laminated glass or double glazing with acoustic seals
		Timber doors	45mm solid core timber - acoustic seals	

Category	Room	Construction element	Indicative treatment	
		Roof/ceiling	Standard constructions	
		Walls	R _w 46	Brick veneer construction, standard internal plasterboard with R1.5 wall batts Or Reverse brick veneer construction, external metal or FC cladding with R1.5 wall batts Or Metal studs with 1 layer of 16mm fire-rated plasterboard inside, metal or FC external cladding, R1.5 wall batts
Category 4 (Alternative ventilation required)	Bedrooms and adjoining ensuites	Windows/glazed doors*	Less than 2m ² = R _w 30 2m ² – 4m ² = R _w 33 4m ² – 8m ² = R _w 36	6.38mm laminated glass with acoustic seals 10.38mm laminated glass with acoustic seals 12.38mm laminated glass with acoustic seals
		Roof/ceiling	Tiled or metal pitched roof / 2 x 13mm plasterboard ceiling / bulk insulation in cavity	
		Walls	R _w 49	Brick veneer construction, standard internal plasterboard with R1.5 wall batts Or Reverse brick veneer construction, external metal or FC cladding with R1.5 wall batts Or Metal studs with 2 layers of 16mm fire-rated plasterboard inside, metal or FC external cladding, R1.5 wall batts
	Lounge/living rooms	Windows/glazed doors*	Less than 4m ² = R _w 35 4m ² – 8m ² = R _w 38 8m ² – 16m ² = R _w 41	10.38mm laminated glass with acoustic seals Heavy laminated glass or double glazing with acoustic seals Double glazed with acoustic seals
		Timber doors	45mm solid core timber - acoustic seals	
		Roof/ceiling	Tiled or metal pitched roof / 2 x 13mm plasterboard ceiling / bulk insulation in cavity	
		Walls	R _w 49	Brick veneer construction, standard internal plasterboard with R1.5 wall batts Or Reverse brick veneer construction, external metal or FC cladding with R1.5 wall batts Or Metal studs with 2 layers of 16mm fire-rated plasterboard inside, metal or FC external cladding, R1.5 wall batts

Notes: * Area of windows and doors shall be the total of all glazing for the given room.

The acoustic requirements for windows and doors have been provided on an R_w basis to allow flexibility with the developer and variations in design due to other design requirements such as thermal performance. The R_w rating sets the basis of the recommended acoustic performance, and the constructions are provided for guidance only. The acoustic performance of specific building components should be confirmed by manufactures or suitably qualified professional prior to installation.

Unless otherwise specified, the base building envelope of dwellings is of standard constructions which are assumed to consist of the following:

- Walls of brick veneer construction, double brick, or light weight clad construction which could consist of fibre-cement cladding on the outside of timber stud walls and internal plasterboard lining. All walls are assumed to have minimum R1.5 insulation in the cavity. It is noted that both brick veneer and cavity double brick construction are of significantly higher acoustic performance than light weight cladding systems. In higher road traffic noise areas, there may be a requirement to upgrade light weight systems. These instances will be noted in the acoustic recommendations.
- Roof to be pitched, with concrete or terracotta tile or sheet metal roof with sarking, R3.0 insulation in the roof space (combination of below roof and above ceiling), and one layer of 10mm thick standard plasterboard fixed to ceiling joists.
- External doors to be solid core timber or glazed, fitted with acoustic seals around the perimeter. Pivot style doors are not recommended as full perimeter acoustic seals are not readily incorporated. The performance of any external doors should have the same acoustic performance as that required for general glazing.

8.3 Alternative ventilation

Where facades have been identified for acoustic treatment in Section 8.2, windows are to be kept closed to meet the internal noise goals. It is noted that windows are not required to be sealed shut/fixed and can be operable.

It is recommended that a mechanical engineer is consulted to ensure the ventilation requirements of the Building Code of Australia and Australian Standard 1668 *"The use of ventilation and air-conditioning in buildings"* are achieved. The internal noise goals are to be met with mechanical ventilation systems not operating.

Where alternative forms of ventilation are to be provided, it must be ensured that the solution does not provide a new noise leakage path into the dwelling and does not create a noise nuisance to neighbouring premises.

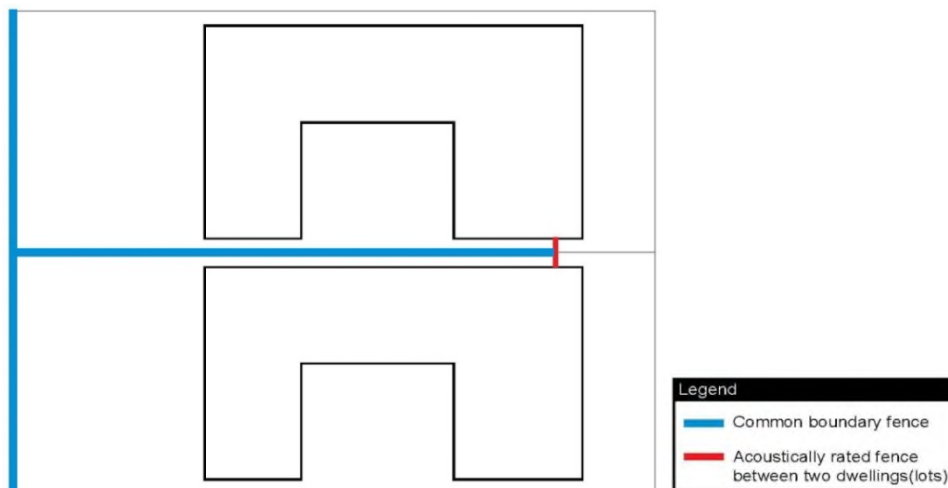
8.4 Scope of acoustic recommendations

The recommended mitigation measures for road traffic noise cannot consider the specific design of each dwelling as those details are not available at this stage of development. The recommendations have been developed for the approvals process and cost planning, and to provide the indicative measures required for each dwelling. Whilst it is the intent for the recommendations and this report to minimise the need for detailed acoustic assessment of each dwelling, it is recommended that an individual acoustic review of the 'Construction' drawings be carried out for each noise affected lot to ensure correct interpretation and application of the recommendations.

8.5 Boundary fences

Acoustically rated fences on the boundary of the lots should be considered if appropriate. Acoustically rated boundary fences are also recommended 'between' dwellings, as illustrated in Figure 7.

Figure 7: Fence locations



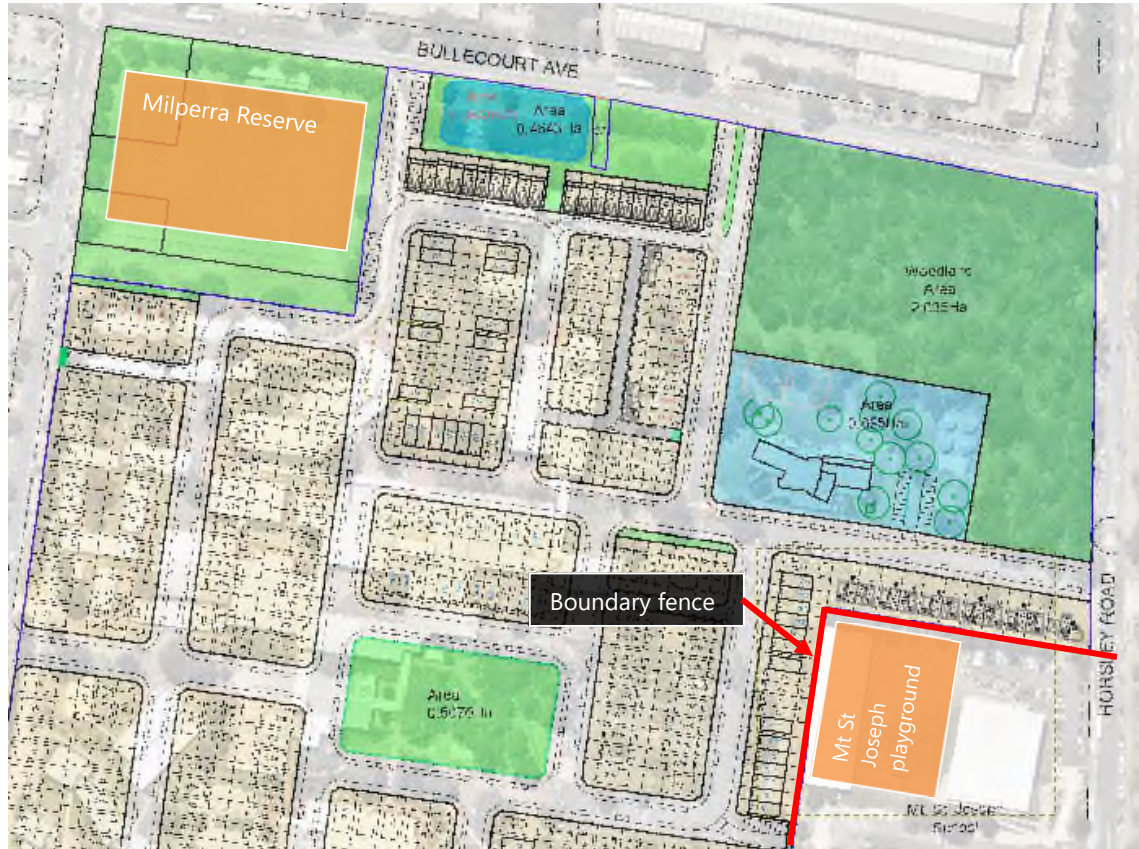
The provision of solid boundary fences between residential lots can be beneficial to the ground floor of properties that are directly exposed to the roads. Acoustically rated fences are not specifically required along common boundaries between individual dwellings, unless specified above.

An acoustically rated fence can be constructed of common building materials but needs to be from a durable material with sufficient mass (min. 10kg/m²) to prevent direct noise transmission e.g., masonry, fibrous cement, lapped and capped timber fence, polycarbonate, or any combination of such materials, provided they withstand the weather elements. A natural barrier of trees or shrubs is not an effective noise screen. The boundary fence should be continuous with no gaps between panels or underneath panels (other than that required for gates). It is recommended that rebates be incorporated into any gates.

8.5.1 Playground and sports ground

The provision of solid boundary fences or earth mounds (berm) between residential lots and playground and sports ground are recommended as specified in Section 7.4 to minimise the noise impact from the sports ground's playground and sports ground. Figure 8 below shows the extent of the acoustic boundary fences.

Figure 8: Extent of acoustic boundary fences at residential lots adjacent to playground and sports ground



9 Conclusion

Renzo Tonin & Associates has completed an environmental noise assessment for the DA of the Milperra WSU Masterplan. The report has quantified the noise impact from existing noise sources around the project site. The report has been prepared in accordance with the relevant objectives as detailed in Section 1.

The results of the noise modelling indicate that:

- Exceedances of the ISEPP criteria are predicted at the residential lots along the southern portion of the Masterplan.
- For facades that are exposed to noise levels above the ISEPP, acoustic constructions for treatment are required to achieve the internal noise level criteria.
- As the industrial noise levels are much lower with respect to road traffic noise levels, façade systems detailed in Section 8 above are sufficient to address road noise and industrial noise intrusion.
- Where the internal criteria can only be achieved with windows closed, then mechanical ventilation or air conditioning that meets the requirements of the Building Code of Australia must also be provided to ensure fresh airflow inside the dwelling. It is important to ensure that mechanical ventilation does not provide a new noise leakage path into the dwelling and does not create a noise nuisance to neighbouring residential premises. It is noted that windows are not required to be sealed shut/fixed and can be operable.
- There is no exceedance predicted at the boundary of the residential lots with respect to operations of the childcare centre (especially noise associated with childcare outdoor play area); and therefore, it is deemed to comply with no additional acoustic mitigation measure.
- Exceedances of the NGLG criteria are predicted at the residential lots along the boundaries between the lots and Mount St Joseph School playground at the eastern part of the masterplan and between the lots and Milperra Reserve sports ground at the north-western part of the masterplan. Noise mitigation measures are specified in Sections 7.4 and 8.5.1.

APPENDIX A Glossary of terminology

The following is a brief description of the technical terms used to describe noise to assist in understanding the technical issues presented.

Adverse weather	Weather effects that enhance noise (that is, wind and temperature inversions) that occur at a site for a significant period of time (that is, wind occurring more than 30% of the time in any assessment period in any season and/or temperature inversions occurring more than 30% of the nights in winter).
Ambient noise	The all-encompassing noise associated within a given environment at a given time, usually composed of sound from all sources near and far.
Assessment period	The period in a day over which assessments are made.
Assessment point	A point at which noise measurements are taken or estimated. A point at which noise measurements are taken or estimated.
Background noise	Background noise is the term used to describe the underlying level of noise present in the ambient noise, measured in the absence of the noise under investigation, when extraneous noise is removed. It is described as the average of the minimum noise levels measured on a sound level meter and is measured statistically as the A-weighted noise level exceeded for ninety percent of a sample period. This is represented as the L90 noise level (see below).
Decibel [dB]	The units that sound is measured in. The following are examples of the decibel readings of everyday sounds: 0dB The faintest sound we can hear 30dB A quiet library or in a quiet location in the country 45dB Typical office space. Ambience in the city at night 60dB CBD mall at lunch time 70dB The sound of a car passing on the street 80dB Loud music played at home 90dB The sound of a truck passing on the street 100dB The sound of a rock band 115dB Limit of sound permitted in industry 120dB Deafening
dB(A)	A-weighted decibels. The A-weighting noise filter simulates the response of the human ear at relatively low levels, where the ear is not as effective in hearing low frequency sounds as it is in hearing high frequency sounds. That is, low frequency sounds of the same dB level are not heard as loud as high frequency sounds. The sound level meter replicates the human response of the ear by using an electronic filter which is called the "A" filter. A sound level measured with this filter switched on is denoted as dB(A). Practically all noise is measured using the A filter.
dB(C)	C-weighted decibels. The C-weighting noise filter simulates the response of the human ear at relatively high levels, where the human ear is nearly equally effective at hearing from mid-low frequency (63Hz) to mid-high frequency (4kHz) but is less effective outside these frequencies.
Frequency	Frequency is synonymous to pitch. Sounds have a pitch which is peculiar to the nature of the sound generator. For example, the sound of a tiny bell has a high pitch, and the sound of a bass drum has a low pitch. Frequency or pitch can be measured on a scale in units of Hertz or Hz.
Impulsive noise	Having a high peak of short duration or a sequence of such peaks. A sequence of impulses in rapid succession is termed repetitive impulsive noise.
Intermittent noise	The level suddenly drops to that of the background noise several times during the period of observation. The time during which the noise remains at levels different from that of the ambient is one second or more.
L _{Max}	The maximum sound pressure level measured over a given period.
L _{Min}	The minimum sound pressure level measured over a given period.

L ₁	The sound pressure level that is exceeded for 1% of the time for which the given sound is measured.
L ₁₀	The sound pressure level that is exceeded for 10% of the time for which the given sound is measured.
L ₉₀	The level of noise exceeded for 90% of the time. The bottom 10% of the sample is the L90 noise level expressed in units of dB(A).
L _{eq}	The "equivalent noise level" is the summation of noise events and integrated over a selected period of time.
Reflection	Sound wave changed in direction of propagation due to a solid object obscuring its path.
SEL	Sound Exposure Level (SEL) is the constant sound level which, if maintained for a period of 1 second would have the same acoustic energy as the measured noise event. SEL noise measurements are useful as they can be converted to obtain L _{eq} sound levels over any period of time and can be used for predicting noise at various locations.
Sound	A fluctuation of air pressure which is propagated as a wave through air.
Sound absorption	The ability of a material to absorb sound energy through its conversion into thermal energy.
Sound level meter	An instrument consisting of a microphone, amplifier and indicating device, having a declared performance and designed to measure sound pressure levels.
Sound pressure level	The level of noise, usually expressed in decibels, as measured by a standard sound level meter with a microphone.
Sound power level	Ten times the logarithm to the base 10 of the ratio of the sound power of the source to the reference sound power.
Tonal noise	Containing a prominent frequency and characterised by a definite pitch.

APPENDIX B Long-term noise monitoring methodology

B.1 Noise monitoring equipment

A long-term unattended noise monitor consists of a sound level meter housed inside a weather resistant enclosure. Noise levels are monitored continuously with statistical data stored in memory for every 15-minute period.

Long term noise monitoring was conducted using the following instrumentation:

Description	Type	Octave band data	Logger location
RTA06 & RTA07 (NTi Audio XL2, with low noise microphone)	Type 1	1/1	L1, L2, L3, L4, and L5

Note: All meters comply with AS IEC 61672.1 2004 "Electroacoustics - Sound Level Meters" and designated either Type 1 or Type 2 as per table and are suitable for field use.

The equipment was calibrated prior and after the measurement period using a Brüel & Kjær Type 4230 calibrator. No significant drift in calibration was observed.

B.2 Meteorology during monitoring

Measurements affected by extraneous noise, wind (greater than 5m/s) or rain were excluded from the recorded data in accordance with the NSW INP. Determination of extraneous meteorological conditions was based on data provided by the Bureau of Meteorology (BOM), for a location considered representative of the noise monitoring location(s). However, the data was adjusted to account for the height difference between the BOM weather station, where wind speed and direction is recorded at a height of 10m above ground level, and the microphone location, which is typically 1.5m above ground level (and less than 3m). The correction factor applied to the data is based on Table C.1 of ISO 4354:2009 '*Wind actions on structures*'.

B.3 Noise vs time graphs

Noise almost always varies with time. Noise environments can be described using various descriptors to show how a noise ranges about a level. In this report, noise values measured or referred to include the L_{10} , L_{90} , and L_{eq} levels. The statistical descriptors L_{10} and L_{90} measure the noise level exceeded for 10% and 90% of the sample measurement time. The L_{eq} level is the equivalent continuous noise level, or the level averaged on an equal energy basis. Measurement sample periods are usually ten to fifteen minutes. The Noise -vs- Time graphs representing measured noise levels, as presented in this report, illustrate these concepts for the broadband dB(A) results.

APPENDIX C Long-term noise monitoring results

WSU Oval South, Milperra

Background & Ambient Noise Monitoring Results - NSW 'Noise Policy for Industry', 2017

Date	L _{A90} Background Noise Levels ⁴			L _{Aeq} Ambient Noise Levels		
	Day ¹	Evening ²	Night ³	Day ¹	Evening ²	Night ³
Wednesday-27-November-2019	-	50	44	-	57	55
Thursday-28-November-2019	53	51	43	58	56	54
Friday-29-November-2019	53	51	43	58	56	53
Saturday-30-November-2019	52	48	40	58	53	51
Sunday-01-December-2019	50	49	41	56	54	55
Monday-02-December-2019	54	51	43	59	56	55
Tuesday-03-December-2019	52	50	42	59	55	55
Wednesday-04-December-2019	52	-	-	57	-	-
Representative Weekday⁵	53	51	43	58	56	54
Representative Weekend⁵	51	49	41	57	54	53
Representative Week⁵	52	50	43	58	56	54

Notes:

- Day is 8:00am to 6:00pm on Sunday and 7:00am to 6:00pm at other times
- Evening is 6:00pm to 10:00pm
- Night is the remaining periods
- Assessment Background Level (ABL) for individual days
- Rating Background Level (RBL) for LA90 and logarithmic average for LAeq
- Leq is calculated in the free field. 2.5dB is subtracted from results if logger is placed at façade
- Number in brackets represents the measured (actual) RBL value, which is below the minimum policy value of 30 dB(A) during the evening or night period or 35 dB(A) during the day period.

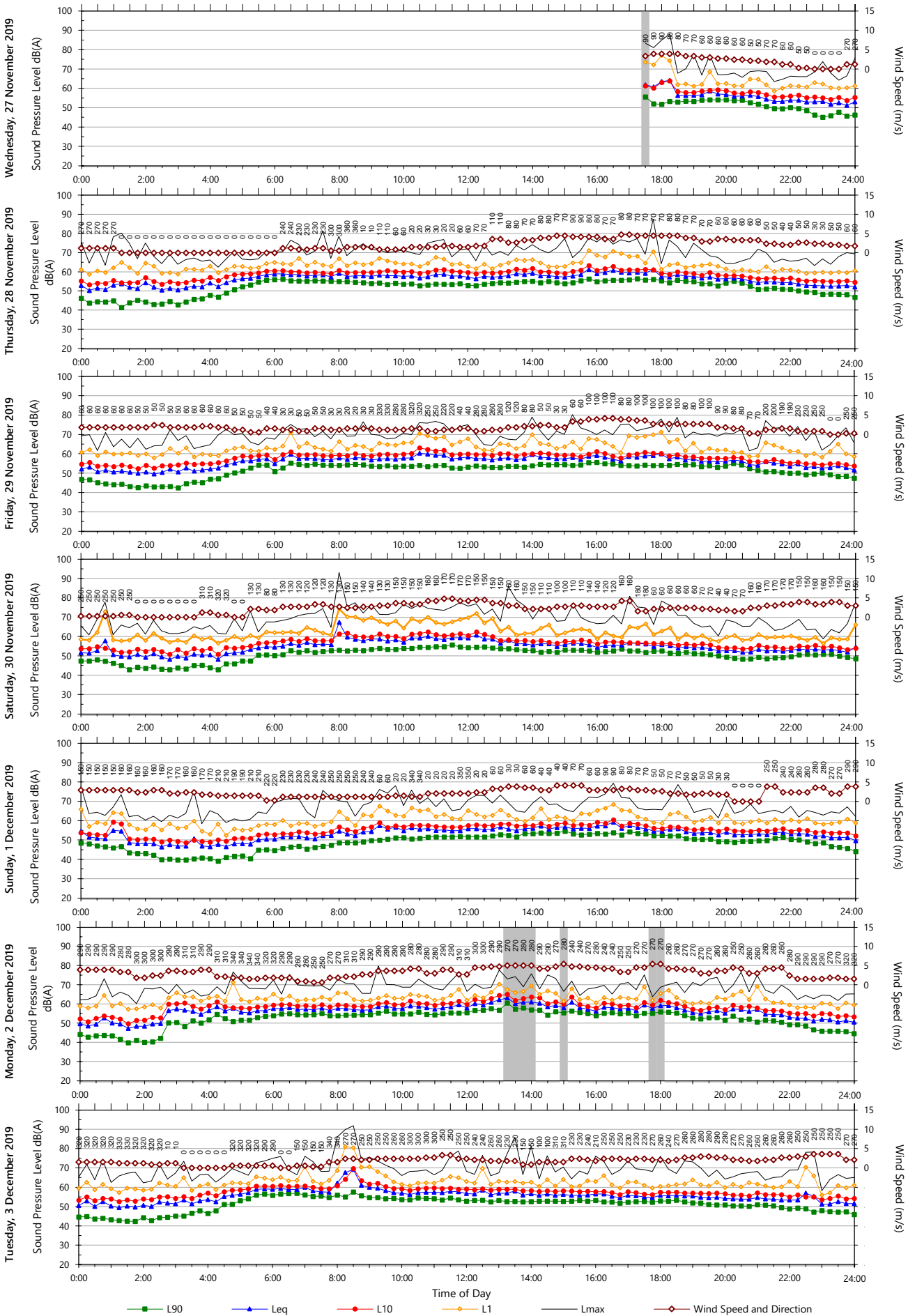
WSU Oval South, Milperra

Road / Rail Noise Monitoring Results (at one metre from façade)

Date	L _{Aeq} Noise Levels		L _{Aeq 1hr} Noise Levels			
	Day ¹	Night ²	Day - Up ⁴	Day - Low ⁵	Night - Up ⁴	Night - Low ⁵
Wednesday-27-November-2019	61	57	64	57	61	54
Thursday-28-November-2019	61	57	62	59	59	53
Friday-29-November-2019	60	55	61	58	57	52
Saturday-30-November-2019	60	54	62	55	56	50
Sunday-01-December-2019	58	57	59	56	60	53
Monday-02-December-2019	60	57	62	59	61	53
Tuesday-03-December-2019	61	57	61	57	61	53
Wednesday-04-December-2019	59	-	60	58	-	-
Representative Weekday³	61	57	61	58	61	53
Representative Weekend³	59	55	60	56	58	51
Representative Week³	60	57	61	58	60	53

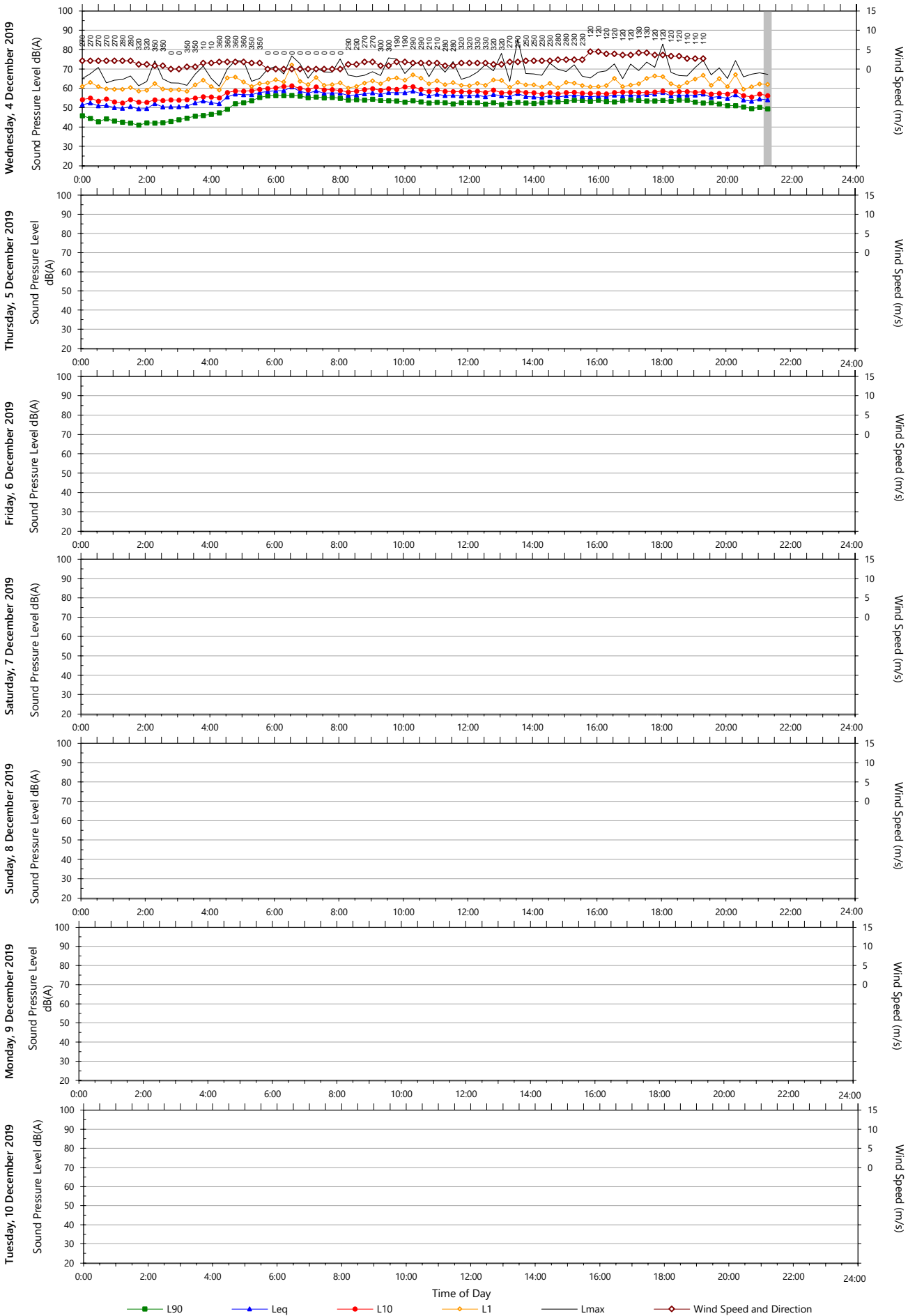
Notes:

- Day is 7:00am to 10:00pm
- Night is 10:00pm to 7:00am
- Median of daily L_{Aeq}
- Upper 10th percentile L_{Aeq 1hr}
- Lower 10th percentile L_{Aeq 1hr}
- Values are calculated at the facade. 2.5dB is added to results if logger is placed in the free field



Unattended Monitoring Results

Location: WSU Oval South, Milperra



Data File: 2019-11-27_SLM_000_123_Rpt_Report.txt

Template: QTE-26 Logger Graphs Program (r31)

Horsley Road, Milperra

Background & Ambient Noise Monitoring Results - NSW 'Noise Policy for Industry', 2017

Date	L _{A90} Background Noise Levels ⁴			L _{Aeq} Ambient Noise Levels		
	Day ¹	Evening ²	Night ³	Day ¹	Evening ²	Night ³
Wednesday-27-November-2019	-	45	42	-	62	58
Thursday-28-November-2019	49	46	41	62	61	57
Friday-29-November-2019	49	47	42	62	60	56
Saturday-30-November-2019	48	41	37	63	59	55
Sunday-01-December-2019	44	40	38	60	58	57
Monday-02-December-2019	51	47	-	62	60	-
Representative Weekday⁵	49	46	42	62	61	57
Representative Weekend⁵	46	41	37	61	59	56
Representative Week⁵	49	45	41	62	60	57

Notes:

- Day is 8:00am to 6:00pm on Sunday and 7:00am to 6:00pm at other times
- Evening is 6:00pm to 10:00pm
- Night is the remaining periods
- Assessment Background Level (ABL) for individual days
- Rating Background Level (RBL) for LA90 and logarithmic average for LAeq
- Leq is calculated in the free field. 2.5dB is subtracted from results if logger is placed at façade
- Number in brackets represents the measured (actual) RBL value, which is below the minimum policy value of 30 dB(A) during the evening or night period or 35 dB(A) during the day period.

Horsley Road, Milperra

Road / Rail Noise Monitoring Results (at one metre from façade)

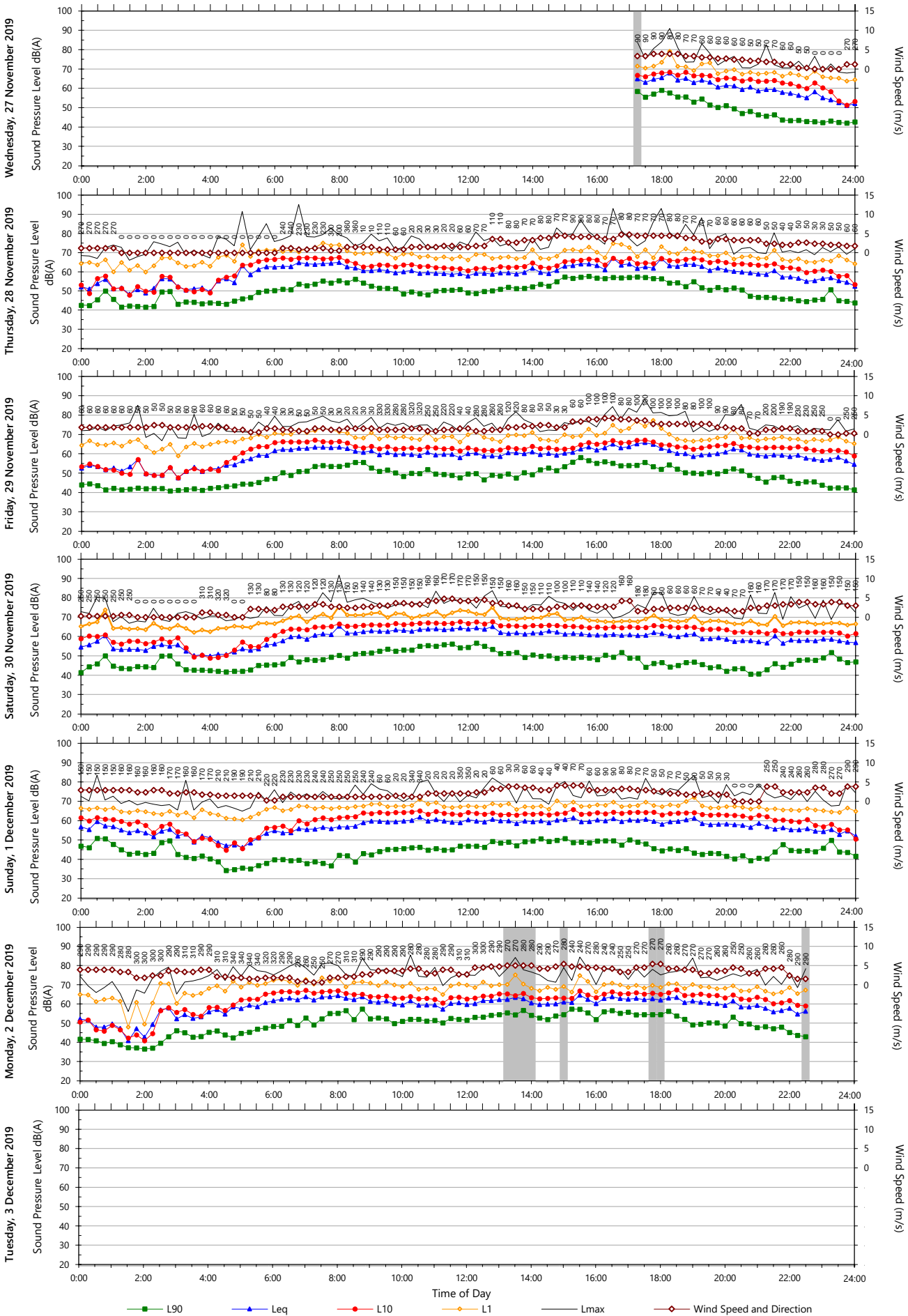
Date	L _{Aeq} Noise Levels		L _{Aeq 1hr} Noise Levels			
	Day ¹	Night ²	Day - Up ⁴	Day - Low ⁵	Night - Up ⁴	Night - Low ⁵
Wednesday-27-November-2019	65	61	68	62	64	53
Thursday-28-November-2019	64	59	67	61	63	54
Friday-29-November-2019	64	58	66	62	61	54
Saturday-30-November-2019	64	58	66	61	60	53
Sunday-01-December-2019	62	60	63	59	63	51
Monday-02-December-2019	64	57	65	62	57	57
Representative Weekday³	64	59	66	62	62	54
Representative Weekend³	63	59	65	60	62	52
Representative Week³	64	59	66	62	62	54

Notes:

- Day is 7:00am to 10:00pm
- Night is 10:00pm to 7:00am
- Median of daily L_{Aeq}
- Upper 10th percentile L_{Aeq 1hr}
- Lower 10th percentile L_{Aeq 1hr}
- Values are calculated at the facade. 2.5dB is added to results if logger is placed in the free field

Unattended Monitoring Results

Location: Horsley Road, Milperra



Data File: 2019-11-27_SLM_000_123_Rpt_Report.txt

Template: QTE-26 Logger Graphs Program (r31)

Bullecourt Avenue, Milperra

Background & Ambient Noise Monitoring Results - NSW 'Noise Policy for Industry', 2017

Date	L _{A90} Background Noise Levels ⁴			L _{Aeq} Ambient Noise Levels		
	Day ¹	Evening ²	Night ³	Day ¹	Evening ²	Night ³
Wednesday-27-November-2019	-	47	40	-	66	63
Thursday-28-November-2019	53	48	39	68	67	63
Friday-29-November-2019	54	45	38	68	66	60
Saturday-30-November-2019	48	41	35	66	63	59
Sunday-01-December-2019	43	40	38	65	63	62
Monday-02-December-2019	54	50	40	68	65	63
Tuesday-03-December-2019	52	47	39	68	65	63
Wednesday-04-December-2019	-	-	-	-	-	-
Representative Weekday⁵	53	47	39	68	66	62
Representative Weekend⁵	46	40	36	66	63	61
Representative Week⁵	53	47	39	67	65	62

Notes:

- Day is 8:00am to 6:00pm on Sunday and 7:00am to 6:00pm at other times
- Evening is 6:00pm to 10:00pm
- Night is the remaining periods
- Assessment Background Level (ABL) for individual days
- Rating Background Level (RBL) for LA90 and logarithmic average for LAeq
- Leq is calculated in the free field. 2.5dB is subtracted from results if logger is placed at façade
- Number in brackets represents the measured (actual) RBL value, which is below the minimum policy value of 30 dB(A) during the evening or night period or 35 dB(A) during the day period.

Bullecourt Avenue, Milperra

Road / Rail Noise Monitoring Results (at one metre from façade)

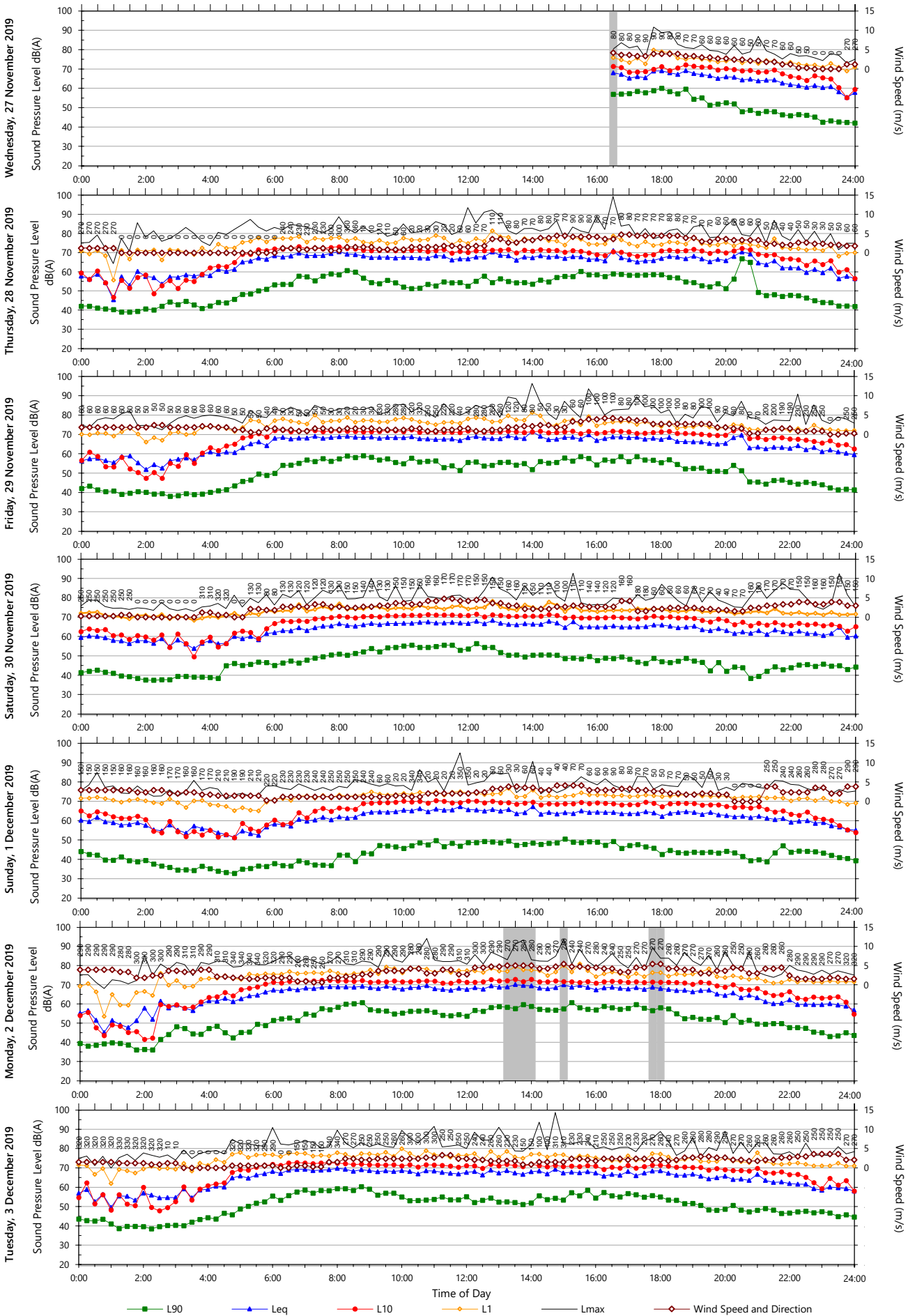
Date	L _{Aeq} Noise Levels		L _{Aeq 1hr} Noise Levels			
	Day ¹	Night ²	Day - Up ⁴	Day - Low ⁵	Night - Up ⁴	Night - Low ⁵
Wednesday-27-November-2019	69	66	70	67	70	59
Thursday-28-November-2019	70	65	71	69	69	59
Friday-29-November-2019	70	63	71	69	65	60
Saturday-30-November-2019	68	61	70	65	64	58
Sunday-01-December-2019	67	65	68	64	69	56
Monday-02-December-2019	70	65	71	67	70	58
Tuesday-03-December-2019	70	66	71	67	70	59
Wednesday-04-December-2019	71	-	72	71	-	-
Representative Weekday³	70	65	71	68	70	59
Representative Weekend³	67	63	69	65	66	57
Representative Week³	70	65	71	67	69	59

Notes:

- Day is 7:00am to 10:00pm
- Night is 10:00pm to 7:00am
- Median of daily L_{Aeq}
- Upper 10th percentile L_{Aeq 1hr}
- Lower 10th percentile L_{Aeq 1hr}
- Values are calculated at the facade. 2.5dB is added to results if logger is placed in the free field

Unattended Monitoring Results

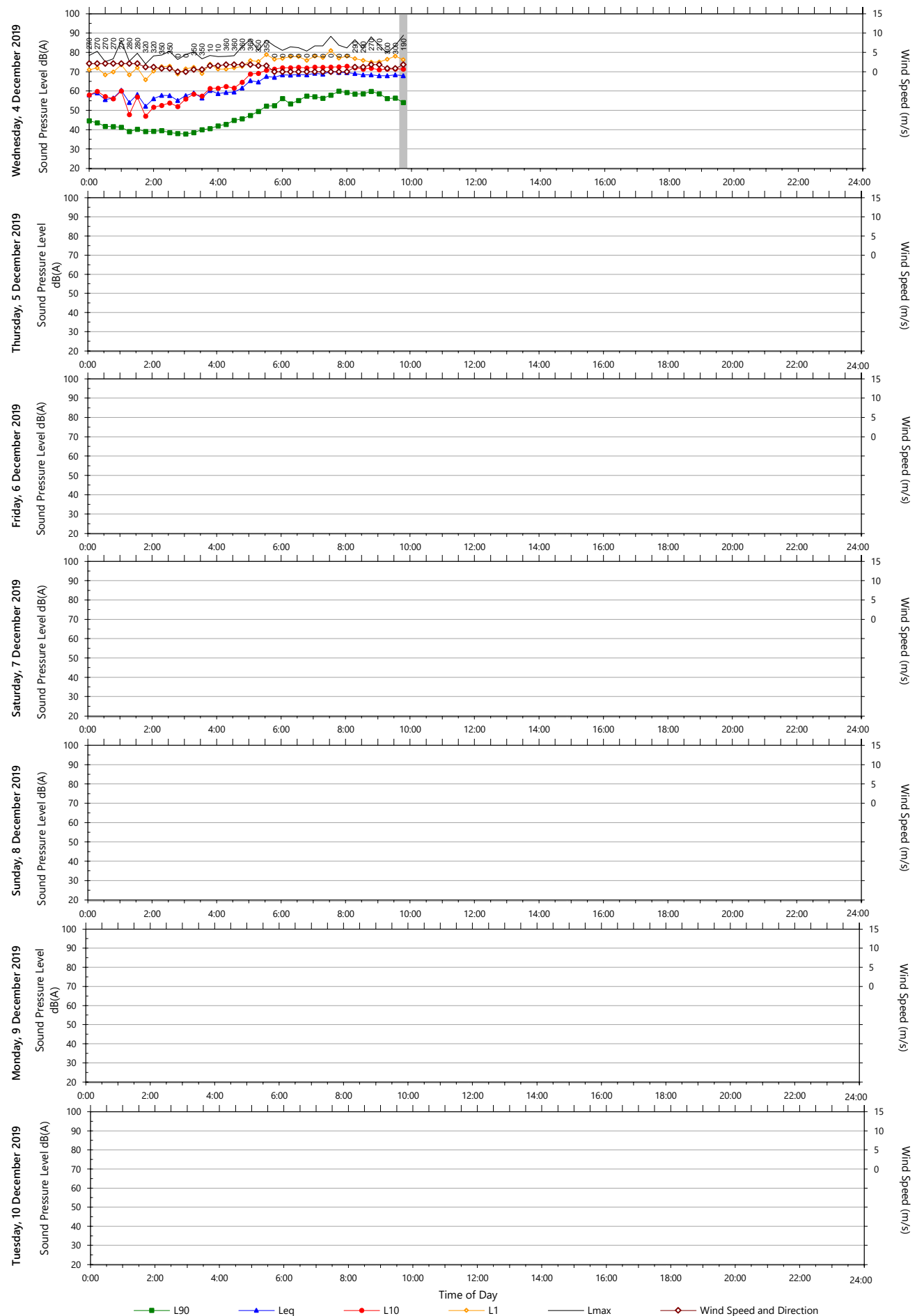
Location: Bullecourt Avenue, Milperra



Data File: 2019-11-27_SLM_000_123_Rpt_Report.txt

Template: QTE-26 Logger Graphs Program (r31)

Location: Bullecourt Avenue, Milperra



Data File: 2019-11-27_SLM_000_123_Rpt_Report.txt

Template: QTE-26 Logger Graphs Program (r31)

Mount St Joseph Sports Field, Milperra

Background & Ambient Noise Monitoring Results - NSW 'Noise Policy for Industry', 2017

Date	L _{A90} Background Noise Levels ⁴			L _{Aeq} Ambient Noise Levels		
	Day ¹	Evening ²	Night ³	Day ¹	Evening ²	Night ³
Friday-06-December-2019	-	-	39	-	-	47
Saturday-07-December-2019	43	45	38	54	51	47
Sunday-08-December-2019	44	43	39	52	51	47
Monday-09-December-2019	47	43	40	55	50	49
Tuesday-10-December-2019	-	47	40	-	53	48
Wednesday-11-December-2019	47	44	38	56	53	48
Thursday-12-December-2019	-	-	-	-	-	-
Representative Weekday⁵	47	44	40	55	52	48
Representative Weekend⁵	43	44	39	53	51	47
Representative Week⁵	45	44	39	54	52	48

Notes:

- Day is 8:00am to 6:00pm on Sunday and 7:00am to 6:00pm at other times
- Evening is 6:00pm to 10:00pm
- Night is the remaining periods
- Assessment Background Level (ABL) for individual days
- Rating Background Level (RBL) for LA90 and logarithmic average for LAeq
- Leq is calculated in the free field. 2.5dB is subtracted from results if logger is placed at façade
- Number in brackets represents the measured (actual) RBL value, which is below the minimum policy value of 30 dB(A) during the evening or night period or 35 dB(A) during the day period.

Mount St Joseph Sports Field, Milperra

Road / Rail Noise Monitoring Results (at one metre from façade)

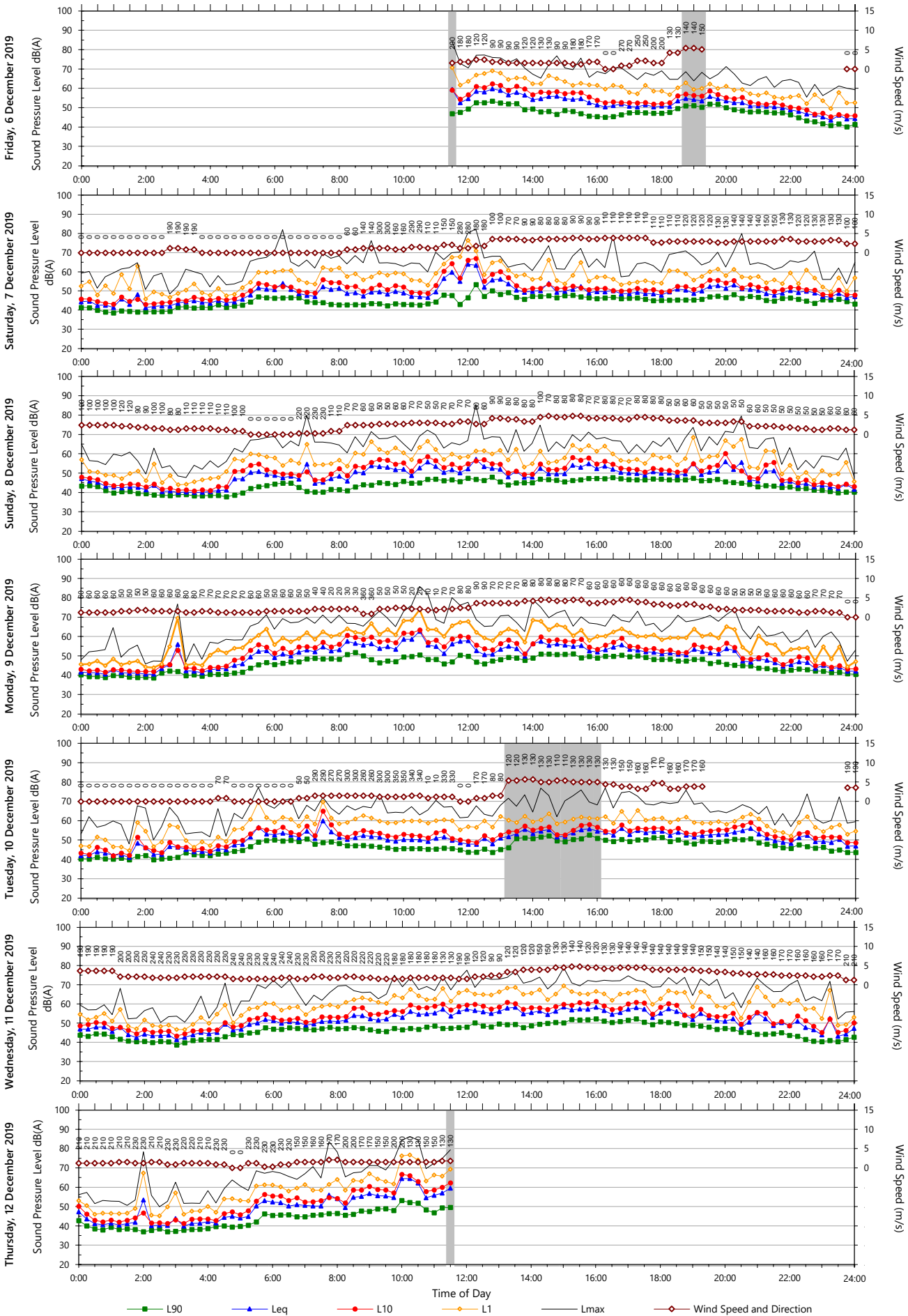
Date	L _{Aeq} Noise Levels		L _{Aeq 1hr} Noise Levels			
	Day ¹	Night ²	Day - Up ⁴	Day - Low ⁵	Night - Up ⁴	Night - Low ⁵
Friday-06-December-2019	57	49	59	53	53	45
Saturday-07-December-2019	56	49	59	51	53	44
Sunday-08-December-2019	54	50	56	51	54	44
Monday-09-December-2019	57	51	59	53	56	45
Tuesday-10-December-2019	55	51	57	52	53	46
Wednesday-11-December-2019	58	50	59	54	53	44
Thursday-12-December-2019	61	-	63	56	-	-
Representative Weekday³	57	50	59	53	53	45
Representative Weekend³	55	50	57	51	53	44
Representative Week³	57	50	59	53	53	45

Notes:

- Day is 7:00am to 10:00pm
- Night is 10:00pm to 7:00am
- Median of daily L_{Aeq}
- Upper 10th percentile L_{Aeq 1hr}
- Lower 10th percentile L_{Aeq 1hr}
- Values are calculated at the facade. 2.5dB is added to results if logger is placed in the free field

Unattended Monitoring Results

Location: Mount St Joseph Sports Field, Milperra



Data File: 2019-12-06_SLM_000_123_Rpt_Report.txt

Template: QTE-26 Logger Graphs Program (r31)

Ashford Avenue, Milperra

Background & Ambient Noise Monitoring Results - NSW 'Noise Policy for Industry', 2017

Date	L _{A90} Background Noise Levels ⁴			L _{Aeq} Ambient Noise Levels		
	Day ¹	Evening ²	Night ³	Day ¹	Evening ²	Night ³
Wednesday-27-November-2019	-	52	41	-	57	54
Thursday-28-November-2019	53	49	45	57	55	54
Friday-29-November-2019	52	49	44	56	55	55
Saturday-30-November-2019	54	50	40	58	56	52
Sunday-01-December-2019	52	50	43	56	55	51
Monday-02-December-2019	-	48	39	-	54	53
Tuesday-03-December-2019	52	53	46	56	63	56
Wednesday-04-December-2019	-	-	-	-	-	-
Representative Weekday⁵	52	49	44	57	58	55
Representative Weekend⁵	53	50	41	57	56	52
Representative Week⁵	52	50	43	57	57	54

Notes:

- Day is 8:00am to 6:00pm on Sunday and 7:00am to 6:00pm at other times
- Evening is 6:00pm to 10:00pm
- Night is the remaining periods
- Assessment Background Level (ABL) for individual days
- Rating Background Level (RBL) for LA90 and logarithmic average for LAeq
- Leq is calculated in the free field. 2.5dB is subtracted from results if logger is placed at façade
- Number in brackets represents the measured (actual) RBL value, which is below the minimum policy value of 30 dB(A) during the evening or night period or 35 dB(A) during the day period.

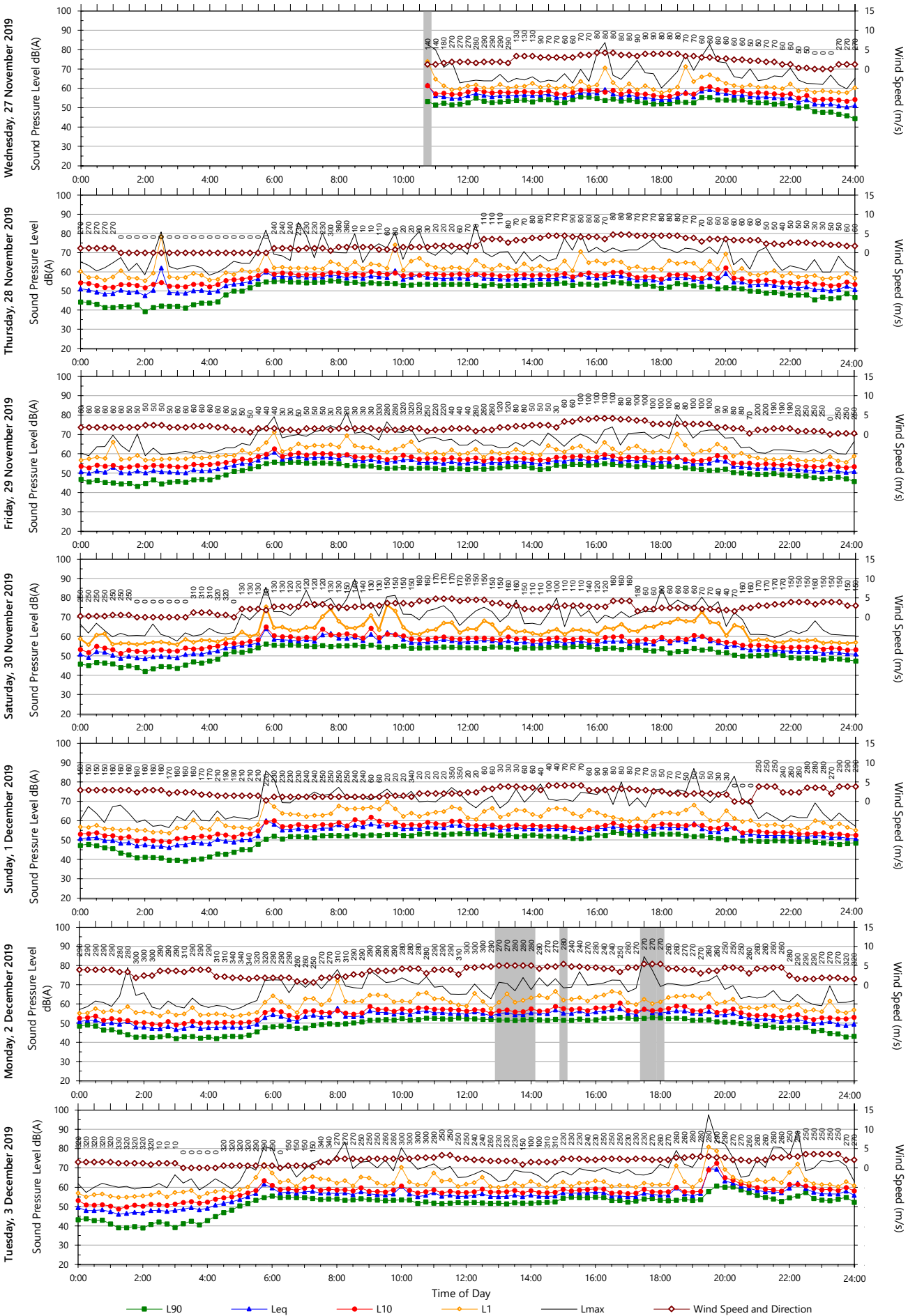
Ashford Avenue, Milperra

Road / Rail Noise Monitoring Results (at one metre from façade)

Date	L _{Aeq} Noise Levels		L _{Aeq 1hr} Noise Levels			
	Day ¹	Night ²	Day - Up ⁴	Day - Low ⁵	Night - Up ⁴	Night - Low ⁵
Wednesday-27-November-2019	59	57	60	58	60	52
Thursday-28-November-2019	59	57	60	57	60	53
Friday-29-November-2019	59	57	60	56	61	52
Saturday-30-November-2019	60	55	62	58	58	50
Sunday-01-December-2019	59	53	60	57	55	50
Monday-02-December-2019	58	56	58	56	60	50
Tuesday-03-December-2019	62	59	62	58	61	54
Wednesday-04-December-2019	61	-	61	60	-	-
Representative Weekday³	59	57	60	57	60	52
Representative Weekend³	59	54	61	57	56	50
Representative Week³	59	57	60	57	60	52

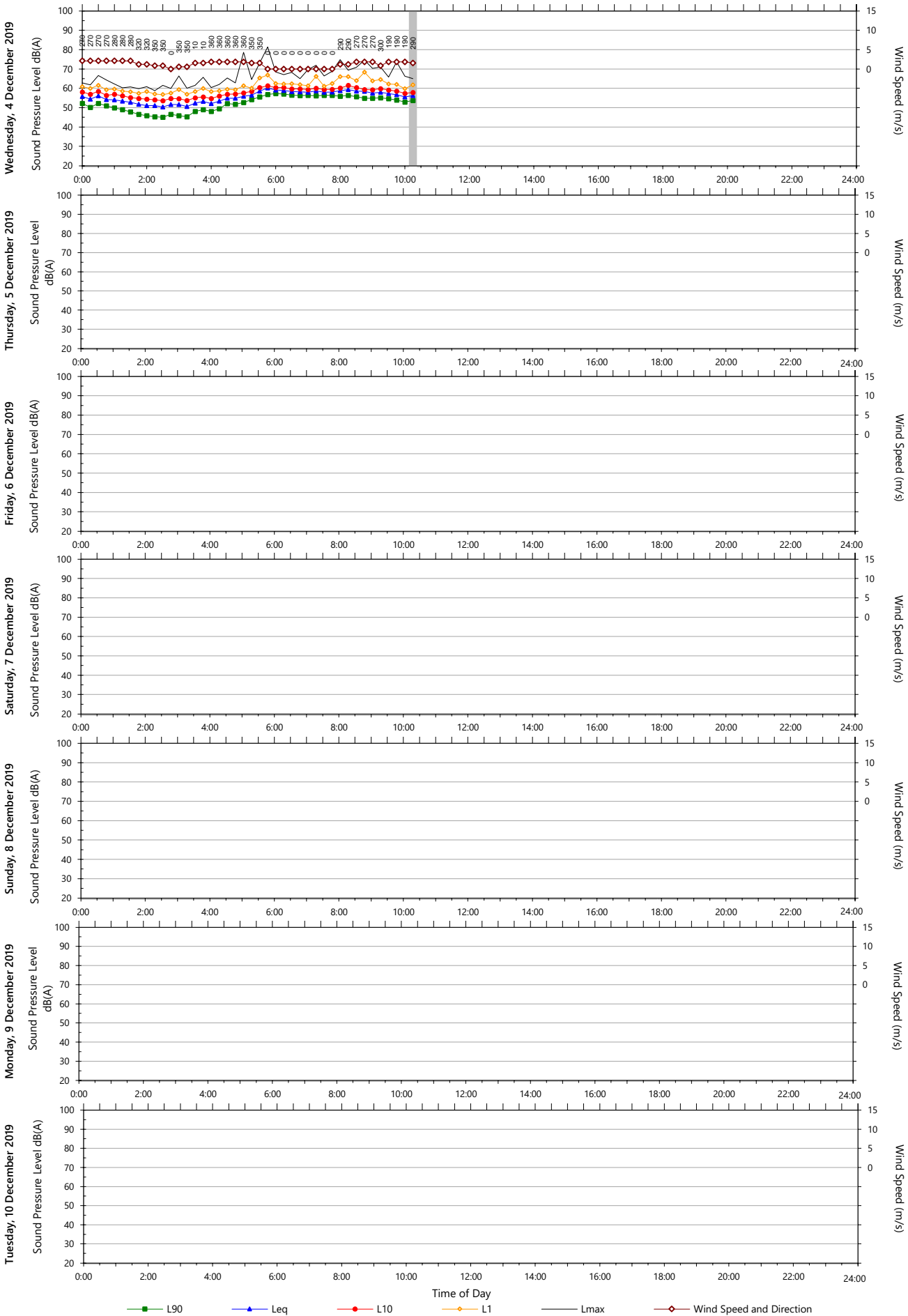
Notes:

- Day is 7:00am to 10:00pm
- Night is 10:00pm to 7:00am
- Median of daily L_{Aeq}
- Upper 10th percentile L_{Aeq 1hr}
- Lower 10th percentile L_{Aeq 1hr}
- Values are calculated at the facade. 2.5dB is added to results if logger is placed in the free field



Unattended Monitoring Results

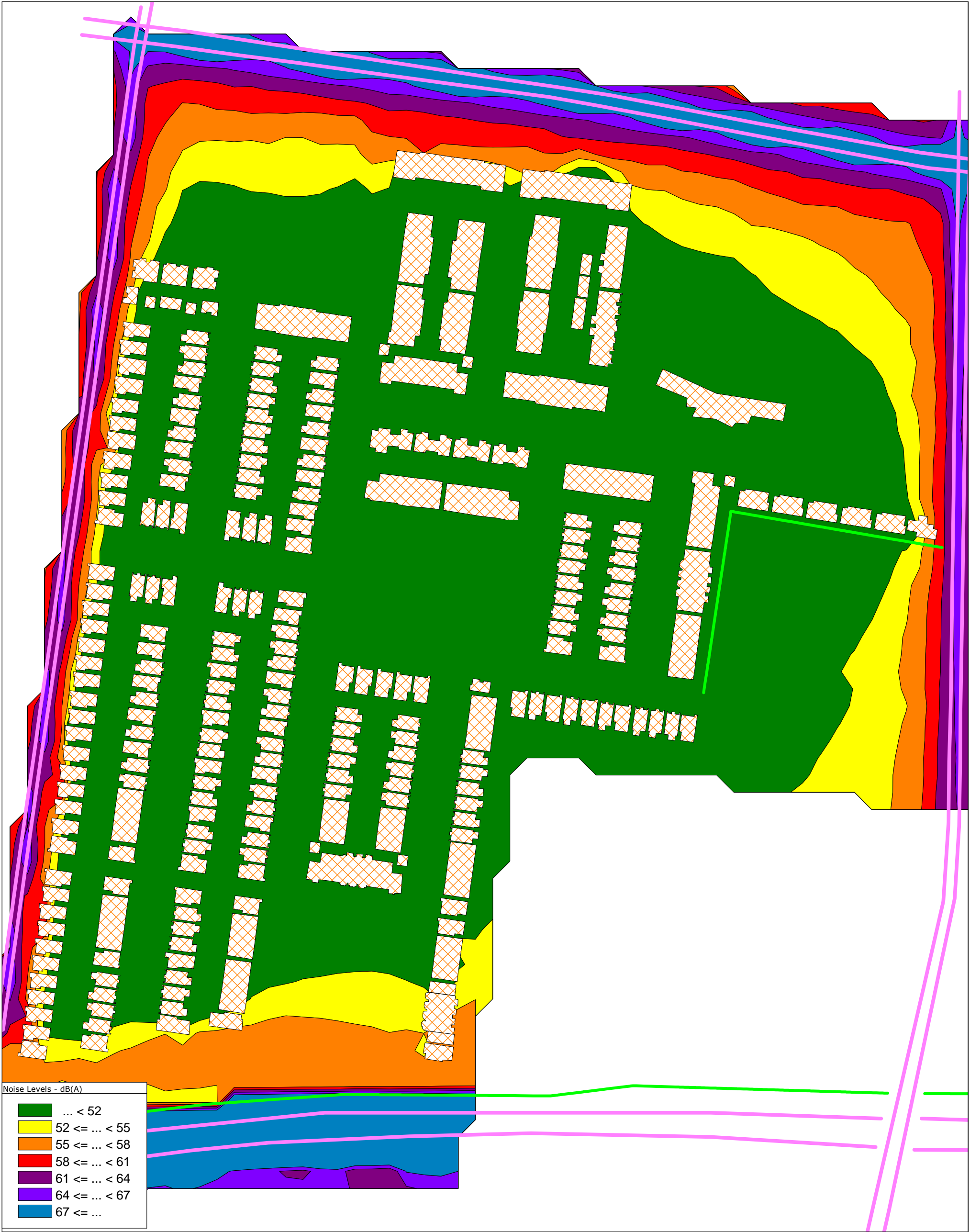
Location: Ashford Avenue, Milperra

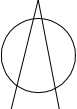




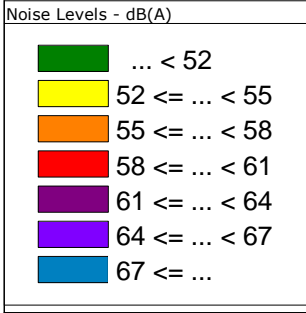
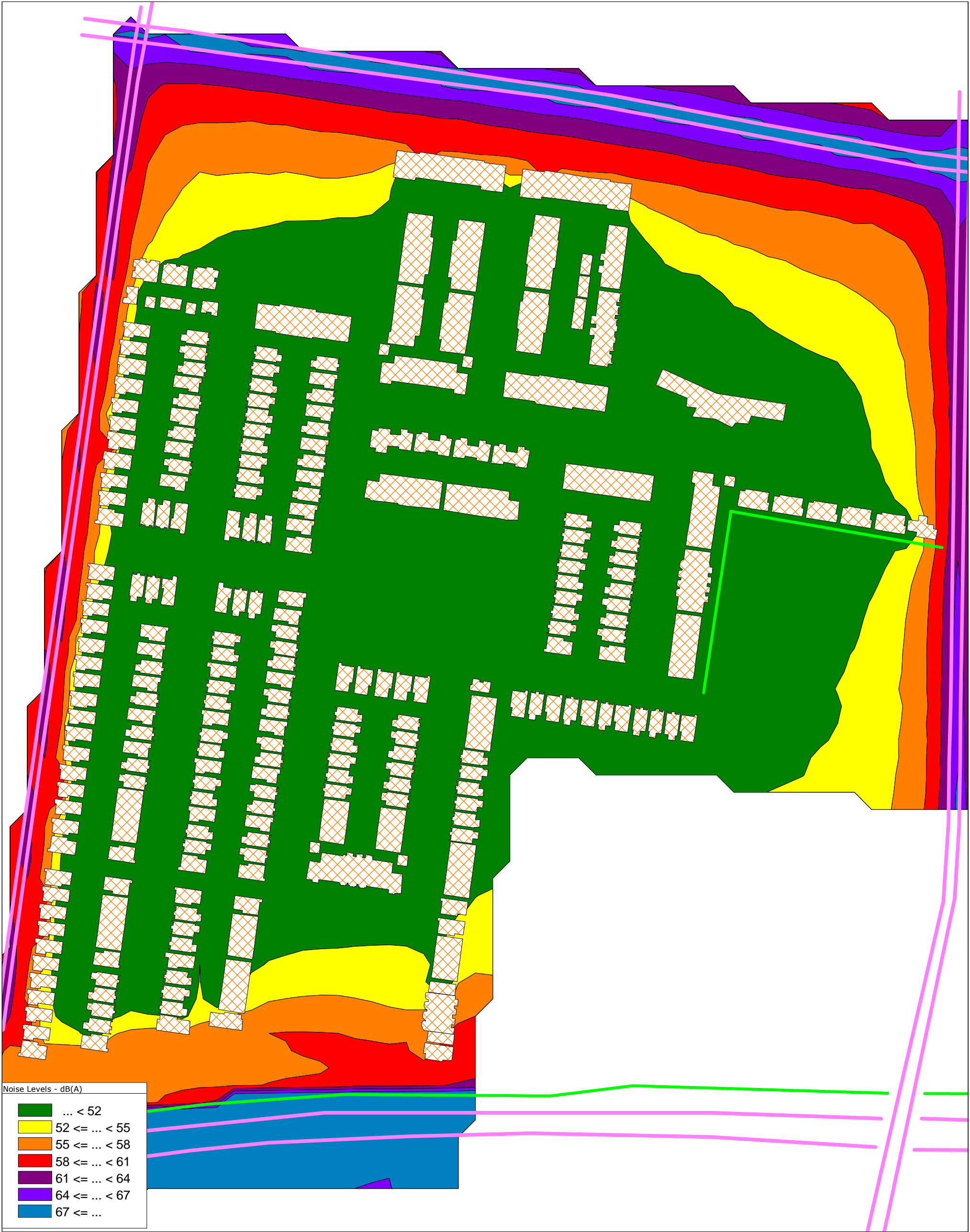
Data File: 2019-11-19_SLM_000_123_Rpt_Report.txt

Template: QTE-26 Logger Graphs Program (r31)

APPENDIX D Noise modelling results - Road Traffic Noise



<div>Legend:</div> <div><div><div></div>Building</div><div><div></div>Existing Road</div><div><div></div>Barrier</div></div> <div></div>	<div>Client:</div> <div></div>	<div>Project:</div> <div>WESTERN SYDNEY UNIVERSITY MILPERRA SUBDIVISION</div>	<div>Description:</div> <div>GROUND FLOOR FACADE TREATMENT</div>	
	<div>Consultant:</div> <div><div>RENZO TONIN & ASSOCIATES <i>inspired to achieve</i></div></div>	<div>Noise levels are approximate due to interpolation of contours and should be used for reference only.</div> <div>For information only and not for construction.</div> <div>This information is protected by copyright.</div>	<div>Project No.:</div> <div>TL127-01</div>	<div>Produced by:</div> <div>MSK</div>
	<div>1/418A Elizabeth Street, SURRY HILLS NSW 2010 P: 02 8218 0500 F: 02 8218 0501</div>		<div>Figure Ref:</div> <div>TL127-02 (r0)</div>	<div>Grid:</div> <div>TL127-02 NC01</div>
		<div>Date:</div> <div>13.09.2022</div>	<div>Scale:</div> <div>1: 2100 A3</div>	



Legend:

- Building
- Existing Road
- Barrier

North Arrow

Client:

mirvac

Consultant:

RENZO TONIN & ASSOCIATES
inspired to achieve

1/418A Elizabeth Street, SURRY HILLS NSW 2010
P: 02 8218 0500 F: 02 8218 0501

Project:

WESTERN SYDNEY UNIVERSITY
MILPERRA SUBDIVISION

Noise levels are approximate due to interpolation of contours and should be used for reference only.

For information only and not for construction.

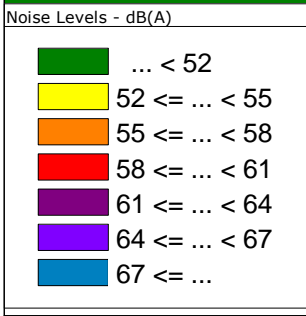
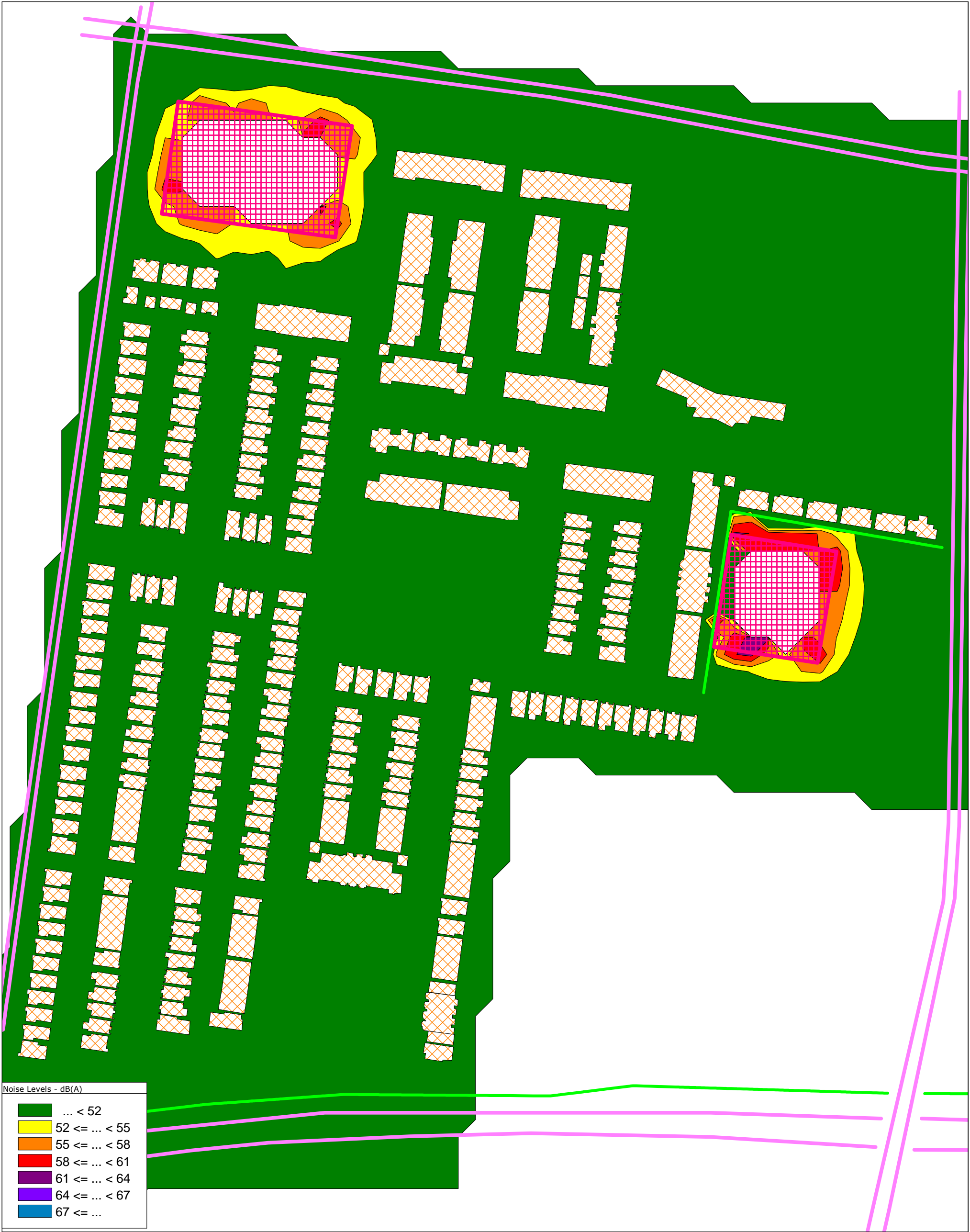
This information is protected by copyright.

Description:

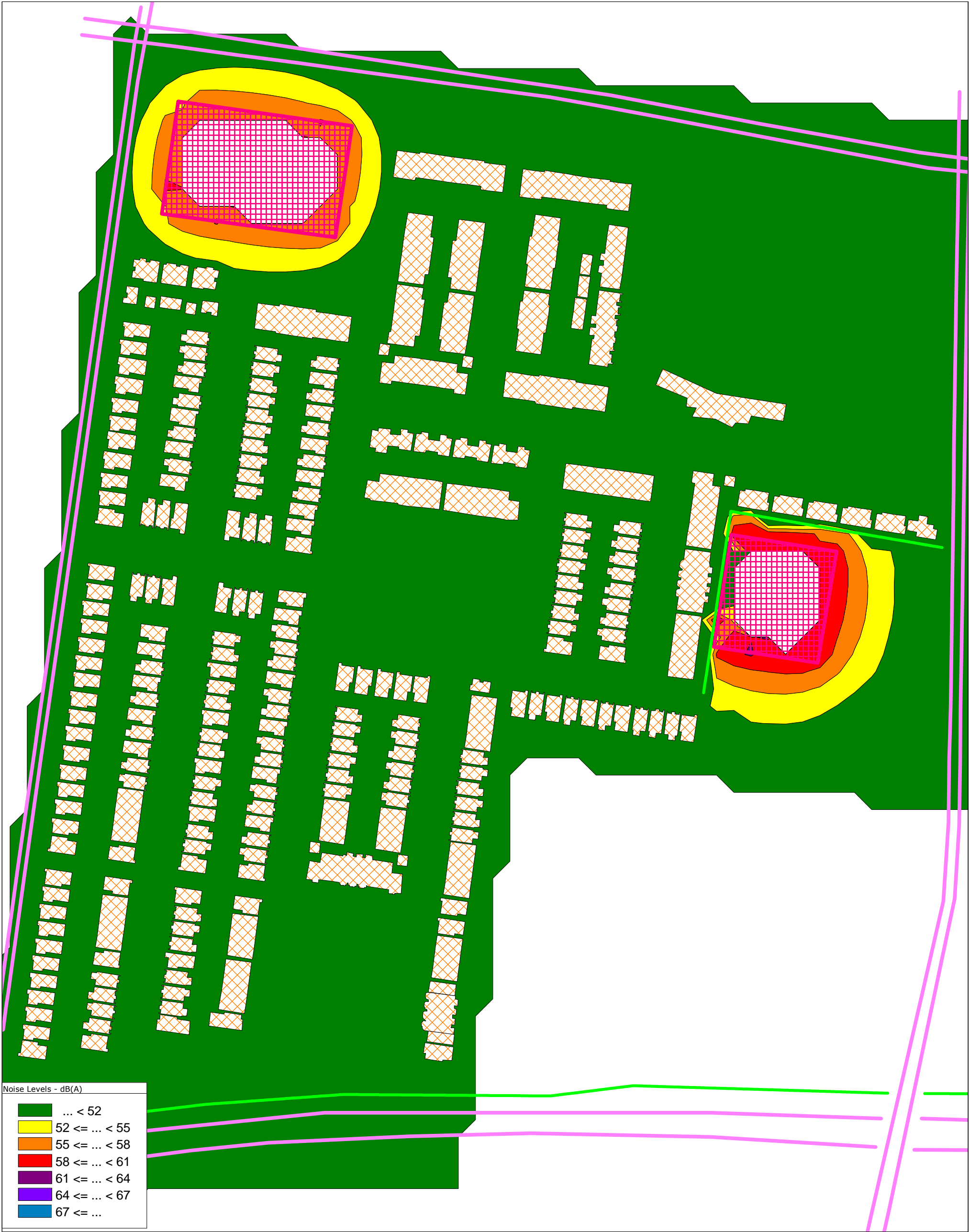
FIRST FLOOR FACADE TREATMENT

Project No.:	TL127-01	Produced by:	MSK
Figure Ref:	TL127-02 (r0)	Grid:	TL127-01NC01
Date:	13.09.2022	Scale:	1: 2100 A3

APPENDIX E **Noise modelling results - Playground and Sports Field Noise**

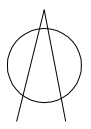




<div>legend:</div> <div><div><div></div>Building</div><div><div></div>Existing Road</div><div><div></div>Barrier</div></div> <div></div>	Client: <div></div>		Project: <div>WESTERN SYDNEY UNIVERSITY MILPERRA SUBDIVISION</div>		Description: <div>GROUND FLOOR FACADE TREATMENT FOR PLAYGROUND NOISE</div>	
	Consultant: <div><div></div><div>RENZO TONIN & ASSOCIATES <i>inspired to achieve</i></div></div>		Noise levels are approximate due to interpolation of contours and should be used for reference only. For information only and not for construction. This information is protected by copyright.		Project No.: <div>TL127-01</div>	Produced by: <div>MSK</div>
	1/418A Elizabeth Street, SURRY HILLS NSW 2010 P: 02 8218 0500 F: 02 8218 0501		Figure Ref: <div>TL127-01P03 (r0)</div>		Date: <div>13.09.2022</div>	Grid: <div>TL127-01NC01</div>
					Scale: <div>1: 2100 A3</div>	

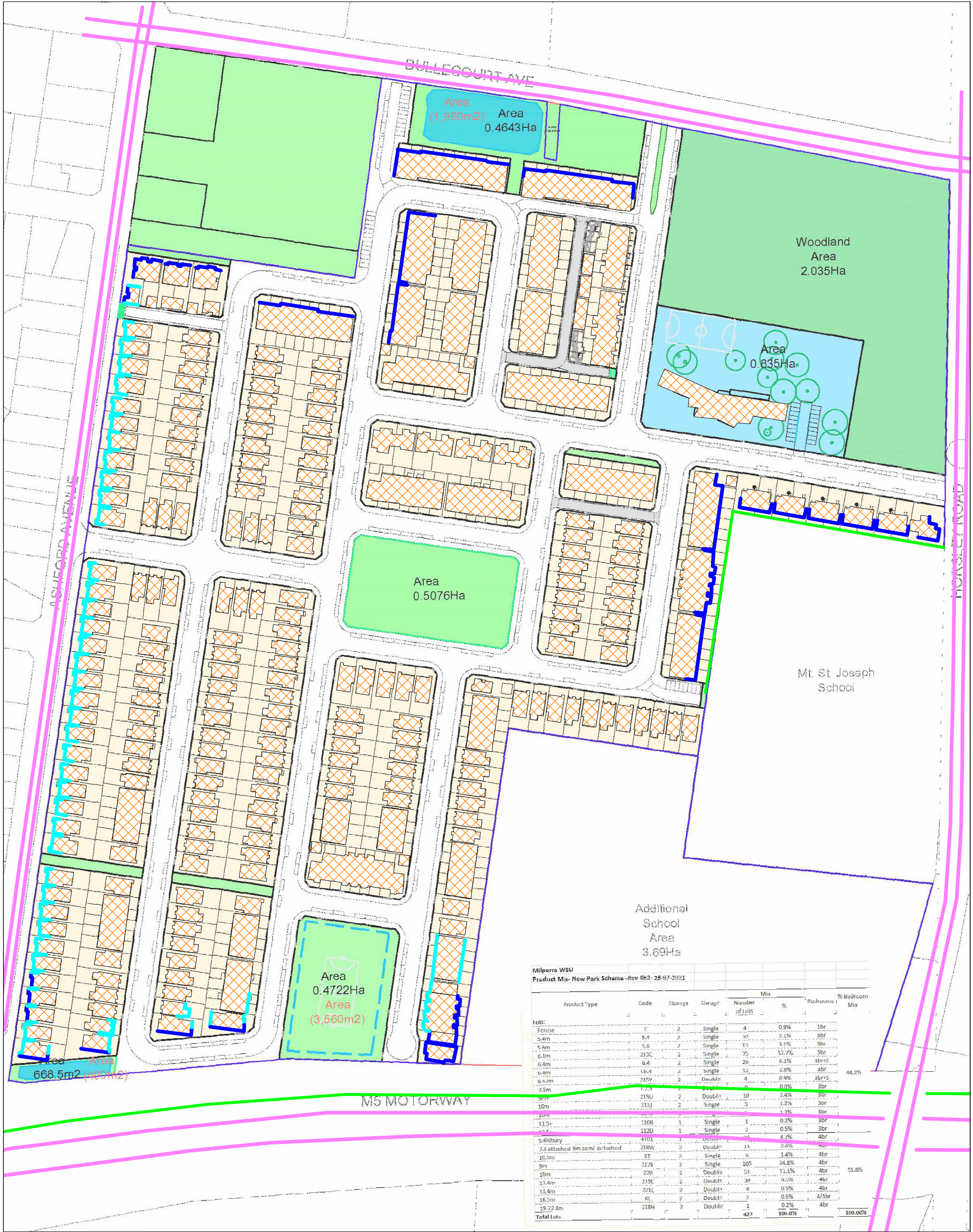


Noise Levels - dB(A)

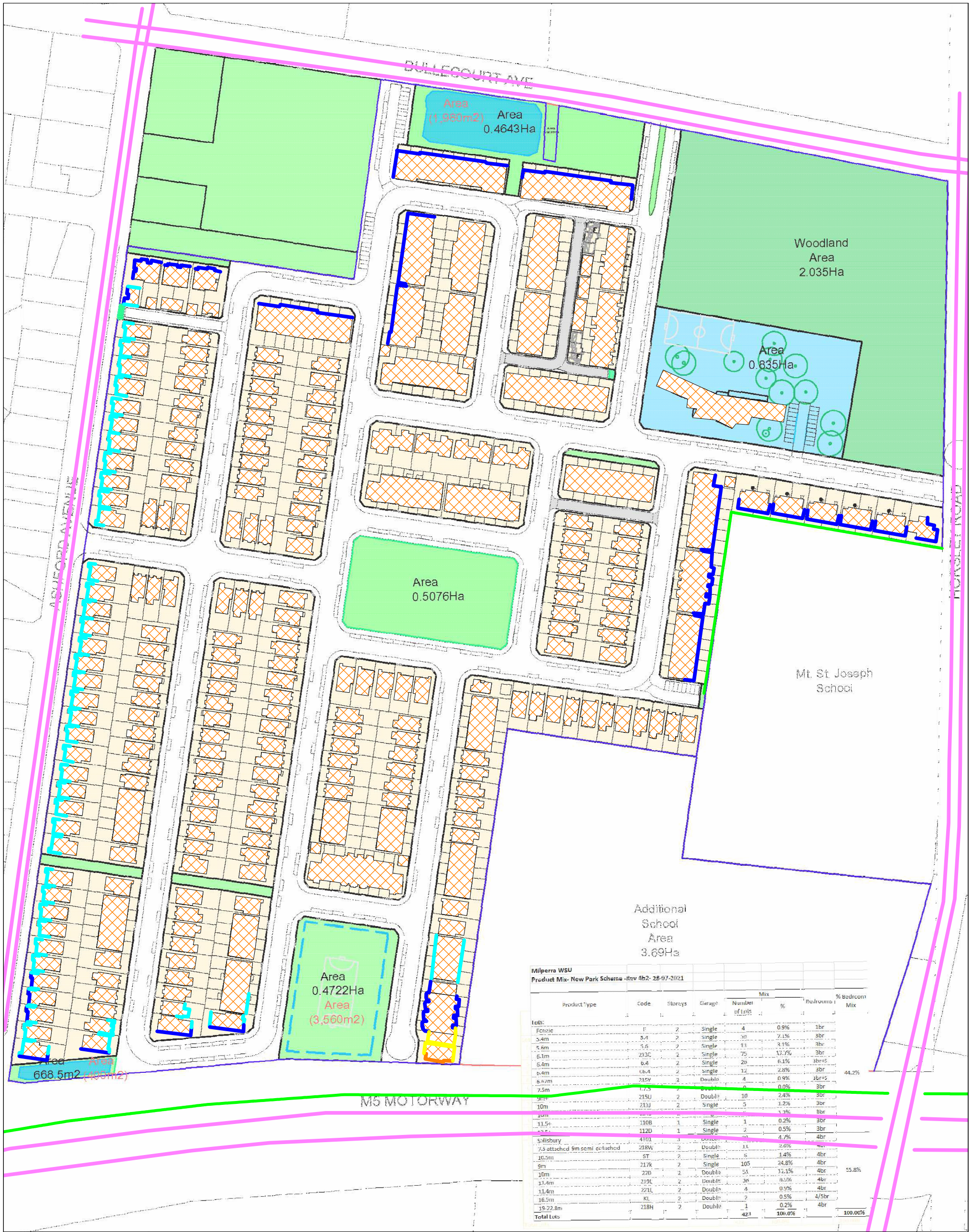
...	< 52
52	<= ... < 55
55	<= ... < 58
58	<= ... < 61
61	<= ... < 64
64	<= ... < 67
67	<= ...

<p>Legend:</p> <ul style="list-style-type: none">BuildingExisting RoadBarrier 	<p>Client:</p> 		<p>Project:</p> <p>WESTERN SYDNEY UNIVERSITY MILPERRA SUBDIVISION</p>		<p>Description:</p> <p>FIRST FLOOR FACADE TREATMENT FOR PLAYGROUND NOISE</p>	
	<p>Consultant:</p>  <p><i>inspired to achieve</i></p>		<p>Noise levels are approximate due to interpolation of contours and should be used for reference only.</p> <p>For information only and not for construction.</p> <p>This information is protected by copyright.</p>		<p>Project No.:</p> <p>TL127-01</p>	<p>Produced by:</p> <p>MSK</p>
	<p>1/418A Elizabeth Street, SURRY HILLS NSW 2010 P: 02 8218 0500 F: 02 8218 0501</p>		<p>Figure Ref:</p> <p>TL127-01P03 (r0)</p>		<p>Grid:</p> <p>TL127-01NC01</p>	<p>Scale:</p> <p>1: 2100 A3</p>
			<p>Date:</p> <p>13.09.2022</p>			

APPENDIX F Acoustic treatment categories

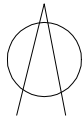


Milperra WSU							
Product Mix - New Park Scheme - Rev 4b2- 28-07-2021							
Product Type	Code	Storeys	Garage	Mix		Bedrooms	% Bedroom Mix
				Number of Lots	%		
Lots:							
1br	108	2	Single	4	0.9%	1br	
2br	110	2	Single	30	7.1%	2br	
3br	112	2	Single	11	2.6%	3br	
4br	113	2	Single	75	17.7%	4br	
5br	114	2	Single	28	6.1%	5br	
6br	115	2	Single	12	2.8%	6br	44.2%
7br	116	2	Double	4	0.9%	7br	
8br	117	2	Double	6	1.4%	8br	
9br	118	2	Double	10	2.4%	9br	
10br	119	2	Single	5	1.2%	10br	
11br	120	2	Single	1	0.2%	11br	
12br	121	2	Single	2	0.5%	12br	
13br	122	2	Single	1	0.2%	13br	
14br	123	2	Single	1	0.2%	14br	
15br	124	2	Single	1	0.2%	15br	
16br	125	2	Single	1	0.2%	16br	
17br	126	2	Single	1	0.2%	17br	
18br	127	2	Single	1	0.2%	18br	
19br	128	2	Single	1	0.2%	19br	
20br	129	2	Single	1	0.2%	20br	
21br	130	2	Single	1	0.2%	21br	
22br	131	2	Single	1	0.2%	22br	
23br	132	2	Single	1	0.2%	23br	
24br	133	2	Single	1	0.2%	24br	
25br	134	2	Single	1	0.2%	25br	
26br	135	2	Single	1	0.2%	26br	
27br	136	2	Single	1	0.2%	27br	
28br	137	2	Single	1	0.2%	28br	
29br	138	2	Single	1	0.2%	29br	
30br	139	2	Single	1	0.2%	30br	
31br	140	2	Single	1	0.2%	31br	
32br	141	2	Single	1	0.2%	32br	
33br	142	2	Single	1	0.2%	33br	
34br	143	2	Single	1	0.2%	34br	
35br	144	2	Single	1	0.2%	35br	
36br	145	2	Single	1	0.2%	36br	
37br	146	2	Single	1	0.2%	37br	
38br	147	2	Single	1	0.2%	38br	
39br	148	2	Single	1	0.2%	39br	
40br	149	2	Single	1	0.2%	40br	
41br	150	2	Single	1	0.2%	41br	
42br	151	2	Single	1	0.2%	42br	
43br	152	2	Single	1	0.2%	43br	
44br	153	2	Single	1	0.2%	44br	
45br	154	2	Single	1	0.2%	45br	
46br	155	2	Single	1	0.2%	46br	
47br	156	2	Single	1	0.2%	47br	
48br	157	2	Single	1	0.2%	48br	
49br	158	2	Single	1	0.2%	49br	
50br	159	2	Single	1	0.2%	50br	
51br	160	2	Single	1	0.2%	51br	
52br	161	2	Single	1	0.2%	52br	
53br	162	2	Single	1	0.2%	53br	
54br	163	2	Single	1	0.2%	54br	
55br	164	2	Single	1	0.2%	55br	
56br	165	2	Single	1	0.2%	56br	
57br	166	2	Single	1	0.2%	57br	
58br	167	2	Single	1	0.2%	58br	
59br	168	2	Single	1	0.2%	59br	
60br	169	2	Single	1	0.2%	60br	
61br	170	2	Single	1	0.2%	61br	
62br	171	2	Single	1	0.2%	62br	
63br	172	2	Single	1	0.2%	63br	
64br	173	2	Single	1	0.2%	64br	
65br	174	2	Single	1	0.2%	65br	
66br	175	2	Single	1	0.2%	66br	
67br	176	2	Single	1	0.2%	67br	
68br	177	2	Single	1	0.2%	68br	
69br	178	2	Single	1	0.2%	69br	
70br	179	2	Single	1	0.2%	70br	
71br	180	2	Single	1	0.2%	71br	
72br	181	2	Single	1	0.2%	72br	
73br	182	2	Single	1	0.2%	73br	
74br	183	2	Single	1	0.2%	74br	
75br	184	2	Single	1	0.2%	75br	
76br	185	2	Single	1	0.2%	76br	
77br	186	2	Single	1	0.2%	77br	
78br	187	2	Single	1	0.2%	78br	
79br	188	2	Single	1	0.2%	79br	
80br	189	2	Single	1	0.2%	80br	
81br	190	2	Single	1	0.2%	81br	
82br	191	2	Single	1	0.2%	82br	
83br	192	2	Single	1	0.2%	83br	
84br	193	2	Single	1	0.2%	84br	
85br	194	2	Single	1	0.2%	85br	
86br	195	2	Single	1	0.2%	86br	
87br	196	2	Single	1	0.2%	87br	
88br	197	2	Single	1	0.2%	88br	
89br	198	2	Single	1	0.2%	89br	
90br	199	2	Single	1	0.2%	90br	
91br	200	2	Single	1	0.2%	91br	
92br	201	2	Single	1	0.2%	92br	
93br	202	2	Single	1	0.2%	93br	
94br	203	2	Single	1	0.2%	94br	
95br	204	2	Single	1	0.2%	95br	
96br	205	2	Single	1	0.2%	96br	
97br	206	2	Single	1	0.2%	97br	
98br	207	2	Single	1	0.2%	98br	
99br	208	2	Single	1	0.2%	99br	
100br	209	2	Single	1	0.2%	100br	
101br	210	2	Single	1	0.2%	101br	
102br	211	2	Single	1	0.2%	102br	
103br	212	2	Single	1	0.2%	103br	
104br	213	2	Single	1	0.2%	104br	
105br	214	2	Single	1	0.2%	105br	
106br	215	2	Single	1	0.2%	106br	
107br	216	2	Single	1	0.2%	107br	
108br	217	2	Single	1	0.2%	108br	
109br	218	2	Double	1	0.2%	109br	
110br	219	2	Double	1	0.2%	110br	
111br	220	2	Double	1	0.2%	111br	
112br	221	2	Double	1	0.2%	112br	
113br	222	2	Double	1	0.2%	113br	
114br	223	2	Double	1	0.2%	114br	
115br	224	2	Double	1	0.2%	115br	
116br	225	2	Double	1	0.2%	116br	
117br	226	2	Double	1	0.2%	117br	
118br	227	2	Double	1	0.2%	118br	
119br	228	2	Double	1	0.2%	119br	
120br	229	2	Double	1	0.2%	120br	
121br	230	2	Double	1	0.2%	121br	
122br	231	2	Double	1	0.2%	122br	
123br	232	2	Double	1	0.2%	123br	
124br	233	2	Double	1	0.2%	124br	
125br	234	2	Double	1	0.2%	125br	
126br	235	2	Double	1	0.2%	126br	
127br	236	2	Double	1	0.2%	127br	
128br	237	2	Double	1	0.2%	128br	
129br	238	2	Double	1	0.2%	129br	
130br	239	2	Double	1	0.2%	130br	
131br	240	2	Double	1	0.2%	131br	
132br	241	2	Double	1	0.2%	132br	
133br	242	2	Double	1	0.2%	133br	
134br	243	2	Double	1	0.2%	134br	
135br	244	2	Double	1	0.2%	135br	
136br	245	2	Double	1	0.2%	136br	
137br	246	2	Double	1	0.2%	137br	
138br	247	2	Double	1	0.2%	138br	
139br	248	2	Double	1	0.2%	139br	
140br	249	2	Double	1	0.2%	140br	
141br	250	2	Double	1	0.2%	141br	
142br	251	2	Double	1	0.2%	142br	
143br	252	2	Double	1	0.2%	143br	
144br	253	2	Double	1	0.2%	144br	
145br	254	2	Double	1	0.2%	145br	
146br	255	2	Double	1	0.2%	146br	
147br	256	2	Double	1	0.2%	147br	
148br	257	2	Double	1	0.2%	148br	
149br	258	2	Double	1	0.2%	149br	
150br	259	2	Double	1	0.2%	150br	
151br	260	2	Double	1	0.2%	151br	
152br	261	2	Double	1	0.2%	152br	
153br	262	2	Double	1	0.2%	153br	
154br	263	2	Double	1	0.2%	154br	
155br	264	2	Double	1	0.2%	155br	
156br	265	2	Double	1	0.2%	156br	
157br	266	2	Double	1	0.2%	157br	
158br	267	2	Double	1	0.2%	158br	
159br	268	2	Double	1	0.2%	159br	
160br	269	2	Double	1	0.2%	160br	
161br	270	2	Double	1	0.2%	161br	
162br	271	2	Double	1	0.2%	162br	
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165br	274	2	Double	1	0.2%	165br	
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169br	278	2	Double	1	0.2%	169br	
170br	279	2	Double	1	0.2%	170br	
171br	280	2	Double	1	0.2%	171br	
172br	281	2	Double	1	0.2%	172br	
173br	282	2	Double	1	0.2%	173br	
174br	283	2	Double	1	0.2%	174br	
175br	284	2	Double	1	0.2%	175br	
176br	285	2	Double	1	0.2%	176br	
177br	286	2	Double	1	0.2%	177br	
178br	287	2	Double	1	0.2%	178br	
179br	288	2	Double	1	0.2%	179br	
180br	289	2	Double	1	0.2%	180br	
181br	290	2	Double	1	0.2%	181br	
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183br	292	2	Double	1	0.2%	183br	
184br	293	2	Double	1	0.2%	184br	
185br	294	2	Double	1	0.2%	185br	
186br	295	2	Double	1	0.2%	186br	
187br	296	2	Double	1	0.2%	187br	
188br	297	2	Double	1	0.2%	188br	
189br	298	2	Double	1	0.2%	189br	
190br	299	2	Double	1	0.2%	190br	
191br	300	2	Double	1	0.2%	191br	
192br	301	2	Double	1	0.2%	192br	
193br	302	2	Double	1	0.2%	193br	
194br	303	2	Double	1	0.2%	194br	
195br	304	2	Double	1	0.2%	195br	
196br	305	2	Double	1	0.2%	196br	
197br	306	2	Double	1	0.2%	197br	
198br	307	2	Double	1	0.2%	198br	
199br	308	2	Double	1	0.2%	199br	
200br	309	2	Double	1	0.2%	200br	
201br	310	2	Double	1	0.2%	201br	
202br	311	2	Double	1	0.2%	202br	
203br	312	2	Double	1	0.2		



Milperra WSU							
Product Mix - New Park Scheme - Rev 4b2- 28-07-2021							
Product Type	Code	Storeys	Garage	Number of lots	Mix %	Bedrooms	% Bedroom Mix
Lots:							
4chzie	F	2	Single	4	0.9%	1br	
5.4m	5.4	2	Single	30	7.1%	3br	
5.6m	5.6	2	Single	11	3.1%	3br	
6.1m	213C	2	Single	75	17.7%	3br	
6.4m	6.4	2	Single	28	6.1%	3br+5	
6.4m	6b.4	2	Single	12	2.8%	3br	44.2%
6.4m	215V	2	Double	4	0.9%	3br+5	
7.5m	7.5	2	Double	6	0.0%	3br	
9m	215U	2	Double	10	2.4%	3br	
10m	213J	2	Single	5	1.2%	3br	
10m	215C	2	Single	1	0.2%	3br	
11.5m	110B	1	Single	1	0.2%	3br	
11.5m	112D	1	Single	2	0.5%	3br	
12.5m	4101	3	Double	3	0.7%	4br	
13.5m	218W	2	Double	11	2.6%	4br	
16.5m	ST	2	Single	5	1.4%	4br	
9m	217K	2	Single	105	24.8%	4br	
10m	220	2	Double	53	12.1%	4br	55.8%
11.4m	219L	2	Double	38	8.7%	4br	
11.4m	221L	2	Double	4	0.9%	4br	
16.5m	KL	2	Double	2	0.5%	4/5br	
19.22.8m	218H	2	Double	1	0.2%	4br	
Total Lots				421	100.0%		100.00%

- Legend:
- Building planners interior des
 - Existing Road
 - Barrier



Client:

mirvac

Consultant:

RENZO TONIN & ASSOCIATES
inspired to achieve

1/418A Elizabeth Street, SURRY HILLS NSW 2010
P: 02 8218 0500 F: 02 8218 0501

Project:

WESTERN SYDNEY UNIVERSITY
MILPERRA SUBDIVISION

Noise levels are approximate due to interpolation of contours and should be used for reference only.

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APPENDIX D: HERITAGE IMPACT ASSESSMENT

EXTENT



WESTERN SYDNEY UNIVERSITY

MILPERRA CAMPUS

Statement of Heritage Impact for the subdivision of the Milperra Campus

Prepared by Extent Heritage Pty. Ltd.

Prepared for Mirvac

September 2024 — Final 0.2



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EXTENT HERITAGE PTY LTD
ABN 24 608 666 306
ACN 608 666 306
accounts@extent.com.au
extent.com.au

SYDNEY
Level 3/73 Union Street
Pyrmont NSW 2009
T 02 9555 4000

MELBOURNE
Level 1, 52 Holmes Street
Brunswick East VIC 3057
T 03 9388 0622

BRISBANE
Level 2, 109 Edward Street
Brisbane QLD 4000
T 07 3051 0171

HOBART
Level 3, 85 Macquarie Street
Hobart TAS 7000
T 03 6144 5880

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Author(s):	Reuel Balmadres

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EXECUTIVE SUMMARY

Project background

Extent Heritage Pty Ltd has been engaged by Beveridge Williams on behalf of Mirvac to prepare a Statement of Heritage Impact (SOHI) for the subdivision of the former Western Sydney University (WSU) Milperra Campus (hereafter referred to as the 'site'). The subdivision forms part of redevelopment of the former WSU campus into a low-rise neighbourhood incorporating a range of attached, semi-detached and free-standing homes. The proposal seeks to facilitate the redevelopment through the subdivision of the site over seven (7) stages.

While the subject site is not a heritage listed item, it is bordered by Bullecourt Avenue to its north and Ashford Avenue to its west, roads that form part of the locally listed heritage item *Milperra Soldier Settlement (former)* on the *Canterbury Bankstown LEP 2023*. This report concludes that the proposed development will not have any impact on these roads as all works proposed are to be contained within the subject site, and as such will not affect the alignment of the roads which is key to the item's significance. The subdivision will facilitate the suburban redevelopment of the area, which seeks to improve the residential amenity of the wider area, as it will provide much needed housing in the area and its surrounds. The proposed subdivision will not result in any adverse impacts on the significance or character of the heritage item in the vicinity or on the identified heritage values of the *Milperra Soldier Settlement (former)*.

Recommendations

In recognition of the historical associations of the site with the *Milperra Soldier Settlement (former)*, the following recommendations are provided to inform the proposed development.

- It is recommended that all future development proposals should give regard to the heritage controls outlined in Chapter 4 of Canterbury Bankstown Development Control Plan (DCP) and Section 3.9 of the draft Site-Specific DCP for Western Sydney University Milperra Former Campus. The objectives outlined in the DCP seek to ensure that adjacent development does not have a detrimental impact on the identified heritage values, is a compatible development, and retains key features that contribute to the character of the area. For the subject site, retaining the historical form of the road corridors of Bullecourt and Ashford Avenues will be integral to the conservation of heritage values.
- Under Clause 5.10(5) of the *Canterbury Bankstown Local Environmental Plan 2023*, subsequent Development Applications for construction may require a Statement of Heritage Impact (SOHI) to assess the potential impacts to the heritage significance of the *Milperra Soldier Settlement (former)*. Given the significance of the heritage item is embodied in the layout of the Bullecourt and Ashford Avenues, it is considered unlikely that built form in the adjacent lot would adversely impact the identified heritage values of the item, however, pre-DA advice from Canterbury Bankstown's Council heritage officer should be sought.

- Section 3.9 of the DCP stipulates that a Heritage Interpretation Plan should be provided as part of any future Development Application or subdivision of the former Western Sydney University Milperra Campus. It is recommended that an Interpretation Plan is prepared following the subdivision, in line with the controls provided in Section 3.9 of the DCP cited above. The Heritage Interpretation Plan would establish a thematic framework to interpret the Milperra Soldier Settlement by exploring the historical and social values associated with the site. The interpretation plan would identify suitable interpretative devices for implementation based on a thorough site analysis.
- The site, like all places in NSW, is subject to the general conditions of the *Heritage Act 1977*, there are however no specific permitting or consent requirements under the Act for this site. As part of the on-site environmental management process, an unexpected finds procedure should be put in place, developed by an archaeologist with demonstrated experience and understanding of the required obligations in accordance with the Act. This protocol would include a pre-start briefing of contractors regarding the type of material that may be uncovered during works and their obligations under the Act. The procedure should also outline a process for protecting and identifying unexpected archaeological material, if uncovered during works.

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1. THE HERITAGE ITEM

Extent Heritage Pty Ltd has been engaged by Beveridge Williams on behalf of Mirvac to prepare a Statement of Heritage Impact (SOHI) for the subdivision of the former Western Sydney University (WSU) Milperra Campus (hereafter referred to as the 'site'). The subdivision forms part of redevelopment of the former WSU campus into a low-rise neighbourhood incorporating a range of attached, semi-detached and free-standing homes. The proposal seeks to facilitate the redevelopment through the subdivision of the site over seven (7) stages.

The purpose of the report is to analyse the proposed subdivision pattern of the site, and the potential impacts on the heritage significance of the *Milperra Soldier Settlement (former)* (LEP I218). The methodology used in the preparation of this Statement of Heritage Impact (SOHI) is in accordance with the principles and definitions as set out in the guidelines to *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance (the Burra Charter)* (Australia ICOMOS 2013) and the latest version of the *Statement of Heritage Impact Guidelines* (Department of Planning and Environment, 2023). This SOHI will review the relevant statutory heritage controls, assess the impact of the proposal on the site and heritage items in the vicinity and make recommendations as to the level of impact. This report specifically relates to built heritage and historical archaeological potential and includes recommendations and conclusions drawn from the impact assessment.

1.1. Site description

The site forms part of the former WSU Milperra campus located in the southwest Sydney suburb of Milperra within the Local Government Area (LGA) of Canterbury Bankstown. It is located at 272 Horsley Road, Milperra, and comprises land legally defined as Lot 2 in DP 1291984 and Lot 1 in DP 101147 (refer to Figure 1 below). Within this context, the site is bounded by the M5 Motorway to the south, Horsley Road to the east, Bullecourt Avenue to the north, and Ashford Avenue to the west.

The site contains a complex of educational, administration, and accommodation university campus buildings that date from the c.1970s. The buildings are predominately low scale in massing and are interconnected by a network of paved pathways and carparks with large open spaces at the south and north of the site.



Figure 1. Aerial photograph showing the defined site extent indicated in red. Source: Nearmap 2024 with Extent Heritage mark-up.

1.1.1. Heritage item

The site is bordered by Bullecourt Avenue to its north and Ashford Avenue to its west, roads that are part of the locally listed item *Milperra Soldier Settlement (former)*. The heritage item is significant at the local level for its conservation of the last surviving evidence of the former subdivision pattern of the Milperra Soldiers Settlement, a national scheme that was intended to repatriate returning servicemen during and after World War I.

1.1.2. Heritage listings

The site, being part of the former WSU Milperra campus, **is not listed** as a heritage item on any statutory register or planning instrument.

The site is located within the vicinity of one (1) heritage item, the *Milperra Soldier Settlement (former)* (LEP I218) which is an item of local heritage significance listed on Schedule 5 of the *Canterbury Bankstown Local Environmental Plan 2023*.

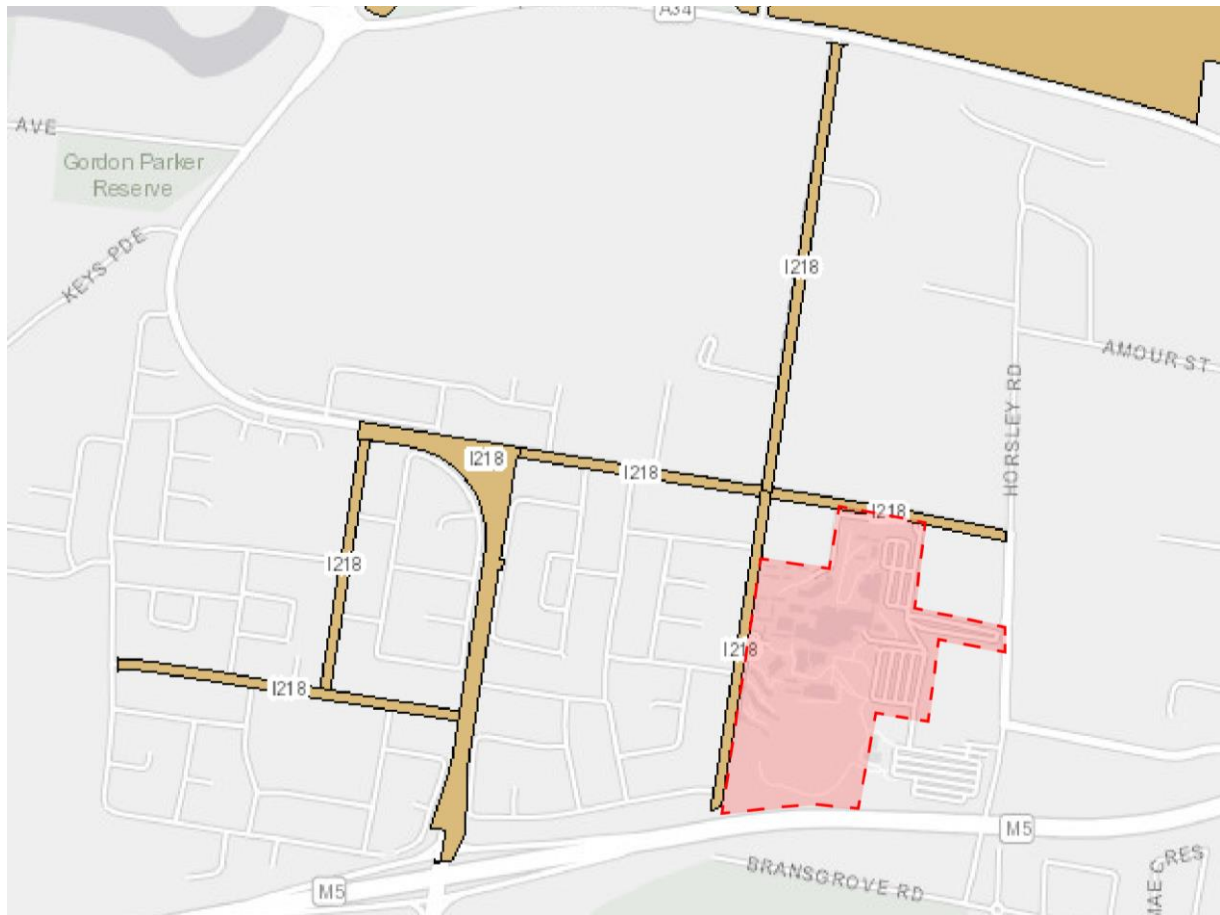


Figure 2. Heritage map showing the defined site indicated in red within context of the heritage curtilage of the *Milperra Soldier Settlement (former)* (LEP I218)

1.2. Historical context

1.2.1. Traditional owners

The site is located within the suburb of Milperra. The wider area is land that has been lived on and cared for by the Aboriginal people for millennia. Natural features such as the Georges River (to the west of the site) formed geographic boundaries for the various clans of the Eora Nation. Land north of the Georges River is reported to be the home of people from Darug language groups, while land to the south was the home of people who spoke the Dharawal language (Georges Riverkeeper n.d.)

The Aboriginal groups hunted for kangaroos, emu, and possum while foraging for wild honey, plants, and roots, and also collected fish and shellfish from the rivers and coast. Life for the Darug, Dharawal and other Aboriginal peoples forever changed with the arrival of the First Fleet in 1788, bringing dispossession through the spread of agricultural land, frontier conflict, and the introduction of foreign disease.

The current name of Milperra is derived from an Aboriginal word that means 'a company, a welcome, a place of recovery of men injured in tribal war or initiation, or a gathering of people' (also spelled milpera) (Beckett 1984, 145 in Allison 2009, 144-157).

1.2.2. Early land tenure

The present suburb of Milperra extends across land grants that were made to William Heath, Thomas Bevan, William Mitchell, John Connell, James Connell, Edward Weston, Esther Julian, George Johnston and George Johnston Junior from the late eighteenth century (Figure 4).

The site is located on land granted to George Johnston Junior in 1819. Johnston Junior first received 500 acres of land at Bankstown in 1804, granted by Governor Philip Gidley King. It was reported that Johnston Junior's father, Captain George Johnston as Lieutenant-Governor, made a conditional grant to his son of 2,000 acres along the Nepean River which was rejected by then-Governor Lachlan Macquarie as inadmissible. However, Macquarie eventually restored parts of the conditional grant to Johnston Junior which included 650 acres comprising part of the site on 31 August 1819 (HLRV Primary Application No. 8299) (Yarwood 2006).

The Johnstons accumulated large tracts of land in the region, including the family's homestead, which was located at the confluence of Prospect Creek with the Georges River (approximately 3.2 kilometres north of the site). Many of the elder Johnston's landholdings passed to Johnston Junior following his death in 1823. Johnston Junior resided at the family homestead, and it was noted that areas of the estate were cleared and used for cultivation (SHR n.d.). Specific land use within the former WSU Campus site is not known.

1.2.3. Soldier Settlement Scheme

The aim of this scheme was to assist returned men to settle on rural land by offering preferential terms and conditions for repayment (Allison 2010). The settlement at Milperra contained forty-eight poultry and eight vegetable farms, with farm sizes ranging from four to ten acres (Allison 2009).

The settlement had five roads – Bullecourt, Amiens, Fleurbaix, and Pozieres Avenues, which were named after French towns and key World War I battlefields, and Ashford Avenue, which was named after the then-New South Wales Minister for Lands (Department of Lands, NRS 8052).

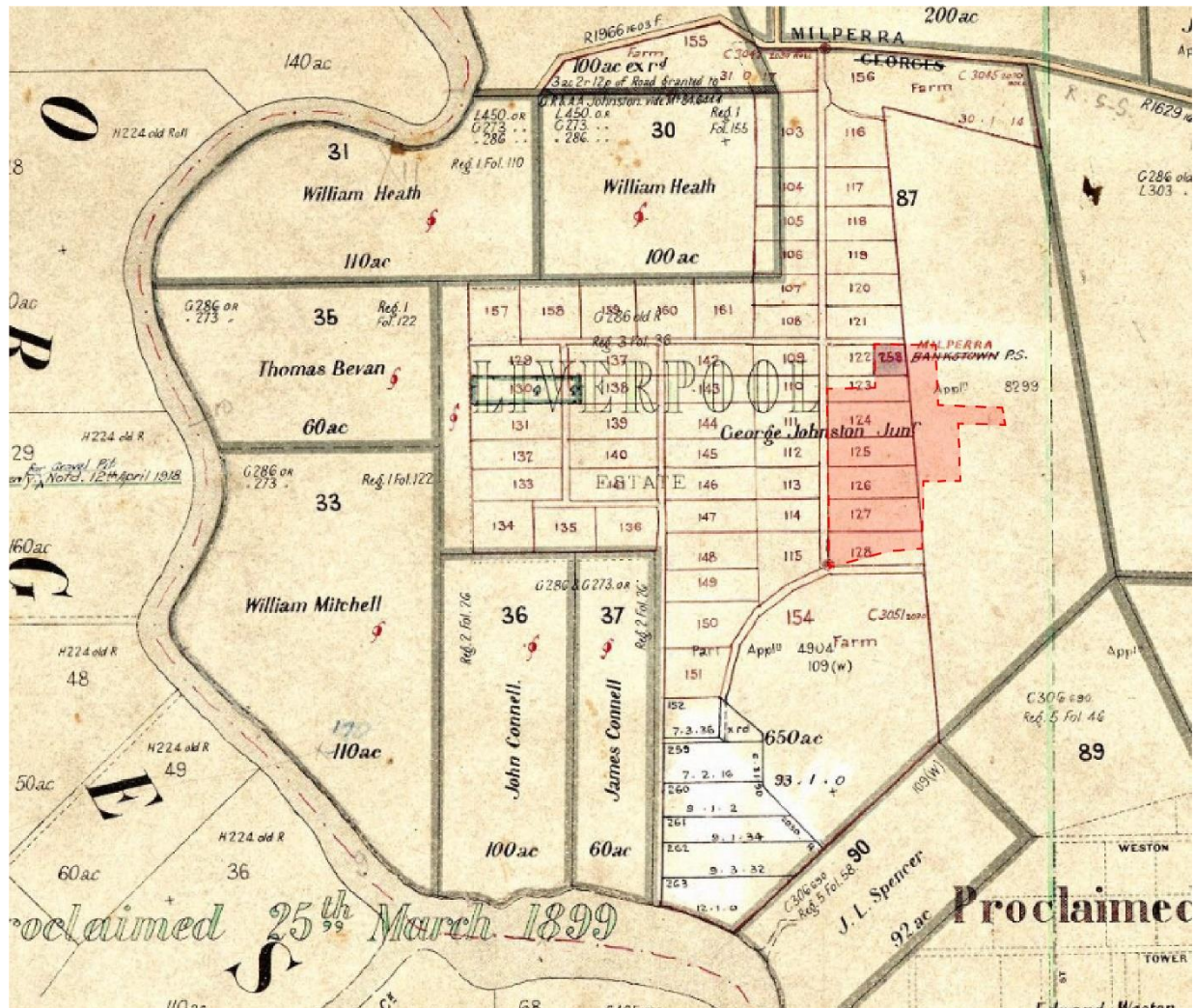


Figure 4. c.1918 Parish of Bankstown map showing the Milperra Soldier Settlement road alignment and subdivision. The extent of the site is indicated in red. Source: NSW Planning Portal with Extent Heritage overlay.

A c.1918 parish map (Figure 4) shows the Soldier Settlement road alignment and planned subdivision. The western portion of former WSU Campus site falls within the planned settlement area. Land at the north of the site, fronting Bullecourt Avenue, was set aside for Milperra Primary School. The eastern extent of the site is outside of the planned settlement.

The Soldier Settlement received returned soldiers and their families between 1917 and 1923. By this later date, only eighteen of the fifty-six farms were occupied. Subsequently, the remaining vacant blocks were offered to civilians. Residences constructed on each plot of land were reported to be standard two-bedroom weatherboards cottages each with verandahs and galvanised iron roofing home to 120 ex-servicemen and their families (Allison 2010).

With the establishment of a Public School and Post Office in 1918, Milperra slowly began to develop as a residential suburb. The Bankstown Soldier Settlement was largely unsuccessful with one-third of the ex-servicemen living there for less than two years (Allison 2010). All that remains of this soldier settlement is the original streets which retain their original names and alignments.

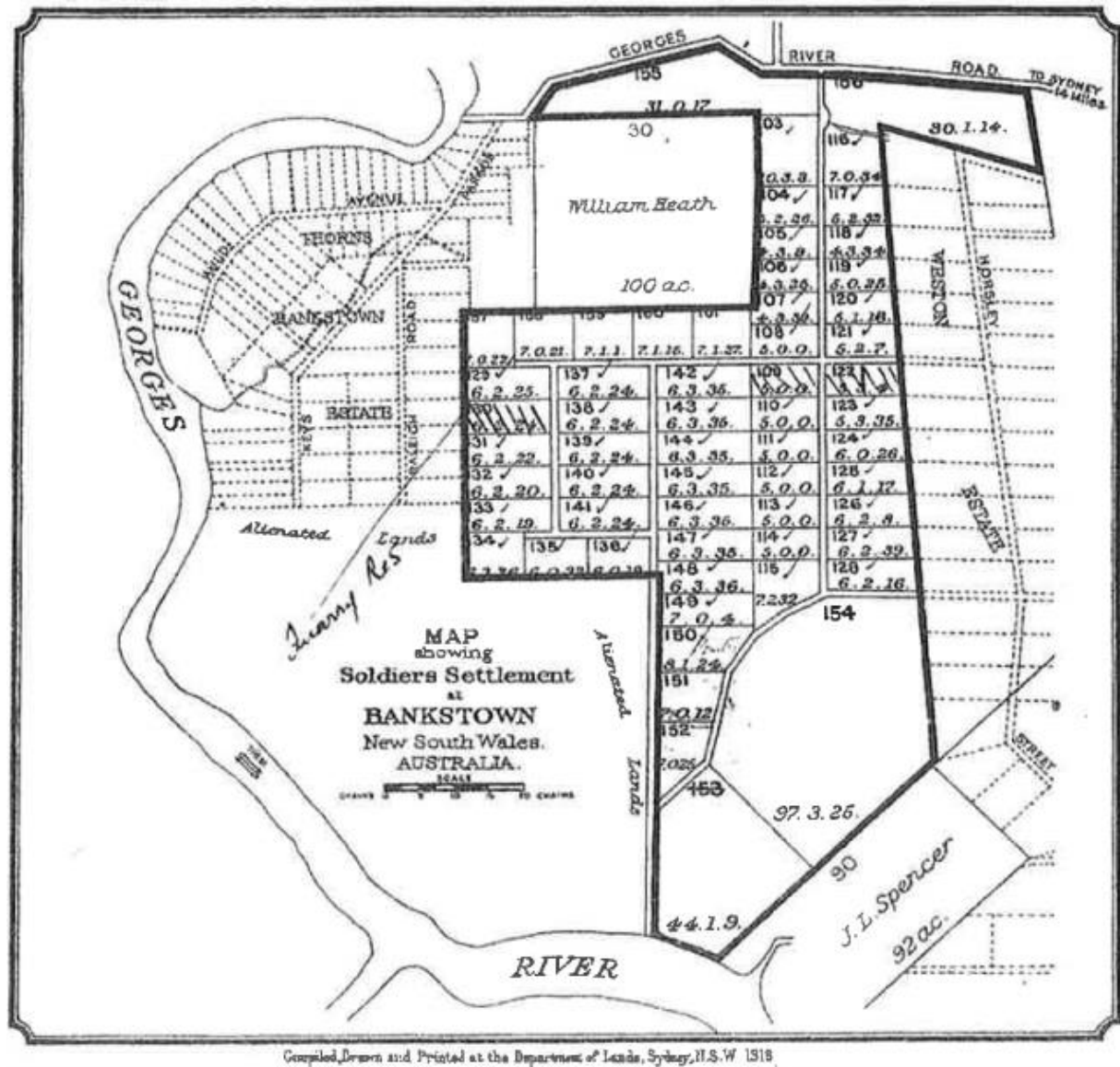


Figure 5. Bankstown Soldiers Settlement, 1918 showing block numbers and acreage. *Source:* State Records NSW Department of Lands, Closer Settlement Promotion Files Call No. 10/137114 in Allison 2009, 149



Figure 6. Bankstown Soldiers' Settlement Estate clearing land. *Source:* State Archives and Records, 2017.



Figure 7. Bankstown Soldiers' Settlement Estate – initial stages of development. *Source:* State Archives and Records, 2017.



Figure 8. Bankstown Soldiers' Settlement Estate general view of cleared and uncleared land. *Source:* State Archives and Records, 2017.



Figure 9. Bankstown Soldiers' Settlement Estate settlers' cottages. *Source:* State Archives and Records, 2017.



Figure 10. Bankstown Soldiers' Settlement Estate spraying the crops. *Source:* State Archives and Records, 2017.



Figure 11. Bankstown Soldiers' Settlement Estate attending the poultry. *Source:* State Archives and Records, 2017.

1.2.4. Development in the early twentieth century

As Milperra continued to develop as a residential suburb, the site of the Milperra WSU campus underwent a series of changes. Land at the north of the site was occupied by Milperra Public School from 1918. The location of the 1918 school building is indicated on the below 1943 (Figure 12). The 1918 school building comprised of a two-roomed, gabled roof building with a front verandah covered by a skillion roof (Figure 14). Built on brick piers, the original school building was of brick and timber construction with galvanised metal sheets to the gable and skillion roofs. The school was relocated to its present site on Pozieres Avenue in 1975 (southwest of and outside the defined site boundary) (WSU 2017; Allison 2009, 150).



Figure 12. 1943 historical aerial of Milperra showing the indicative extent of the site outlined in red. The location of the school is indicated outlined in blue. *Source:* NSW Historical Imagery with Extent Heritage overlay



Figure 13. Closeup view of the 1943 historical aerial of Milperra showing original school building outlined in blue. *Source:* NSW Historical Imagery with Extent Heritage overlay



Figure 14. The original 1918 Milperra Public School. *Source:* History of Padstow Revesby Panania Picnic Point East Hills Milperra, 2017



Figure 15. 1955 historical aerial showing the indicative extent of the site outlined in red. The location of the school is indicated outlined in blue. *Source:* NSW Historical Imagery with Extent Heritage overlay



Figure 16. 1965 historical aerial showing the indicative extent of the site outlined in red. The location of the original school which appears demolished by this time is indicated outlined in blue. *Source:* NSW Historical Imagery with Extent Heritage overlay.

The site and wider area remained predominantly agricultural in land use throughout the c.1950s and c.1960s (Figure 15 and Figure 16). By 1965 it appears that much of the development associated with the Milperra Soldier Settlement within the site boundary was demolished. The allotments remained agricultural in use, with new industrial development established to the east and north of the site (Figure 16). The 1965 historical aerial also shows that the 1918 Milperra Public School building was demolished by this time, with new school buildings surrounding its original location (Figure 16).



Figure 17. 1971 historical aerial showing the indicative extent of the site outlined in red. *Source:* NSW Historical Imagery with Extent Heritage overlay.

The 1971 historical aerial (Figure 17) shows that most of the agricultural buildings within the site was demolished by this time with the surrounding area largely suburbanised. The former Milperra Public School site remains visible at the northern side of the site with buildings along its eastern, southern, and western internal boundary.

The closeup extract of the 1975 historical aerial (the year of the school's relocation) shows the school buildings located within the site at the time. It also shows the establishment of the off-street return driveway which remains extant in its alignment on the southern side of Bullecourt Avenue (Figure 18).



Figure 18. Closeup of the 1975 historical aerial showing the extent of the school grounds and building along Bullecourt Avenue. *Source:* NSW Historical Imagery with Extent Heritage overlay

1.2.5. Establishment of Western Sydney University

The Milperra College of Advanced Education (CAE) was established on the site in 1973 to cater to the growing need for teachers' education in NSW. Changes made to the site while it was the CAE campus included the construction of the current multipurpose Building 1 in 1976 (Figure 20). The 1975 historical aerial (Figure 19) shows the site cleared of all previous agricultural structures, with site establishment works for the new educational campus underway.



Figure 19. 1975 historical aerial showing the indicative extent of the site outlined in red. *Source:* NSW Historical Imagery with Extent Heritage overlay.



Figure 20. The 1976 College of Advance Education building. *Source:* History of Padstow Revesby Panania Picnic Point East Hills Milperra, 2017

In 1983, the Milperra CAE was renamed Macarthur Institute of Higher Education (State Records NSW Call No, AGY-2956). Original plans to accommodate 2,500 teachers on site were altered, and there was a push to start tertiary education programs. The Macarthur Institute of Higher Education was absorbed into the University of Western Sydney in 1989 becoming the third campus in its growing network of campuses. During the 1980s, the site underwent numerous changes including extensions to Building 1, the construction of Building 19 and Building 2; and in the 1990s with the construction of Building 4. Most of the structures on the site dates from the 1990s onwards (Western Sydney University 2017).

1.2.6. Contemporary development

The site remained in use as one of the eleven campuses for WSU until c.2020s. The campus supported students, staff, and faculty through providing education spaces, student accommodation, staff offices, parking and all other typical amenities. In 2016, the campus supported approximately 8,166 students, 195 academic staff and 128 professional staff (NSW Department of Planning and Environment 2022).

The site is currently not in use, as the area is earmarked for redevelopment and subdivision following the establishment of a development agreement between WSU and Mirvac. The redevelopment seeks to create a low low-rise neighbourhood incorporating a range of attached, semi-detached and free-standing homes.

1.3. Physical analysis

Extent Heritage carried out a physical assessment of the site on 14 February 2024. The inspection was undertaken as a visual study from the public domain only with limited views to the site. Internal photographs of the site are utilised from Extent Heritage's previous site inspection, undertaken in November 2019, and are cited accordingly.

The analysis involved an investigation into the built form and landscape setting. It does not provide a detailed investigation of all fabric but an overview of the elements of the place to assist in determining significance.

1.3.1. WSU Milperra campus

The WSU Milperra campus contains twenty-nine (29) educational, administrative, and accommodation facilities. The campus buildings date from the c.1970s to the c.2000s, and are generally low-scale in massing and form of one to three-storeys. The buildings are generally brick veneer and steel structures with corrugated sheet metal roofing and large areas of glazing. The buildings are interconnected by a network of paved pathways with large open carparks to the east of the campus buildings accessed off Horsley Road (Figure 25 to Figure 34). Internal roads within the campus include Ian Smith Avenue, First Avenue and Third Avenue (Figure 35).

Refer to the campus map below (Figure 35) showing the internal campus layout and buildings.



Figure 21. View along the internal Third Avenue looking south from Bullecourt Avenue. *Source:* Extent Heritage 2024.



Figure 22. Overview of the campus viewed south from Bullecourt Avenue. *Source:* Extent Heritage 2024.



Figure 23. Overview of the campus viewed southeast from Ashford Avenue. *Source:* Extent Heritage 2024.



Figure 24. Overview of the campus oval viewed northeast from the Ashford Avenue. *Source:* Extent Heritage 2024.



Figure 25. View of building 1 – the 1976 building with extensions. *Source:* Extent Heritage 2019.



Figure 26. View of buildings 2 and 3. *Source:* Extent Heritage 2019.



Figure 27. View of building 11. *Source:* Extent Heritage 2019.



Figure 28. View of building 12. *Source:* Extent Heritage 2019.



Figure 29. View of building 23 (Margot Hardy Gallery). *Source:* Extent Heritage 2019.



Figure 30. View of Library. *Source:* Extent Heritage 2019.



Figure 31. View of WSU village. *Source:* Extent Heritage 2019.



Figure 32. View of WSU village. *Source:* Extent Heritage 2019.



Figure 33. View of WSU Bankstown Campus Oval to the southern end of campus. *Source:* Extent Heritage 2019.



Figure 34. View of existing university student housing from Ashford Avenue. *Source:* Extent Heritage 2019.

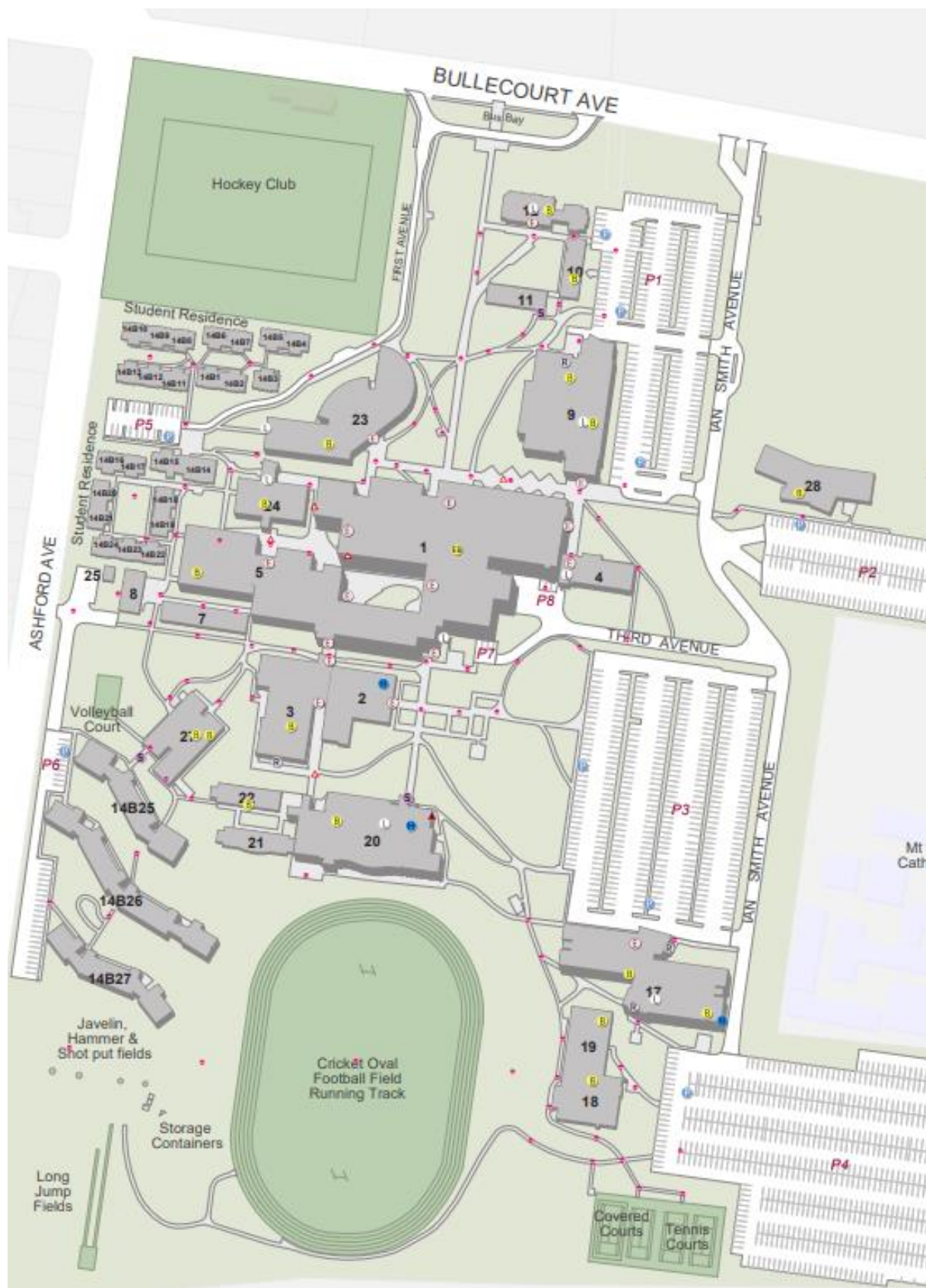


Figure 35. WSU Milperra campus map showing the various buildings at the site. Source: WSU

1.3.1.1. Location of the former Milperra Public School

The former Milperra Public School was located along Bullecourt Avenue, along the northern side of the campus and defined site boundary. It operated in this location between 1918 – 1975. Historical aerals showing the former school site indicates that it was situated within an area that presently contains a bus bay. The bus bay was established in the c.1970s while the site was still used for the former public school.

There are no visible remnants of the 1918 Milperra Public School building or other associated structures at ground level when viewed from the public domain. The grounds which comprised the former Milperra Public School has been integrated into the wider campus lawn landscape with paved pathways and interspersed tree planting, and a roadside bus stop and university sign along Bullecourt Avenue (Figure 37 to Figure 40).

However, an overlay of the school buildings visible in the 1975 historical aerial (Figure 18) over a present 2024 aerial photograph shows two (2) campus buildings (identified as Building 10 and 11 on the WSU campus map) occupying the footprint of the former school buildings which were constructed between 1955-1965 (Figure 15Figure 15 and Figure 16). However, limitations of site access excluded the direct inspection of Building 10 and 11. Any association with the former Milperra Public School, and the potential existence of these former school buildings has not been ascertained. The two (2) structures appear on the 1965 historical aerial and are indicated in green in Figure 36 below.



Figure 36. Overlay of the former Milperra Public School buildings (in blue) within the site boundary indicated with the red dashed line. The two c.1960s school buildings that appear to have been integrated into the university campus (now Building 10 and 11) is indicated in green.



Figure 37. Overview of the general location of the former Milperra Public School and bus bay from Bullecourt Avenue. *Source:* Extent Heritage 2024.



Figure 38. Closeup view of the landscape of the former school site from Bullecourt Avenue. *Source:* Extent Heritage 2024.



Figure 39. Closeup view of the landscape of the former school site from Bullecourt Avenue. *Source:* Extent Heritage 2024.



Figure 40. Closeup view of the landscape of the former school site from Bullecourt Avenue. *Source:* Extent Heritage 2024.

1.3.1.2. Remnant Cumberland Plains Woodland

A tract of remnant Cumberland Plains Woodland is located at the northeastern side of the site. It is heavily vegetated with mature trees and occupies a roughly square block bordered by Bullecourt Avenue to the north, Horsley Road to the east, and the internal campus carparks to the south and west (Figure 41 and Figure 42). This area remains outside the site boundary.



Figure 41. Overview of the remnant woodland viewed southwest from the junction of Bullecourt Avenue and Horsley Road. *Source:* Extent Heritage 2024.



Figure 42. Overview of the remnant woodland viewed southwest from Bullecourt Avenue. *Source:* Extent Heritage 2024.

1.3.2. Milperra Soldier Settlement (former) (LEP I218)

The Milperra Soldier Settlement was subdivided in the c.1910s as part of the national effort to repatriate soldiers returning from WWI. The wider area which contained part of the campus and defined site was subdivided into market garden and farm allotments set on a neat, grid road alignment. The settlement at Milperra contained five streets, Bullecourt, Fleurbaix, Amiens, and Pozieres Avenue, and Ashford Avenue. Residences constructed on the farm allotments were reported to comprise two-roomed timber cottages.

The timber cottages were mostly demolished by c.1970, and the site was redeveloped as a higher education campus (Figure 17). No structures associated with the Soldier Settlement remain within the site boundary. The agricultural landscape and allotments of the wider landscape surrounding the site have since been re-subdivided for suburban development from the c.1970s.

The existing road layout of the principal streets named above, as well as street names relating to the post-1970s subdivision, remain the only tangible evidence of the former Milperra Soldier Settlement.

1.3.2.1. Bullecourt Avenue

Bullecourt Avenue forms the northern boundary of the site and is adjacent to industrial development. It is a bi-directional road on an east-west axis, laid with bitumen with concrete gutters, kerbing, and crossovers. Street furniture and other elements including street signs, bus stops, power lines, and boundary fencing are contemporary in nature. It includes concrete footpaths and a nature strip on either side with inconsistent street tree planting. The remnant Cumberland Plain Woodland is located along Bullecourt Avenue to the northeast side of the site. Bullecourt Avenue forms the junction with Ashford Avenue off the northwestern side of the site (Figure 43 to Figure 46).



Figure 43. Overview of Bullecourt Avenue generally looking east along the campus showing the adjacent industrial development. *Source:* Extent Heritage 2024.



Figure 44. Overview of Bullecourt Avenue generally looking west along the campus. *Source:* Extent Heritage 2024.



Figure 45. Overview of Bullecourt Avenue generally looking west along the campus towards the junction with Ashford Avenue. *Source:* Extent Heritage 2024.



Figure 46. Overview of the junction of Bullecourt and Ashford Avenue looking west. *Source:* Extent Heritage 2024.

1.3.2.2. Ashford Avenue

The section of Ashford Avenue bordering the western boundary of the site extends south from the junction with Bullecourt Avenue. Suburban streets extend from the west of Ashford Avenue, which include Sinai Avenue, Zonnebake Crescent, and Flanders Avenue, which are not associated with the original settlement alignment. Ashford Avenue is a bi-directional road laid on a north-south axis with contemporary street furniture. However, it only includes a concrete footpath on the western side between Bullecourt Avenue to Sinai Avenue. The eastern side of Ashford Avenue does not include a footpath and comprises a wide nature street with inconsistent street tree planting (Figure 47 to Figure 50). Ashford Avenue retains a residential character with a mix of single and double-storey housing along its alignment.



Figure 47. Overview of Ashford Avenue looking south. *Source:* Extent Heritage 2024.



Figure 48. Overview of Ashford Avenue looking north. *Source:* Extent Heritage 2024.



Figure 49. Overview of Ashford Avenue looking south from the junction with Zonnebeke Crescent. *Source:* Extent Heritage 2024.



Figure 50. Overview of the southern extent of Ashford Avenue at the junction with Flanders Avenue. *Source:* Extent Heritage 2024.

1.3.3. Settings and views

The site is surrounded by low scale suburban development to its west and southeast, and industrial development to its east and north. The area to its immediate south, across from the M5 Motorway comprises undeveloped areas and a series of open sports field which connects to the Georges River towards the southwest.

The site is bordered by a council-owned sports field to the north-west of the site, and the Mount St Joseph Catholic College Milperra to the east. In addition, the site is bounded to the north-east by a sizeable tract of protected remnant Cumberland Plain Woodland. These areas are not included within the site boundary.

The present scale of the campus is consistent with that of the surrounding modern residential and industrial development. Given the extensive frontage of the campus with the main suburban road network, it is highly visible along the adjacent streetscape, particularly along its frontages with Bullecourt Avenue and Ashford Avenue (Figure 51 to Figure 56). However, wider views of the campus from the public domain are largely screened by tree plantings and buildings. Secondary views to the

site can be obtained from Horsley Road to the east. Views from the south along the M5 Motorway to the site cannot be obtained due to highway noise barriers.



Figure 51. Overview of the suburban setting surrounding the site. *Source:* Extent Heritage 2024.



Figure 52. Overview of the suburban setting surrounding the site. *Source:* Extent Heritage 2024.



Figure 53. Overview of the Council sports field adjacent to the campus. *Source:* Extent Heritage 2024.



Figure 54. View to the campus from Ashford Avenue. *Source:* Extent Heritage 2024.



Figure 55. View of the commercial development at the junction of Bullecourt and Ashford Avenues. *Source:* Extent Heritage 2024.



Figure 56. Overview of the adjacent industrial development along Bullecourt Avenue. *Source:* Extent Heritage 2024.

2. SIGNIFICANCE ASSESSMENT

This chapter provides the basis for assessing heritage significance in New South Wales as outlined in the *Guidelines for preparing a statement of heritage impact* (Department of Planning and Environment 2023b, 16-18).

2.1. Statement of significance

The following statement of significance is quoted from the State Heritage Inventory (SHI) inventory sheet for the *Milperra Soldier Settlement (former)* (LEP I218):

The Milperra Soldiers Settlement is historically significant because it was part of a national scheme that was intended to repatriate returning servicemen during and after World War I. It reflects then-current attitudes towards the appropriate ways to develop the country and ensure its growth and prosperity. The Settlement was a rare event in the history of Bankstown and was a relatively late and unusual form of agricultural development in the Bankstown area. Apart from this, it represents very early settlement within the area and resulted in the locality being named Milperra.

The road layout of the principal streets provides the only tangible evidence of the subdivision that was formed to accommodate the Settlement.

2.2. Significance of the site

The subject site comprising part of the former WSU Milperra campus has undergone considerable changes in terms of its built fabric from its early agricultural landscape associated with the early land tenure and the former Milperra Soldier Settlement to its present use as a campus of higher education from the mid-1970s.

Historical aerials also indicate that structure associated with the Milperra Soldier Settlement were mostly demolished by the c.1970s in place of the redevelopment of the area for educational purposes. It is unlikely that any former structures associated with the settlement remain extant at the site and that the only known extant feature of the settlement comprises the now-heritage listed road alignment (with Bullecourt Avenue and Ashford Avenue respectively forming the northern and western boundaries of the campus and site).

The site also contains the grounds of the former Milperra Public School which was established in 1918 as part of the settlement development. It operated within the grounds until 1975 when it was relocated to its present location southwest of the campus. Historical aerials indicate that the original 1918 Milperra Public School building was demolished between 1955-1965. Other school buildings generally date from c.1955 and was integrated for use as part of the CAE and subsequent institutions. However, these buildings were progressively demolished in place of more modern educational facilities and updated campus landscaping throughout the late twentieth century. However, two structures which date from c.1955-1965 were possibly integrated into the existing

campus facilities based on a comparison of historical aerials provided in the historical analysis above (Figure 12 and Figure 15 to Figure 19). The existing campus map identifies the structures as Building 10 and 11. However, due to internal site access limitations, the possibility that Building 10 and 11 is associated with the former Milperra Public School is uncertain.

The earliest known existing campus building (Building 1) dates from 1976 and was originally constructed as part of the CAE, later forming part of the Macarthur Institute of Higher Education then the University of Western Sydney (now WSU). Building 1 and other existing campus structures are modern examples of higher education buildings and are not considered to be of heritage significance. The campus landscape is also highly altered and contemporary in setting and apart from the remnant Cumberland Plains Woodland (located outside the site boundary), do not include any landscape items of note.

3. PROPOSED WORKS

3.1. The proposal

Mirvac is partnering with Western Sydney University to develop a proposal for a low-rise medium density master planned neighbourhood incorporating a range of attached, semi-detached and free-standing homes. The proposal is intended to sensitively integrate with the surrounding neighbourhood, enhancing the area for future residents and the wider Milperra community.

This feeds into the wider evolution of WSU's aim to transform the current 'suburban' campus network into a hybrid campus model which includes both suburban and consolidated city centre vertical campuses. The facilities, staff, and students formerly located at the Milperra Campus have been transitioned to the new Liverpool Central Business District (CBD) and Bankstown CBD WSU campuses.

To achieve this vision, the proposed works seeks to subdivide the site through a seven (7) staged program to facilitate the redevelopment of the former Western Sydney University (WSU) Milperra Campus. The subdivision pattern proposed is consistent with the Structure Plan identified in the Draft Site-Specific Development Control Plan and is shown in Figure 57 below.

Stage	No. of residential lots
Stage 1	16
Stage 2	11
Stage 3	135
Stage 4	19
Stage 5	96
Stage 6	105
Commercial	0



Figure 57. Staging Plan showing for the proposed subdivision of the site. *Source:* Mirvac, DRG No. 010

4. HERITAGE IMPACT ASSESSMENT

This chapter assesses the impacts of the proposed works on the heritage significance of the heritage item in accordance with the *Guidelines for preparing a statement of heritage impact* (Department of Planning and Environment 2023b, 18-20).

4.1. Matters for consideration

This Statement of Heritage Impact has established the subject site and the associated buildings contained within are of no heritage significance. This site is however located in the vicinity of one local heritage item, *Milperra Soldiers Settlement*, listed on Schedule 5 of the Canterbury-Bankstown LEP 2023. The roads – Bullecourt Avenue and Ashford Avenue – to the north and western edges of the site form part of the curtilage of the item. The road layout is significant as it provides the only tangible evidence of the subdivision pattern that was formed to accommodate the Settlement to accommodate repatriated soldiers after World War I, later contributing to the residential development of the suburb of Milperra.

The proposed subdivision will facilitate the proposed redevelopment of the former campus into a low-rise medium density residential development. The subdivision of the site will have a minor and inconsequential impact on the road alignments themselves, with the creation of new roads and sixteen (16) driveways adjoining the heritage listed streets.

4.1.1. Fabric and spatial arrangements

The proposed subdivision will be wholly contained within the former campus boundary to a pattern that is consistent with the draft Site-Specific DCP for the former Western Sydney University, Milperra Campus. While the proposed activity will have some interface with the historic subdivision pattern, this is limited to the creation of new linking roads and a total of sixteen (16) driveways off Ashford Avenue. This is consistent with the existing pattern of development along Ashford Avenue and a necessary change required to facilitate the development outcomes for the area.

While the proposal will alter the urban streetscape pattern, Bullecourt and Ashford Avenues will retain their prominent alignment within the streetscape and remain legible in the wider landscape. The proposed subdivision will see a minor and inconsequential impact to the spatial arrangement *Milperra Soldier Settlement (former)* and no impact to significant fabric that contributes to the heritage values of the item. Impacts to the spatial arrangement of Bullecourt and Ashford Avenues could be mitigated through the introduction of formalised landscaping to reinforce the axis of the historic streetscape pattern.

4.1.2. Setting, views and vistas

Views to Bullecourt Avenue and Ashford Avenue have changed considerably since the establishment of the Milperra Soldier Settlement, with large industrial warehouses along Bullecourt Avenue and one to two storey residential and retail developments along Ashford Avenue.

The proposed development will not affect these existing views but reflect the changing character of the area. The residential nature of the proposed development will help retain the largely residential character of Ashford Avenue and the wider area by providing much needed housing in the area with increased residential amenity. The views and settings will generally remain unchanged as the subdivision proposed is similar to that which currently exists within the adjoining neighbourhoods.

4.1.3. Use

The proposed subdivision is consistent with the existing use of the wider landscape, which is characterised as a residential landscape.

4.1.4. Demolition

The demolition of existing buildings formed part of the impact assessment in the rezoning application. As noted in the previous impact statement, the demolition of existing buildings on the subject site will not impact the road alignments themselves, which will be retained as part of the new development, nor will it impact on the heritage significance of the item.

4.1.5. Curtilage

The proposed works are wholly contained within the former campus. Where the subdivision will create new driveways off Ashford Avenue and new linking roads, this will have a minor and inconsequential impact on the heritage curtilage of *Milperra Soldier Settlement (former)*.

4.1.6. Aboriginal cultural heritage

An Aboriginal Archaeological Due Diligence report was prepared for the site in 2017. The report established the following with regards to Aboriginal cultural heritage:

- With the exception of the area identified as a remnant Cumberland Plain Woodland to the northeast of the site (outside of the study area), development work for the majority of the subject area may proceed with caution.
- It is considered that there is a low risk of Aboriginal objects being present within the subject area. However, the nature of disturbance does not preclude the potential for isolated finds, which is a common site type across the region, even in disturbed contexts.
- In the event of unexpected Aboriginal objects, sites or places (or potential Aboriginal objects, site or places) are discovered during the subdivision and later construction, all works in the vicinity should cease and the contractor should determine the subsequent course of action in

consultation with a heritage professional and/or Heritage NSW as appropriate. A process of consultation with Aboriginal community representatives would also be required in this event.

- This document may be summarised within and/or appended to a Development Application, Statement of Environmental Effects (SEE) or Review of Environment Factors (REF). If any Aboriginal objects are later identified within the proposed activity area, this report cannot however be used to support an application for an Aboriginal Heritage Impact Permit (AHIP). Such an application would require more detailed investigation involving a formal process of Aboriginal community consultation and the preparation of an Aboriginal Cultural Heritage Assessment Report (ACHA).

4.1.7. Historical archaeology

Following the major University developments in 1973 for buildings, sports fields, parking and associated services, it is unlikely that substantial archaeological evidence has been preserved. The topography of the site has been modified through both cutting and filling to meet the functions of the university. This activity is likely to have reduced the integrity and survival of physical remains including structural remains, landscape elements, archaeological deposits and 'relics'.

There is no documented evidence for developments within the site during the eighteenth and nineteenth centuries that are likely to have left significant physical remains. Archaeological evidence of buildings associated with the soldier settlement are likely to be restricted to building piers and foundations associated with housing, poultry-shed footings, postholes and fence lines. If such remains survive, they are likely to be of local significance with a low research potential. Physical remains associated with the post-1920 development of the site is unlikely to provide any substantive information that would contribute to our understanding of the historical development of the site.

The presence of historical archaeological remains of local significance is considered to be low. Any remains that do survive are likely to have a low research potential.

4.1.8. Natural heritage

A remnant portion of Cumberland Plain Woodland is conserved to the northeast of the site, outside the site boundary. The area is to be retained and zoned Woodland Conservation. The proposed subdivision will have no impact on the natural heritage values of this area.

4.1.9. Conservation areas

There are no heritage conservation areas within the vicinity of the subject site.

4.1.10. Cumulative impacts

The subdivision forms part of a wider plan to redevelop the subject site for additional residential dwellings in accordance with objectives outlined in the Draft site-specific DCP for Milperra Campus

and master plan prepared for the site. The subdivision will have no cumulative impacts to the heritage significance of the *Milperra Soldiers Settlement (former)*.

4.1.11. Other heritage items in the vicinity

The site is in the vicinity of one local heritage item, the *Milperra Soldier Settlement (former)*. As previously stated, it is the alignment of the streets Bullecourt Avenue and Ashford Avenue, which directly abut the subject site to the north and west, that contribute to the heritage significance of the former settlement. The street alignment will not be altered by the proposed subdivision, and thus the proposed works will have no impact to this heritage item.

4.2. Assessment against statutory and non-statutory controls

4.2.1. Canterbury Bankstown Local Environmental Plan 2023

Clause 5.10 of the Canterbury Bankstown LEP 2023 applies to heritage conservation and 5.10(4) requires, among other things, that before granting consent under clause, Council must assess the effect of a proposed development on the heritage significance of the item or conservation area and concerned. Clause 10(5) specifies that Council, before granting consent, may require a heritage management document to be prepared that assesses the extent to which the carrying out of the proposed development would affect the heritage significance of the heritage item or heritage conservation area. This applies to land in the vicinity of a heritage item or heritage conservation area.

Extent Heritage comment

The subject site is not listed as local heritage item on schedule 5 of the Canterbury Bankstown LEP, nor is it located within a heritage conservation area. However, the site is located within the vicinity of one (1) local heritage item, *Milperra Soldier Settlement (former)*. Clause 5.10 requires a heritage management document and an assessment of the heritage impacts of the proposal. This Statement of Heritage Impact fulfils that requirement.

4.2.2. Canterbury Bankstown Development Control Plan 2023

The Canterbury Bankstown LEP 2023 is supplemented by the Canterbury Bankstown Development Control Plan (DCP) 2023. The DCP provides a unified set of controls that provides detailed planning and design guidelines to support the planning controls in the LEP. It is important the controls are adhered to as the Consent Authority is required to take into consideration the relevant provisions of the DCP in determining an application for development affecting a locally listed heritage item.

The draft WSU Milperra Site Specific Development Control Plan 2023 (DCP) was adopted by Council on 2 November 2023. It provides a site-specific framework and supporting guidelines for the future redevelopment of the site and is applicable to land which comprises the site assessed in this report.

The following general controls relevant to the proposed subdivision of the site and guidelines related to heritage outlined in the DCP are listed in the table below.

DCP Controls
Heritage
4.4 Heritage in the vicinity of a heritage item
<p><u>Objectives</u></p> <p>O1. To ensure that adjacent development does not detrimentally impact upon the heritage significance of places of heritage significance or their settings.</p> <p>O2. To ensure that new development is compatible with the heritage values of adjacent places of heritage significance.</p>
<p><u>Development controls</u></p> <p>1.1 The design of development must:</p> <ul style="list-style-type: none"> (a) respond to the setting, setbacks, form, scale and style of nearby places of heritage significance; (b) maintain significant views to and from the place of heritage significance; (c) ensure adequate setbacks from the site of the place of heritage significance to retain its visual setting; (d) retain original or significant landscape features that are associated with the place of heritage significance or that contribute to its setting; (e) use materials, finishes and colours selected to avoid strong contrast with the place of heritage significance in order to retain its visual importance or significance.
<p><u>Extent Heritage assessment</u></p> <p>The proposed subdivision and redevelopment will improve the amenity of the area with the inclusion of low-rise medium residential development. This is a compatible use that will see no impact to the heritage significance of the locally listed item, <i>Milperra Soldier Settlement (former)</i>, an item consisting of a series of road alignments surrounding the site to the north and west. While the subdivision will see the creation new roads and driveways intersecting the Bullecourt and Ashford Avenues, this will not detract from the heritage values of the item.</p>
Draft WSU Milperra Site Specific
3.9 Heritage
<p><u>Objectives</u></p> <p>O1. To preserve the significant historical form of road corridors contributing to the character of the precinct, specifically along Bullecourt and Ashford Avenue.</p>
<p><u>Controls</u></p> <p>C1. A Heritage Interpretation Plan must be provided as part of any future Development Application or Subdivision that highlights the historical and cultural significance of the subject site.</p> <p>C2. For all residential subdivisions or developments on lands adjacent to or lands containing a C2 Environmental Conservation zone, an Aboriginal Cultural Heritage Assessment (ACHA) must be prepared prior to any ground disturbances in the area.</p> <p>C3. An Unexpected Finds Protocol is required to be issued prior to any remediation, earthworks or construction is undertaken on any lands identified in the Heritage Interpretation Map.</p>

DCP Controls

Extent Heritage comments

The proposed subdivision has made a considered effort to ensure the new pattern of development has a minimal impact on the existing road corridors that contribute to the heritage significance of the *Milperra Soldiers Settlement (former)* retained and conserved in Bullecourt and Ashford Avenues. This could be enhanced by additional placemaking initiatives explored in a Heritage Interpretation Plan.

5. SUMMARY AND RECOMMENDATIONS

5.1. Summary

This report seeks to address the impacts of the proposed subdivision of the former Western Sydney University Milperra Campus. While the subject site is not a heritage listed item, it is bordered by Bullecourt Avenue to its north and Ashford Avenue to its west, roads that form part of the locally listed heritage item *Milperra Soldier Settlement (former)* on the *Canterbury Bankstown LEP 2023*. This report concludes that the proposed development will not have any impact on these roads as all works proposed are to be contained within the subject site, and as such will not affect the alignment of the roads which is key to the item's significance. The subdivision will facilitate the suburban redevelopment of the area, which seeks to improve the residential amenity of the wider area, as it will provide much needed housing in the area and its surrounds.

This report has assessed the heritage impacts of the proposed works against the relevant objectives and development controls within the *Canterbury Bankstown LEP 2023* and *Canterbury Bankstown DCP 2023*. The proposed subdivision generally comply with the relevant heritage controls within the LEP and DCP to result in an improved outcome for the heritage items in the vicinity. The proposed subdivision will not result in any adverse impacts on the significance or character of the heritage item in the vicinity or on the identified heritage values of the *Milperra Soldier Settlement (former)*.

5.2. Recommendations

In recognition of the historical associations of the site with the *Milperra Soldier Settlement (former)*, the following recommendations are provided to inform the proposed development.

- It is recommended that all future development proposals should give regard to the heritage controls outlined in Chapter 4 of *Canterbury Bankstown Development Control Plan (DCP)* and Section 3.9 of the draft *Site-Specific DCP for Western Sydney University Milperra Former Campus*. Broadly, the objectives outlined in the DCP seek to ensure that adjacent development does not have a detrimental impact on the identified heritage values, is a compatible development, and retains key features that contribute to the character of the area. For the subject site, retaining the historical form of the road corridors of Bullecourt and Ashford Avenues will be integral to the conservation of heritage values.
- Under Clause 5.10(5) of the *Canterbury Bankstown Local Environmental Plan 2023*, subsequent Development Applications for construction may require a Statement of Heritage Impact (SOHI) to assess the potential impacts to the heritage significance of the *Milperra Soldier Settlement (former)*. Given the significance of the heritage item is embodied in the layout of the Bullecourt and Ashford Avenues, it is considered unlikely that built form in the adjacent lot would adversely impact the identified heritage values of the item, however, pre-DA advice from Canterbury Bankstown's Council heritage officer should be sought.

- Section 3.9 of the DCP stipulates that a Heritage Interpretation Plan should be provided as part of any future Development Application or subdivision of the former Western Sydney University Milperra Campus. It is recommended that an Interpretation Plan is prepared following the subdivision, in line with the controls provided in Section 3.9 of the DCP cited above. The Heritage Interpretation Plan would establish a thematic framework to interpret the Milperra Soldier Settlement by exploring the historical and social values associated with the site. The interpretation plan would identify suitable interpretative devices for implementation based on a thorough site analysis.
- The site, like all places in NSW, is subject to the general conditions of the *Heritage Act 1977*, there are however no specific permitting or consent requirements under the Act for this site. As part of the on-site environmental management process, an unexpected finds procedure should be put in place, developed by an archaeologist with demonstrated experience and understanding of the required obligations in accordance with the Act. This protocol would include a pre-start briefing of contractors regarding the type of material that may be uncovered during works and their obligations under the Act. The procedure should also outline a process for protecting and identifying unexpected archaeological material, if uncovered during works.

6. REFERENCES

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List of definitions

Term	Meaning
Consent authority	The person or body with whose approval that act, matter or thing may be done or without whose approval that act, matter or thing may not be done.
Conservation	Conservation means all the processes of looking after a place so as to retain its cultural significance (as defined in <i>The Burra Charter</i>).
Development	The erection of a building, carrying out work, use of or subdivision of land.
Heritage significance	Term used in the assessment and understanding of heritage items that have significance in relation to their historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value.
Moveable heritage	A moveable object that is not a relic.
<i>National construction code</i>	A code that sets minimum requirements for design, construction and performance of buildings, as well as plumbing and drainage systems throughout Australia.
Relic	Any deposit, artefact, object or material evidence that is of state or local heritage significance.
Setting	The area around an item, which may include the visual catchment.
State Heritage Inventory	An online database containing heritage items and conservation areas on statutory lists in NSW. This includes the State Heritage Register and local government items.
State Heritage Register	The NSW State Heritage Register. A list of places and items of importance to the people of NSW. Only places of state heritage significance are listed on the State Heritage Register. The State Heritage Register protects these items and their significance.
State Heritage Register item	A term to describe a heritage item that is of state heritage significance and is listed on the State Heritage Register.

List of abbreviations

Abbreviation	Meaning
CMP	Conservation Management Plan
DA	Development application
DCP	Development Control Plan
DP&E	Department of Planning and Environment
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
HCA	Heritage Conservation Area
Heritage Act	<i>Heritage Act 1977 (NSW)</i>
LEP	Local Environmental Plan
LGA	Local Government Area
NSW	New South Wales
S170 Register	Section 170 State Agency Heritage and Conservation Register
SEPP	State Environmental Planning Policies
SHI	State Heritage Inventory, NSW
SHR	State Heritage Register
SOHI	Statement of Heritage Impact

APPENDIX E: ESTIMATED DEVELOPMENT COST

SECTION A. Details of the Applicant					
Mr	<input checked="" type="checkbox"/>	Ms	<input type="checkbox"/>	Mrs	<input type="checkbox"/>
Miss	<input type="checkbox"/>				
First Name	Mirvac Homes (NSW) Pty Ltd			Family Name	
Unit No.		Street No.	200	Street	George Street
Suburb	Sydney			State	NSW
		Postcode	2000		
Daytime Telephone				Mobile	0426885668
Email	Stanley.lu@mirvac.com				
SECTION B. Location and Title Description of the Property					
Unit No.		Street No.	2 & 2A	Street	Bullecourt Avenue
Suburb	Milperra			State	NSW
		Postcode	2214		
Lot No.	Lot 1 & Lot 2			Section No.	
Deposited Plan/Strata Plan No.	Lot 1 DP 101147 & Lot 2 DP1291984				
SECTION C. Development Cost					
Item				Cost	
DEVELOPMENT DETAILS					
Gross Floor Area - Commercial				m ²	
Gross Floor Area - Residential				m ²	4328
Gross Floor Area - Retail				m ²	
Gross Floor Area - Car Parking				m ²	
Gross Floor Area - Other				m ²	
Total Gross Floor Area				m ²	4328
Total Site Area				m ²	6030
Total Car Parking Spaces					
Total Development Cost				\$	8,520,330.00
Total Construction Cost				\$	8,353,265.00
Total GST				\$	759,388.00
ESTIMATE DETAILS					
Excavation				\$	
Cost per square metre of site area				\$/ m ²	
Demolition and Site Preparation				\$	
Cost per square metre of site area				\$/ m ²	
Construction - Commercial				\$	

Cost per square metre of commercial area	\$/ m ²	
Construction - Residential	\$	8,353,265.00
Cost per square metre of residential area	\$/ m ²	1,930.05
Construction - Retail	\$	
Cost per square metre of retail area	\$/ m ²	
Carpark	\$	
Cost per square metre of site area	\$/ m ²	
Cost per space	\$/space	
Fitout - Commercial	\$	
Cost per square metre of commercial area	\$/ m ²	
Fitout - Residential	\$	
Cost per square metre of residential area \$/m ²	\$	
Fitout - Retail	\$	
Cost per square metre of retail area	\$/ m ²	
Professional Fees	\$	167,065.00
% of Development Cost	%	2
% of Construction Cost	%	2

SECTION D. Applicant's Declaration

I certify that I have:

- ☒ Inspected the plans the subject of the application for development consent or construction certificate.
- ☒ Prepared and attached an elemental estimate generally prepared in accordance with the Australian Cost Management Manuals from the Australian Institute of Quantity Surveyors.
- ☒ Calculated the development costs in accordance with the definition of development costs in the Section 94A Development Contributions Plan of the Council of Bankstown at current prices.
- ☒ Included GST in the calculation of development cost.
- ☒ Measured gross floor areas in accordance with the Method of Measurement of Building Area in the AIQS Cost Management Manual Volume 1 (Appendix A2).
- ☒ I understand that the information supplied on this form and any related document will be made accessible to the public, on Council's website and may be copied at Council under the GIPA Act 2009.

Name Nick Wong

Signature

Must be signed by a Registered Quantity Surveyor

Nicky Wong

Position & Qualifications: MAIQS

Membership No. MAIQS (11634)

Date 18-Jun-2024

PRIVACY NOTICE

Council is required under the Privacy and Personal Information Protection Act 1998 (PPIPA) to collect, maintain and use your personal information in accordance with the Privacy Principles and other relevant requirements of the PPIPA.

Personal information requested on this form will only be used to fulfil the purpose for which it is being collected. Provision of this information is voluntary and is required to help process your application. Council is regarded as the agency that holds the information and access is restricted to council officers and other authorised people. You may apply to access or amend the information. For further information or clarification please contact the Privacy Contact Officer at Council.

BANKSTOWN CUSTOMER SERVICE CENTRE
Upper Ground Floor, Civic Tower, 66-72 Rickard Road,
Bankstown NSW 2200, PO Box 8, Bankstown NSW 1885

CAMPSPIC CUSTOMER SERVICE CENTRE
137 Beamish Street, Campsie NSW 2194
PO Box 77, Campsie NSW 2194

CANTERBURY-BANKSTOWN COUNCIL
ABN 45 985 891 846 P. 9707 9000 F. 9707 9700
W. cbc.city.nsw.gov.au

Executive Summary

This cost report has been prepared based on the Development Application architectural drawings prepared by Mirvac Design, Site 1 revision A, 10 April 2024.

We stress that this is only a preliminary cost estimate as detailed design information is not available at this stage and several assumptions had to be made to, yet these assumptions, are and shall **not** be considered as contingencies. We therefore strongly recommend that a more detailed measured check estimate be prepared at a later stage when further design development information including structural design, schematic services design, specifications and development consent conditions are available.

Cost Plan Exclusions

- Civil works associated with land subdivision including bulk earthworks, site services infrastructure, public roads and paths etc.
- Land costs and acquisition costs
- Interest, Finance, Legal Fees
- Marketing and Agent Fees
- DA and CC fees, Section 7.11 and Council Contribution, Long Service Leave Levy, other authority charges and contributions
- Sydney Water Development Plan Charges/ Section 73 Contributions
- Relocation, diversion or upgrading existing site services
- Removal of contaminants and hazardous materials (if discovered)
- Works beyond site boundaries
- Loose furniture
- Future increase in costs from date of this estimate to date of actual commencement of construction
- Goods and Service Tax

Appendix A – Area Schedule



AREA SCHEDULE

**WSU Milperra
Site 1
Lots 1001 to 1016 (16)**

	Total		
Level	FECA	UCA	GFA
Ground Floor	1973	445	2418
First Floor	1849	61	1910
Total	3822	506	4328

Site Area (m2)

6030

Appendix B – Cost Plan Summary

SITE 1, WSU



Code	Description	Quantity	Unit	Rate	SubTotal	Factor	Total
	SUBSTRUCTURE	4328	m2	\$ 105.63	\$ 457,153		\$ 457,153
	COLUMNS	4328	m2	\$ -	\$ -		\$ -
	UPPER FLOORS	4328	m2	\$ 86.85	\$ 375,877		\$ 375,877
	STAIRS	4328	m2	\$ 28.76	\$ 124,493		\$ 124,493
	ROOFING	4328	m2	\$ 129.10	\$ 558,747		\$ 558,747
	EXTERNAL WALLS & WINDOWS	4328	m2	\$ 421.68	\$ 1,825,036		\$ 1,825,036
	EXTERNAL DOORS	4328	m2	\$ 20.05	\$ 86,797		\$ 86,797
	INTERNAL WALLS	4328	m2	\$ 125.47	\$ 543,044		\$ 543,044
	INTERNAL SCREENS	4328	m2	\$ 6.23	\$ 26,971		\$ 26,971
	INTERNAL DOORS	4328	m2	\$ 43.62	\$ 188,798		\$ 188,798
	WALL FINISHES	4328	m2	\$ 73.19	\$ 316,776		\$ 316,776
	FLOOR FINISHES	4328	m2	\$ 92.24	\$ 399,228		\$ 399,228
	CEILING FINISHES	4328	m2	\$ 73.19	\$ 316,776		\$ 316,776
	FITMENTS	4328	m2	\$ 88.69	\$ 383,842		\$ 383,842
	HYDRAULIC SERVICES	4328	m2	\$ 95.88	\$ 414,976		\$ 414,976
	ELECTRICAL SERVICES	4328	m2	\$ 118.37	\$ 512,317		\$ 512,317
	FIRE SERVICES	4328	m2	\$ 2.15	\$ 9,322		\$ 9,322
	MECHANICAL SERVICES (INCL. A/C)	4328	m2	\$ 38.87	\$ 168,208		\$ 168,208
	EXTERNAL WORKS & LANDSCAPING	4328	m2	\$ 67.48	\$ 292,067		\$ 292,067
	SUBTOTAL	4328	m2	\$ 1,617.47	\$ 7,000,427		\$ 7,000,427
	PRELIMINARIES & MARGIN	4328	m2	\$ 137.12	\$ 593,450		\$ 593,450
	ESTIMATED CONSTRUCTION COST (EXCL. GST)	4328	m2	\$ 1,754.59	\$ 7,593,877		\$ 7,593,877
	GST	4328	m2	\$ 175.46	\$ 759,388		\$ 759,388
	ESTIMATED CONSTRUCTION COST (INCL. GST)	4328	m2	\$ 1,930.05	\$ 8,353,265		\$ 8,353,265
	PROFESSIONAL FEES (2%)	4328	m2	\$ 39	\$ 167,065		\$ 167,065
	TOTAL DEVELOPMENT COSTS	4328	m2	\$ 1,968.65	\$ 8,520,330		\$ 8,520,330
			m2				
	SITE AREA	6030	m2				
	GROSS FLOOR AREA (GFA)	4328	m2				
	DWELLINGS	16	No				

GFA: 0.00 m2

To Collection \$8,520,330

APPENDIX F: WASTE MANAGEMENT PLAN

WASTE MANAGEMENT PLAN FOR BANKSTOWN, BASS HILL & REVESBY WARDS



Demolition, construction and ongoing management

The applicable sections of this Plan must be completed and submitted with your Development Application. Completing this Plan will assist you in identifying the type of waste that will be generated and in advising Council how you intend to reuse, recycle or dispose of the waste. The information provided will be assessed against the objectives of the DCP. If you require assistance completing your Waste Management Plan, please contact Council's **Resource Recovery Team – Bankstown Branch on 9707 9000**.

If there is insufficient space, please provide attachments.

Site details

Site address:

Suburb:

Postcode:

Applicants details

Name:

Address:

Suburb:

Postcode:

Telephone:

Mobile:

Email:



The details provided on this form are for the intention of managing waste relating to this project.

WASTE MANAGEMENT PLAN

DEMOLITION (PLEASE FILL IF APPLICABLE)

Do the works involve asbestos removal?

N/A Under 10m² Over 10m²

(If N/A or under 10m², only complete General Demolition Waste details)

Work Cover License No.

Demolition Contractor Details:

Licensed Landfill:

Tick ☐ if a demolition contractor has not been appointed. If approved, a condition of consent may be placed on the Development Application requiring the above details prior to works commencing on-site.

General demolition waste

Type of material	Amount		How will you manage this waste		
	Less than 10m ³	More than 10m ³	Reuse on-site	Recycle	Landfill
Bricks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Concrete	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tiles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timber (clean)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timber (treated)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Asphalt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Metals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plasterboard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Green waste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other - specify	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other - specify	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Principal Off-Site Recyclers:

Principal Licensed Landfill Sites:

WASTE MANAGEMENT PLAN
CONSTRUCTION (PLEASE FILL IF APPLICABLE)

Will a skip bin hire company be used?

Yes for some work Yes for all work No

Estimated total volume of waste:

Name of skip bin hire company used:

Address:

Suburb:

Postcode:

ABN Number:

Contractor License Number:

Tick ☐ if a skip bin hire company has not been appointed. If approved, a condition of consent may be placed on the Development Application requiring the above details prior to works commencing on-site.

If using a skip bin hire company for all work, please stop here.

All excavation material including swimming pools	Less than 10m ³	More than 10m ³	
	Reuse on-site	Reuse off-site	Landfill disposal

Address if reused off-site:

Name of licensed landfill:

Address of licensed landfill:

Type of material	Amount		How will you manage this waste		
	Less than 10m ³	More than 10m ³	Reuse on-site	Recycle	Landfill
Bricks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Concrete	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tiles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timber (clean)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timber (treated)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Asphalt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Metals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plasterboard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Green waste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other - specify	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other - specify	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Principal Off-Site Recyclers:

Principal Licensed Landfill Sites:

I certify that:

- (a) any material moved off-site is transported in accordance with the requirements of the Protection of the Environment Operations Act 1997;
- (b) waste is only transported to a place that can lawfully be used as a waste facility;
- (c) generation, storage, treatment and disposal of hazardous waste and special waste (including asbestos) is conducted in accordance

with relevant waste legislation administered by the EPA and relevant Work Health and Safety legislation administered by WorkCover NSW; and

- (d) all records demonstrating lawful disposal of waste and evidence such as weighbridge dockets and invoices for waste disposal or recycling services is retained and kept readily accessible for inspection by regulatory authorities such as Council, NSW EPA or WorkCover NSW.

Signature:
Date:

WASTE MANAGEMENT PLAN

ONGOING MANAGEMENT

- ☐ Multi dwelling housing with individual bin storage areas
- ☐ Multi dwelling housing or Residential Flat Building with communal bin storage area
- ☐ Mixed use development
- ☐ Commercial/retail or Industrial development

Proposed number of residential dwellings:

Proposed number of commercial dwellings:

Please stop here if you have selected the 'commercial/retail or industrial development' option. A commercial waste service must be provided. Council provides a commercial waste collection service for garbage only. Please contact Council's Waste Operations Unit on 9707 9000 to confirm if a service is available for your development.

Bin size and collection frequency

Council allocates bins at the rates prescribed in Section 3.2 of the Waste Management Guide. Standard bin dimensions are detailed in Section 3.3 of the Guide.

Service	Bin Size	Number of bins required	Standard collection frequency	Approved alternate collection frequency*
Garbage	120L 660L 1100L		Weekly	
Recycling	240L 660L 1100L		Fortnightly	
Garden waste	240L		Fortnightly	N/A

Note: Collection frequencies and bin selections are at Council's discretion.

*Alternate collection frequencies must be approved by Council prior to lodgement. Where this has been discussed with and approval given by an assessing officer, please provide details of the Council contact:

Council Officer Name:

Telephone:

Date:

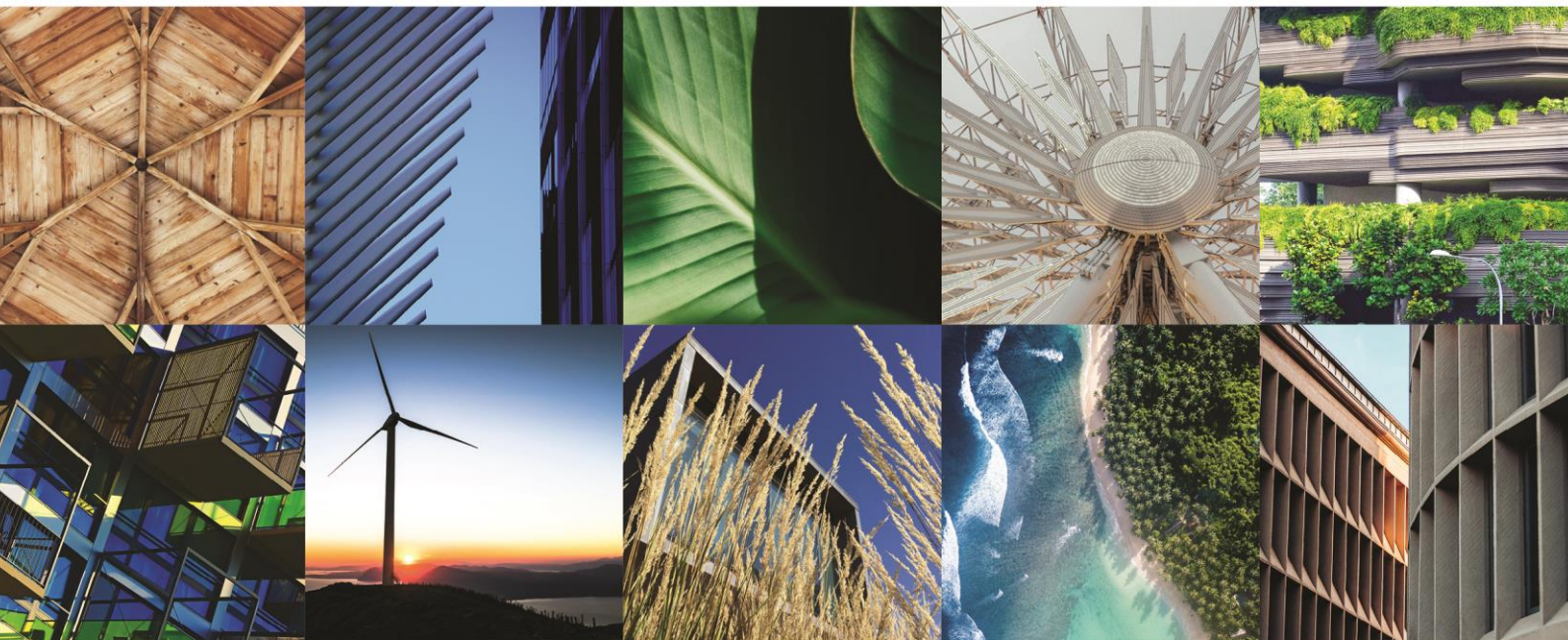
Storage of waste	YES	NO	N/A
------------------	-----	----	-----

1. Is there sufficient space allocated within each dwelling for two day's capacity of waste and recycling?
2. Does the bin storage area(s) have sufficient space to store the required number of bins?
3. Does the development ensure the bin storage area is located:
 - a) behind the building line of the dwelling where it is screened or cannot be viewed from the public domain?
 - b) away from habitable windows and doors of adjoining dwellings to reduce noise and odour?
 - c) such that residents are able to conveniently carry their waste to the correct bin from their dwelling?
 - d) such that the bin-carting route to the collection point does not pass through any internal rooms of the dwelling?
 - e) such that the bin-carting route to the collection point avoids steps and slopes?
 - f) such that the bins can be moved safely to the collection point?
4. Has the design ensured that any door and pathway from the bin storage area to the collection point is a minimum of 2 metres in width?
5. Has the bin-carting route been illustrated on the plans accompanying the DA?
6. Is the bin-carting route:
 - a) non-slip?
 - b) free from obstructions and steps?
 - c) a maximum grade of 1:14 (or 1:30 where 660L or 1100L bins are used)?

Storage of waste	YES	NO	N/A
7. Has the required cleaning equipment been provided to manage waste, bins and the bin storage area, including access to water supply?			
8. For kerbside collection, is the bin storage area located within 50 metres of the collection point?			
9. For collect and return service:			
a) Is the bin storage area located within 10 metres of a layback to the collection point?			
b) If no, has a temporary bin holding area been provided within 10 metres of a layback the to the collection point?			
c) What is the bin-carting distance from the bin storage area to the temporary bin holding area?			
d) Is bin-handling equipment (e.g. bin tugs) provided to assist the caretaker with bin-carting (to comply with WH&S requirements)?			
10. Is there a garbage chute system proposed?			
a) How many floors will the chute service?			
b) Is there a recycling cupboard provided on each residential floor adjacent to the chute hopper?			
c) Has a bin storage room been provided where the waste chute terminates?			
d) Is there a bin lifting machine provided to assist with condensing 240L recycling bins on each floor into bulk bins for collection?			
11. Is the residential bin storage area separated from the commercial bin storage area with access restricted to each type of tenancy? (mixed use developments only)			
12. Has a minimum of 4m ² per building been allocated for the storage of bulky waste?			
13. Has a scaled plan been submitted illustrating the layout of the bin storage area(s)?			
Collection of waste	YES	NO	N/A
1. Has a kerbside collection point been nominated on the plans accompanying the DA?			
2. For collect and return service, does the collection point have a convenient layback to the roadway or remain flat to the truck loading area?			
3. For kerbside collection:			
a) is there enough kerbside space for each dwelling to present all bins for collection in single file, also allowing for a 30 centimetre gap between bins?			
b) can all allocated bins be placed within the site's allocated frontage and not in front of driveways or neighbouring lots?			
4. Is there a separation distance of at least 2 metres between all bins and street trees, bus stops, street furniture and road infrastructure such as round-a-bouts and speed humps?			
5. a) Does the development require the collection vehicle to access the site to service the bins?			
b) If yes, is the DA accompanied by scaled swept path diagrams for the waste collection vehicle which demonstrates the vehicle can enter and exit in a forward direction, minimises manoeuvring within the site and can access the nominated loading area?			
6. Has the development been designed to ensure that access to the collection point can be undertaken by a Heavy Rigid Vehicle?			
7. Is the DA accompanied by a traffic statement confirming the site and collection point has been designed to comply with AS 2890.2 Parking Facilities: Off-Street Commercial Vehicle Facilities?			

Ongoing use	YES	NO	N/A
1. a) Is there a caretaker on site responsible for managing waste?			
b) How often are they on site and what is their role?			
2. Is the bin storage area accessible to waste collection staff (no security locks or devices)?			
3. Additional information:			

APPENDIX G: BASIX CERTIFICATE



Mirvac Proposed Residential Development

To be built at Western Sydney University, Milperra Site 01

2, Bullecourt Avenue, Milperra NSW 2214

Issue	File Ref	Description	Author	Date
A	24-5716R	NatHERS Thermal Comfort and BASIX Assessment	JF/SS	09/09/2024

This report has been prepared by Efficient Living Pty Ltd on behalf of our client Mirvac Projects Pty Ltd. Efficient Living prepares all reports in accordance with the BASIX Thermal Comfort Protocol and is backed by professional indemnity insurance. This report takes into account our Client's instructions and preferred building inclusions.

If there is a change to this specification during design or construction phases, please contact Efficient Living and quote the above file reference for advice, and to obtain an updated Certificate if required.



Thermal Comfort Inclusions

Floors

Waffle pod slab 85mm concrete and 300mm waffle pods

Timber frame between levels, no insulation required between conditioned areas.

Suspended timber frame, with an R4.0 insulation lined below

External Walls

75mm Hebel on framed walls with R2.5 insulation (insulation only value)

50mm Hebel on framed walls with R2.5 insulation (insulation only value)

Brick veneer with R2.5 insulation (insulation only value)

Lightweight cladding on framed walls with R2.5 insulation (insulation only value)

Note: No insulation is required to external Garage walls

External Colour:

Default medium colour modelled.

Walls within dwellings

Plasterboard on studs, no insulation required.

R2.5 insulation to internal garage walls shared with habitable rooms.

R2.5 insulation to walls between conditioned and unconditioned zones.

Glazing Doors/Windows

Glazing upgrade - SEM double-glazed, single low-e

Awning: U 3.8 and SHGC 0.52

Fixed: U 3.1 and SHGC 0.67

Sliding door: U 3.9 and SHGC 0.58

Circular solartube modelled with 250mm diameter. (where applicable)

Note: U 6.7 and SHGC 0.57 are proxy for entry door glazing.

Window frame colour

Dark (SA > 0.7)

Roof and Ceilings

Metal roof with anticon blanket ($R_{u1.3}$ and $R_{d1.3}$)

R5.0 ceiling insulation and plasterboard lining, where metal roof above

Garage ceiling with R4.0 insulation and plasterboard lining, where conditioned area above

No insulation to garage ceiling where roof above.

External Colour

Dark (SA > 0.7) Monument

Ceiling Penetrations

Sealed and insulated LED downlights as per the lighting plan

Sealed and insulated exhaust fans as per plans

Floor coverings

As per plans

External Shading

Shading as per stamped drawings

Ventilation

All external doors have weather seals, all exhaust fans and chimneys have dampers, and down lights proposed will have capped fittings

Thermal comfort upgrades as per below - See NatHERS certificate for details.

Lot number	Upgrades required
1001	<ol style="list-style-type: none"> 75mm Hebel on framed walls with R2.7 insulation (insulation only value) Lightweight cladding on framed walls with R2.7 insulation (insulation only value) R2.7 insulation to internal garage walls shared with habitable rooms. No insulation to walls between conditioned and unconditioned zones. Window upgrade 3 - SEM double-glazed, double low-e Awning: U 2.9 and SHGC 0.35 Fixed: U 2.0 and SHGC 0.44 Sliding door: U 2.8 and SHGC 0.39 R4.0 ceiling insulation and plasterboard lining, where metal roof above Garage ceiling with R6.0 insulation and plasterboard lining to where conditioned area above and between conditioned and unconditioned areas. 1300mm ceiling fan to living, family, sitting and bedrooms.

1002	<ol style="list-style-type: none"> 75mm Hebel on framed walls with R2.7 insulation (insulation only value) 50mm Hebel on framed walls with R2.7 insulation (insulation only value) R2.7 insulation to internal garage walls shared with habitable rooms. No insulation to walls between conditioned and unconditioned zones. Window upgrade 3 - SEM double-glazed, double low-e Awning: U 2.9 and SHGC 0.35 Fixed: U 2.0 and SHGC 0.44 Sliding door: U 2.8 and SHGC 0.39 R4.0 ceiling insulation and plasterboard lining, where metal roof above. Garage ceiling with R6.0 insulation and plasterboard lining, where conditioned area above.
1003	<ol style="list-style-type: none"> 75mm Hebel on framed walls with R2.7 insulation (insulation only value) 50mm Hebel on framed walls with R2.7 insulation (insulation only value) R2.7 insulation to internal garage walls shared with habitable rooms. R2.7 insulation to walls between conditioned and unconditioned zones. Window upgrade 3 - SEM double-glazed, double low-e Awning: U 2.9 and SHGC 0.35 Fixed: U 2.0 and SHGC 0.44 Sliding door: U 2.8 and SHGC 0.39 R4.0 ceiling insulation and plasterboard lining, where metal roof above. Garage ceiling with R6.0 insulation and plasterboard lining, where conditioned area above. 1300mm ceiling fan to living, family, sitting and bedrooms.
1004	<ol style="list-style-type: none"> 75mm Hebel on framed walls with R2.7 insulation (insulation only value) R2.7 insulation to internal garage walls shared with habitable rooms. R2.7 insulation to walls between conditioned and unconditioned zones.

	<ol style="list-style-type: none"> 1. Window upgrade 3 - SEM double-glazed, double low-e Awning: U 2.9 and SHGC 0.35 Fixed: U 2.0 and SHGC 0.44 Sliding door: U 2.8 and SHGC 0.39 2. R6.0 ceiling insulation and plasterboard lining, where metal roof above 3. R6.0 insulation throughout suspended floor. 4. 1300mm ceiling fan to living, family and sitting and bedrooms.
1005	<ol style="list-style-type: none"> 1. 75mm Hebel on framed walls with R2.7 insulation (insulation only value) 50mm Hebel on framed walls with R2.7 insulation (insulation only value) 2. R2.7 insulation to internal garage walls shared with habitable rooms. No insulation to walls between conditioned and unconditioned zones. <ol style="list-style-type: none"> 1. Window upgrade 3 - SEM double-glazed, double low-e Awning: U 2.9 and SHGC 0.35 Fixed: U 2.0 and SHGC 0.44 Sliding door: U 2.8 and SHGC 0.39 1. R4.0 ceiling insulation and plasterboard lining, where metal roof above Garage ceiling with R6.0 insulation and plasterboard lining, where conditioned area above. 2. 1300mm ceiling fan to living, family and sitting and bedrooms.
1006	<ol style="list-style-type: none"> 1. 75mm Hebel on framed walls with R2.7 insulation (insulation only value) 50mm Hebel on framed walls with R2.7 insulation (insulation only value) 2. R2.7 insulation to internal garage walls shared with habitable rooms. R2.7 insulation to walls between conditioned and unconditioned zones. <ol style="list-style-type: none"> 1. Window upgrade 3 - SEM double-glazed, double low-e Awning: U 2.9 and SHGC 0.35 Fixed: U 2.0 and SHGC 0.44 Sliding door: U 2.8 and SHGC 0.39

	<ol style="list-style-type: none"> 1. R6.0 ceiling insulation and plasterboard lining, where metal roof above Garage ceiling with R6.0 insulation and plasterboard lining to where conditioned area above and between conditioned and unconditioned areas 2. R6.0 to suspended open floor. 3. 1300mm ceiling fan to living, family and sitting
1007	<ol style="list-style-type: none"> 1. 75mm Hebel on framed walls with R2.7 insulation (insulation only value) Lightweight cladding on framed walls with R2.7 insulation (insulation only value) 2. R2.7 insulation to internal garage walls shared with habitable rooms. R2.7 insulation to walls between conditioned and unconditioned zones. 3. Window upgrade 3 - SEM double-glazed, double low-e Awning: U 2.9 and SHGC 0.35 Fixed: U 2.0 and SHGC 0.44 Sliding door: U 2.8 and SHGC 0.39 4. R6.0 ceiling insulation and plasterboard lining, where metal roof above. 5. R6.0 insulation throughout suspended floor. 6. 1300mm ceiling fan to living, family, dining, sitting and bedrooms
1008	<ol style="list-style-type: none"> 1. 75mm Hebel on framed walls with R2.7 insulation (insulation only value) 50mm Hebel on framed walls with R2.7 insulation (insulation only value) 2. R2.7 insulation to internal garage walls shared with habitable rooms. No insulation to walls between conditioned and unconditioned zones. 3. Window upgrade 3 - SEM double-glazed, double low-e Awning: U 2.9 and SHGC 0.35 Fixed: U 2.0 and SHGC 0.44 Sliding door: U 2.8 and SHGC 0.39 4. Garage ceiling with R6.0 insulation and plasterboard lining where conditioned area above.

	5. 1300mm ceiling fan to living, family and sitting.
1009	<ol style="list-style-type: none"> 75mm Hebel on framed walls with R2.7 insulation (insulation only value) 50mm Hebel on framed walls with R2.7 insulation (insulation only value) R2.7 insulation to internal garage walls shared with habitable rooms. R2.0 insulation to walls between conditioned and unconditioned zones. Window upgrade 3 - SEM double-glazed, double low-e Awning: U 2.9 and SHGC 0.35 Fixed: U 2.0 and SHGC 0.44 Sliding door: U 2.8 and SHGC 0.39 R4.0 ceiling insulation and plasterboard lining, where metal roof above Garage ceiling with R6.0 insulation and plasterboard lining where conditioned area above and between conditioned and unconditioned areas. R6.0 insulation to open suspended floor. 1300mm ceiling fan to living, family and sitting and bedrooms.
1010	<ol style="list-style-type: none"> 75mm Hebel on framed walls with R2.7 insulation (insulation only value) Lightweight cladding on framed walls with R2.7 insulation (insulation only value) R2.7 insulation to internal garage walls shared with habitable rooms. R2.7 insulation to walls between conditioned and unconditioned zones. Window upgrade 3 - SEM double-glazed, double low-e Awning: U 2.9 and SHGC 0.35 Fixed: U 2.0 and SHGC 0.44 Sliding door: U 2.8 and SHGC 0.39 R6.0 insulation throughout suspended floor. 1300mm ceiling fan to living, family, dining, sitting and bedrooms.
1011	<ol style="list-style-type: none"> 75mm Hebel on framed walls with R2.7 insulation (insulation only value) 50mm Hebel on framed walls with R2.7 insulation (insulation only value)

	<ol style="list-style-type: none"> 2. R2.7 insulation to internal garage walls shared with habitable rooms. R2.7 insulation to walls between conditioned and unconditioned zones. 3. Window upgrade 3 - SEM double-glazed, double low-e Awning: U 2.9 and SHGC 0.35 Fixed: U 2.0 and SHGC 0.44 Sliding door: U 2.8 and SHGC 0.39 4. R4.0 ceiling insulation and plasterboard lining, where metal roof above. Garage ceiling with R6.0 insulation and plasterboard lining to where conditioned area above and between conditioned and unconditioned areas. 5. 1300mm ceiling fan to living, family, sitting and bedrooms.
1012	<ol style="list-style-type: none"> 1. 75mm Hebel on framed walls with R2.7 insulation (insulation only value) 50mm Hebel on framed walls with R2.7 insulation (insulation only value) 2. R2.7 insulation to internal garage walls shared with habitable rooms. No insulation to walls between conditioned and unconditioned zones. 3. Window upgrade 3 - SEM double-glazed, double low-e Awning: U 2.9 and SHGC 0.35 Fixed: U 2.0 and SHGC 0.44 Sliding door: U 2.8 and SHGC 0.39 4. R4.0 ceiling insulation and plasterboard lining, where metal roof above Garage ceiling with R6.0 insulation and plasterboard lining to where conditioned area above.
1013	<ol style="list-style-type: none"> 1. 75mm Hebel on framed walls with R2.7 insulation (insulation only value) 2. R2.7 insulation to internal garage walls shared with habitable rooms. R2.7 insulation to walls between conditioned and unconditioned zones. 3. Window upgrade 3 - SEM double-glazed, double low-e Awning: U 2.9 and SHGC 0.35 Fixed: U 2.0 and SHGC 0.44 Sliding door: U 2.8 and SHGC 0.39

	4. Garage ceiling with R6.0 insulation and plasterboard lining to where conditioned area above and between conditioned and unconditioned areas.
1014	<p>1. Brick veneer with R2.7 insulation (insulation only value) Lightweight cladding on framed walls with R2.7 insulation (insulation only value)</p> <p>1. R2.7 insulation to internal garage walls shared with habitable rooms. R2.7 insulation to walls between conditioned and unconditioned zones.</p> <p>2. Window upgrade 3 - SEM double-glazed, double low-e Awning: U 2.9 and SHGC 0.35 Fixed: U 2.0 and SHGC 0.44 Sliding door: U 2.8 and SHGC 0.39</p> <p>3. R4.0 ceiling insulation and plasterboard lining, where metal roof above Garage ceiling with R6.0 insulation and plasterboard lining to where conditioned area above.</p>
1015	<p>1. No insulation to internal walls between conditioned and unconditioned areas.</p> <p>2. R4.0 ceiling insulation and plasterboard lining, where metal roof above.</p> <p>3. Window upgrade 2 - SEM double-glazed, single low-e Awning: U 3.3 and SHGC 0.38 Fixed: U 2.4 and SHGC 0.48 Sliding door: U 3.2 and SHGC 0.42</p>
1016	<p>6. 75mm Hebel on framed walls with R2.7 insulation (insulation only value) 50mm Hebel on framed walls with R2.7 insulation (insulation only value)</p> <p>7. R2.7 insulation to internal garage walls shared with habitable rooms. R2.7 insulation to walls between conditioned and unconditioned zones.</p> <p>8. Window upgrade 3 - SEM double-glazed, double low-e Awning: U 2.9 and SHGC 0.35 Fixed: U 2.0 and SHGC 0.44 Sliding door: U 2.8 and SHGC 0.39</p> <p>9. R6.0 ceiling insulation and plasterboard lining, where metal roof above Garage ceiling with R6.0 insulation and plasterboard lining to where conditioned area above and between conditioned and unconditioned areas.</p>



efficient
LIVING

Mirvac
WSU, Milperra

	10. 1300mm ceiling fan to living, family, sitting and bedrooms.
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Nationwide House Energy Rating Scheme® Class 1 Summary

NatHERS® Certificate No. #HR-MUVPB0-18

Generated on 29 Aug 2024 using Hero 4.1

Property

Address 2 BULLECOURT AVENUE, MILPERRA, NSW, 2214
Lot/DP 2/DP1291984
NatHERS climate zone 56 - Mascot AMO



Accredited assessor

Name Stefanie Simpson
Business name Efficient Living
Email stefanie@efficientliving.com.au
Phone +61 299706181
Accreditation No. 10035
Assessor Accrediting Organisation HERA

Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-MUVPB0-18>.
When using either link, ensure you are visiting <http://www.hero-software.com.au>



National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J3D3 and J3D15 of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

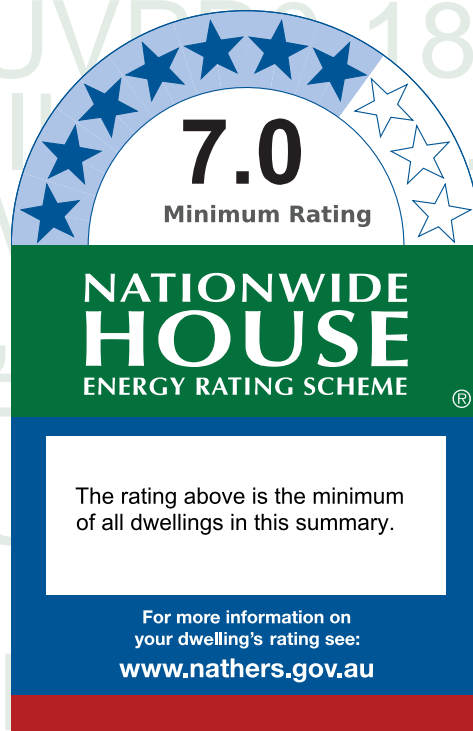
The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Summary of all dwellings

Certificate number and link	Unit Number	Heating load (load limit) (MJ/m ² .yr)	Cooling load (load limit) (MJ/m ² .yr)	Total load (MJ/m ² .yr)	Star Rating	Whole of Home Rating
HR-H5CM0D-02	1001	13.0 (25)	16.6 (18)	29.7	7.0	n/a
HR-ZLHT7C-02	1002	16.8 (25)	13.1 (18)	29.8	7.0	n/a
HR-W8XDSZ-02	1003	13.4 (25)	16.4 (18)	29.8	7.0	n/a
HR-36H5MC-02	1004	13.8 (25)	16.1 (18)	29.9	7.0	n/a
HR-XZ7WNZ-02	1005	14.4 (25)	14.6 (18)	29.0	7.1	n/a

Thermal performance Star rating



Whole of Home performance rating

No Whole of Home performance rating generated for this certificate or not completed for all dwellings.



Summary of all dwellings

Certificate number and link	Unit Number	Heating load (load limit) (MJ/m².yr)	Cooling load (load limit) (MJ/m².yr)	Total load (MJ/m².yr)	Star Rating	Whole of Home Rating
HR-OBOXPM-02	1006	13.5 (25)	16.4 (18)	29.9	7.0	n/a
HR-OJHS1M-02	1007	13.6 (25)	16.0 (18)	29.5	7.0	n/a
HR-LBPVUX-02	1008	17.3 (25)	12.6 (18)	29.9	7.0	n/a
HR-R50RVS-04	1009	13.6 (25)	16.1 (18)	29.7	7.0	n/a
HR-VHF5H9-02	1010	14.0 (25)	15.8 (18)	29.8	7.0	n/a
HR-T2JRGX-02	1011	18.7 (25)	11.1 (18)	29.8	7.0	n/a
HR-U7I8Z5-02	1012	12.7 (25)	17.1 (18)	29.8	7.0	n/a
HR-FMEVC9-02	1013	12.2 (25)	17.7 (18)	30.0	7.0	n/a
HR-3Q770R-02	1014	14.3 (25)	15.3 (18)	29.6	7.0	n/a
HR-WI74I0-02	1015	14.6 (25)	14.8 (18)	29.5	7.1	n/a
HR-ADMU6O-02	1016	14.0 (25)	15.9 (18)	29.9	7.0	n/a

Explanatory notes

About the ratings

This is a summary of NCC Class 1 dwellings in a development. For more details of each dwelling refer to the individual dwelling's certificate using the certificate number in summary of all dwellings table.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the energy loads and societal cost. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy production and storage to estimate the home's societal cost.

For more details about an individual dwelling's assessment, refer to the individual dwelling's NatHERS Certificate (accessible via link).

Accredited Assessors

For high quality NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and are not quality assured.

Licensed assessors in the Australian Capital Territory (ACT) can produce assessments for regulatory purposes only, using endorsed software, as listed on the ACT licensing register.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in certificates is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy use, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

BASIX[®]Certificate

Building Sustainability Index www.basix.nsw.gov.au

Multi Dwelling

Certificate number: 1763491M

This certificate confirms that the proposed development will meet the NSW government's requirements for sustainability, if it is built in accordance with the commitments set out below. Terms used in this certificate, or in the commitments, have the meaning given by the document entitled "BASIX Definitions" dated 10/09/2020 published by the Department. This document is available at www.basix.nsw.gov.au

Secretary

Date of issue: Monday, 09 September 2024

To be valid, this certificate must be submitted with a development application or lodged with a complying development certificate application within 3 months of the date of issue.



Project summary

Project name	Stage1/WSU- 2 Bullecourt Avenue, Milperra NSW 2214
Street address	2 BULLECOURT AVENUE MILPERRA 2214
Local Government Area	CANTERBURY-BANKSTOWN
Plan type and plan number	Deposited Plan 1291984
Lot No.	2
Section no.	-
No. of residential flat buildings	0
Residential flat buildings: no. of dwellings	0
Multi-dwelling housing: no. of dwellings	0
No. of single dwelling houses	16

Project score

Water	✓ 44	Target 40
Thermal Performance	✓ Pass	Target Pass
Energy	✓ 100	Target 72
Materials	✓ -100	Target n/a

Certificate Prepared by

Name / Company Name: Efficient Living Pty Ltd

ABN (if applicable): 82116346082

Description of project

Project address

Project name	Stage1/WSU- 2 Bullecourt Avenue, Milperra NSW 2214
Street address	2 BULLECOURT AVENUE MILPERRA 2214
Local Government Area	CANTERBURY-BANKSTOWN
Plan type and plan number	Deposited Plan 1291984
Lot No.	2
Section no.	-

Project type

No. of residential flat buildings	0
Residential flat buildings: no. of dwellings	0
Multi-dwelling housing: no. of dwellings	0
No. of single dwelling houses	16

Site details

Site area (m ²)	6030
Roof area (m ²)	2593.11
Non-residential floor area (m ²)	0.00
Residential car spaces	30
Non-residential car spaces	0

Common area landscape

Common area lawn (m ²)	0
Common area garden (m ²)	0.00
Area of indigenous or low water use species (m ²)	0.00

Assessor details and thermal loads

Assessor number	HERA10035
Certificate number	HR-MUVPB0-18
Climate zone	56

Project score

Water	✓ 44	Target 40
Thermal Performance	✓ Pass	Target Pass
Energy	✓ 100	Target 72
Materials	✓ -100	Target n/a

Description of project

The tables below describe the dwellings and common areas within the project

Single dwelling houses

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
1001	4+	168.2	15.5	184.66	0
1005	4+	166.6	13	185	0
1009	4+	166.8	13	185.08	0
1013	4+	131	14.8	175.08	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
1002	4+	165.4	13	183.09	0
1006	4+	165.4	13	184.83	0
1010	4+	168.2	15.5	184.71	0
1014	4+	154.8	15.5	180.98	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
1003	4+	166.6	13	185.1	0
1007	4+	169.3	15.5	185.19	0
1011	4+	165.3	13	183.3	0
1015	4+	154.8	15.5	180.94	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
1004	4+	168.2	15.5	185.22	0
1008	4+	165.4	13	183.18	0
1012	4+	130.6	14.8	175.67	0
1016	4+	166.8	13	175.8	0

No common areas specified.

Schedule of BASIX commitments

1. Commitments for multi-dwelling housing

(a) Dwellings

- (i) Water
- (ii) Energy
- (iii) Thermal Performance and Materials

2. Commitments for single dwelling houses

(a) Dwellings

- (i) Water
- (ii) Energy
- (iii) Thermal Performance and Materials

3. Commitments for common areas and central systems/facilities for the development (non-building specific)

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

Schedule of BASIX commitments

The commitments set out below regulate how the proposed development is to be carried out. It is a condition of any development consent granted, or complying development certificate issued, for the proposed development, that BASIX commitments be complied with.

1. Commitments for multi-dwelling housing

(a) Dwellings

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must plant indigenous or low water use species of vegetation throughout the area of land specified for the dwelling in the "Indigenous species" column of the table below, as private landscaping for that dwelling. (This area of indigenous vegetation is to be contained within the "Area of garden and lawn" for the dwelling specified in the "Description of Project" table).	✓	✓	
(c) If a rating is specified in the table below for a fixture or appliance to be installed in the dwelling, the applicant must ensure that each such fixture and appliance meets the rating specified for it.		✓	✓
(d) The applicant must install an on demand hot water recirculation system which regulates all hot water use throughout the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below.		✓	✓
(e) The applicant must install: <div> <div>(aa) a hot water diversion system to all showers, kitchen sinks and all basins in the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below; and</div> <div>(bb) a separate diversion tank (or tanks) connected to the hot water diversion systems of at least 100 litres. The applicant must connect the hot water diversion tank to all toilets in the dwelling.</div> </div>		✓ ✓	✓ ✓
(e) The applicant must not install a private swimming pool or spa for the dwelling, with a volume exceeding that specified for it in the table below.	✓	✓	
(f) If specified in the table, that pool or spa (or both) must have a pool cover or shading (or both).		✓	
(g) The pool or spa must be located as specified in the table.	✓	✓	
(h) The applicant must install, for the dwelling, each alternative water supply system, with the specified size, listed for that dwelling in the table below. Each system must be configured to collect run-off from the areas specified (excluding any area which supplies any other alternative water supply system), and to divert overflow as specified. Each system must be connected as specified.	✓	✓	✓
(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(b) The applicant must install each hot water system specified for the dwelling in the table below, so that the dwelling's hot water is supplied by that system. If the table specifies a central hot water system for the dwelling, then the applicant must connect that central system to the dwelling, so that the dwelling's hot water is supplied by that central system.	✓	✓	✓
(c) The applicant must install, in each bathroom, kitchen and laundry of the dwelling, the ventilation system specified for that room in the table below. Each such ventilation system must have the operation control specified for it in the table.		✓	✓
(d) The applicant must install the cooling and heating system/s specified for the dwelling under the "Living areas" and "Bedroom areas" headings of the "Cooling" and "Heating" columns in the table below, in/for at least 1 living/bedroom area of the dwelling. If no cooling or heating system is specified in the table for "Living areas" or "Bedroom areas", then no systems may be installed in any such areas. If the term "zoned" is specified beside an air conditioning system, then the system must provide for day/night zoning between living areas and bedrooms.		✓	✓
(e) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Artificial lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that the "primary type of artificial lighting" for each such room in the dwelling is fluorescent lighting or light emitting diode (LED) lighting. If the term "dedicated" is specified for a particular room or area, then the light fittings in that room or area must only be capable of being used for fluorescent lighting or light emitting diode (LED) lighting.		✓	✓
(f) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Natural lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that each such room or area is fitted with a window and/or skylight.	✓	✓	✓
(g) This commitment applies if the applicant installs a water heating system for the dwelling's pool or spa. The applicant must: (aa) install the system specified for the pool in the "Individual Pool" column of the table below (or alternatively must not install any system for the pool). If specified, the applicant must install a timer, to control the pool's pump; and (bb) install the system specified for the spa in the "Individual Spa" column of the table below (or alternatively must not install any system for the spa). If specified, the applicant must install a timer to control the spa's pump.		✓ ✓	
(h) The applicant must install in the dwelling: (aa) the kitchen cook-top and oven specified for that dwelling in the "Appliances & other efficiency measures" column of the table below; (bb) each appliance for which a rating is specified for that dwelling in the "Appliances & other efficiency measures" column of the table, and ensure that the appliance has that minimum rating; and (cc) any clothes drying line specified for the dwelling in the "Appliances & other efficiency measures" column of the table.		✓ ✓ ✓	✓
(i) If specified in the table, the applicant must carry out the development so that each refrigerator space in the dwelling is "well ventilated".		✓	
(j) The applicant must install the photovoltaic system specified for the dwelling under the "Photovoltaic system" heading of the "Alternative energy" column of the table below, and connect the system to that dwelling's electrical system.	✓	✓	✓

(iii) Thermal Performance and Materials	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must attach the certificate referred to under "Assessor details" on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or, if the applicant is applying for a complying development certificate for the proposed development, to that application). The applicant must also attach the Assessor Certificate to the application for a final occupation certificate for the proposed development.			
(b) The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			
(c) The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX Certificate, including the details shown in the "Thermal Loads" table below.			
(d) The applicant must show on the plans accompanying the development application for the proposed development, all matters which the Thermal Comfort Protocol requires to be shown on those plans. Those plans must bear a stamp of endorsement from the Accredited Assessor, to certify that this is the case.	✓		
(e) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), all thermal performance specifications set out in the Assessor Certificate, and all aspects of the proposed development which were used to calculate those specifications.		✓	
(f) The applicant must construct the development in accordance with all thermal performance specifications set out in the Assessor Certificate, and in accordance with those aspects of the development application or application for a complying development certificate which were used to calculate those specifications.		✓	✓
(g) Where there is an in-slab heating or cooling system, the applicant must: (aa) Install insulation with an R-value of not less than 1.0 around the vertical edges of the perimeter of the slab; or (bb) On a suspended floor, install insulation with an R-value of not less than 1.0 underneath the slab and around the vertical edges of the perimeter of the slab.	✓	✓	✓
(h) The applicant must construct the floors and walls of the development in accordance with the specifications listed in the table below.	✓	✓	✓
(i) The applicant must show on The plans accompanying The development application for The proposed development, The locations of ceiling fans set out in The Assessor Certificate.	✓		
(j) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), the locations of ceiling fans set out in the Assessor Certificate.		✓	

2. Commitments for single dwelling houses

(a) Dwellings

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must plant indigenous or low water use species of vegetation throughout the area of land specified for the dwelling in the "Indigenous species" column of the table below, as private landscaping for that dwelling. (This area of indigenous vegetation is to be contained within the "Area of garden and lawn" for the dwelling specified in the "Description of Project" table).	✓	✓	
(c) If a rating is specified in the table below for a fixture or appliance to be installed in the dwelling, the applicant must ensure that each such fixture and appliance meets the rating specified for it.		✓	✓
(d) The applicant must install an on demand hot water recirculation system which regulates all hot water use throughout the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below.		✓	✓
(e) The applicant must install: (aa) a hot water diversion system to all showers, kitchen sinks and all basins in the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below; and (bb) a separate diversion tank (or tanks) connected to the hot water diversion systems of at least 100 litres. The applicant must connect the hot water diversion tank to all toilets in the dwelling.		✓ ✓	✓ ✓
(e) The applicant must not install a private swimming pool or spa for the dwelling, with a volume exceeding that specified for it in the table below.	✓	✓	
(f) If specified in the table, that pool or spa (or both) must have a pool cover or shading (or both).		✓	
(g) The pool or spa must be located as specified in the table.	✓	✓	
(h) The applicant must install, for the dwelling, each alternative water supply system, with the specified size, listed for that dwelling in the table below. Each system must be configured to collect run-off from the areas specified (excluding any area which supplies any other alternative water supply system), and to divert overflow as specified. Each system must be connected as specified.	✓	✓	✓

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
All dwellings	4 star (> 6 but ≤ 7.5 L/min)	4 star	5 star	5 star	-	-	-	-	-	-	-	-	-	-

	Alternative water source							
Dwelling no.	Alternative water supply systems	Size	Configuration	Landscape connection	Toilet connection (s)	Laundry connection	Pool top-up	Spa top-up
1006	Individual water tank (No. 1)	Tank size (min) 2000 liters	To collect run-off from at least: 125 square metres of roof area; 0 square metres of impervious area; 0 square metres of garden and lawn area; and 0 square metres of planter box area.	yes	yes	yes	no	no
1007	Individual water tank (No. 1)	Tank size (min) 2000 liters	To collect run-off from at least: 109 square metres of roof area; 0 square metres of impervious area; 0 square metres of garden and lawn area; and 0 square metres of planter box area.	yes	yes	yes	no	no
1011	Individual water tank (No. 1)	Tank size (min) 2000 liters	To collect run-off from at least: 120 square metres of roof area; 0 square metres of impervious area; 0 square metres of garden and lawn area; and 0 square metres of planter box area.	yes	yes	yes	no	no
1012	Individual water tank (No. 1)	Tank size (min) 2000 liters	To collect run-off from at least: 98 square metres of roof area; 0 square metres of impervious area; 0 square metres of garden and lawn area; and 0 square metres of planter box area.	yes	yes	yes	no	no
1013	Individual water tank (No. 1)	Tank size (min) 2000 liters	To collect run-off from at least: 85 square metres of roof area; 0 square metres of impervious area; 0 square metres of garden and lawn area; and 0 square metres of planter box area.	yes	yes	yes	no	no
1002, 1008	Individual water tank (No. 1)	Tank size (min) 2000 liters	To collect run-off from at least: 126 square metres of roof area; 0 square metres of impervious area; 0 square metres of garden and lawn area; and 0 square metres of planter box area.	yes	yes	yes	no	no
1004, 1014, 1015	Individual water tank (No. 1)	Tank size (min) 2000 liters	To collect run-off from at least: 115 square metres of roof area; 0 square metres of impervious area; 0 square metres of garden and lawn area; and 0 square metres of planter box area.	yes	yes	yes	no	no

Dwelling no.	Alternative water source							
	Alternative water supply systems	Size	Configuration	Landscape connection	Toilet connection (s)	Laundry connection	Pool top-up	Spa top-up
All other dwellings	Individual water tank (No. 1)	Tank size (min) 2000 liters	To collect run-off from at least: 110 square metres of roof area; 0 square metres of impervious area; 0 square metres of garden and lawn area; and 0 square metres of planter box area.	yes	yes	yes	no	no

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must install each hot water system specified for the dwelling in the table below, so that the dwelling's hot water is supplied by that system. If the table specifies a central hot water system for the dwelling, then the applicant must connect that central system to the dwelling, so that the dwelling's hot water is supplied by that central system.	✓	✓	✓
(c) The applicant must install, in each bathroom, kitchen and laundry of the dwelling, the ventilation system specified for that room in the table below. Each such ventilation system must have the operation control specified for it in the table.		✓	✓
(d) The applicant must install the cooling and heating system/s specified for the dwelling under the "Living areas" and "Bedroom areas" headings of the "Cooling" and "Heating" columns in the table below, in/for at least 1 living/bedroom area of the dwelling. If no cooling or heating system is specified in the table for "Living areas" or "Bedroom areas", then no systems may be installed in any such areas. If the term "zoned" is specified beside an air conditioning system, then the system must provide for day/night zoning between living areas and bedrooms.		✓	✓
(e) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Artificial lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that the "primary type of artificial lighting" for each such room in the dwelling is fluorescent lighting or light emitting diode (LED) lighting. If the term "dedicated" is specified for a particular room or area, then the light fittings in that room or area must only be capable of being used for fluorescent lighting or light emitting diode (LED) lighting.		✓	✓
(f) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Natural lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that each such room or area is fitted with a window and/or skylight.	✓	✓	✓
(g) This commitment applies if the applicant installs a water heating system for the dwelling's pool or spa. The applicant must: (aa) install the system specified for the pool in the "Individual Pool" column of the table below (or alternatively must not install any system for the pool). If specified, the applicant must install a timer, to control the pool's pump; and (bb) install the system specified for the spa in the "Individual Spa" column of the table below (or alternatively must not install any system for the spa). If specified, the applicant must install a timer to control the spa's pump.		✓ ✓	
(h) The applicant must install in the dwelling:			

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(aa) the kitchen cook-top and oven specified for that dwelling in the "Appliances & other efficiency measures" column of the table below;		✓	
(bb) each appliance for which a rating is specified for that dwelling in the "Appliances & other efficiency measures" column of the table, and ensure that the appliance has that minimum rating; and		✓	✓
(cc) any clothes drying line specified for the dwelling in the "Appliances & other efficiency measures" column of the table.		✓	
(i) If specified in the table, the applicant must carry out the development so that each refrigerator space in the dwelling is "well ventilated".		✓	
(j) The applicant must install the photovoltaic system specified for the dwelling under the "Photovoltaic system" heading of the "Alternative energy" column of the table below, and connect the system to that dwelling's electrical system.	✓	✓	✓

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	heat pump - 21 to 25 STCs	individual fan, ducted to façade or roof	interlocked to light with timer off	individual fan, ducted to façade or roof	manual switch on/off	individual fan, ducted to façade or roof	manual switch on/off

	Cooling		Heating		Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bathrooms or toilets	Main kitchen
1014, 1015	3-phase airconditioning / EER 3.0 - 3.5	3-phase airconditioning / EER 3.0 - 3.5	3-phase airconditioning / EER 3.5 - 4.0	3-phase airconditioning / EER 3.5 - 4.0	3	no
1001, 1004, 1007, 1010, 1012, 1013	3-phase airconditioning / EER 3.0 - 3.5	3-phase airconditioning / EER 3.0 - 3.5	3-phase airconditioning / EER 3.5 - 4.0	3-phase airconditioning / EER 3.5 - 4.0	3	yes

	Cooling		Heating		Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bathrooms or toilets	Main kitchen
All other dwellings	3-phase airconditioning / EER 3.0 - 3.5	3-phase airconditioning / EER 3.0 - 3.5	3-phase airconditioning / EER 3.5 - 4.0	3-phase airconditioning / EER 3.5 - 4.0	2	yes

	Individual pool			Individual spa		Appliances other efficiency measures				
Dwelling no.	Pool heating system	Pool Pump	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Dishwasher	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
All dwellings	-	-	-	-	-	electric cooktop & electric oven	-	-	no	yes

	Alternative energy		
Dwelling no.	Photovoltaic system (min rated electrical output in peak kW)	Photovoltaic collector installation	Orientation inputs
1002, 1006, 1008, 1011, 1012	between >10° to <=25° degree to the horizontal	5	N
All other dwellings	between >0° to <=10° degree to the horizontal	5.0	E

(iii) Thermal Performance and Materials	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must attach the certificate referred to under "Assessor details" on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or, if the applicant is applying for a complying development certificate for the proposed development, to that application). The applicant must also attach the Assessor Certificate to the application for a final occupation certificate for the proposed development.			
(b) The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			
(c) The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX Certificate, including the details shown in the "Thermal Loads" table below.			
(d) The applicant must show on the plans accompanying the development application for the proposed development, all matters which the Thermal Comfort Protocol requires to be shown on those plans. Those plans must bear a stamp of endorsement from the Accredited Assessor, to certify that this is the case.	✓		

(iii) Thermal Performance and Materials	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(e) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), all thermal performance specifications set out in the Assessor Certificate, and all aspects of the proposed development which were used to calculate those specifications.		✓	
(f) The applicant must construct the development in accordance with all thermal performance specifications set out in the Assessor Certificate, and in accordance with those aspects of the development application or application for a complying development certificate which were used to calculate those specifications.		✓	✓
(g) Where there is an in-slab heating or cooling system, the applicant must: (aa) Install insulation with an R-value of not less than 1.0 around the vertical edges of the perimeter of the slab; or (bb) On a suspended floor, install insulation with an R-value of not less than 1.0 underneath the slab and around the vertical edges of the perimeter of the slab.	✓	✓	✓
(h) The applicant must construct the floors and walls of the development in accordance with the specifications listed in the table below.	✓	✓	✓
(i) The applicant must show on The plans accompanying The development application for The proposed development, The locations of ceiling fans set out in The Assessor Certificate.	✓		
(j) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), the locations of ceiling fans set out in the Assessor Certificate.		✓	

Dwelling no.	Thermal loads		
	Area adjusted heating load (in MJ/m²/yr)	Area adjusted cooling load (in MJ/m²/yr)	Area adjusted total load (in MJ/m²/yr)
1001	13	16.6	29.600
1002	16.8	13.1	29.900
1003	13.4	16.4	29.800
1004	13.8	16.1	29.900
1005	14.4	14.6	29.000
1006	13.5	16.4	29.900
1007	13.6	16	29.600
1008	17.3	12.6	29.900
1009	13.6	16.1	29.700
1010	14	15.8	29.800
1011	18.7	11.1	29.800
1012	12.7	17.1	29.800
1013	12.2	17.7	29.900

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)	Area adjusted total load (in MJ/m ² /yr)
1014	14.3	15.3	29.600
1015	14.6	14.8	29.400
All other dwellings	14	15.9	29.900

	Construction of floors and walls				
Dwelling no.	Concrete slab on ground (m ²)	Suspended floor with open subfloor (m ²)	Suspended floor with enclosed subfloor (m ²)	Suspended floor above garage (m ²)	Primarily rammed earth or mudbrick walls
1007	76.9	1.1	-	32.4	no
1009	77.4	2.4	-	25.2	no
1012	68.6	1.8	-	9.0	no
1013	68.6	2.1	-	9	no
1016	77.3	2.4	-	25.2	no
1002, 1008	77.4	1	-	25.2	no
1003, 1005	77.3	2.3	-	25.2	no
1006, 1011	77.3	1	-	25.2	no
1014, 1015	78.7	6	-	26.6	no
All other dwellings	76.9	-	-	32.4	no

	Floor types									
	Concrete slab on ground				Suspended floor above enclosed subfloor			Suspended floor above open subfloor		
Dwelling no.	Area (m ²)	Insulation	Low emissions option	Dematerialisation	Construction type	Area (m ²)	Insulation	Construction type	Area (m ²)	Insulation
1007	76.9	-	-	waffle pod slab	-	-	-	treated softwood, frame: timber - H2 treated softwood	1.1	-
1012, 1013	68.6	-	-	waffle pod slab	-	-	-	treated softwood, frame: timber - H2 treated softwood	1.8	-

	Floor types									
	Concrete slab on ground				Suspended floor above enclosed subfloor			Suspended floor above open subfloor		
Dwelling no.	Area (m²)	Insulation	Low emissions option	Dematerialisation	Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation
1014, 1015	78.7	-	-	waffle pod slab	-	-	-	treated softwood, frame: timber - H2 treated softwood	6	-
1001, 1004, 1010	76.9	-	-	waffle pod slab	-	-	-	-	-	-
1002, 1008, 1009	77.4	-	-	waffle pod slab	-	-	-	treated softwood, frame: timber - H2 treated softwood	1	-
All other dwellings	77.3	-	-	waffle pod slab	-	-	-	treated softwood, frame: timber - H2 treated softwood	2.3	-

	Floor types										
	First floor above habitable rooms or mezzanine			Suspended floor above garage			Garage floor				
Dwelling no.	Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation	Low emissions option	Dematerialisation
1007	treated softwood, frame: timber - H2 treated softwood	74.40	-	treated softwood, frame: timber - H2 treated softwood	32.4	-	concrete slab on ground, frame: timber - H2 treated softwood	34.4	-	-	waffle pod slab
1009	treated softwood, frame: timber - H2 treated softwood	78.7	-	treated softwood, frame: timber - H2 treated softwood	25.2	-	concrete slab on ground, frame: timber - H2 treated softwood	34.1	-	-	waffle pod slab

	Floor types										
	First floor above habitable rooms or mezzanine			Suspended floor above garage			Garage floor				
Dwelling no.	Construction type	Area (m ²)	Insulation	Construction type	Area (m ²)	Insulation	Construction type	Area (m ²)	Insulation	Low emissions option	Dematerialisation
1012	treated softwood, frame: timber - H2 treated softwood	66	-	treated softwood, frame: timber - H2 treated softwood	9.0	-	concrete slab on ground, frame: timber - H2 treated softwood	18.9	-	-	waffle pod slab
1013	treated softwood, frame: timber - H2 treated softwood	66.1	-	treated softwood, frame: timber - H2 treated softwood	9	-	concrete slab on ground, frame: timber - H2 treated softwood	18.9	-	-	waffle pod slab
1006, 1016	treated softwood, frame: timber - H2 treated softwood	74.9	-	treated softwood, frame: timber - H2 treated softwood	25.2	-	concrete slab on ground, frame: timber - H2 treated softwood	34.1	-	-	waffle pod slab
1014, 1015	treated softwood, frame: timber - H2 treated softwood	59	-	treated softwood, frame: timber - H2 treated softwood	26.6	-	concrete slab on ground, frame: timber - H2 treated softwood	37.9	-	-	waffle pod slab
1001, 1004, 1010	treated softwood, frame: timber - H2 treated softwood	74.4	-	treated softwood, frame: timber - H2 treated softwood	32.4	-	concrete slab on ground, frame: timber - H2 treated softwood	34.1	-	-	waffle pod slab
All other dwellings	treated softwood, frame: timber - H2 treated softwood	74.8	-	treated softwood, frame: timber - H2 treated softwood	25.2	-	concrete slab on ground, frame: timber - H2 treated softwood	34.1	-	-	waffle pod slab

	External walls							
	External wall type 1				External wall type 2			
Dwelling no.	Wall type	Area (m²)	Insulation	Low emissions option	Wall type	Area (m²)	Insulation	Low emissions option
1001	AAC veneer, frame : timber - H2 treated softwood	186.8	-	none	framed (fibre cement sheet or boards), frame : timber - H2 treated softwood	9.1	-	none
1004	AAC veneer, frame : timber - H2 treated softwood	195.9	-	-	-	-	-	-
1006	AAC veneer, frame : timber - H2 treated softwood	189.8	-	-	-	-	-	-
1007	AAC veneer, frame : timber - H2 treated softwood	178.3	-	none	framed (fibre cement sheet or boards), frame : timber - H2 treated softwood	17.6	-	none
1010	AAC veneer, frame : timber - H2 treated softwood	186.9	-	none	framed (fibre cement sheet or boards), frame : timber - H2 treated softwood	9.1	-	none
1014	brick veneer, frame : timber - H2 treated softwood	107.2	-	none	framed (fibre cement sheet or boards), frame : timber - H2 treated softwood	80.9	-	none
1015	brick veneer, frame : timber - H2 treated softwood	107.6	-	none	framed (fibre cement sheet or boards), frame : timber - H2 treated softwood	80.6	-	none
1016	AAC veneer, frame : timber	190.1	-	-	-	-	-	-

	External walls							
	External wall type 1				External wall type 2			
Dwelling no.	Wall type	Area (m²)	Insulation	Low emissions option	Wall type	Area (m²)	Insulation	Low emissions option
	- H2 treated softwood							
1003, 1005	AAC veneer, frame : timber - H2 treated softwood	190	-	-	-	-	-	-
1012, 1013	AAC veneer, frame : timber - H2 treated softwood	184.2	-	-	-	-	-	-
All other dwellings	AAC veneer, frame : timber - H2 treated softwood	190.2	-	-	-	-	-	-

	External walls							
	External wall type 3				External wall type 4			
Dwelling no.	Wall type	Area (m²)	Insulation	Low emissions option	Wall type	Area (m²)	Insulation	Low emissions option
All dwellings	-	-	-	-	-	-	-	-

	Internal walls								
	Internal walls shared with garage			Internal wall type 1			Internal wall type 2		
Dwelling no.	Wall type	Area (m²)	Insulation	Wall type	Area (m²)	Insulation	Wall type	Area (m²)	Insulation
1005	plasterboard, frame: timber - H2 treated softwood	29	-	plasterboard, frame: timber - H2 treated softwood	154	-	-	-	-
1007	plasterboard, frame: timber - H2 treated softwood	29.1	-	plasterboard, frame: timber - H2 treated softwood	169.1	-	-	-	-

Internal walls									
	Internal walls shared with garage			Internal wall type 1			Internal wall type 2		
Dwelling no.	Wall type	Area (m²)	Insulation	Wall type	Area (m²)	Insulation	Wall type	Area (m²)	Insulation
1012	plasterboard, frame: timber - H2 treated softwood	19.1	-	plasterboard, frame: timber - H2 treated softwood	129.2	-	-	-	-
1013	plasterboard, frame: timber - H2 treated softwood	19.1	-	plasterboard, frame: timber - H2 treated softwood	129.8	-	-	-	-
1014	plasterboard, frame: timber - H2 treated softwood	32	-	plasterboard, frame: timber - H2 treated softwood	140.6	-	-	-	-
1015	plasterboard, frame: timber - H2 treated softwood	34.4	-	plasterboard, frame: timber - H2 treated softwood	138.2	-	-	-	-
1001, 1004, 1010	plasterboard, frame: timber - H2 treated softwood	29.1	-	plasterboard, frame: timber - H2 treated softwood	168.1	-	-	-	-
1003, 1009, 1016	plasterboard, frame: timber - H2 treated softwood	29	-	plasterboard, frame: timber - H2 treated softwood	154.1	-	-	-	-
All other dwellings	plasterboard, frame: timber - H2 treated softwood	29	-	plasterboard, frame: timber - H2 treated softwood	153.3	-	-	-	-

Ceiling and roof									
	Flat ceiling / pitched roof			Raked ceiling / pitched or skillion roof			Flat ceiling / flat roof		
Dwelling no.	Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation
1001	-	-	Ceiling:,Roof:	-	-	Ceiling:,Roof:	framed - metal roof,	162.55	Ceiling:,Roof:

Ceiling and roof									
	Flat ceiling / pitched roof			Raked ceiling / pitched or skillion roof			Flat ceiling / flat roof		
Dwelling no.	Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation
							frame: timber - H2 treated softwood		
1002	framed - metal roof, frame: timber - H2 treated softwood	180.74	Ceiling:,Roof:	-	-	Ceiling:,Roof:	-	-	Ceiling:,Roof:
1003	-	-	Ceiling:,Roof:	-	-	Ceiling:,Roof:	framed - metal roof, frame: timber - H2 treated softwood	157.59	Ceiling:,Roof:
1004	-	-	Ceiling:,Roof:	-	-	Ceiling:,Roof:	framed - metal roof, frame: timber - H2 treated softwood	162.46	Ceiling:,Roof:
1005	-	-	Ceiling:,Roof:	-	-	Ceiling:,Roof:	framed - metal roof, frame: timber - H2 treated softwood	158.2	Ceiling:,Roof:
1006	framed - metal roof, frame: timber - H2 treated softwood	178.9	Ceiling:,Roof:	-	-	Ceiling:,Roof:	-	-	Ceiling:,Roof:
1007	-	-	Ceiling:,Roof:	-	-	Ceiling:,Roof:	framed - metal roof, frame: timber - H2 treated softwood	157.21	Ceiling:,Roof:
1008	framed - metal roof, frame: timber	180.17	Ceiling:,Roof:	-	-	Ceiling:,Roof:	-	-	Ceiling:,Roof:

Ceiling and roof									
	Flat ceiling / pitched roof			Raked ceiling / pitched or skillion roof			Flat ceiling / flat roof		
Dwelling no.	Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation
	- H2 treated softwood								
1009	-	-	Ceiling:,Roof:	-	-	Ceiling:,Roof:	framed - metal roof, frame: timber - H2 treated softwood	157.92	Ceiling:,Roof:
1010	-	-	Ceiling:,Roof:	-	-	Ceiling:,Roof:	framed - metal roof, frame: timber - H2 treated softwood	162.28	Ceiling:,Roof:
1011	framed - metal roof, frame: timber - H2 treated softwood	178.61	Ceiling:,Roof:	-	-	Ceiling:,Roof:	-	-	Ceiling:,Roof:
1012	framed - metal roof, frame: timber - H2 treated softwood	141.68	Ceiling:,Roof:	-	-	Ceiling:,Roof:	-	-	Ceiling:,Roof:
1013	-	-	Ceiling:,Roof:	-	-	Ceiling:,Roof:	framed - metal roof, frame: timber - H2 treated softwood	124.19	Ceiling:,Roof:
1014	-	-	Ceiling:,Roof:	-	-	Ceiling:,Roof:	framed - metal roof, frame: timber - H2 treated softwood	167.31	Ceiling:,Roof:
1015	-	-	Ceiling:,Roof:	-	-	Ceiling:,Roof:	framed - metal roof, frame: timber - H2 treated softwood	167.3	Ceiling:,Roof:

Ceiling and roof									
Flat ceiling / pitched roof				Raked ceiling / pitched or skillion roof			Flat ceiling / flat roof		
Dwelling no.	Construction type	Area (m ²)	Insulation	Construction type	Area (m ²)	Insulation	Construction type	Area (m ²)	Insulation
All other dwellings	-	-	Ceiling:,Roof:	-	-	Ceiling:,Roof:	framed - metal roof, frame: timber - H2 treated softwood	156.29	Ceiling:,Roof:

Glazing type									Frame types			
Dwelling no.	Single glazing (m ²)	Double glazing (m ²)	Triple glazing (m ²)	Aluminium frames (m ²)	Timber frames (m ²)	uPVC frames (m ²)	Steel frames (m ²)	Composite frames (m ²)				
1004	0.9	55.2	-	56.1	-	-	-	-				
1005	1	51.9	-	52.9	-	-	-	-				
1006	1	54.5	-	55.5	-	-	-	-				
1007	0.9	54.5	-	55.4	-	-	-	-				
1008	0.8	55.1	-	55.9	-	-	-	-				
1012	1	41.3	-	42.3	-	-	-	-				
1013	0.7	40.8	-	41.5	-	-	-	-				
1014	2.8	40.9	-	43.7	-	-	-	-				
1015	2.6	40.6	-	43.2	-	-	-	-				
1016	1	51.3	-	52.3	-	-	-	-				
1001, 1009, 1010	0.9	55.5	-	56.4	-	-	-	-				
All other dwellings	1	55.1	-	56.1	-	-	-	-				

3. Commitments for common areas and central systems/facilities for the development (non-building specific)

(b) Common areas and central systems/facilities

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a showerhead, toilet, tap or clothes washer into a common area, then that item must meet the specifications listed for it in the table.		✓	✓
(b) The applicant must install (or ensure that the development is serviced by) the alternative water supply system(s) specified in the "Central systems" column of the table below. In each case, the system must be sized, be configured, and be connected, as specified in the table.	✓	✓	✓
(c) A swimming pool or spa listed in the table must not have a volume (in kLs) greater than that specified for the pool or spa in the table.	✓	✓	
(d) A pool or spa listed in the table must have a cover or shading if specified for the pool or spa in the table.		✓	
(e) The applicant must install each fire sprinkler system listed in the table so that the system is configured as specified in the table.		✓	✓
(f) The applicant must ensure that the central cooling system for a cooling tower is configured as specified in the table.		✓	✓

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	no common facility	no common facility	no common laundry facility

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a ventilation system to service a common area specified in the table below, then that ventilation system must be of the type specified for that common area, and must meet the efficiency measure specified.		✓	✓
(b) In carrying out the development, the applicant must install, as the "primary type of artificial lighting" for each common area specified in the table below, the lighting specified for that common area. This lighting must meet the efficiency measure specified. The applicant must also install a centralised lighting control system or Building Management System (BMS) for the common area, where specified.		✓	✓
(c) The applicant must install the systems and fixtures specified in the "Central energy systems" column of the table below. In each case, the system or fixture must be of the type, and meet the specifications, listed for it in the table.	✓	✓	✓

Central energy systems	Type	Specification
Other	-	-

Notes

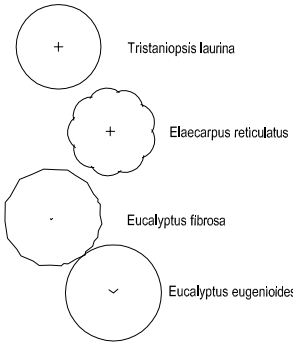
1. In these commitments, "applicant" means the person carrying out the development.
2. The applicant must identify each dwelling, building and common area listed in this certificate, on the plans accompanying any development application, and on the plans and specifications accompanying the application for a construction certificate / complying development certificate, for the proposed development, using the same identifying letter or reference as is given to that dwelling, building or common area in this certificate.
3. This note applies if the proposed development involves the erection of a building for both residential and non-residential purposes (or the change of use of a building for both residential and non-residential purposes). Commitments in this certificate which are specified to apply to a "common area" of a building or the development, apply only to that part of the building or development to be used for residential purposes.
4. If this certificate lists a central system as a commitment for a dwelling or building, and that system will also service any other dwelling or building within the development, then that system need only be installed once (even if it is separately listed as a commitment for that other dwelling or building).
5. If a star or other rating is specified in a commitment, this is a minimum rating.
6. All alternative water systems to be installed under these commitments (if any), must be installed in accordance with the requirements of all applicable regulatory authorities. NOTE: NSW Health does not recommend that stormwater, recycled water or private dam water be used to irrigate edible plants which are consumed raw, or that rainwater be used for human consumption in areas with potable water supply.

Legend

1. Commitments identified with a "✔" in the "Show on DA plans" column must be shown on the plans accompanying the development application for the proposed development (if a development application is to be lodged for the proposed development).
2. Commitments identified with a "✔" in the "Show on CC/CDC plans and specs" column must be shown in the plans and specifications accompanying the application for a construction certificate / complying development certificate for the proposed development.
3. Commitments identified with a "✔" in the "Certifier check" column must be certified by a certifying authority as having been fulfilled. (Note: a certifying authority must not issue an occupation certificate (either interim or final) for a building listed in this certificate, or for any part of such a building, unless it is satisfied that each of the commitments whose fulfilment it is required to monitor in relation to the building or part, has been fulfilled).

APPENDIX H: LANDSCAPE PLANS

LEGEND



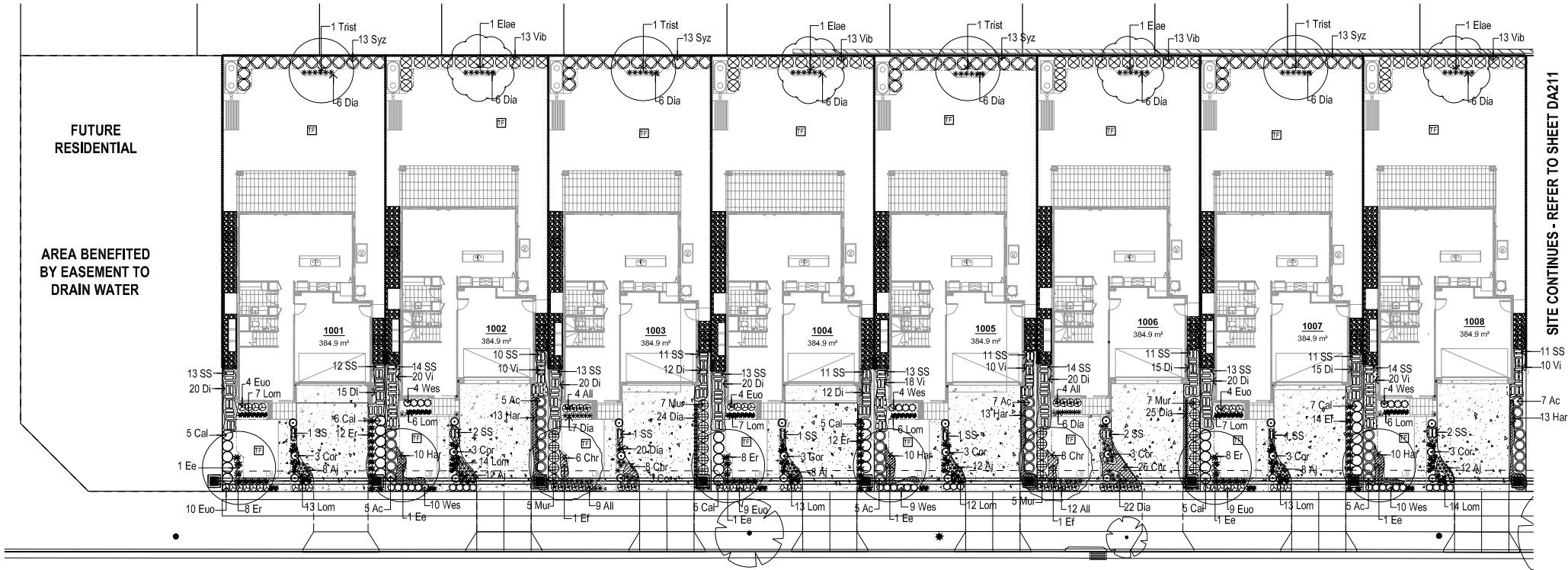
- Syzygium 'Backyard Bliss'
Viburnum odoratissimum
Callistemon viminalis 'Scarlet Flame'
Acmena 'Green Screen'
Murraya paniculatum
Westringia 'Wynabbie Gem'
Euonymus 'Tom Thumb'
Acmena 'Allyn's Magic'
Correa glabra 'Ivory Lantern'
- Dianella 'Tas Red'
Lomandra 'Savannah Blue'
Eremophila Blue Horizon'
Hardenbergia 'Sea of Purple'
Chrysocephalum 'Desert Flame'
Viola hederacea
Dichondra repens
Ajuga australis
- Turf - Kikuyu/Couch
Timber edging
Crushed stone
Stepping stones
200 x 600mm

PLANTING SCHEDULE

Abbrev.	Botanical Name	Common Name	Pot Size	Spacing	Height	Width	Qty
TREES							
Trist	Tristaniopsis laurina	Water Gum	75L		7-12m	5m	4
Elae	Elaeocarpus reticulatus	Blueberry Ash	75L		10m	5m	4
Ef	Eucalyptus fibrosa	Red Ironbark	75L		30m	10-20m	2
Ee	Eucalyptus eugenioides	Thin Leaved Stringy Bark	75L		25-30m	10-20m	6
SHRUBS							
Syz	Syzygium 'Backyard Bliss'	Lillypilly	45L	1m	2m	hedged	52
Vib	Viburnum odoratissimum	Lillypilly	45L	1m	2m	hedged	52
Cal	Callistemon 'Scarlet Flame'	Bottlebrush	300mm	800mm	1.5m	1m	33
Ac	Acmena 'Green Screen'	Lillypilly	300mm	800mm	1.8m	hedged	36
Mur	Murraya paniculatum	Orange Jessamine	300mm	800mm	1.5m	hedged	24
Wes	Westringia 'Wynabbie Gem'	Coastal Rosemary	300mm	500mm	1.5m	hedged	41
Euo	Euonymus 'Tom Thumb'	Dwarf Spindle Bush	300mm	500mm	600mm	hedged	40
All	Acmena 'Allyn's Magic'	Lillypilly	300mm	500mm	800mm	hedged	29
Corr	Correa glabra 'Ivory Lantern'	Rock Correa	300mm	500mm	600mm	600mm	24
GRASSES/GROUNDCOVERS							
Dia	Dianella 'Tas Red'	Flax Lilly	150mm	400mm	500mm	500mm	152
Lom	Lomandra 'Savannah Blue'	Perennial Tussock	150mm	300mm	300mm	300mm	118
Er	Eremophila 'Blue Horizon'	Emu Bush	200mm	500mm	250mm	1m	62
Har	Hardenbergia 'Sea of Purple'	Purple Coral Pea	150mm	500mm	500mm	1.5m	69
Chr	Chrysocephalum 'Desert Flame'	Yellow Buttons	150mm	5/m2	300mm	500mm	47
Vio	Viola hederacea	Native Violet	120mm	5/m2	100mm	600mm	108
DI	Dichondra repens	Kidney Weed	100mm	5/m2	100mm	1m	169
Aju	Ajuga australis	Austral Bugle	150mm	5/m2	200mm	200mm	60

Mulch	384.2m2
Turf	886.8m2
Timber edging	277.4Lm
Crushed stone	128.8m2
Stepping stones	207

FUTURE RESIDENTIAL



ASHFORD AVENUE

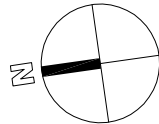


WSU - MILPERRA Stage 1 Lots 1001-1008
LANDSCAPE DESIGN

rev:	date:	amendment:
A	22.05.24	ISSUE FOR DA
B	21.08.24	ISSUE FOR DA - amendments

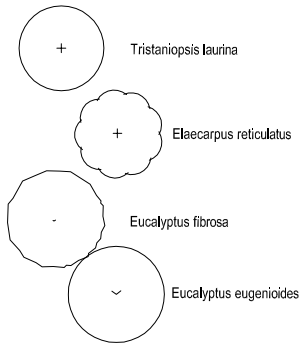
client:
MIRVAC
Lvl 28, 200 George Street
SYDNEY NSW 2000

dwg no:
LS001
Sheet A1 @ 1:200
Sheet 1 of 1



Green Tree Designs
Design / Horticulture consulting
greentreedesigns@gmail.com

LEGEND

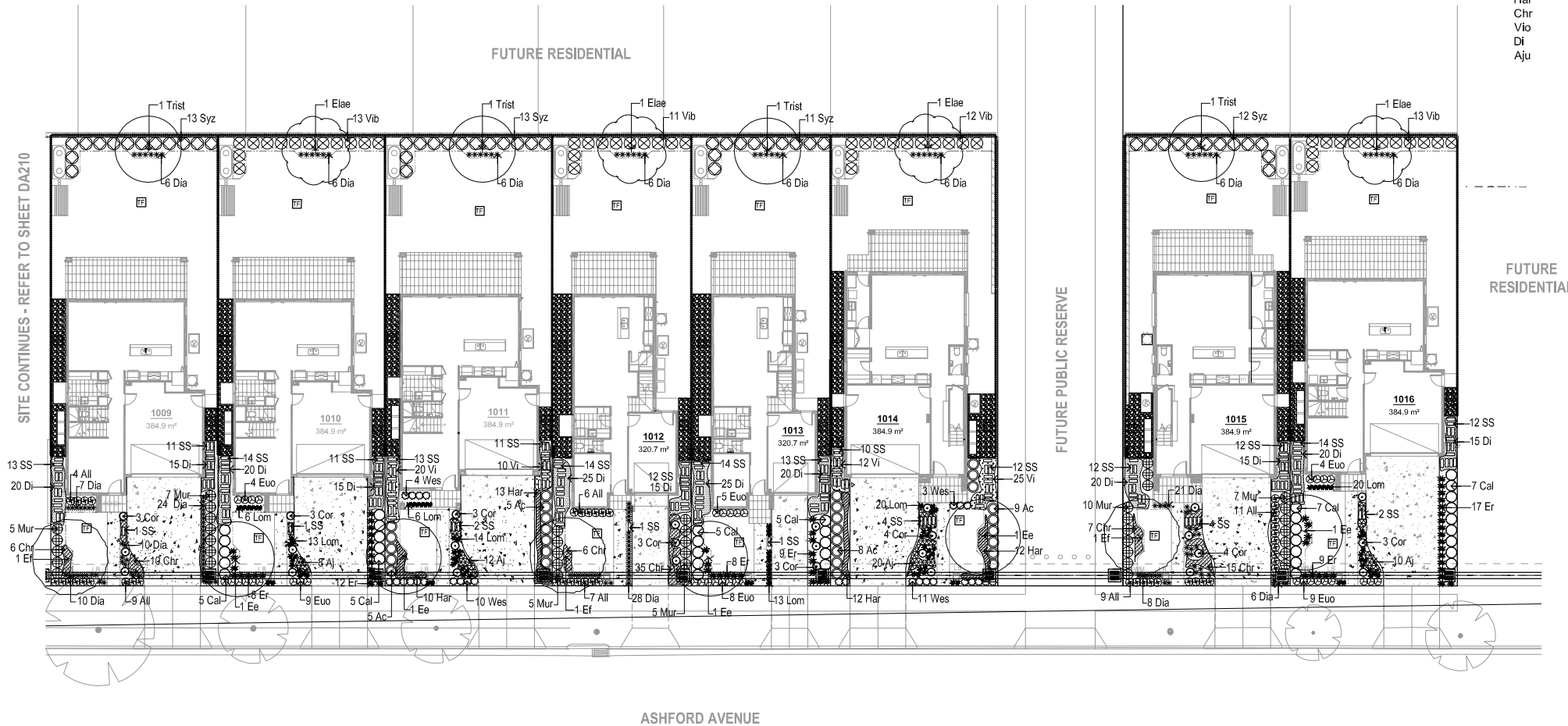


- Syzygium 'Backyard Bliss'
- Viburnum odoratissimum
- Callistemon viminalis 'Scarlet Flame'
- Acmena 'Green Screen'
- Murraya paniculatum
- Westringia 'Wynyabbie Gem'
- Euonymus 'Tom Thumb'
- Acmena 'Allyn's Magic'
- Correa glabra 'Ivory Lantern'
- Dianella 'Silver Streak'
- Lomandra 'Savannah Blue'
- Eremophila Blue Horizon'
- Hardenbergia 'Sea of Purple'
- Chrysocephalum 'Desert Flame'
- Viola hederacea
- Dichondra repens
- Ajuga australis
- Turf - Kikuyu/Couch
- Timber edging
- Crushed stone
- Stepping stones 200 x 600mm

PLANTING SCHEDULE

Abbrev.	Botanical Name	Common Name	Pot Size	Spacing	Height	Width	Qty
TREEES							
Trist	Tristaniopsis laurina	Water Gum	75L		7-12m	5m	4
Elae	Elaeocarpus reticulatus	Blueberry Ash	75L		10m	5m	4
Ef	Eucalyptus fibrosa	Red Ironbark	75L		30m	10-20m	3
Ee	Eucalyptus eugenioides	Thin Leaved Stringy Bark	75L		25-30m	10-20m	5
SHRUBS							
Syz	Syzygium 'Backyard Bliss'	Lillypilly	45L	1m	2m	hedged	49
Vib	Viburnum odoratissimum	Viburnum	45L	1m	2m	hedged	49
Cal	Callistemon 'Scarlet Flame'	Bottlebrush	300mm	800mm	1.5m	1m	36
Ac	Acmena 'Green Screen'	Lillypilly	300mm	800mm	1.8m	hedged	29
Mur	Murraya paniculatum	Orange Jessamine	300mm	800mm	1.5m	hedged	39
Wes	Westringia 'Wynyabbie Gem'	Coastal Rosemary	300mm	500mm	1.5m	hedged	28
Euo	Euonymus 'Tom Thumb'	Dwarf Spindle Bush	300mm	500mm	600mm	hedged	39
All	Acmena 'Allyn's Magic'	Lillypilly	300mm	500mm	800mm	hedged	29
Corr	Correa glabra 'Ivory Lantern'	Rock Correa	300mm	1.2m	600mm	600mm	26
GRASSES/GROUNDCOVERS							
Dia	Dianella 'Tas Red'	Flax Lilly	150mm	400mm	500mm	500mm	164
Lom	Lomandra 'Savannah Blue'	Perennial Tussock	150mm	300mm	300mm	300mm	92
Er	Eremophila 'Blue Horizon'	Emu Bush	200mm	500mm	250mm	1m	63
Har	Hardenbergia 'Sea of Purple'	Purple Coral Pea	150mm	500mm	500mm	1.5m	47
Chr	Chrysocephalum 'Desert Flame'	Yellow Buttons	150mm	5/m2	300mm	500mm	79
Vio	Viola hederacea	Native Violet	120mm	5/m2	100mm	600mm	67
Di	Dichondra repens	Kidney Weed	100mm	5/m2	100mm	1m	225
Aju	Ajuga australis	Austral Bugle	150mm	5/m2	200mm	200mm	52

Mulch	378m2
Turf	886.8m2
Timber edging	277.4Lm
Crushed stone	128.8m2
Stepping stones	214



WSU - MILPERRA Stage 1 Lots 1009-1016
LANDSCAPE DESIGN

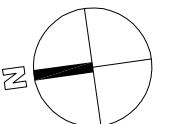


Green Tree Designs
Design / Horticulture consulting
greentreedesigns@gmail.com

rev: date: amendment:
A 22.05.24 ISSUE FOR DA
B 21.08.24 ISSUE FOR DA - amendments

client:
MIRVAC
Lvl 28, 200 George Street
SYDNEY NSW 2000

dwg no:
LS001
Sheet A1 @ 1:200
Sheet 1 of 1



APPENDIX I: ARCHITECTURAL PLANS



WESTERN SYDNEY UNIVERSITY - WSU

STAGE 1 - SITE 1

LOTS: 1001-1016

SHEET NO.	DRAWING TITLE	REV
S1-01-DA000	COVER SHEET	C
S1-01-DA001	THERMAL PERFORMANCE & SUSTAINABILITY SPECIFICATIONS - LOTS 1001-1006	C
S1-01-DA002	THERMAL PERFORMANCE & SUSTAINABILITY SPECIFICATIONS - LOTS 1007-1012	C
S1-01-DA003	THERMAL PERFORMANCE & SUSTAINABILITY SPECIFICATIONS - LOTS 1013-1016	C
S1-01-DA050	LOCATION & SITE ANALYSIS PLAN	C
S1-01-DA052	LOT LAYOUT & SITING PLAN	C
S1-01-DA100	EROSION, BENCHING & SEDIMENT CONTROL PLAN	C
S1-01-DA140	HYDRAULIC CONCEPT PLAN	C
S1-01-DA210	GROUND FLOOR PLANS - LOTS 1001-1008	C
S1-01-DA211	GROUND FLOOR PLANS - LOTS 1009-1016	C
S1-01-DA220	FIRST FLOOR PLANS - LOTS 1001-1008	C
S1-01-DA221	FIRST FLOOR PLANS - LOTS 1009-1016	C
S1-01-DA230	ROOF PLANS	C
S1-01-DA250	NEIGHBOURING NOTIFICATION PLANS - LOTS 1001-1004	C
S1-01-DA251	NEIGHBOURING NOTIFICATION PLANS - LOTS 1005-1008	C
S1-01-DA252	NEIGHBOURING NOTIFICATION PLANS - LOTS 1009-1012	C
S1-01-DA253	NEIGHBOURING NOTIFICATION PLANS - LOTS 1013-1016	C
S1-01-DA320	COLOURED STREETSCAPES - FRONT & SIDE	C
S1-01-DA321	COLOURED STREETSCAPES - FRONT & SIDE	C
S1-01-DA330	SECTIONS	C
S1-01-DA331	SECTIONS	C
S1-01-DA400	SHADOW ANALYSIS	C
S1-01-DA401	SHADOW DIAGRAM - 21 JUNE - 9AM/12PM/3PM - LOTS 1001-1008	C
S1-01-DA402	SHADOW DIAGRAM 21 JUNE - 9AM/12PM/3PM - LOTS 1009-1016	C
S1-01-DA410	SUN EYE VIEWS - 21 JUNE 8AM/9AM	C
S1-01-DA411	SUN EYE VIEWS - 21 JUNE 10AM	C
S1-01-DA412	SUN EYE VIEWS - 21 JUNE 11AM	C
S1-01-DA420	AREA PLAN - PRIVATE OPEN SPACE AND PERMEABLE AREA	C
S1-01-DA421	GFA AREA PLANS - GROUND FLOOR	C
S1-01-DA422	GFA AREA PLANS - FIRST FLOOR	C
S1-01-DA800	GENERAL CONSTRUCTION DETAILS	C



0mm

100mm

200mm

300mm

LOT - 1013 (THERMAL PERFORMANCE)

Construction General:

Glazing (Doors & windows)

Window upgrade 3 - SEM double-glazed, double low-e

Awning: U 2.9 and SHGC 0.35

Fixed: U 2.0 and SHGC 0.44

Sliding door: U 2.8 and SHGC 0.39

Window frame colour

Dark (SA > 0.85)

Walls

External walls

75mm Hebel panel 35mm air gap sarking, R2.7 insulation (insulation only value) and plasterboard lined.

Note: No insulation is required to external garage walls

External Colour:

As per plans provided.

Walls within dwellings

Plasterboard on studs, no insulation required

R2.7 insulation to internal garage walls shared with habitable rooms.

R2.7 insulation to walls between conditioned and unconditioned zones

Roof and Ceilings

Metal roof with anticon blanket (Rn1.3 and Rn1.3)

Garage ceiling with R6.0 insulation and plasterboard lining to where conditioned area above and between conditioned and unconditioned areas.

External Colour

Medium (0.475-SA-0.7)

Ceiling Penetrations

Sealed and insulated LED downlights as per lighting plan

Sealed and insulated exhaust fans as per plans

Floors

Waffle pod slab 85mm concrete and 300mm waffle pods

Timber frame between levels, no insulation required between conditioned areas.

Suspended timber frame, with an R4.0 insulation lined below

Floor coverings

Floor coverings as per plans

External Shading

Shading as per stamped drawings

Ventilation

All external doors have weather seals, all exhaust fans and chimneys have dampers.

BASIX Inclusions

Site details

- Lot number: 1013

- Measure roof area: 111.6m²

- Site area refers to Site Plan DA-S1-01-DA052

- Landscaping area refers to Landscaping Plan by TURF

Water Fixtures

- 4 star showers mid flow (>6.0 but <= 7.5 litters/min)

- 4 star toilets

- 5 star taps

Rain tank

- Harvested roof areas 70%

- Rainwater tank size 2000L connected to garden, toilets, and laundry

- Landscaping as per landscape area schedule

Energy

Hot water system

- Electric heat pump – 21 to 25 STCs

Heating and cooling

- Three phase AC EER 3.0 cooling

- Three phase AC EER 3.5 heating

Lighting

- LED lighting throughout

Ventilation

- Bathroom exhaust – Individual fan, ducted to façade or roof. Manual switch on/off.

- Kitchen exhaust – Individual fan, ducted to façade or roof. Manual switch on/off

- Laundry exhaust – Individual fan, ducted to façade or roof. Manual switch on/off

Other

- Electric cooktop & electric oven

- Outdoor clothes drying line

- Fridge Space – not well-ventilated

- Alternative energy 5.0kW peak system per house

LOT - 1014 (THERMAL PERFORMANCE)

Construction General:

Glazing (Doors & windows)

Window upgrade 3 - SEM double-glazed, double low-e

Awning: U 2.9 and SHGC 0.35

Fixed: U 2.0 and SHGC 0.44

Sliding door: U 2.8 and SHGC 0.39

Window frame colour

Dark (SA > 0.85)

Walls

External walls

Brick veneer with R2.7 insulation (insulation only value)

Lightweight cladding on framed walls with R2.7 insulation (insulation only value)

Note: No insulation is required to external garage walls

External Colour:

As per plans provided.

Walls within dwellings

Plasterboard on studs, no insulation required.

R2.7 insulation to internal garage walls shared with habitable rooms.

R2.7 insulation to walls between conditioned and unconditioned zones

Roof and Ceilings

Metal roof with anticon blanket (Rn1.3 and Rn1.3)

R4.0 ceiling insulation and plasterboard lining, where metal roof above

Garage ceiling with R6.0 insulation and plasterboard lining to where conditioned area above.

External Colour

Medium (0.475-SA-0.7)

Ceiling Penetrations

Sealed and insulated LED downlights as per lighting plan

Sealed and insulated exhaust fans as per plans

Floors

Waffle pod slab 85mm concrete and 300mm waffle pods

Timber frame between levels, no insulation required between conditioned areas.

Suspended timber frame, with an R4.0 insulation lined below

Floor coverings

Floor coverings as per plans

External Shading

Shading as per stamped drawings

Ventilation

All external doors have weather seals, all exhaust fans and chimneys have dampers.

BASIX Inclusions

Site details

- Lot number: 1014

- Measure roof area: 138.9m²

- Site area refers to Site Plan DA-S1-01-DA052

- Landscaping area refers to Landscaping Plan by TURF

Water Fixtures

- 4 star showers mid flow (>6.0 but <= 7.5 litters/min)

- 4 star toilets

- 5 star taps

Rain tank

- Harvested roof areas 70%

- Rainwater tank size 2000L connected to garden, toilets, and laundry

- Landscaping as per landscape area schedule

Energy

Hot water system

- Electric heat pump – 21 to 25 STCs

Heating and cooling

- Three phase AC EER 3.0 cooling

- Three phase AC EER 3.5 heating

Lighting

- LED lighting throughout

Ventilation

- Bathroom exhaust – Individual fan, ducted to façade or roof. Manual switch on/off.

- Kitchen exhaust – Individual fan, ducted to façade or roof. Manual switch on/off

- Laundry exhaust – Individual fan, ducted to façade or roof. Manual switch on/off

Other

- Electric cooktop & electric oven

- Outdoor clothes drying line

- Fridge Space – not well-ventilated

- Alternative energy 5.0kW peak system per house

LOT - 1015 (THERMAL PERFORMANCE)

Construction General:

Glazing (Doors & windows)

Window upgrade 2 - SEM double-glazed, single low-e

Awning: U 3.3 and SHGC 0.38

Fixed: U 2.4 and SHGC 0.48

Sliding door: U 3.2 and SHGC 0.42

Window frame colour

Dark (SA > 0.85)

Walls

External walls

Brick veneer with R2.5 insulation (insulation only value.)

Lightweight cladding on framed walls with R2.5 insulation (insulation only value)

Note: No insulation is required to external Garage walls.

External Colour:

As per plans provided.

Walls within dwellings

Plasterboard on studs, no insulation required.

No insulation to internal walls between conditioned and unconditioned areas

Roof and Ceilings

Metal roof with anticon blanket (Rn1.3 and Rn1.3)

Plasterboard lining to ground floor.

R4.0 ceiling insulation and plasterboard lining, where metal roof above

External Colour

Medium (0.475-SA-0.7)

Ceiling Penetrations

Sealed and insulated LED downlights as per lighting plan

Sealed and insulated exhaust fans as per plans

Floors

Waffle pod slab 85mm concrete and 300mm waffle pods

Timber frame between levels, no insulation required between conditioned areas.

Suspended timber frame, with an R4.0 insulation lined below

Floor coverings

Floor coverings as per plans

External Shading

Shading as per stamped drawings

Ventilation

All external doors have weather seals, all exhaust fans and chimneys have dampers.

BASIX Inclusions

Site details

- Lot number: 1015

- Measure roof area: 138.5m²

- Site area refers to Site Plan DA-S1-01-DA052

- Landscaping area refer to Landscaping Plan by TURF

Water Fixtures

- 4 star showers mid flow (>6.0 but <= 7.5 litters/min)

- 4 star toilets

- 5 star taps

Rain tank

- Harvested roof areas 70%

- Rainwater tank size 2000L connected to garden, toilets, and laundry

- Landscaping as per landscape area schedule

Energy

Hot water system

- Electric heat pump – 21 to 25 STCs

Heating and cooling

- Three phase AC EER 3.0 cooling

- Three phase AC EER 3.5 heating

Lighting

- LED lighting throughout

Ventilation

- Bathroom exhaust – Individual fan, ducted to façade or roof. Manual switch on/off.

- Kitchen exhaust – Individual fan, ducted to façade or roof. Manual switch on/off

- Laundry exhaust – Individual fan, ducted to façade or roof. Manual switch on/off

Other

- Electric cooktop & electric oven

- Outdoor clothes drying line

- Fridge Space – not well-ventilated

- Alternative energy 5.0kW peak system per house

LOT - 1016 (THERMAL PERFORMANCE)

Construction General:

Glazing (Doors & windows)

Window upgrade 3 - SEM double-glazed, double low-e

Awning: U 2.9 and SHGC 0.35

Fixed: U 2.0 and SHGC 0.44

Sliding door: U 2.8 and SHGC 0.39

Window frame colour

Dark (SA > 0.85)

Walls

External walls

75mm Hebel on framed walls with R2.7 insulation (insulation only value)

50mm Hebel on framed walls with R2.7 insulation (insulation only value)

Note: No insulation is required to external garage walls

External Colour:

As per plans provided.

Walls within dwellings

Plasterboard on studs, no insulation required.

R2.7 insulation to internal garage walls shared with habitable rooms.

R2.7 insulation to walls between conditioned and unconditioned zones

Roof and Ceilings

Metal roof with anticon blanket (Rn1.3 and Rn1.3)

Plasterboard lining to ground floor.

R6.0 ceiling insulation and plasterboard lining, where metal roof above

Garage ceiling with R6.0 insulation and plasterboard lining to where conditioned area above and between conditioned and unconditioned areas

External Colour

Medium (0.475-SA-0.7)

Ceiling Penetrations

Sealed and insulated LED downlights as per lighting plan

Sealed and insulated exhaust fans as per plans

Floors

Waffle pod slab 85mm concrete and 300mm waffle pods

Timber frame between levels, no insulation required between conditioned areas.

Suspended timber frame, with an R4.0 insulation lined below

Floor coverings

Floor coverings as per plans

External Shading

Shading as per stamped drawings

Ventilation

All external doors have weather seals, all exhaust fans and chimneys have dampers.

1300mm ceiling fan to living, family, sitting and bedrooms.

BASIX Inclusions

Site details

- Lot number: 1016

- Measure roof area: 142.9m²

- Site area refers to Site Plan DA-S1-01-DA052

- Landscaping area refer to Landscaping Plan by TURF

Water Fixtures

- 4 star showers mid flow (>6.0 but <= 7.5 litters/min)

- 4 star toilets

- 5 star taps

Rain tank

- Harvested roof areas 70%

- Rainwater tank size 2000L connected to garden, toilets, and laundry

- Landscaping as per landscape area schedule

Energy

Hot water system

- Electric heat pump – 21 to 25 STCs

Heating and cooling

- Three phase AC EER 3.0 cooling

- Three phase AC EER 3.5 heating

Lighting

- LED lighting throughout

Ventilation

- Bathroom exhaust – Individual fan, ducted to façade or roof. Interlocked to light with timer off

- Kitchen exhaust – Individual fan, ducted to façade or roof. Manual switch on/off

- Laundry exhaust – Individual fan, ducted to façade or roof. Manual switch on/off

Other

- Electric cooktop & electric oven

- Outdoor clothes drying line

- Fridge Space – not well-ventilated

- Alternative energy 5.0kW peak system per house



06/09/24	C	RE-ISSUE FOR CONSULTANTS
25/06/24	B	ISSUE FOR CONSULTANTS
10/04/24	A	ISSUE FOR REVIEW
686	REV	amendment



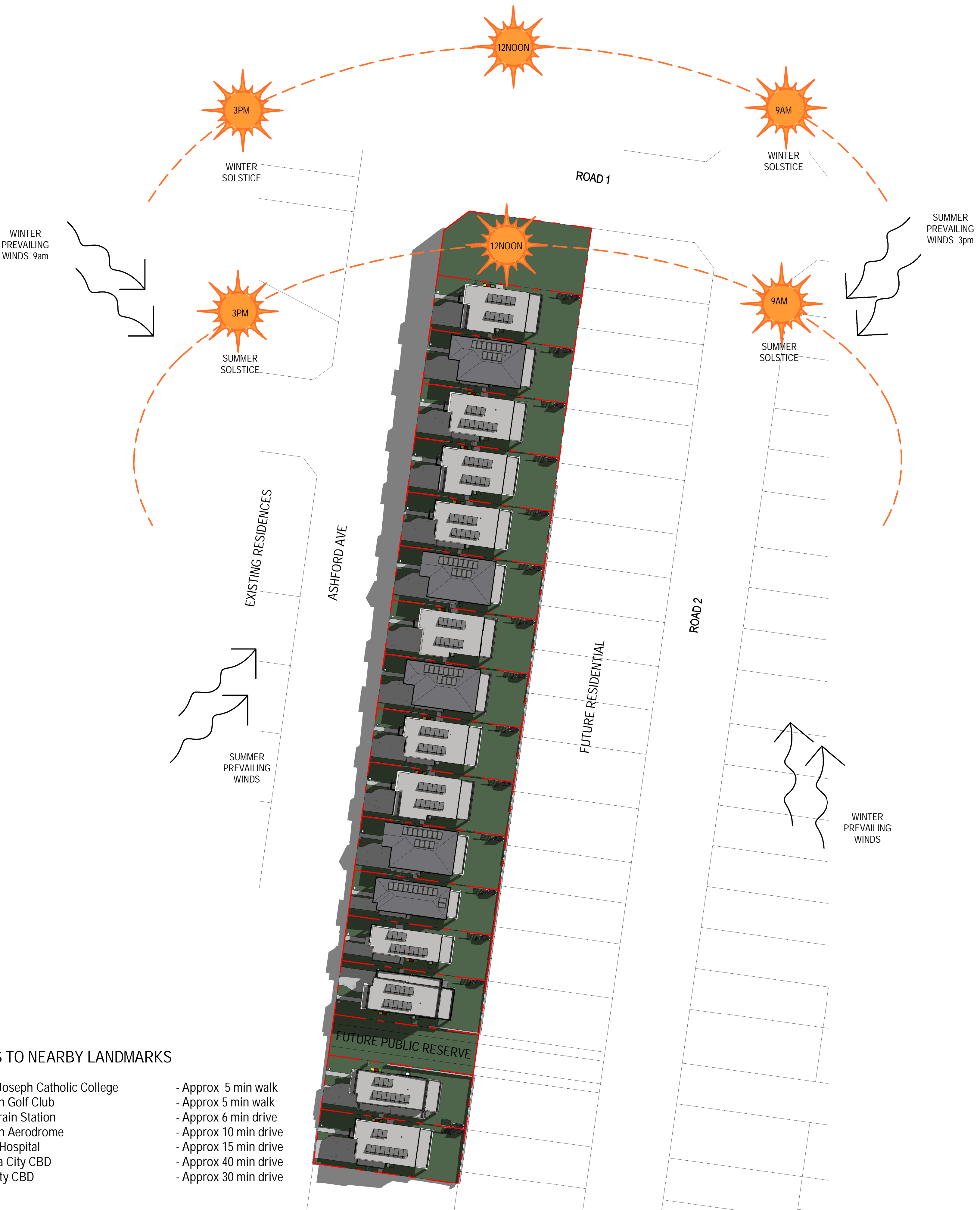
project:
WSU - MILPERRA
2 Bullecourt Avenue, Milperra NSW 2214
Stage: 1 Site: 01 Lot: 10



1 LOCATION PLAN
1 : 2000

DISTANCES TO NEARBY LANDMARKS

- Mount St Joseph Catholic College - Approx 5 min walk
- Bankstown Golf Club - Approx 5 min walk
- Panania Train Station - Approx 6 min drive
- Bankstown Aerodrome - Approx 10 min drive
- Liverpool Hospital - Approx 15 min drive
- Parramatta City CBD - Approx 40 min drive
- Sydney City CBD - Approx 30 min drive



2 SITE ANALYSIS
1 : 500



06.09.24
25.06.24
10.04.24
686

C
B
A
rev

RE-ISSUE FOR CONSULTANTS
ISSUE FOR CONSULTANTS
ISSUE FOR REVIEW
amendment

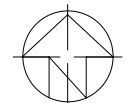
MIRVAC DESIGN
Level 28/200 George St
Sydney NSW 2000
Tel: 02 9550 8000
Mirvac Design Pty Ltd
ABN 70 007 997 937
Mirvac Design Nominated / Responsible Architects
Avala Verma Michael Milner David Hinch Parramatta Brisbane Andrew Li
https://www.mirvacdesign.com/nominated-architects

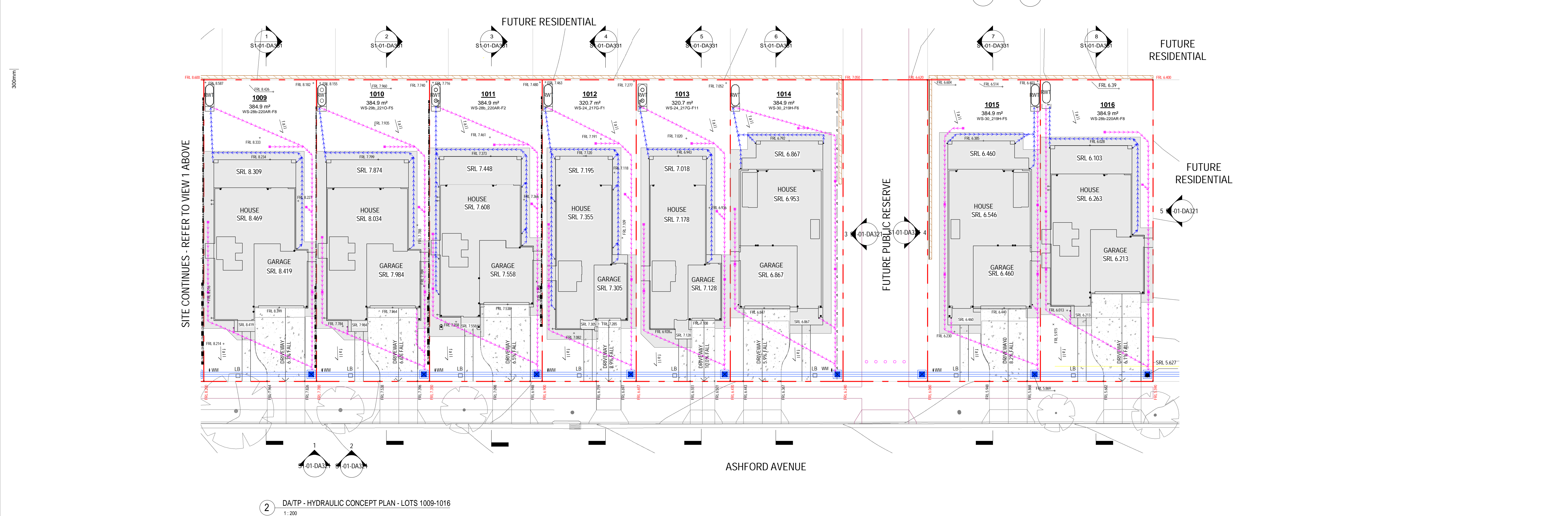
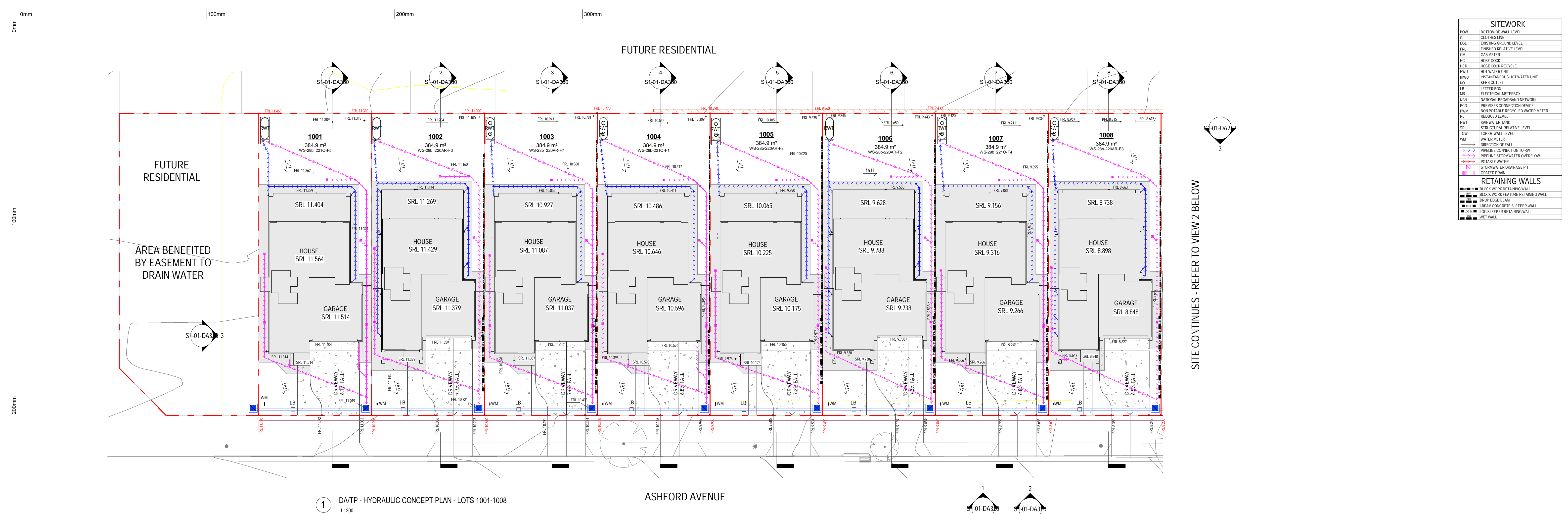


project:
WSU - MILPERRA
2 Bullecourt Avenue, Milperra NSW 2214
Stage: 1 Site: 01 Lot: 1001-1016

title:
LOCATION & SITE ANALYSIS PLAN

job no: MB-10197
drawing no: S1-01-DA050
scale @ A1 : As indicated
date: 06.09.24
rev: C





SITEWORK	
OW	BOTTOM OF WALL LEVEL
CL	CLOTHES LINE
EL	EXISTING GROUND LEVEL
RL	FINISHED RELATIVE LEVEL
GC	GAS METER
HC	HOLE CORK
HC	HOLE CORK RECYCLE
HW	HOT WATER UNIT
HWU	HOT WATER UNIT HOT WATER UNIT
KE	KEY HOLE
B	LETTER BOX
EL	ELECTRICAL NETWORK
BN	NETWORK BROADBAND NETWORK
NC	NON-REMEDIATION CONNECTION DEVICE
WM	PROMISSIBLE RECYCLED WATER METER
WM	REDUCED LEVEL
WM	RAINWATER TANK
WT	STRUCTURAL RELATIVE LEVEL
WT	TOP OF WALL LEVEL
WM	WATER METER
WM	DIRECTION OF FALL
WM	POTABLE WATER CONNECTION TO PIPING
WM	POTABLE WATER OVERFLOW
WM	POTABLE WATER
WM	POTABLE WATER DRAINAGE PIT
WM	GRADED DRAIN

RETAINING WALLS	
■	BLOCK WORK RETAINING WALL
■	BLOCK WORK FEATURE RETAINING WALL
■	DRY DOG BEAM
■	BEAM CONNECTION SEE PIER
■	SEE PIER PIER SEE PIER
■	WET WALL

0mm

100mm

200mm

300mm

WINDOW SCHEDULE - 1001					
Window No.	Type	Height	Width	Description	
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L_SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-04	SXD2448	2400	4780		
W-05L	SXD2116_L	2100	1570		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-13	SA1236_SPECIAL	1200	3680	1200H x 3680W SA1208 WITHIN	
W-14	SXD2127	2100	2712		
W-29	SA1007_OBS	1030	730	OBSCURE	
W-29	SA1007_OBS	1030	730	OBSCURE	
W-30L	SA1014_L_OBS	1030	1450	OBSCURE	
W-31L	SA1322_L	1370	2170		
W-31L	SA1322_L	1370	2170		
W-31R	SA1322_R	1370	2170		
W-32	SF1308	1370	850		

WINDOW SCHEDULE - 1002					
Window No.	Type	Height	Width	Description	
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L_SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-04	SXD2448	2400	4780		
W-05L	SXD2116_L	2100	1570		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-15	SXD2132	2100	3162		
W-16	SA1326_SPECIAL	1370	2650	1200H x 2650W SA1207 WITHIN	
W-29	SA1007_OBS	1030	730	OBSCURE	
W-30R	SA1014_R_OBS	1030	1450	OBSCURE	
W-31L	SA1322_L	1370	2170		
W-31L	SA1322_L	1370	2170		
W-31R	SA1322_R	1370	2170		
W-32	SF1308	1370	850		

WINDOW SCHEDULE - 1003					
Window No.	Type	Height	Width	Description	
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L_SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-04	SXD2448	2400	4780		
W-05L	SXD2116_L	2100	1570		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-16	SA1326_SPECIAL	1370	2650	1200H x 2650W SA1207 WITHIN	
W-17	SA1238_SPECIAL	1200	3780	1200H x 3780W SA1208 WITHIN	
W-29	SA1007_OBS	1030	730	OBSCURE	
W-30R	SA1014_R_OBS	1030	1450	OBSCURE	
W-31L	SA1322_L	1370	2170		
W-31L	SA1322_L	1370	2170		
W-31R	SA1322_R	1370	2170		
W-32	SF1308	1370	850		

WINDOW SCHEDULE - 1004					
Window No.	Type	Height	Width	Description	
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L_SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-04	SXD2448	2400	4780		
W-05L	SXD2116_L	2100	1570		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-14	SXD2127	2100	2712		
W-18R	SA1330_R_SPECIAL	1370	3010	1370H x 3010W SA1308 WITHIN	
W-19R	SA1319_R_SPECIAL	1370	1960	1370H x 1960W SA1308 WITHIN	
W-29	SA1007_OBS	1030	730	OBSCURE	
W-29	SA1007_OBS	1030	730	OBSCURE	
W-30L	SA1014_L_OBS	1030	1450	OBSCURE	
W-31L	SA1322_L	1370	2170		
W-31L	SA1322_L	1370	2170		
W-31R	SA1322_R	1370	2170		
W-32	SF1308	1370	850		

WINDOW SCHEDULE - 1005					
Window No.	Type	Height	Width	Description	
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L_SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-04	SXD2448	2400	4780		
W-05L	SXD2116_L	2100	1570		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-15	SXD2132	2100	3162		
W-16	SA1326_SPECIAL	1370	2650	1200H x 2650W SA1207 WITHIN	
W-29	SA1007_OBS	1030	730	OBSCURE	
W-30R	SA1014_R_OBS	1030	1450	OBSCURE	
W-31R	SA1322_R	1370	2170		
W-31R	SA1322_R	1370	2170		
W-32	SF1308	1370	850		

WINDOW SCHEDULE - 1006					
Window No.	Type	Height	Width	Description	
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L_SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-04	SXD2448	2400	4780		
W-05L	SXD2116_L	2100	1570		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-15	SXD2132	2100	3162		
W-16	SA1326_SPECIAL	1370	2650	1200H x 2650W SA1208 WITHIN	
W-22	SA1807T	1800	730		
W-29	SA1007_OBS	1030	730	OBSCURE	
W-30L	SA1014_L_OBS	1030	1450	OBSCURE	
W-31L	SA1322_L	1370	2170		
W-31R	SA1322_R	1370	2170		
W-32	SF1308	1370	850		

WINDOW SCHEDULE - 1007					
Window No.	Type	Height	Width	Description	
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L_SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-04	SXD2448	2400	4780		
W-05L	SXD2116_L	2100	1570		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-13	SA1236_SPECIAL	1200	3680	1200H x 3680W SA1208 WITHIN	
W-22	SA1807T	1800	730		
W-29	SA1007_OBS	1030	730	OBSCURE	
W-30L	SA1014_L_OBS	1030	1450	OBSCURE	
W-31L	SA1322_L	1370	2170		
W-31R	SA1322_R	1370	2170		
W-32	SF1308	1370	850		

WINDOW SCHEDULE - 1008					
Window No.	Type	Height	Width	Description	
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L_SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-04	SXD2448	2400	4780		
W-05L	SXD2116_L	2100	1570		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-15	SXD2132	2100	3162		
W-16	SA1326_SPECIAL	1370	2650	1200H x 2650W SA1207 WITHIN	
W-29	SA1007_OBS	1030	730	OBSCURE	
W-30R	SA1014_R_OBS	1030	1450	OBSCURE	
W-31L	SA1322_L	1370	2170		
W-31R	SA1322_R	1370	2170		
W-32	SF1308	1370	850		

DOOR SCHEDULE 1001				
Door No.	Height	Leaf Width	O/A Frame Width	
D-01L_6G	2400	920	1450	
D-07	2100	820	900	

DOOR SCHEDULE 1002				
Door No.	Height	Leaf Width	O/A Frame Width	
D-02L_8G	2400	920	1500	
D-07	2100	820	900	

DOOR SCHEDULE 1003				
Door No.	Height	Leaf Width	O/A Frame Width	
D-03L_6G	2400	920	1500	
D-07	2100	820	900	

DOOR SCHEDULE 1004				
Door No.	Height	Leaf Width	O/A Frame Width	
D-01L_6G	2400	920	1450	
D-07	2100	820	900	

DOOR SCHEDULE 1005				
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WINDOW SCHEDULE - 1009				
Window No.	Type	Height	Width	Description
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN
W-02L	SA2018T_L_SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN
W-03	SA2007T	2035	730	
W-03	SA2007T	2035	730	
W-03	SA2007T	2035	730	
W-04	SXD2448	2400	4780	
W-05L	SXD2116_L	2100	1570	
W-06	SA1307	1370	730	
W-06	SA1307	1370	730	
W-06	SA1307	1370	730	
W-19R	SA1319_R_SPECIAL	1370	1960	1370H x 1960W SA1308 WITHIN
W-20L	SA1324_L_SPECIAL	1370	2410	1370H x 2410W SA1308 WITHIN
W-29	SA1007_OBS	1030	730	OBSCURE
W-30R	SA1014_R_OBS	1030	1450	OBSCURE
W-31L	SA1322_L	1370	2170	
W-31L	SA1322_L	1370	2170	
W-31R	SA1322_R	1370	2170	
W-32	SF1308	1370	850	

DOOR SCHEDULE 1009			
Door No.	Height	Leaf Width	O/A Frame Width
D-03L_6G	2400	920	1500
D-07	2100	820	900

WINDOW SCHEDULE - 1010				
Window No.	Type	Height	Width	Description
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN
W-02L	SA2018T_L_SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN
W-03	SA2007T	2035	730	
W-03	SA2007T	2035	730	
W-03	SA2007T	2035	730	
W-04	SXD2448	2400	4780	
W-05L	SXD2116_L	2100	1570	
W-06	SA1307	1370	730	
W-06	SA1307	1370	730	
W-13	SA1236_SPECIAL	1200	3680	1200H x 3680W SA1208 WITHIN
W-14	SXD2127	2100	2712	
W-29	SA1007_OBS	1030	730	OBSCURE
W-29	SA1007_OBS	1030	730	OBSCURE
W-30L	SA1014_L_OBS	1030	1450	OBSCURE
W-31L	SA1322_L	1370	2170	
W-31L	SA1322_L	1370	2170	
W-31R	SA1322_R	1370	2170	
W-32	SF1308	1370	850	

DOOR SCHEDULE 1010			
Door No.	Height	Leaf Width	O/A Frame Width
D-01L_6G	2400	920	1450
D-07	2100	820	900

WINDOW SCHEDULE - 1011				
Window No.	Type	Height	Width	Description
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN
W-02L	SA2018T_L_SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN
W-03	SA2007T	2035	730	
W-03	SA2007T	2035	730	
W-03	SA2007T	2035	730	
W-04	SXD2448	2400	4780	
W-05L	SXD2116_L	2100	1570	
W-06	SA1307	1370	730	
W-06	SA1307	1370	730	
W-15	SXD2132	2100	3162	
W-16	SA1326_SPECIAL	1370	2650	1200H x 2650W SA1207 WITHIN
W-29	SA1007_OBS	1030	730	OBSCURE
W-30R	SA1014_R_OBS	1030	1450	OBSCURE
W-31L	SA1322_L	1370	2170	
W-31L	SA1322_L	1370	2170	
W-31R	SA1322_R	1370	2170	
W-32	SF1308	1370	850	

DOOR SCHEDULE 1011			
Door No.	Height	Leaf Width	O/A Frame Width
D-02L_8G	2400	920	1500
D-07	2100	820	900

WINDOW SCHEDULE - 1012				
Window No.	Type	Height	Width	Description
W-02L	SA2018T_L_SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN
W-06	SA1307	1370	730	
W-10	SXD2442	2400	4180	
W-11	SA2008T	2035	850	
W-11	SA2008T	2035	850	
W-11	SA2008T	2035	850	
W-11	SA2008T	2035	850	
W-12	SA1006_OBS	1030	610	OBSCURE
W-23L	SA1318_L	1370	1810	
W-23R	SA1318_R	1370	1810	
W-23R	SA1318_R	1370	1810	
W-24R	SA1318_R	1370	1810	
W-24	SA1308	1370	850	
W-24	SA1308	1370	850	
W-38	SF2007	2035	730	
W-39	SF1307	1370	730	
W-40	SA1208_OBS	1370	850	OBSCURE

DOOR SCHEDULE 1012			
Door No.	Height	Leaf Width	O/A Frame Width
D-04L_6G	2400	920	1000
D-07	2100	820	900

WINDOW SCHEDULE - 1013				
Window No.	Type	Height	Width	Description
W-02R	SA2018T_R_SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN
W-06	SA1307	1370	730	
W-10	SXD2442	2400	4180	
W-11	SA2008T	2035	850	
W-11	SA2008T	2035	850	
W-11	SA2008T	2035	850	
W-11	SA2008T	2035	850	
W-23R	SA1318_R	1370	1810	
W-23R	SA1318_R	1370	1810	
W-23R	SA1318_R	1370	1810	
W-25R	SA1320_R_SPECIAL	1370	2080	1370H x 2080W SA1308 WITHIN
W-26	AF2006	2035	610	
W-27	SF0613_SPECIAL	600	1340	600H x 1340W
W-38	SF2007	2035	730	
W-39	SF1307	1370	730	
W-40	SA1208_OBS	1370	850	OBSCURE

DOOR SCHEDULE 1013			
Door No.	Height	Leaf Width	O/A Frame Width
D-05L_8G	2400	920	1000
D-07	2100	820	900

WINDOW SCHEDULE - 1014				
Window No.	Type	Height	Width	Description
W-04	SXD2448	2400	4780	
W-06	SA1307	1370	730	
W-07L	SA2024T_L_SPECIAL	2035	2410	2035H x 2410W SA2008T WITHIN
W-08	SA1206	1200	610	
W-08	SA1206_OBS	1200	610	OBSCURE
W-09	SA2006T	2035	610	
W-14	SXD2127	2100	2712	
W-28	SA1306	1370	610	
W-29	SA1007_OBS	1030	730	OBSCURE
W-33R	SA1218_R	1200	1810	
W-33L	SA1218_L	1200	1810	
W-33R	SA1218_R	1200	1810	
W-34	SA1207	1200	730	
W-34	SA1207	1200	730	
W-36	SF1007	1030	730	

DOOR SCHEDULE 1014			
Door No.	Height	Leaf Width	O/A Frame Width
D-06R_8G	2400	920	1900
D-07	2100	820	900
D-08	2400	820	900

WINDOW SCHEDULE - 1015				
Window No.	Type	Height	Width	Description
W-04	SXD2448	2400	4780	
W-06	SA1307	1370	730	
W-07R	SA2024T_R_SPECIAL	2035	2410	2035H x 2410W SA2008T WITHIN
W-08	SA1206	1200	610	
W-08	SA1206_OBS	1200	610	OBSCURE
W-09	SA2006T	2035	610	
W-14	SXD2127	2100	2712	
W-28	SA1306	1370	610	
W-29	SA1007_OBS	1030	730	OBSCURE
W-33R	SA1218_R	1200	1810	
W-33R	SA1218_R	1200	1810	
W-34	SA1207	1200	730	
W-34	SA1207	1200	730	
W-35L	SA1018_L_SPECIAL	1030	1810	1030H x 1810W SA1007 WITHIN
W-36	SF1007	1030	730	

DOOR SCHEDULE 1015			
Door No.	Height	Leaf Width	O/A Frame Width
D-07	2100	820	900
D-08	2400	820	900

WINDOW SCHEDULE - 1016				
Window No.	Type	Height	Width	Description
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN
W-02L	SA2018T_L_SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN
W-03	SA2007T	2035	730	
W-03	SA2007T	2035	730	
W-03	SA2007T	2035	730	
W-04	SXD2448	2400	4780	
W-05L	SXD2116_L	2100	1570	
W-06	SA1307	1370	730	
W-06	SA1307	1370	730	
W-19R	SA1319_R_SPECIAL	1370	1960	1370H x 1960W SA1308 WITHIN
W-20L	SA1324_L_SPECIAL	1370	2410	1370H x 2410W SA1308 WITHIN
W-29	SA1007_OBS	1030	730	OBSCURE
W-30R	SA1014_R_OBS	1030	1450	OBSCURE
W-31L	SA1322_L	1370	2170	
W-31R	SA1322_R	1370	2170	
W-32	SF1308	1370	850	

DOOR SCHEDULE 1016			
Door No.	Height	Leaf Width	O/A Frame Width
D-03L_6G	2400	920	1500
D-07	2100	820	900

TOTAL GROSS BUILDING AREAS - LOTS 09-16		
Lot No.	Name	Area

1009	Ground Floor	88.2 m ²
1009	First Floor	118.5 m ²
1009	Garage	37.0 m ²
1009	Alfresco	26.1 m ²
1009	Porch	2.6 m ²
		272.5 m ²

1010	Ground Floor	88.2 m ²
1010	First Floor	126.1 m ²
1010	Garage	37.5 m ²
1010	Alfresco	26.1 m ²
1010	Balcony	7.2 m ²
1010	Porch	2.5 m ²
		287.7 m ²

1011	Ground Floor	88.2 m ²
1011	First Floor	115.9 m ²
1011	Garage	37.2 m ²
1011	Alfresco	26.1 m ²
1011	Balcony	6.1 m ²
1011	Porch	2.6 m ²
		276.1 m ²

1012	Ground Floor	78.9 m ²
1012	First Floor	91.8 m ²
1012	Garage	21.4 m ²
1012	Alfresco	18.2 m ²
1012	Porch	1.7 m ²
		211.9 m ²

1013	Ground Floor	78.9 m ²
1013	First Floor	92.5 m ²
1013	Garage	21.4 m ²
1013	Alfresco	18.2 m ²
1013	Porch	3.6 m ²
		214.5 m ²

1014	Ground Floor	91.0 m ²
1014	First Floor	110.2 m ²
1014	Garage	41.2 m ²
1014	Alfresco	23.2 m ²
1014	Balcony	7.6 m ²
1014	Porch	6.3 m ²
		279.6 m ²

1015	Ground Floor	91.0 m ²
1015	First Floor	110.3 m ²
1015	Garage	41.2 m ²
1015	Alfresco	23.2 m ²
1015	Balcony	7.4 m ²
1015	Porch	6.3 m ²
		279.3 m ²

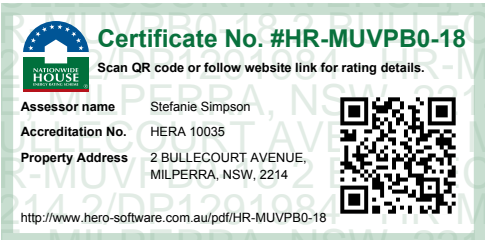
1016	Ground Floor	88.2 m ²
1016	First Floor	118.5 m ²
1016	Garage	37.0 m ²
1016	Alfresco	26.1 m ²
1016	Porch	2.6 m ²
		272.5 m ²

title:
GROUND FLOOR PLANS - LOTS
1009-1016

job no: MB-10197
drawing no: S1-01-DA211
scale @ A1 : 1 : 200
date: 06.09.24
rev: C



1 GROUND FLOOR PLAN (LOTS 1009 - 1016)
1 : 200



06.09.24
25.06.24
10.04.24
086

C
B
A
rev

RE: ISSUE FOR CONSULTANTS
ISSUE FOR CONSULTANTS
ISSUE FOR REVIEW
amendment



Level 28 200 George St
Sydney NSW 2000
Tel: 02 9550 8000
Mircac Design Pty Ltd
ABN 70 007 599 751
Mircac Design Nominees / Responsible Architects
Alicia Verma, Michael Wilmer, David Hinch, Farmington, Stedman, Andrew La
https://www.m

0mm 100mm 200mm 300mm

WINDOW SCHEDULE - 1001					
Window No.	Type	Height	Width	Description	
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-04	SXD2448	2400	4780		
W-05L	SXD2116_L	2100	1570		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-13	SA1236 SPECIAL	1200	3680	1200H x 3680W SA1208 WITHIN	
W-14	SXD2127	2100	2712		
W-29	SA1007 OBS	1030	730	OBSCURE	
W-29	SA1007 OBS	1030	730	OBSCURE	
W-30L	SA1014_L OBS	1030	1450	OBSCURE	
W-31L	SA1322_L	1370	2170		
W-31L	SA1322_L	1370	2170		
W-31R	SA1322_R	1370	2170		
W-32	SF1308	1370	850		

WINDOW SCHEDULE - 1002					
Window No.	Type	Height	Width	Description	
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-04	SXD2448	2400	4780		
W-05L	SXD2116_L	2100	1570		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-15	SXD2132	2100	3162		
W-16	SA1326 SPECIAL	1370	2650	1200H x 2650W SA1207 WITHIN	
W-29	SA1007 OBS	1030	730	OBSCURE	
W-30R	SA1014_R OBS	1030	1450	OBSCURE	
W-31L	SA1322_L	1370	2170		
W-31R	SA1322_R	1370	2170		
W-32	SF1308	1370	850		

WINDOW SCHEDULE - 1003					
Window No.	Type	Height	Width	Description	
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-04	SXD2448	2400	4780		
W-05L	SXD2116_L	2100	1570		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-16	SA1326 SPECIAL	1370	2650	1200H x 2650W SA1207 WITHIN	
W-17	SA1238 SPECIAL	1200	3780	1200H x 3780W SA1208 WITHIN	
W-29	SA1007 OBS	1030	730	OBSCURE	
W-30R	SA1014_R OBS	1030	1450	OBSCURE	
W-31L	SA1322_L	1370	2170		
W-31R	SA1322_R	1370	2170		
W-32	SF1308	1370	850		

WINDOW SCHEDULE - 1004					
Window No.	Type	Height	Width	Description	
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-04	SXD2448	2400	4780		
W-05L	SXD2116_L	2100	1570		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-14	SXD2127	2100	2712		
W-18R	SA1330_R SPECIAL	1370	3010	1370H x 3010W SA1308 WITHIN	
W-29	SA1007 OBS	1030	730	OBSCURE	
W-29	SA1007 OBS	1030	730	OBSCURE	
W-30L	SA1014_L OBS	1030	1450	OBSCURE	
W-31L	SA1322_L	1370	2170		
W-31L	SA1322_L	1370	2170		
W-31R	SA1322_R	1370	2170		
W-32	SF1308	1370	850		

WINDOW SCHEDULE - 1005					
Window No.	Type	Height	Width	Description	
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-04	SXD2448	2400	4780		
W-05L	SXD2116_L	2100	1570		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-19R	SA1319_R SPECIAL	1370	1960	1370H x 1960W SA1308 WITHIN	
W-20L	SA1324_L SPECIAL	1370	2410	1370H x 2410W SA1308 WITHIN	
W-29	SA1007 OBS	1030	730	OBSCURE	
W-30R	SA1014_R OBS	1030	1450	OBSCURE	
W-31L	SA1322_L	1370	2170		
W-31R	SA1322_R	1370	2170		
W-32	SF1308	1370	850		

WINDOW SCHEDULE - 1006					
Window No.	Type	Height	Width	Description	
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-04	SXD2448	2400	4780		
W-05L	SXD2116_L	2100	1570		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-15	SA1232 SPECIAL	2100	3162		
W-16	SA1326 SPECIAL	1370	2650	1200H x 2650W SA1207 WITHIN	
W-29	SA1007 OBS	1030	730	OBSCURE	
W-30R	SA1014_R OBS	1030	1450	OBSCURE	
W-31L	SA1322_L	1370	2170		
W-31R	SA1322_R	1370	2170		
W-32	SF1308	1370	850		

WINDOW SCHEDULE - 1007					
Window No.	Type	Height	Width	Description	
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-04	SXD2448	2400	4780		
W-05L	SXD2116_L	2100	1570		
W-06	SA1307	1370	730		
W-13	SA1236 SPECIAL	1200	3680	1200H x 3680W SA1208 WITHIN	
W-22	SA1807T	1800	730		
W-29	SA1007 OBS	1030	730	OBSCURE	
W-29	SA1007 OBS	1030	730	OBSCURE	
W-30L	SA1014_L OBS	1030	1450	OBSCURE	
W-31L	SA1322_L	1370	2170		
W-31R	SA1322_R	1370	2170		
W-31R	SA1322_R	1370	2170		
W-32	SF1308	1370	850		

WINDOW SCHEDULE - 1008					
Window No.	Type	Height	Width	Description	
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-04	SXD2448	2400	4780		
W-05L	SXD2116_L	2100	1570		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-15	SXD2132	2100	3162		
W-16	SA1326 SPECIAL	1370	2650	1200H x 2650W SA1207 WITHIN	
W-29	SA1007 OBS	1030	730	OBSCURE	
W-30R	SA1014_R OBS	1030	1450	OBSCURE	
W-31L	SA1322_L	1370	2170		
W-31R	SA1322_R	1370	2170		
W-32	SF1308	1370	850		

DOOR SCHEDULE 1001				
Door No.	Height	Leaf Width	O/A Frame Width	
D-01L_6G	2400	920	1450	
D-07	2100	820	900	

DOOR SCHEDULE 1002				
Door No.	Height	Leaf Width	O/A Frame Width	
D-02L_8G	2400	920	1500	
D-07	2100	820	900	

DOOR SCHEDULE 1003				
Door No.	Height	Leaf Width	O/A Frame Width	
D-03L_6G	2400	920	1500	
D-07	2100	820	900	

DOOR SCHEDULE 1004				
Door No.	Height	Leaf Width	O/A Frame Width	
D-01L_6G	2400	920	1450	
D-07	2100	820	900	

DOOR SCHEDULE 1005				
Door No.	Height	Leaf Width	O/A Frame Width	
D-03L_6G	2400	920	1500	
D-07	2100	820	900	

DOOR SCHEDULE 1006			
Door No.	Height	Leaf Width	O/A Frame Width
D-02L_8G	2400	920	1500
D-07	2100	820	900

WINDOW SCHEDULE - 1009					
Window No.	Type	Height	Width	Description	
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-04	SKD2448	2400	4780		
W-05L	SKD2116_L	2100	1570		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-19R	SA1319_R SPECIAL	1370	1960	1370H x 1960W SA1308 WITHIN	
W-20L	SA1324_L SPECIAL	1370	2410	1370H x 2410W SA1308 WITHIN	
W-29	SA1007 OBS	1030	730	OBSCUR	
W-30R	SA1014_R OBS	1030	1450	OBSCUR	
W-31L	SA1322_L	1370	2170		
W-31L	SA1322_L	1370	2170		
W-31R	SA1322_R	1370	2170		
W-32	SF1308	1370	850		

DOOR SCHEDULE 1009				
Door No.	Height	Leaf Width	O/A Frame Width	
D-03L_6G	2400	920	1500	
D-07	2100	820	900	

WINDOW SCHEDULE - 1010					
Window No.	Type	Height	Width	Description	
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-04	SKD2448	2400	4780		
W-05L	SKD2116_L	2100	1570		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-13	SA1236 SPECIAL	1200	3680	1200H x 3680W SA1208 WITHIN	
W-14	SKD2127	2100	2712		
W-29	SA1007 OBS	1030	730	OBSCUR	
W-29	SA1007 OBS	1030	730	OBSCUR	
W-30L	SA1014_L OBS	1030	1450	OBSCUR	
W-31L	SA1322_L	1370	2170		
W-31R	SA1322_R	1370	2170		
W-32	SF1308	1370	850		

DOOR SCHEDULE 1010				
Door No.	Height	Leaf Width	O/A Frame Width	
D-01L_6G	2400	920	1450	
D-07	2100	820	900	

WINDOW SCHEDULE - 1011					
Window No.	Type	Height	Width	Description	
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-04	SKD2448	2400	4780		
W-05L	SKD2116_L	2100	1570		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-15	SKD2132	2100	3162		
W-16	SA1326 SPECIAL	1370	2650	1200H x 2650W SA1207 WITHIN	
W-29	SA1007 OBS	1030	730	OBSCUR	
W-30R	SA1014_R OBS	1030	1450	OBSCUR	
W-31L	SA1322_L	1370	2170		
W-31R	SA1322_R	1370	2170		
W-32	SF1308	1370	850		

DOOR SCHEDULE 1011				
Door No.	Height	Leaf Width	O/A Frame Width	
D-02L_8G	2400	920	1500	
D-07	2100	820	900	

WINDOW SCHEDULE - 1012					
Window No.	Type	Height	Width	Description	
W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-06	SA1307	1370	730		
W-10	SKD2442	2400	4180		
W-11	SA2008T	2035	850		
W-11	SA2008T	2035	850		
W-11	SA2008T	2035	850		
W-11	SA2008T	2035	850		
W-12	SA1006 OBS	1030	610	OBSCUR	
W-23L	SA1318_L	1370	1810		
W-23R	SA1318_R	1370	1810		
W-23R	SA1318_R	1370	1810		
W-23R	SA1318_R	1370	1810		
W-24	SA1308	1370	850		
W-24	SA1308	1370	850		
W-38	SF2007	2035	730		
W-39	SF1307	1370	730		
W-40	SA1208 OBS	1370	850	OBSCUR	

DOOR SCHEDULE 1012				
Door No.	Height	Leaf Width	O/A Frame Width	
D-04_6G	2400	920	1000	
D-07	2100	820	900	

WINDOW SCHEDULE - 1013					
Window No.	Type	Height	Width	Description	
W-02R	SA2018T_R SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-06	SA1307	1370	730		
W-10	SKD2442	2400	4180		
W-11	SA2008T	2035	850		
W-11	SA2008T	2035	850		
W-11	SA2008T	2035	850		
W-11	SA2008T	2035	850		
W-23R	SA1318_R	1370	1810		
W-23R	SA1318_R	1370	1810		
W-25R	SA1320_R SPECIAL	1370	2080	1370H x 2080W SA1308 WITHIN	
W-26	AF2006	2035	610		
W-27	SF0613 SPECIAL	600	1340	600H x 1340W	
W-38	SF2007	2035	730		
W-39	SF1307	1370	730		
W-40	SA1208 OBS	1370	850	OBSCUR	

DOOR SCHEDULE 1013				
Door No.	Height	Leaf Width	O/A Frame Width	
D-05_8G	2400	920	1000	
D-07	2100	820	900	

WINDOW SCHEDULE - 1014					
Window No.	Type	Height	Width	Description	
W-04	SKD2448	2400	4780		
W-06	SA1307	1370	730		
W-07L	SA2024T_L SPECIAL	2035	2410	2035H x 2410W SA2008T WITHIN	
W-08	SA1206	1200	610		
W-08	SA1206 OBS	1200	610	OBSCUR	
W-09	SA2004T	2035	610		
W-14	SKD2127	2100	2712		
W-28	SA1306	1370	610		
W-29	SA1007 OBS	1030	730	OBSCUR	
W-33L	SA1218_L	1200	1810		
W-33L	SA1218_L	1200	1810		
W-33R	SA1218_R	1200	1810		
W-34	SA1207	1200	730		
W-34	SA1207	1200	730		
W-36	SF1007	1030	730		

DOOR SCHEDULE 1014				
Door No.	Height	Leaf Width	O/A Frame Width	
D-06R_8G	2400	920	1900	
D-07	2100	820	900	
D-08	2400	820	900	

WINDOW SCHEDULE - 1015					
Window No.	Type	Height	Width	Description	
W-04	SKD2448	2400	4780		
W-06	SA1307	1370	730		
W-07R	SA2024T_R SPECIAL	2035	2410	2035H x 2410W SA2008T WITHIN	
W-08	SA1206	1200	610		
W-08	SA1206 OBS	1200	610	OBSCUR	
W-09	SA2004T	2035	610		
W-14	SKD2127	2100	2712		
W-28	SA1306	1370	610		
W-29	SA1007 OBS	1030	730	OBSCUR	
W-33R	SA1218_R	1200	1810		
W-33R	SA1218_R	1200	1810		
W-34	SA1207	1200	730		
W-35L	SA1018_L SPECIAL	1030	1810	1030H x 1810W SA1007 WITHIN	
W-36	SF1007	1030	730		

DOOR SCHEDULE 1015				
Door No.	Height	Leaf Width	O/A Frame Width	
D-07	2100	820	900	
D-08	2400	820	900	

WINDOW SCHEDULE - 1016					
Window No.	Type	Height	Width	Description	
W-01L	SA2016T_SPECIAL	2035	1570	2035H x 1570W SA2007T WITHIN	
W-02L	SA2018T_L SPECIAL	2035	1810	2035H x 1810W SA2008T WITHIN	
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-03	SA2007T	2035	730		
W-04	SKD2448	2400	4780		
W-05L	SKD2116_L	2100	1570		
W-06	SA1307	1370	730		
W-06	SA1307	1370	730		
W-19R	SA1319_R SPECIAL	1370	1960	1370H x 1960W SA1308 WITHIN	
W-20L	SA1324_L SPECIAL	1370	2410	1370H x 2410W SA1308 WITHIN	
W-29	SA1007 OBS	1030	730	OBSCUR	
W-30R	SA1014_R OBS	1030	1450	OBSCUR	
W-31L	SA1322_L	1370	2170		
W-31R	SA1322_R	1370	2170		
W-32	SF1308	1370	850		

DOOR SCHEDULE 1016				
Door No.	Height	Leaf Width	O/A Frame Width	
D-03L_6G	2400	920	1500	
D-07	2100	820	900	

TOTAL GROSS BUILDING AREAS - LOTS 09-16		
Lot No.	Name	Area

0mm 100mm 200mm 300mm

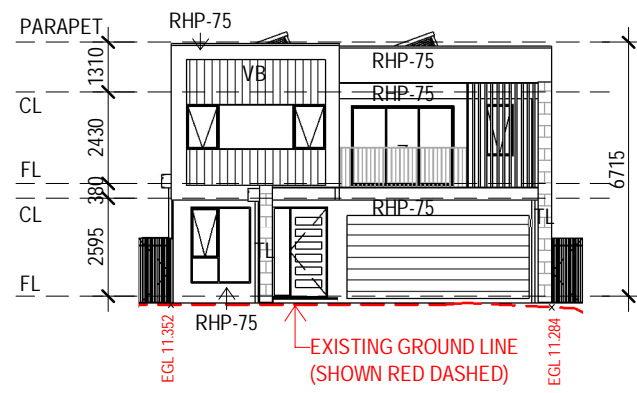
ROOF PLAN

0mm 100mm 200mm 300mm

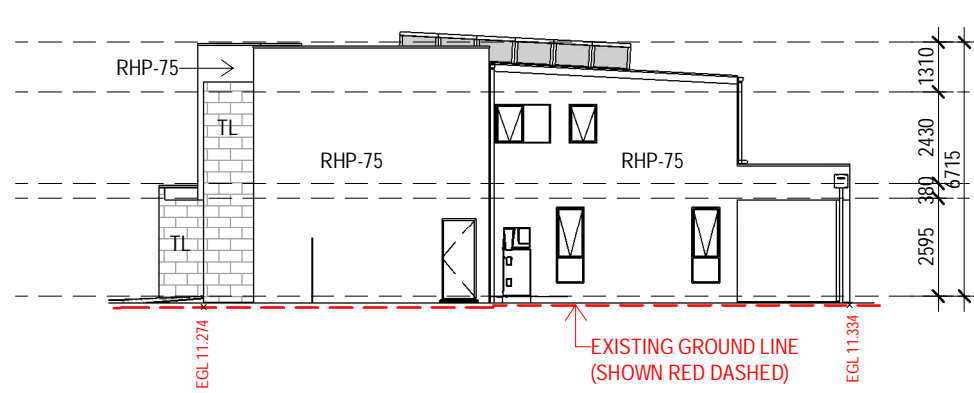
100mm

200mm

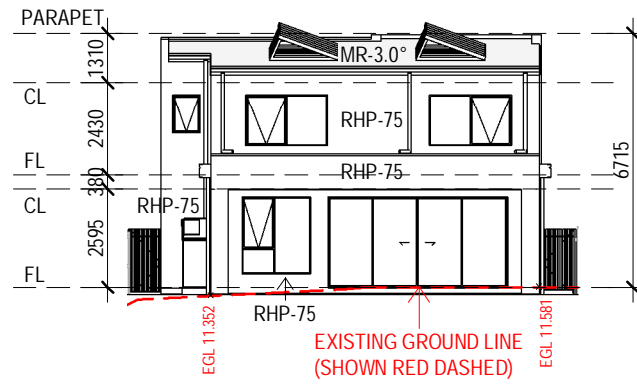
300mm



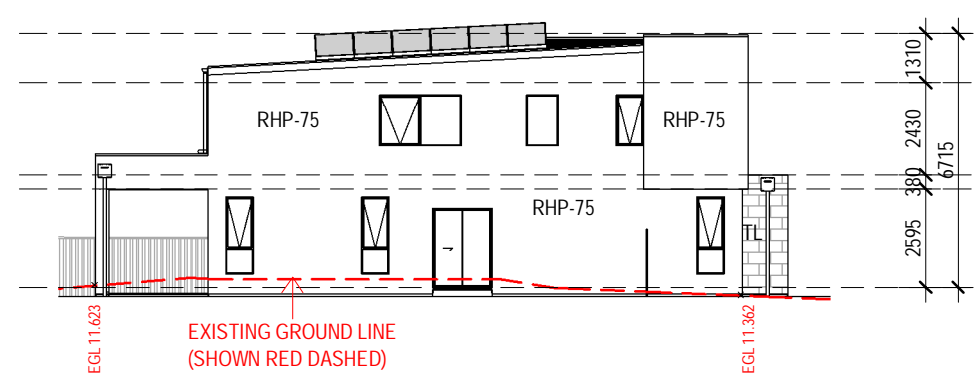
1 1001 FRONT
1:200



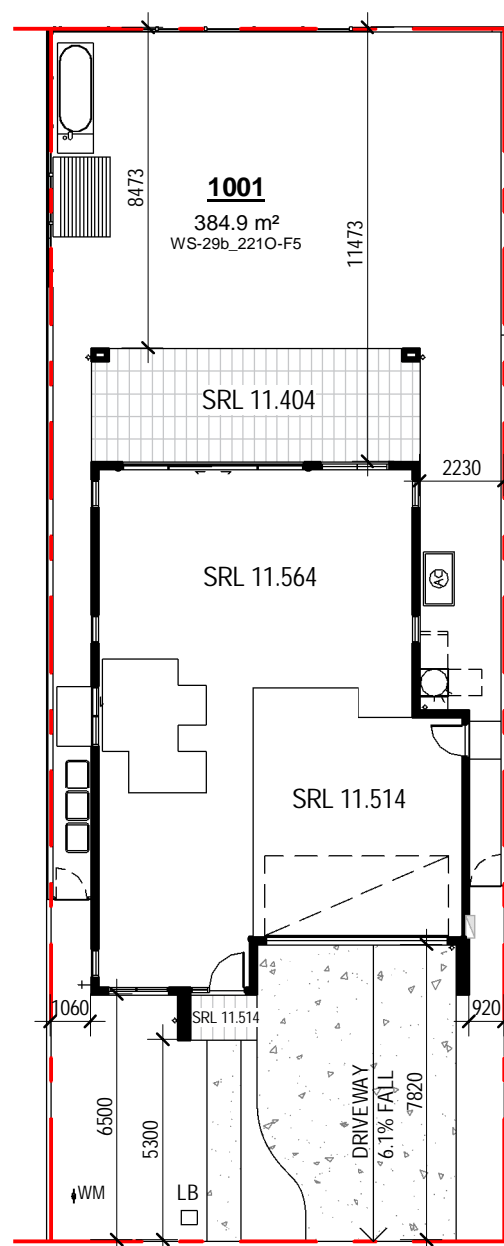
2 1001 SIDE A
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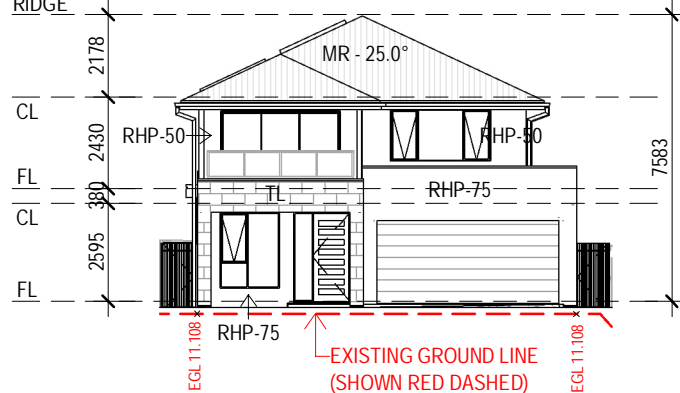
3 1001 REAR
1:200



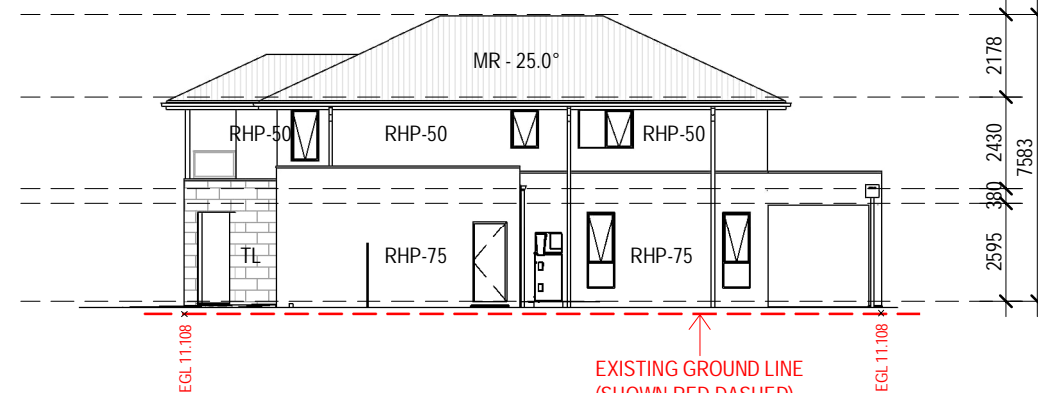
4 1001 SIDE B
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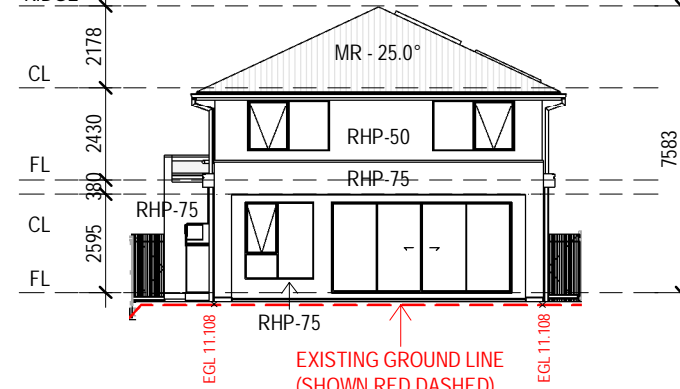
5 DA/TP 1001 NOTIFICATION PLAN
1:200



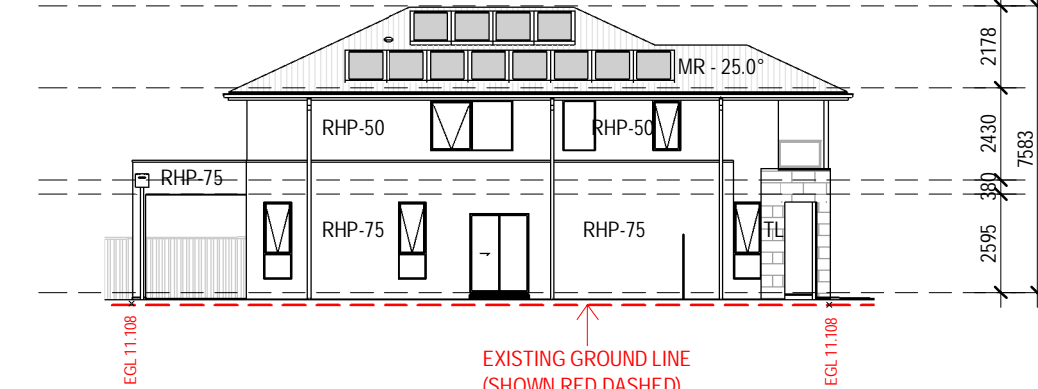
6 1002 FRONT
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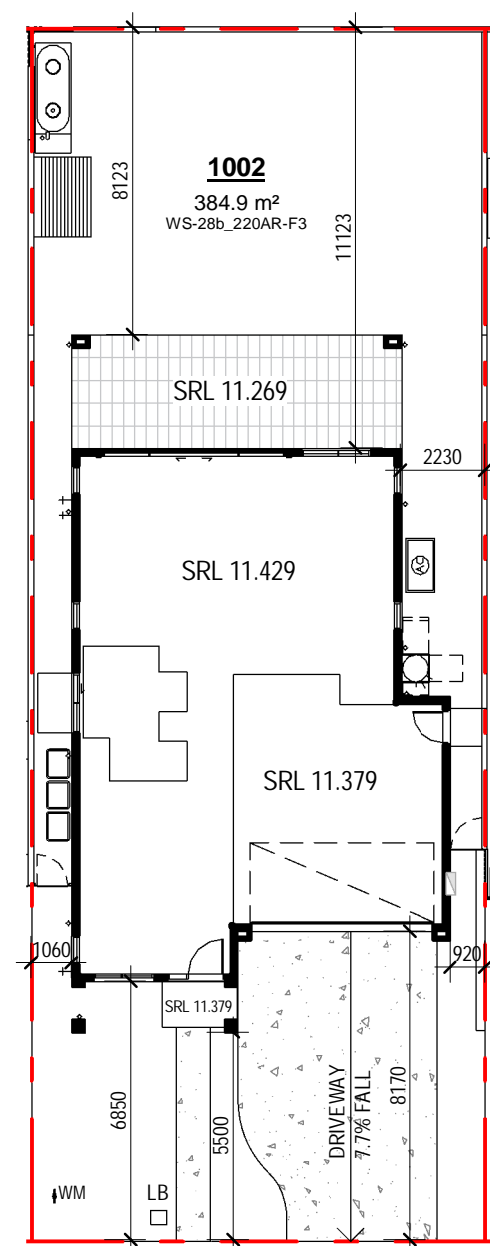
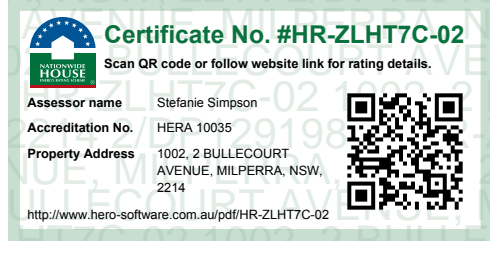
7 1002 SIDE A
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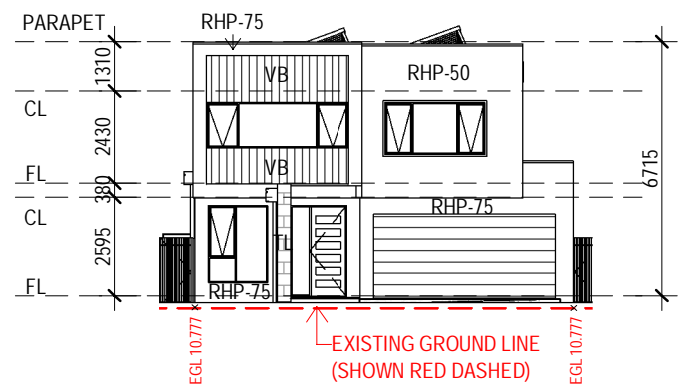
8 1002 REAR
1:200



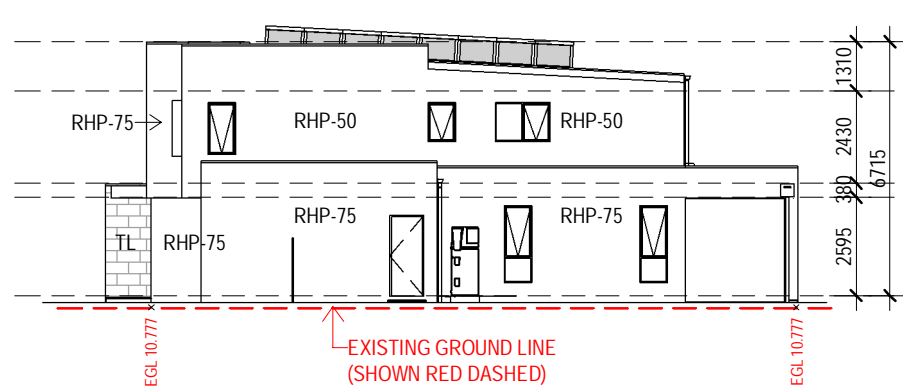
9 1002 SIDE B
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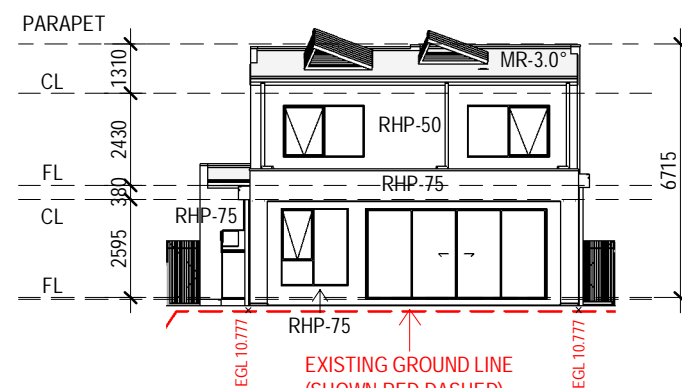
10 DA/TP 1002 NOTIFICATION PLAN
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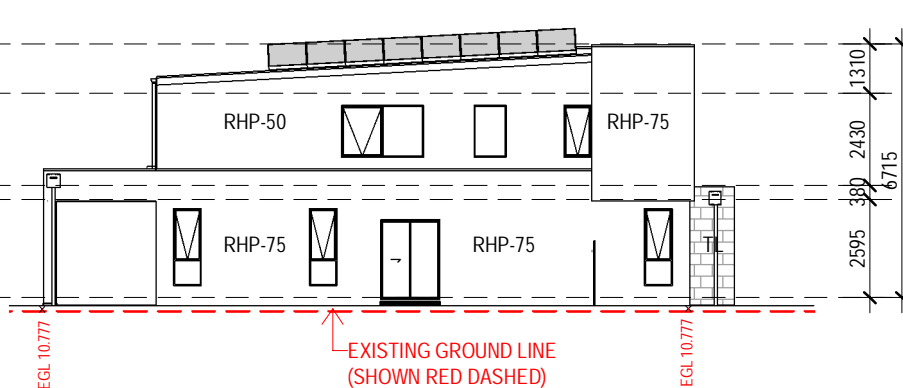
11 1003 FRONT
1:200



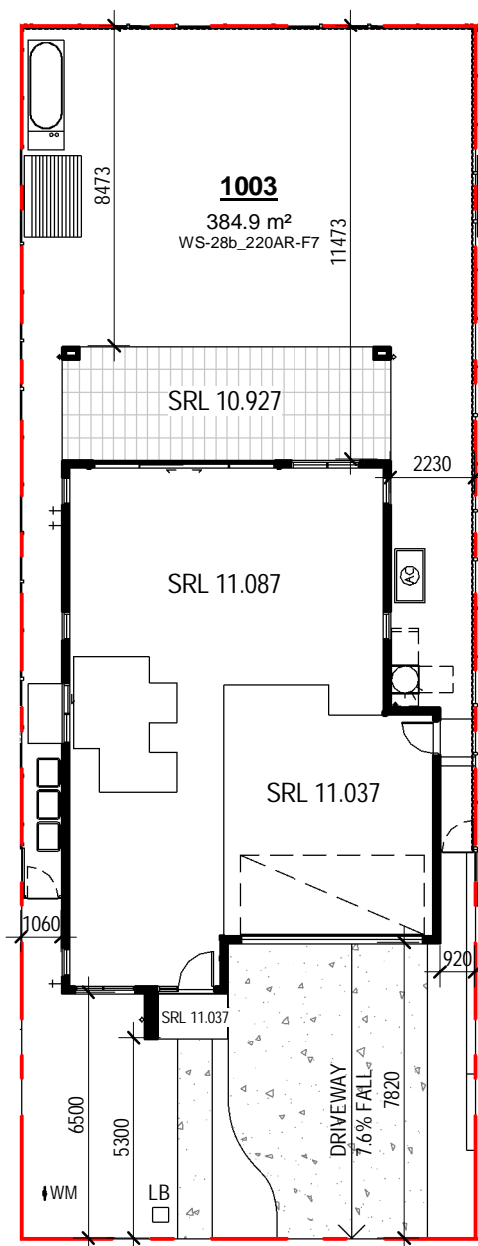
12 1003 SIDE A
1:200



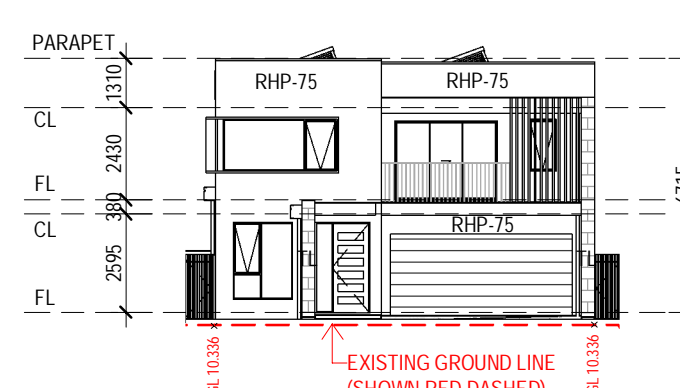
13 1003 REAR
1:200



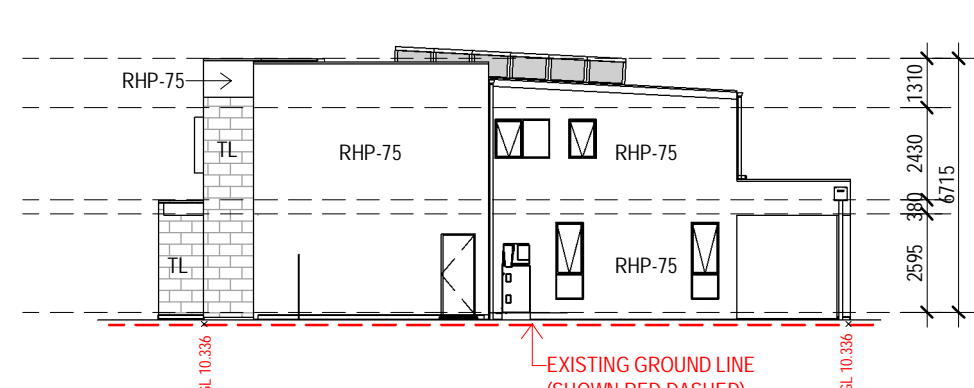
14 1003 SIDE B
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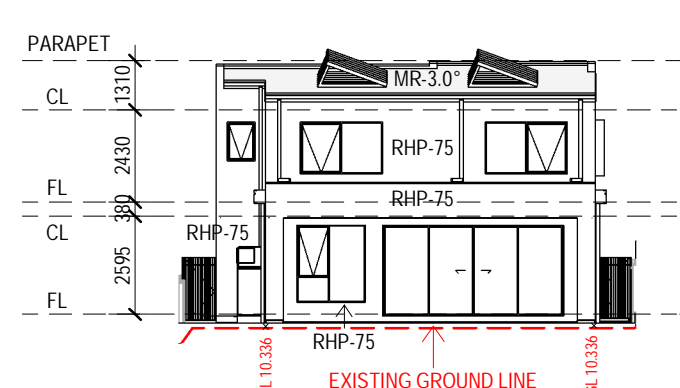
15 DA/TP 1003 NOTIFICATION PLAN
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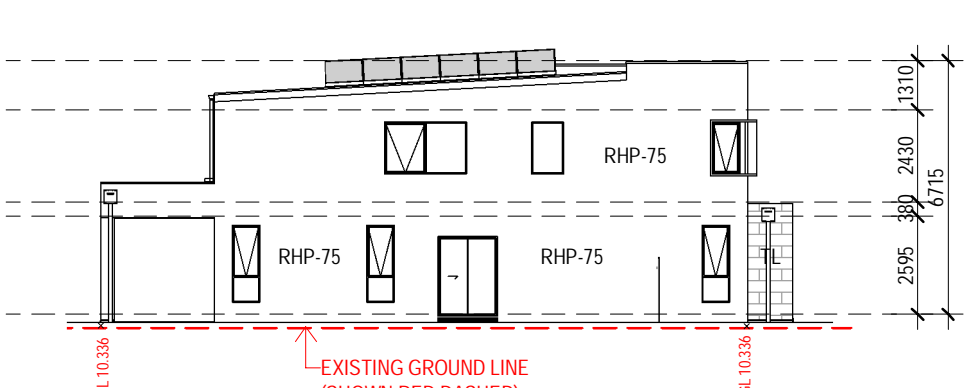
16 1004 FRONT
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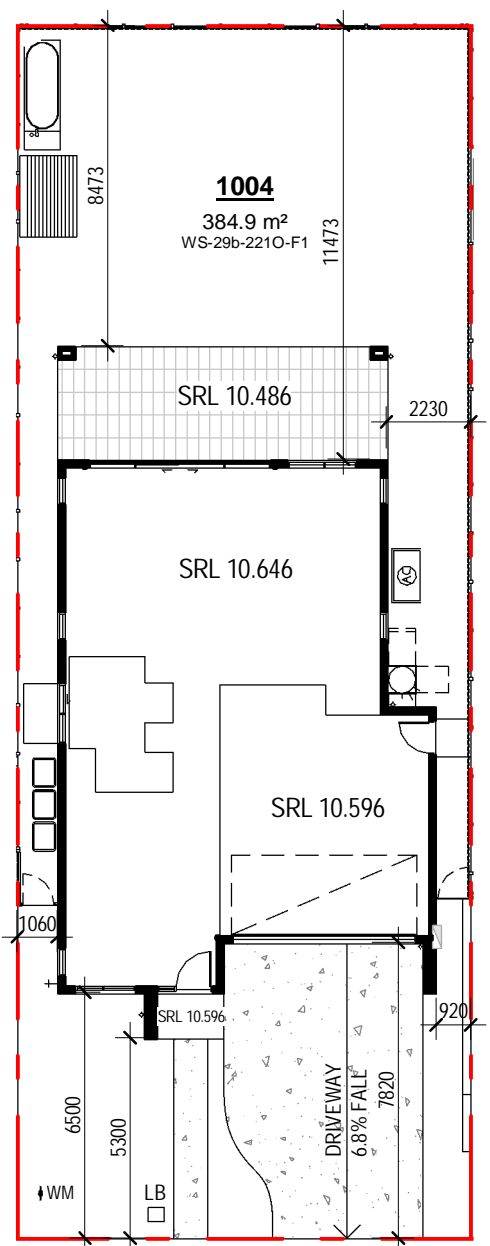
17 1004 SIDE A
1:200



18 1004 REAR
1:200



19 1004 SIDE B
1:200



20 DA/TP 1004 NOTIFICATION PLAN
1:200

EXTERNAL FINISHES WALL TYPE	
EXTENT OF FINISHES INDICATED ONLY. REFER TO FINISHES SCHEDULE	
FRW	FACE BRICKWORK
RBRW	RENDERED BRICKWORK
RHP-75	RENDERED HEBEL PANEL 75
RHP-50	RENDERED HEBEL PANEL 50
VB	LIGHTWEIGHT CLADDING - VERTICAL RIB TIMBER LOOK
TL	TILE FEATURE CLADDING
LWC-H	LIGHT WEIGHT CLADDING - HORIZONTAL
LWS	RENDERED LIGHTWEIGHT SHEET CLADDING
LWS-B	PAINTED LIGHTWEIGHT SHEET CLADDING WITH FEATURE BATTENS



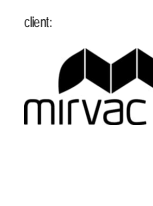
06/09/24
25/06/24
10/04/24
686

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RE-ISSUE FOR CONSULTANTS
ISSUE FOR CONSULTANTS
ISSUE FOR REVIEW
amendment



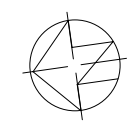
Mirvac Design Nomination / Responsible Architects
Avala Verma, Michael Wilmer, David Hiron, Paramany Srikanth, Andrew La
https://www.mirvacdesign.com.au/consultants/



project:
WSU - MILPERRA
2 Bullecourt Avenue, Milperra NSW 2214
Stage: 1 Site: 01 Lot: 1001-1016

title:
NEIGHBOURING NOTIFICATION
PLANS - LOTS 1001-1004

job no: MB-10197
drawing no: S1-01-DA250
scale @ A1 : 1:200
date: 06.09.24 rev: C



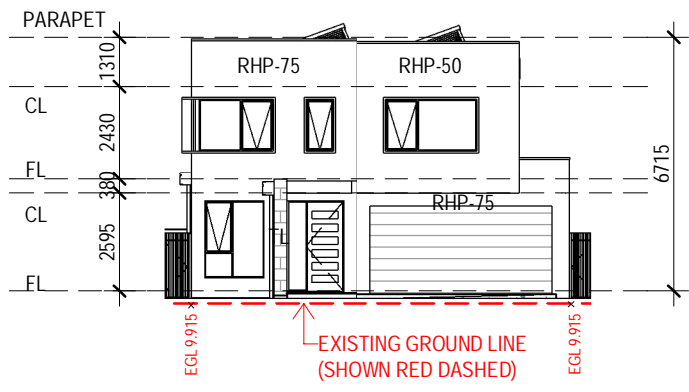
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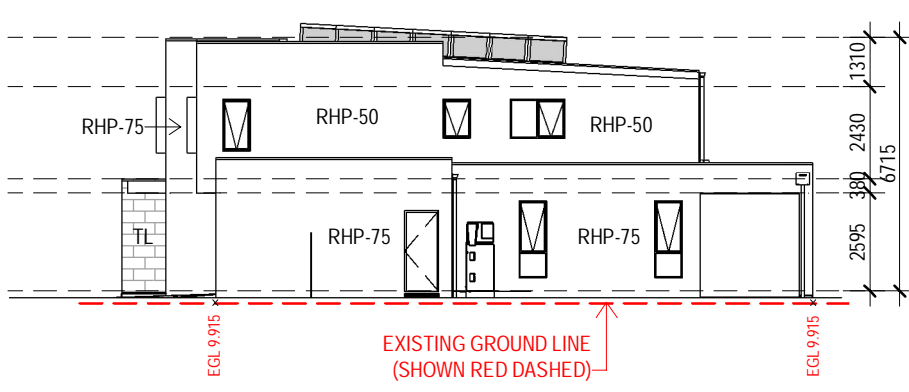
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300mm

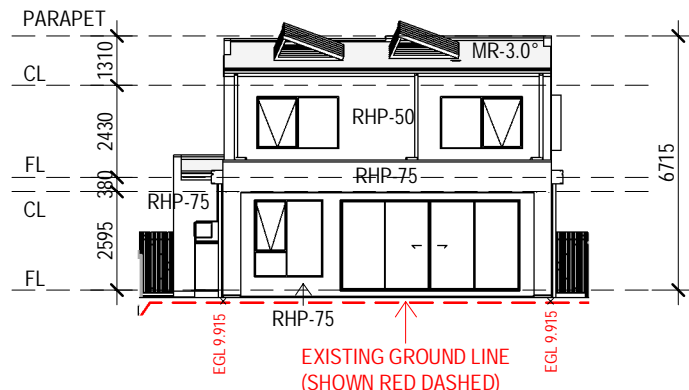
EXTERNAL FINISHES WALL TYPE	
EXTENT OF FINISHES INDICATED ONLY. REFER TO FINISHES SCHEDULE	
FBW	FACE BRICKWORK
RBW	RENDERED BRICKWORK
RHP-75	RENDERED REBEL PANEL 75
RHP-50	RENDERED REBEL PANEL 50
VB	LIGHTWEIGHT CLADDING - VERTICAL RB TIMBER LOOK
TL	TILE FEATURE CLADDING
LWC-H	LIGHT WEIGHT CLADDING - HORIZONTAL
LWS	RENDERED LIGHTWEIGHT SHEET CLADDING
LWS-B	PAINTED LIGHTWEIGHT SHEET CLADDING WITH FEATURE BATTENS



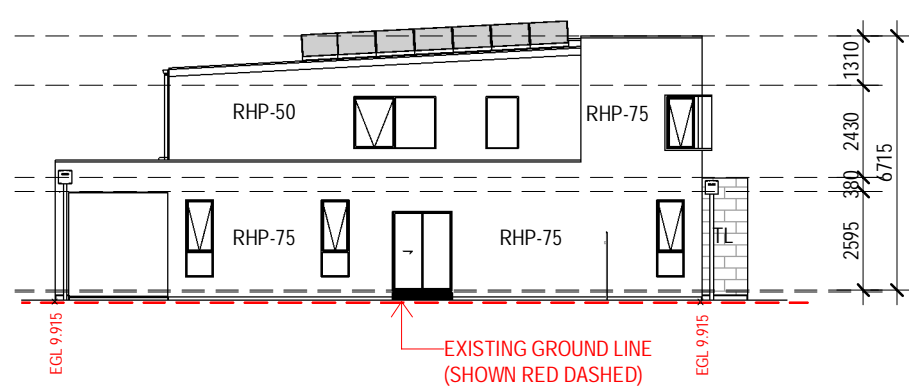
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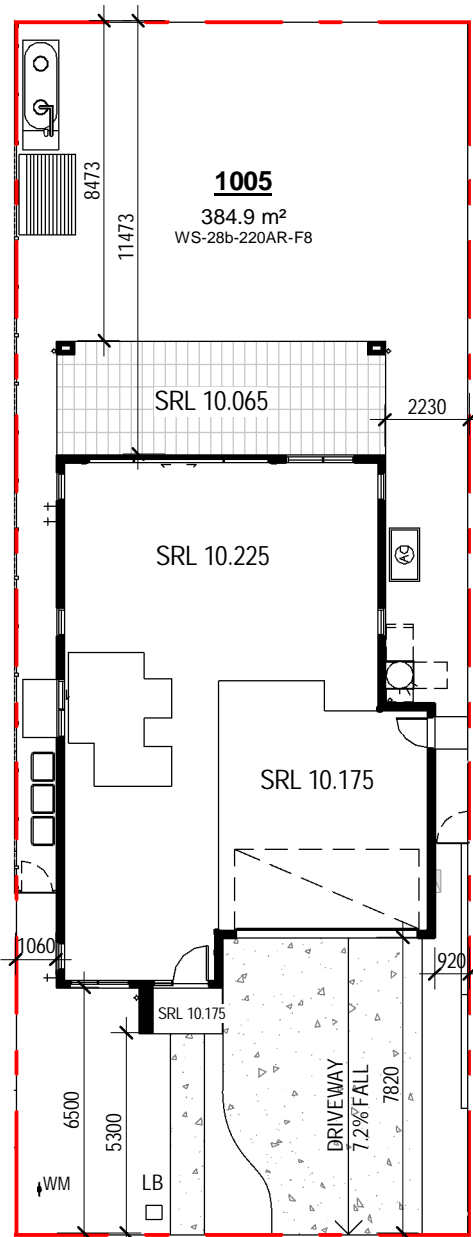
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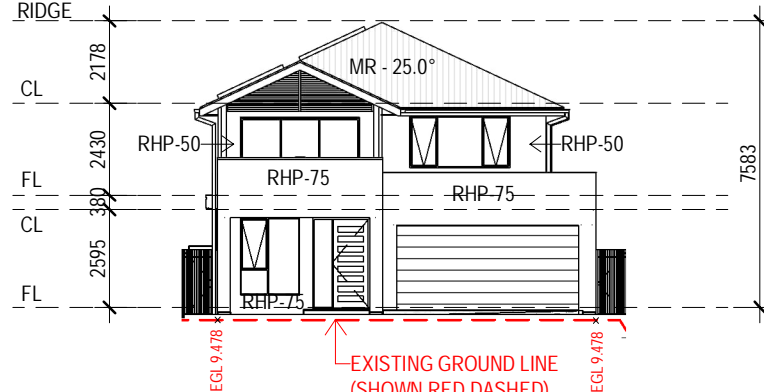
3 1005 REAR
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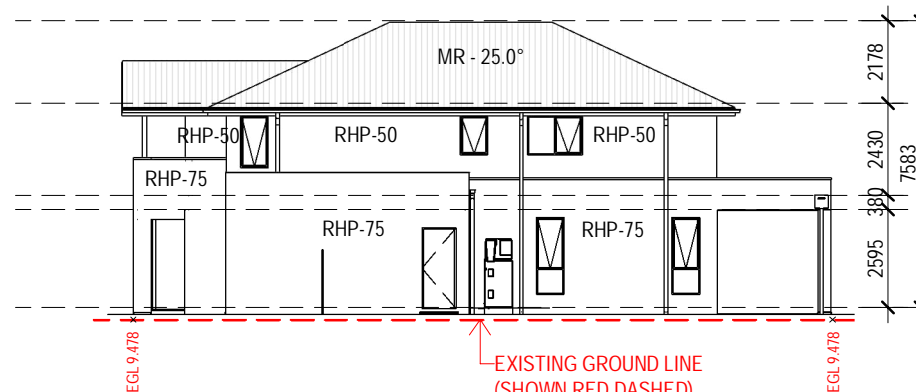
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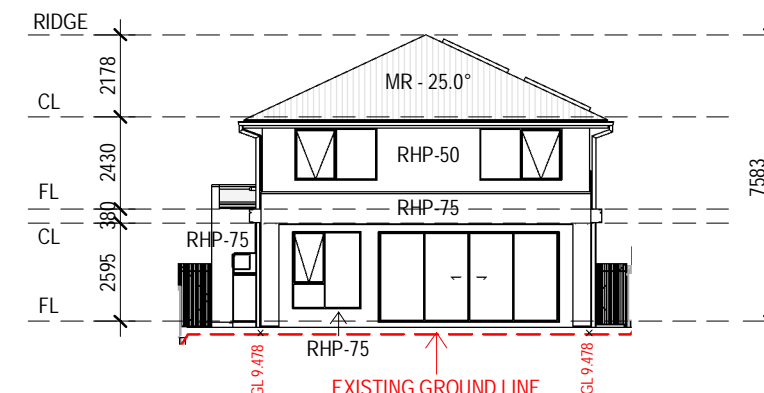
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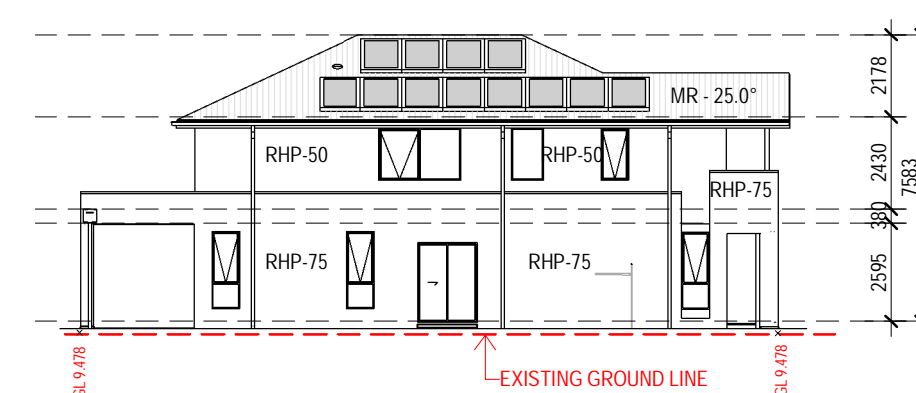
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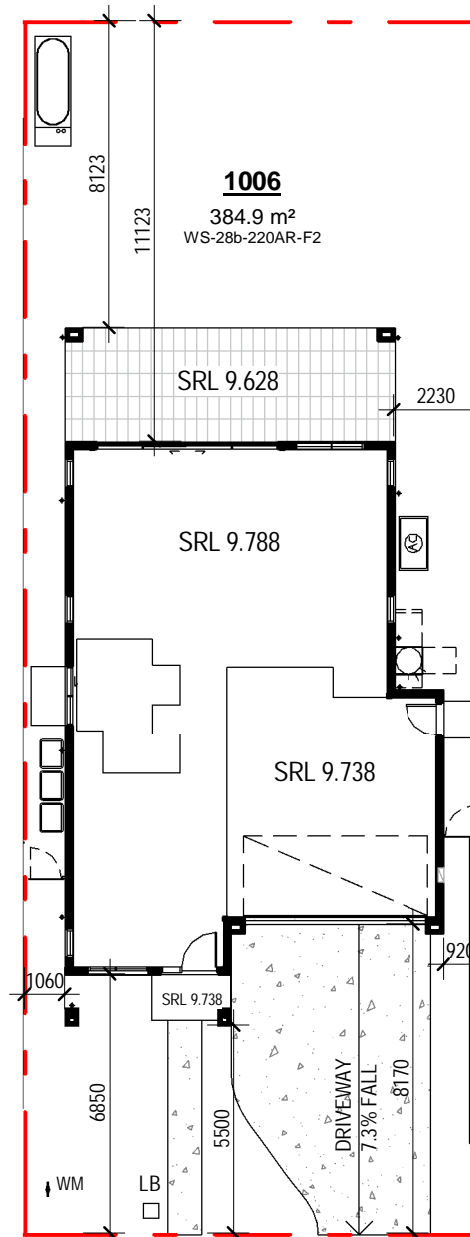
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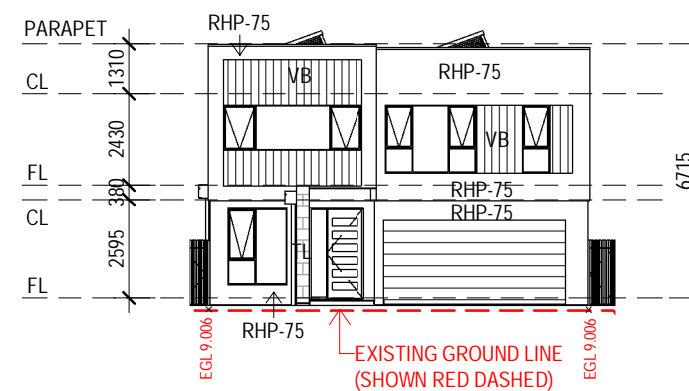
8 1006 REAR
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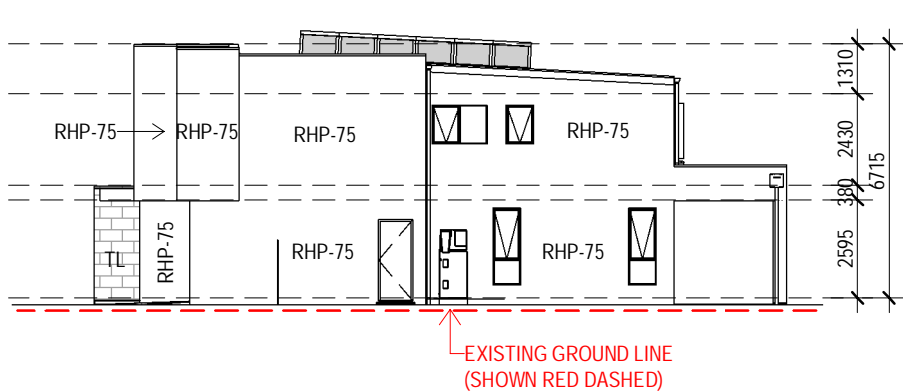
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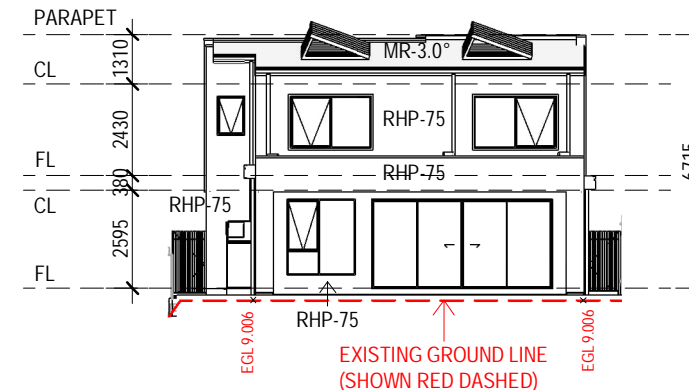
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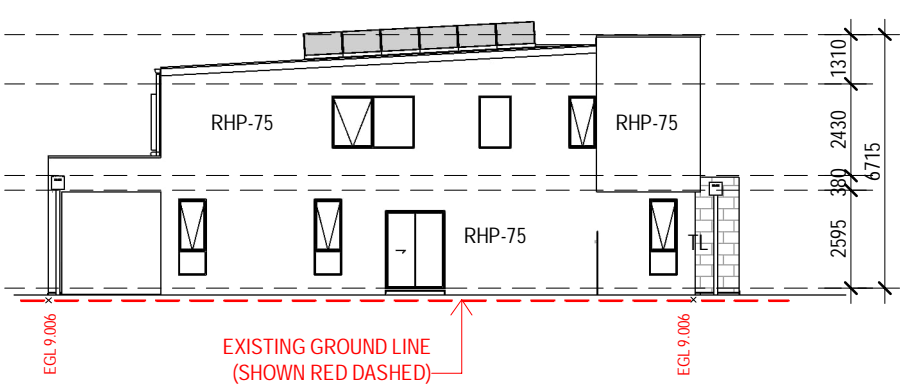
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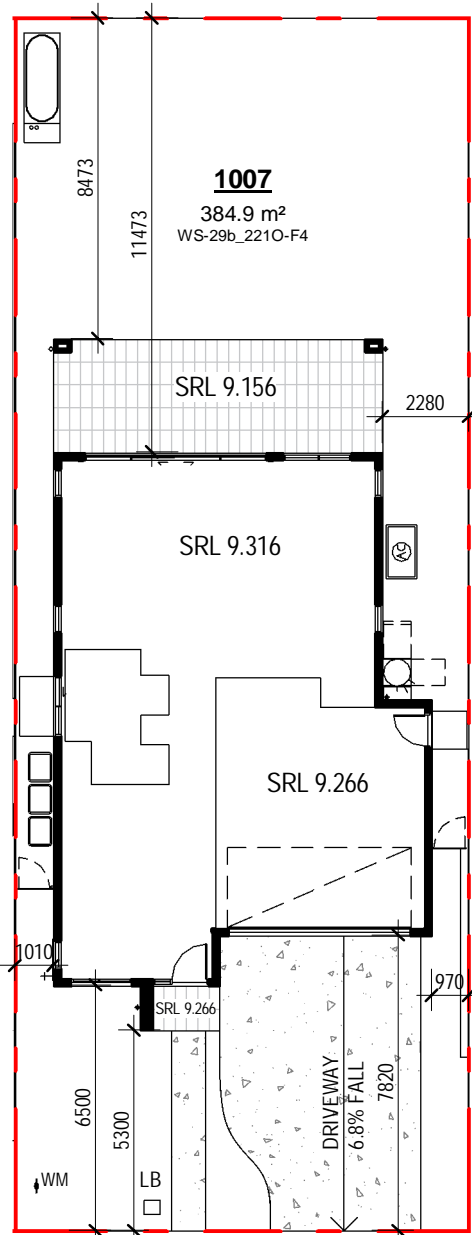
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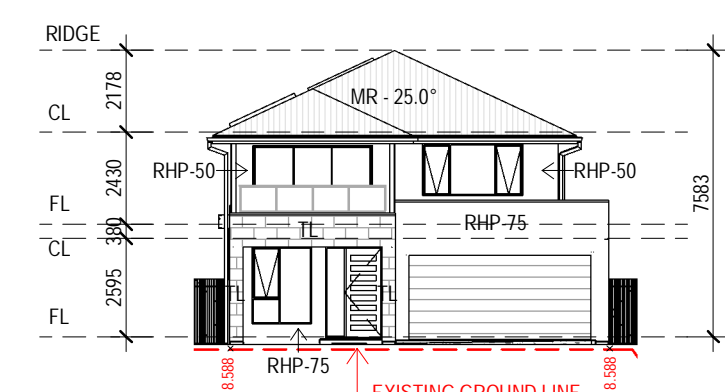
13 1007 REAR
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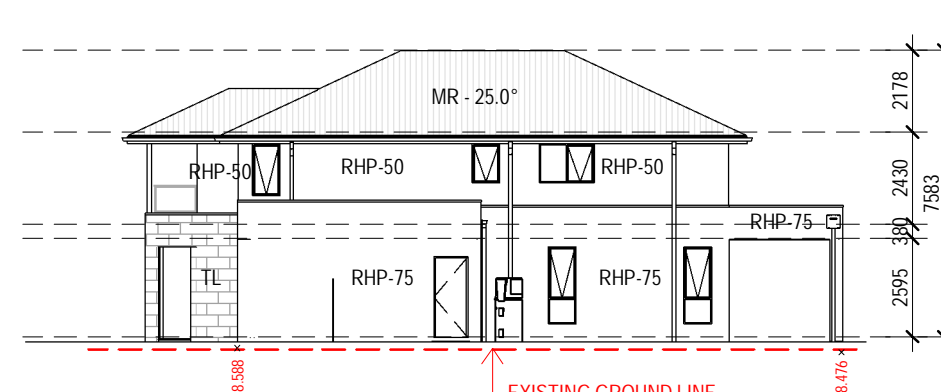
14 1007 SIDE B
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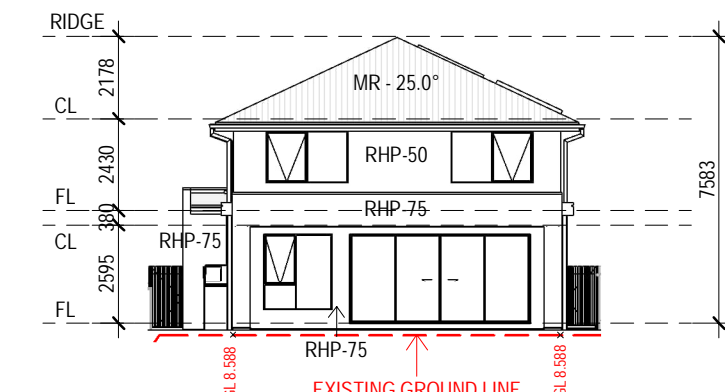
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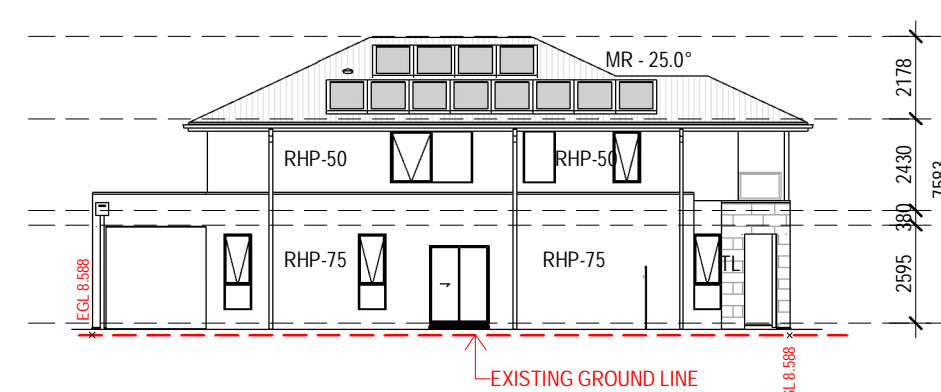
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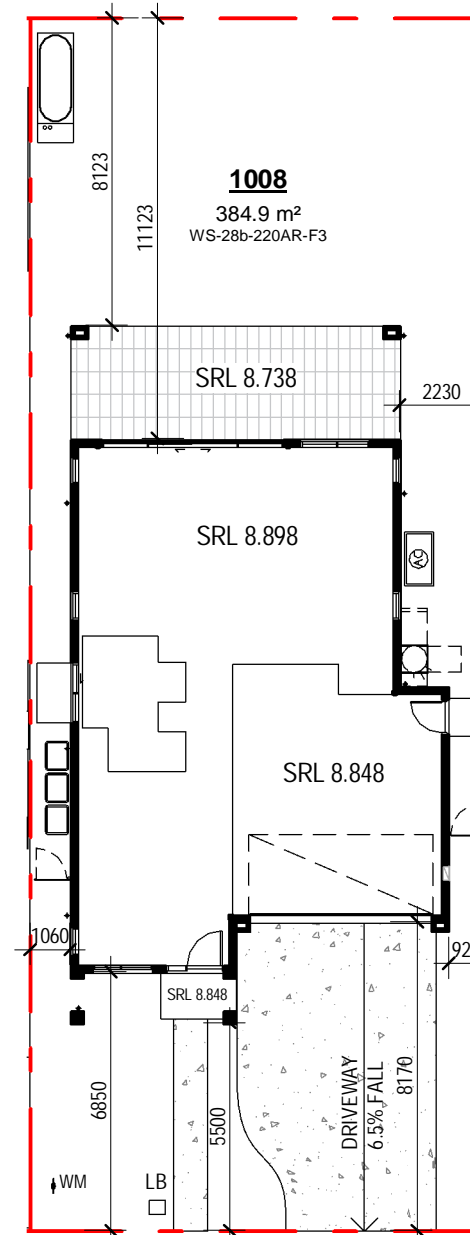
17 1008 SIDE A
1:200



18 1008 REAR
1:200



19 1008 SIDE B
1:200



20 DA/TP 1008 NOTIFICATION PLAN
1:200



06/09/24
25/06/24
10/04/24
686

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RE: ISSUE FOR CONSULTANTS
ISSUE FOR CONSULTANTS
ISSUE FOR REVIEW
amendment

MIRVAC DESIGN
Level 28 280 George St
Sydney NSW 2000
Tel: 02 9237 9333
Fax: 02 9237 9333
MIRVAC DESIGN Pty Ltd
ABN 70 007 997 933
Mirvac Design Nominatee / Responsible Architects
Alicia Verma Michael Wilmer David Hinch Partnership Solicitors Andrew La
https://www.mirvacdesign.com/consultants-and-builders



project:
WSU - MILPERRA
2 Bullecourt Avenue, Milperra NSW 2214
Stage: 1 Site: 01 Lot: 1001-1016

title:
NEIGHBOURING NOTIFICATION
PLANS - LOTS 1005-1008

job no: MB-10197
drawing no: S1-01-DA251
scale at A1 : 1:200
date: 06.09.24 rev: C



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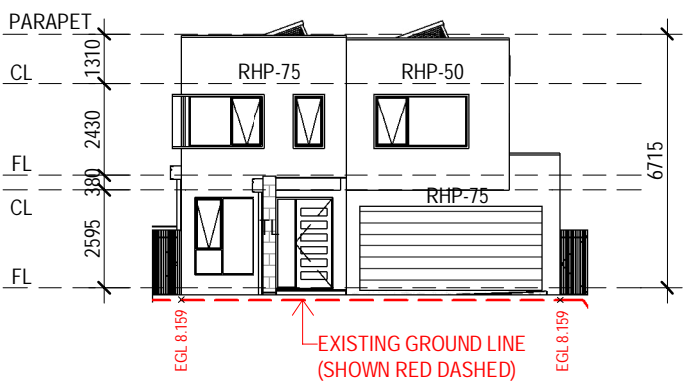
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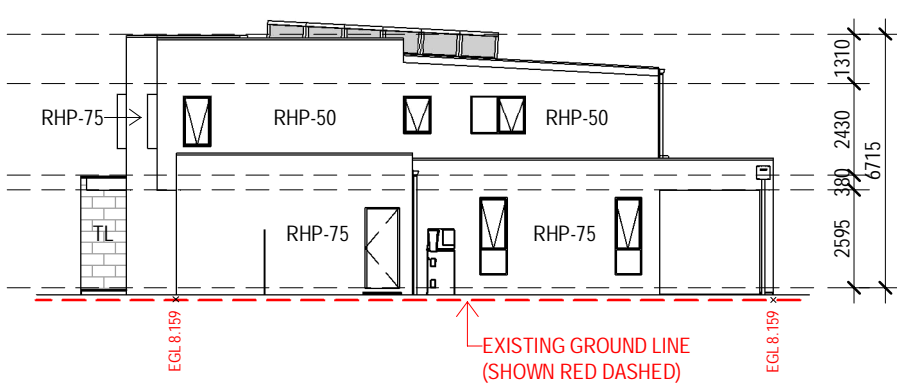
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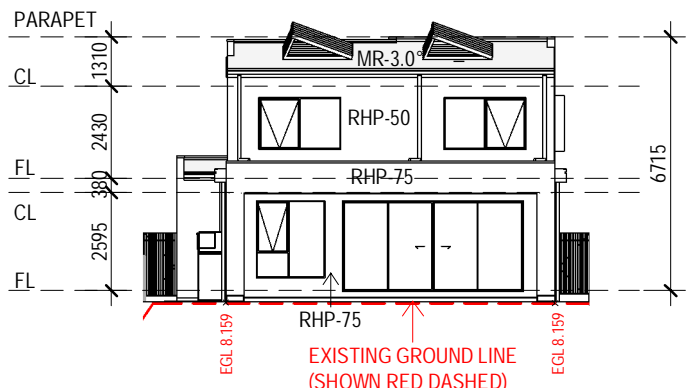
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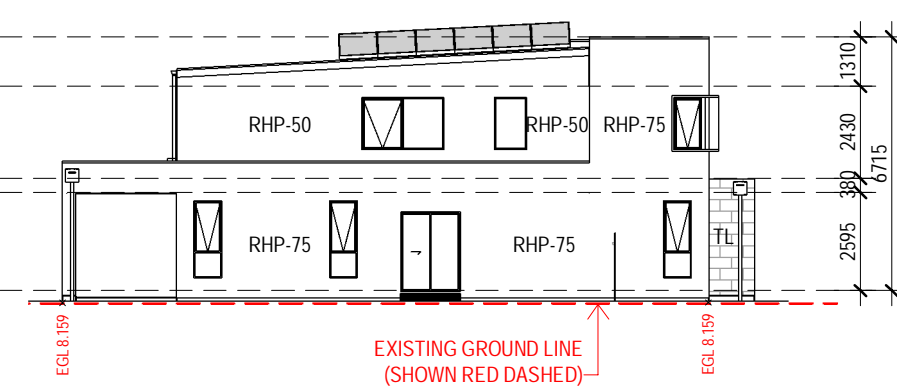
1 1009 FRONT
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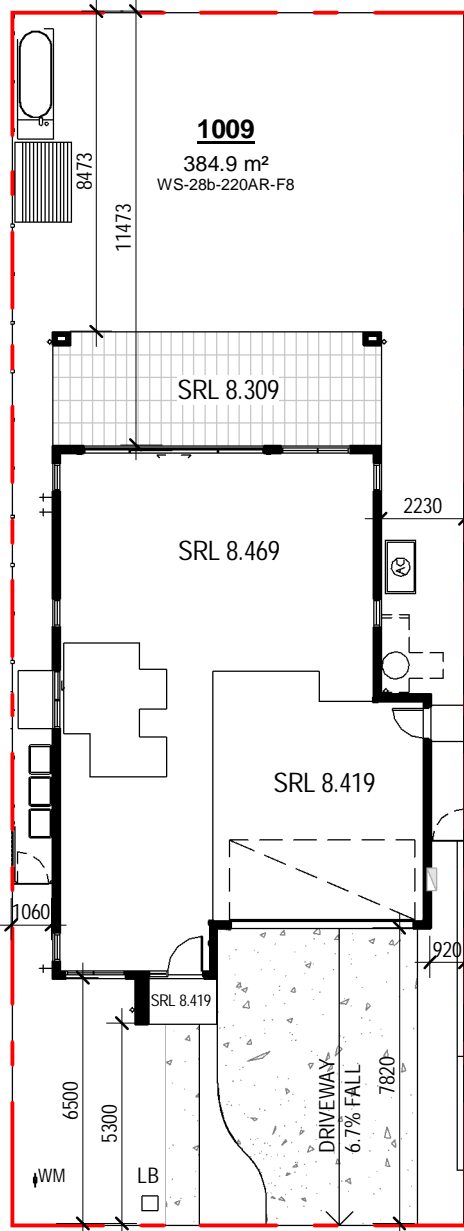
2 1009 SIDE B
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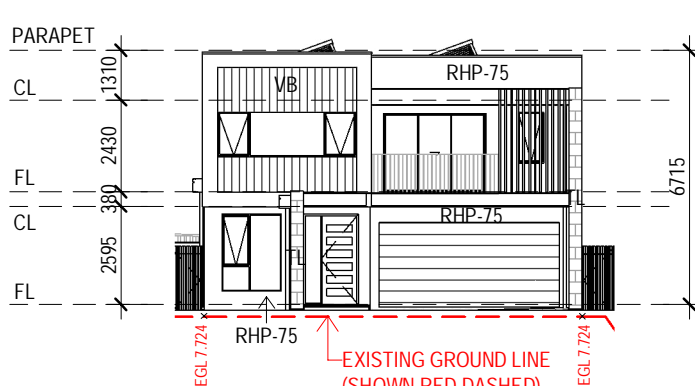
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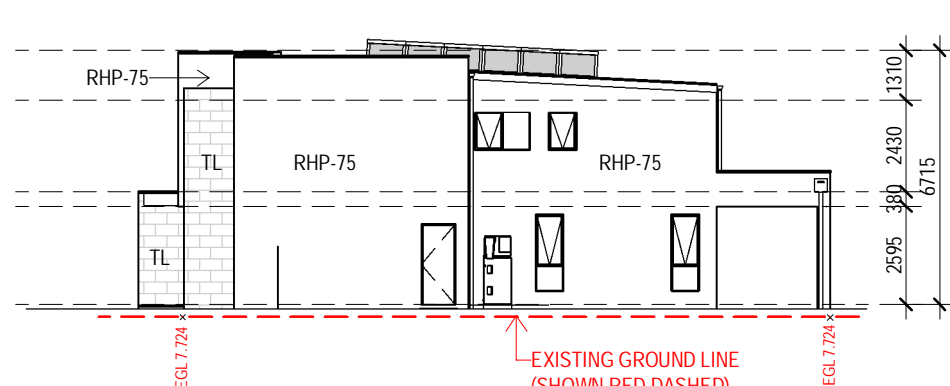
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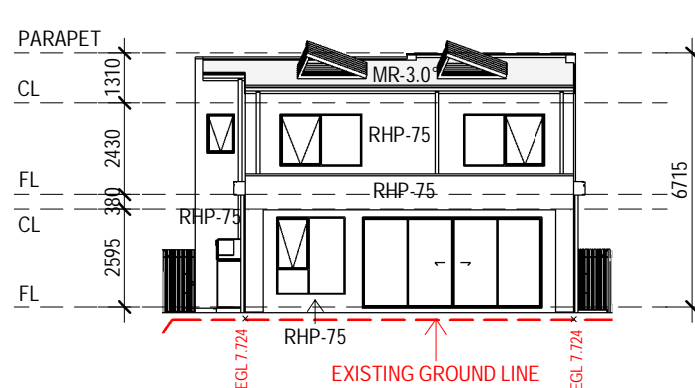
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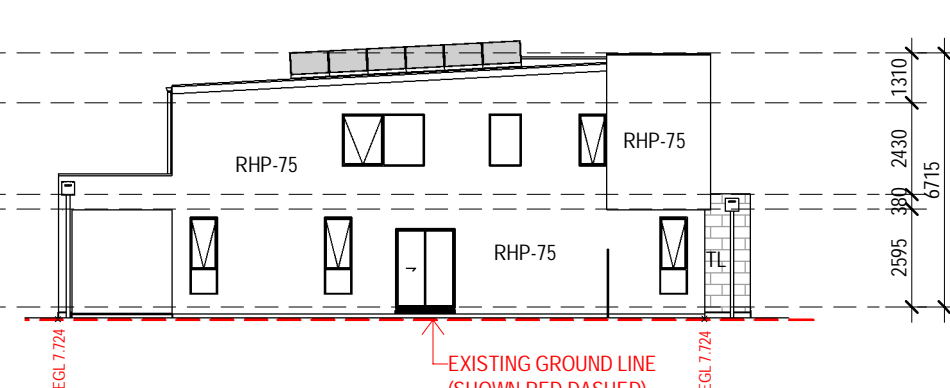
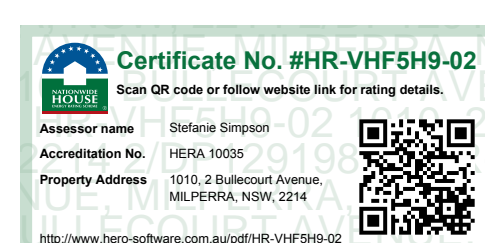
6 1010 FRONT
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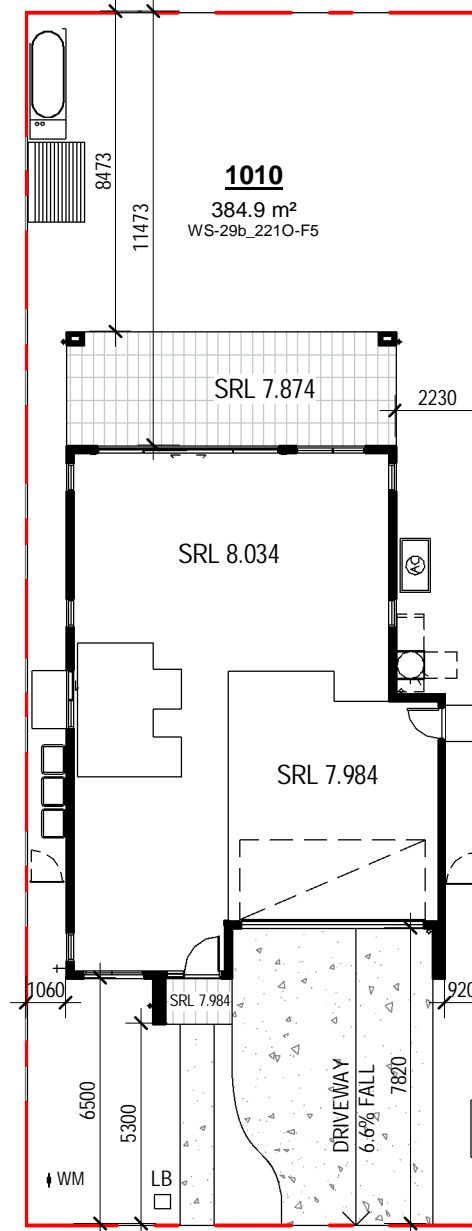
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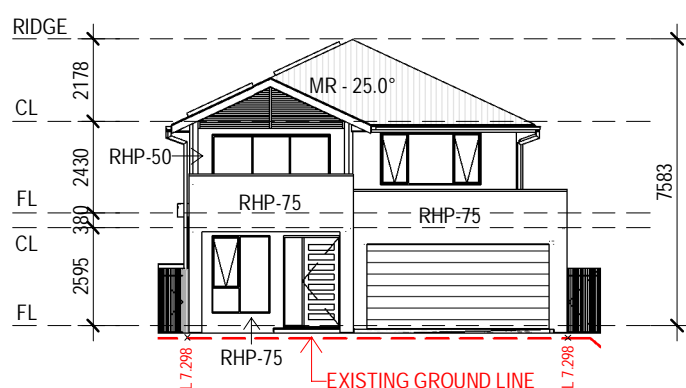
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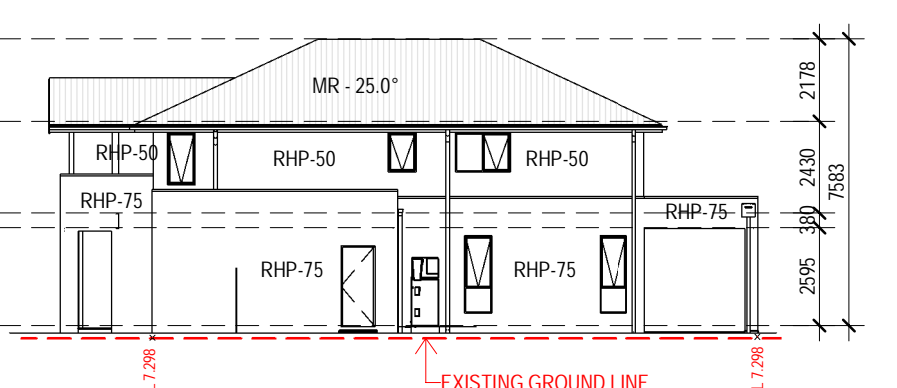
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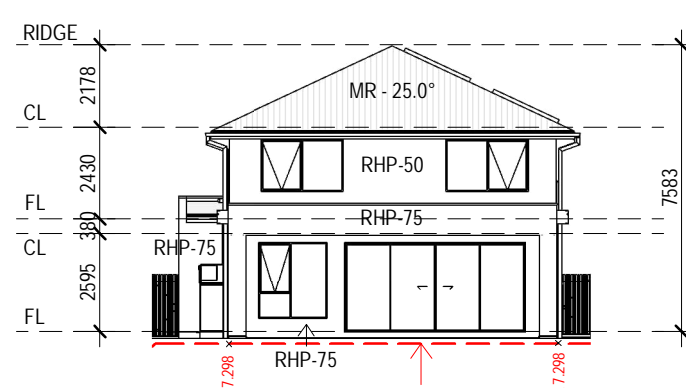
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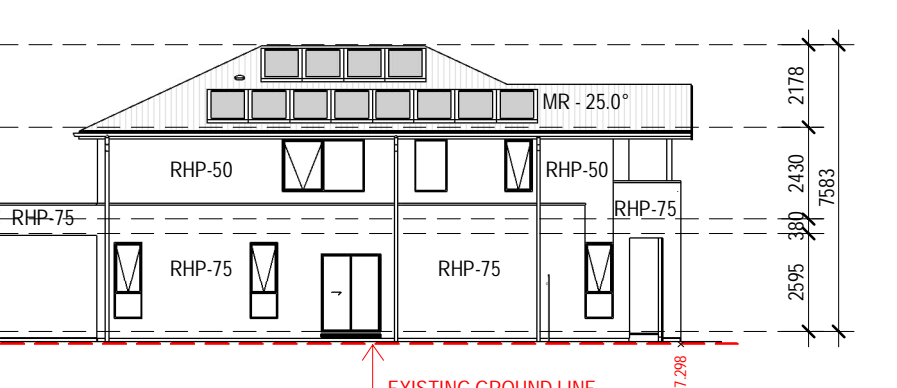
11 1011 FRONT
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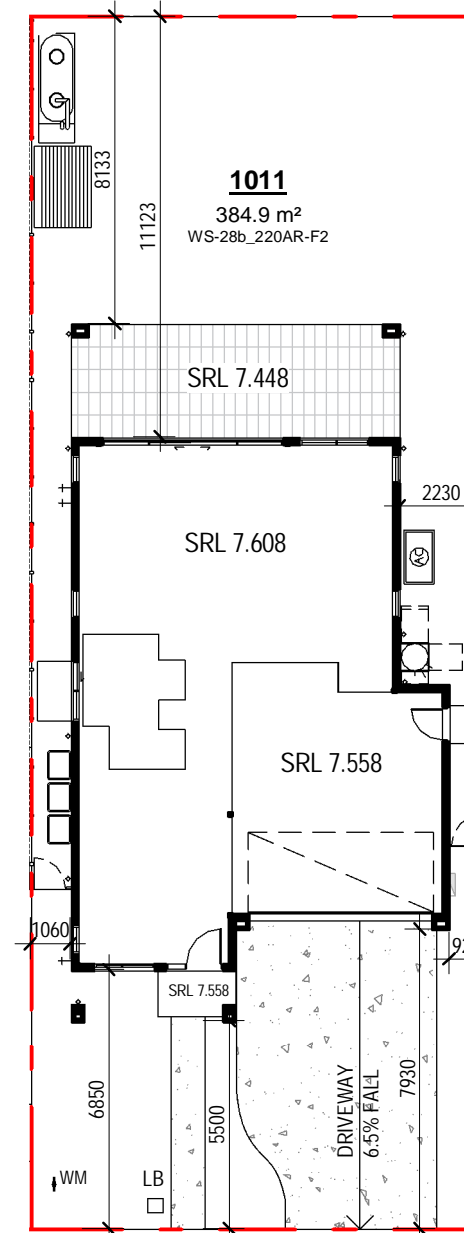
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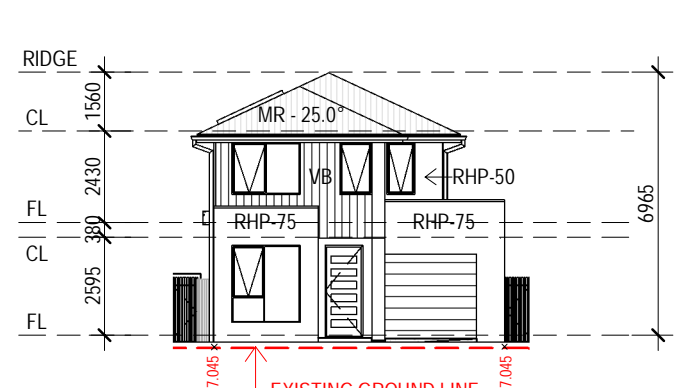
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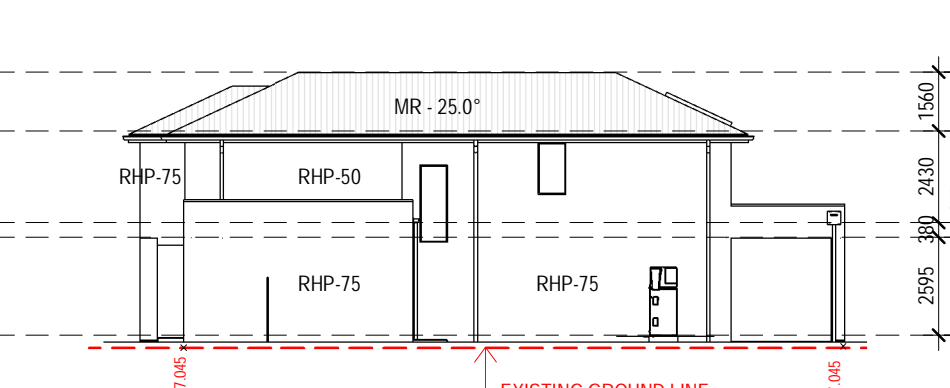
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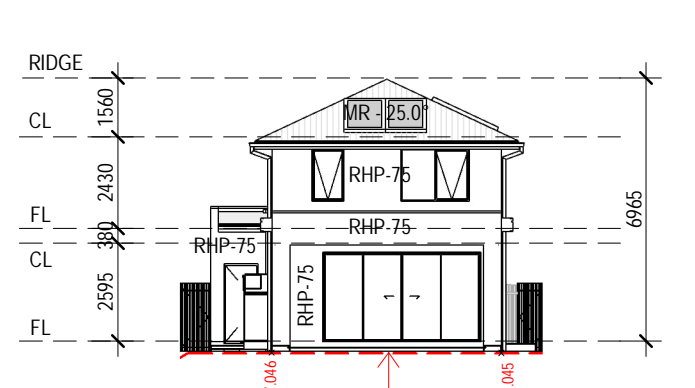
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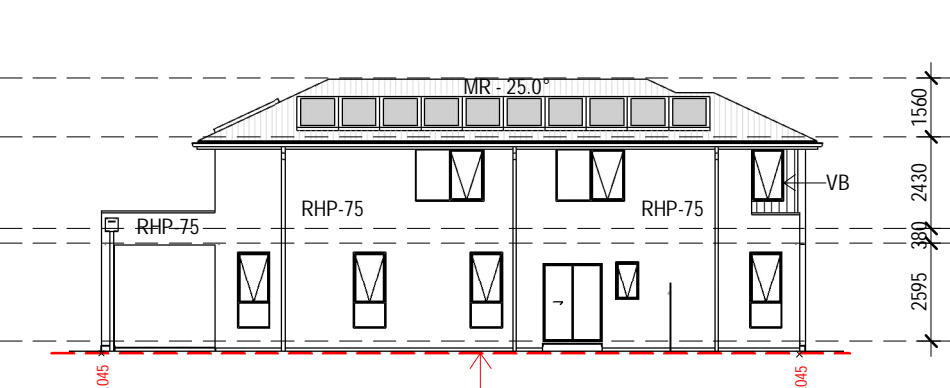
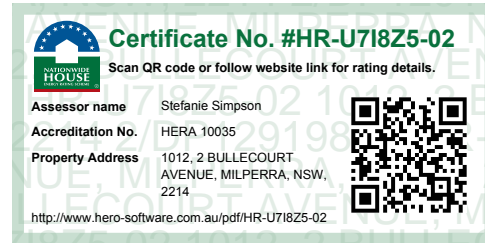
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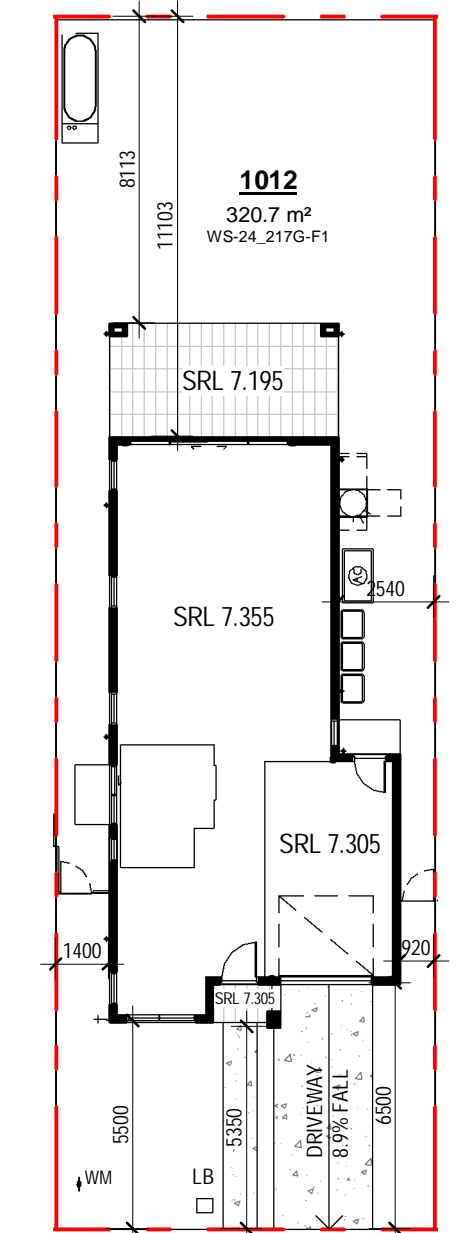
17 1012 SIDE A
1:200



18 1012 REAR
1:200



19 1012 SIDE B
1:200



20 DA/TP 1012 NOTIFICATION PLAN
1:200

EXTERNAL FINISHES WALL TYPE	
EXTENT OF FINISHES INDICATED ONLY. REFER TO FINISHES SCHEDULE.	
FBW	FACE BRICKWORK
RBW	RENDERED BRICKWORK
RHP-75	RENDERED HEBEL PANEL 75
RHP-50	RENDERED HEBEL PANEL 50
VB	LIGHTWEIGHT CLADDING - VERTICAL RB TIMBER LOOK
TL	TILE FEATURE CLADDING
LWC-H	LIGHT WEIGHT CLADDING - HORIZONTAL
LWS	RENDERED LIGHTWEIGHT SHEET CLADDING
LWS-B	PAINTED LIGHTWEIGHT SHEET CLADDING WITH FEATURE BATTENS



06/09/24
25/06/24
10/04/24
686

C
B
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rev

RE: ISSUE FOR CONSULTANTS
ISSUE FOR CONSULTANTS
ISSUE FOR REVIEW
amendment

MIRVAC DESIGN
Level 28 200 George St
Sydney NSW 2000
Tel: 02 9237 9973
Fax: 02 9237 9973

Mirvac Design Pty Ltd
ABN 70 007 997 937

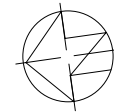
Mirvac Design Nominates / Responsible Architects
Alistair Venn, Michael Milner, David Hinch, Farmington Standaish, Andrew La
https://www.mirvacdesign.com.au/consultants/



project:
WSU - MILPERRA
2 Bullecourt Avenue, Milperra NSW 2214
Stage: 1 Site: 01 Lot: 1001-1016

title:
**NEIGHBOURING NOTIFICATION
PLANS - LOTS 1009-1012**

job no: MB-10197
drawing no: S1-01-DA252
scale @ A1 : 1:200
date: 06.09.24 rev: C



EXTERNAL FINISHES WALL TYPE	
EXTENT OF FINISHES INDICATED ONLY. REFER TO FINISHES SCHEDULE	
FBW	FACE BRICKWORK
RSW	RENDERED BRICKWORK
RHP - 75	RENDERED HEBEL PANEL 75
RHP - 50	RENDERED HEBEL PANEL 50
VB	LIGHTWEIGHT CLADDING - VERTICAL RIB TIMBER LOOK
TL	TILE FEATURE CLADDING
LWC - H	LIGHT WEIGHT CLADDING - HORIZONTAL
LWS	RENDERED LIGHTWEIGHT SHEET CLADDING
LWS - B	PAINTED LIGHTWEIGHT SHEET CLADDING WITH FEATURE BATTENS

10 DA/TP 1008 NOTIFICATION PLAN
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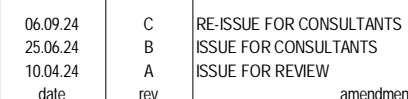
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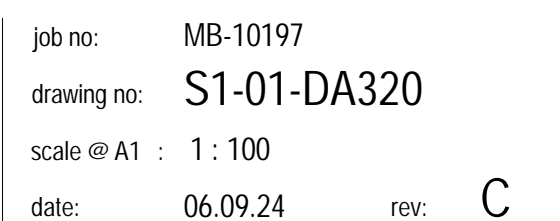
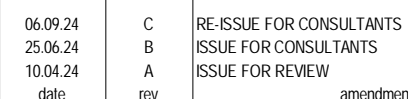
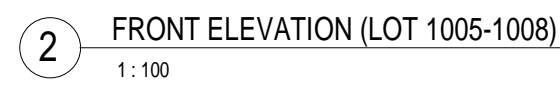
16 1016 FRONT
1:200

20 DA/TP 1016 NOTIFICATION PLAN
1:200

18 1016 REAR
1:200

15 DA/TP 1015 NOTIFICATION PLAN
1:200





0mm

100mm

200mm

300mm

100mm

200mm

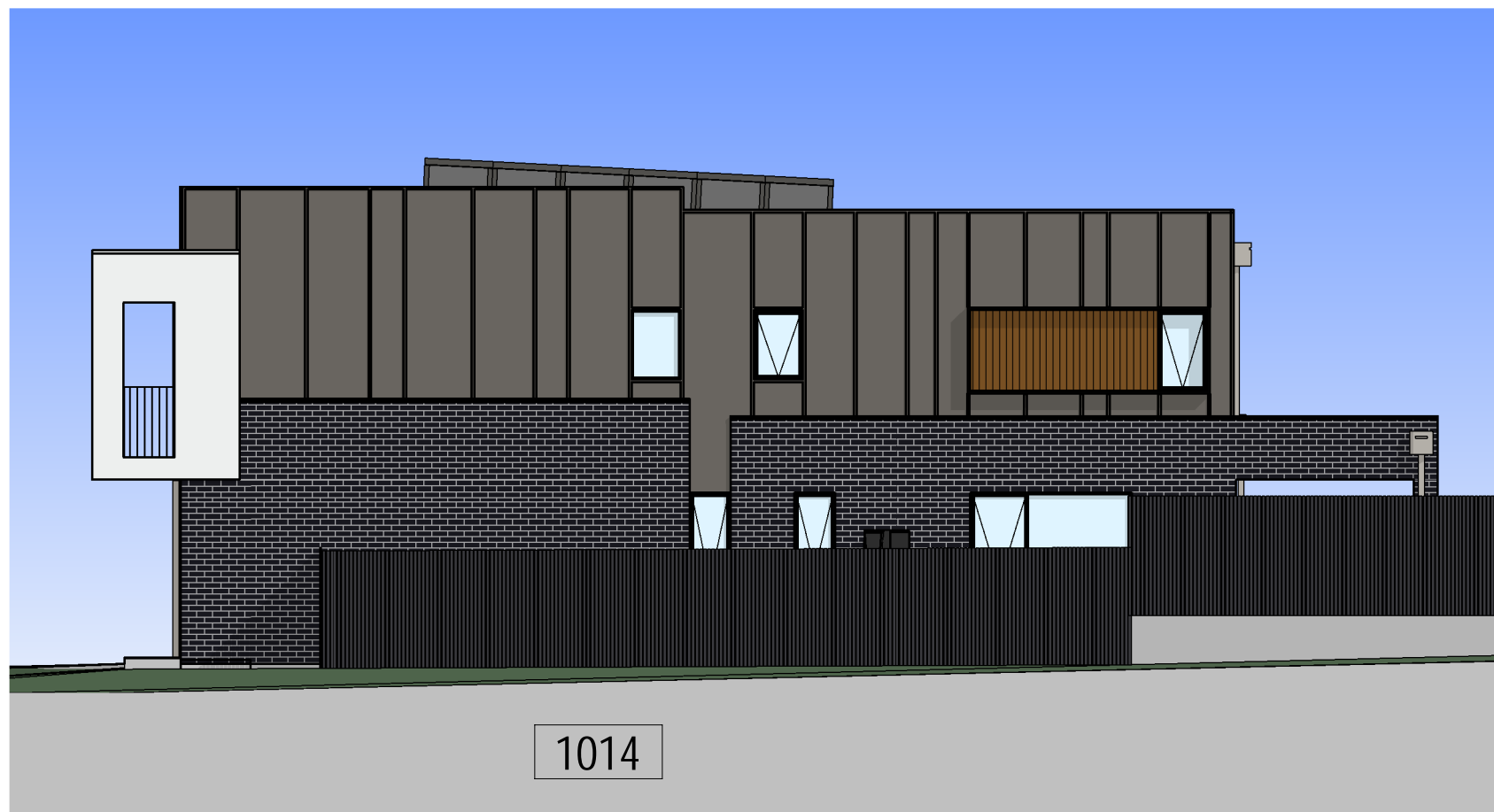
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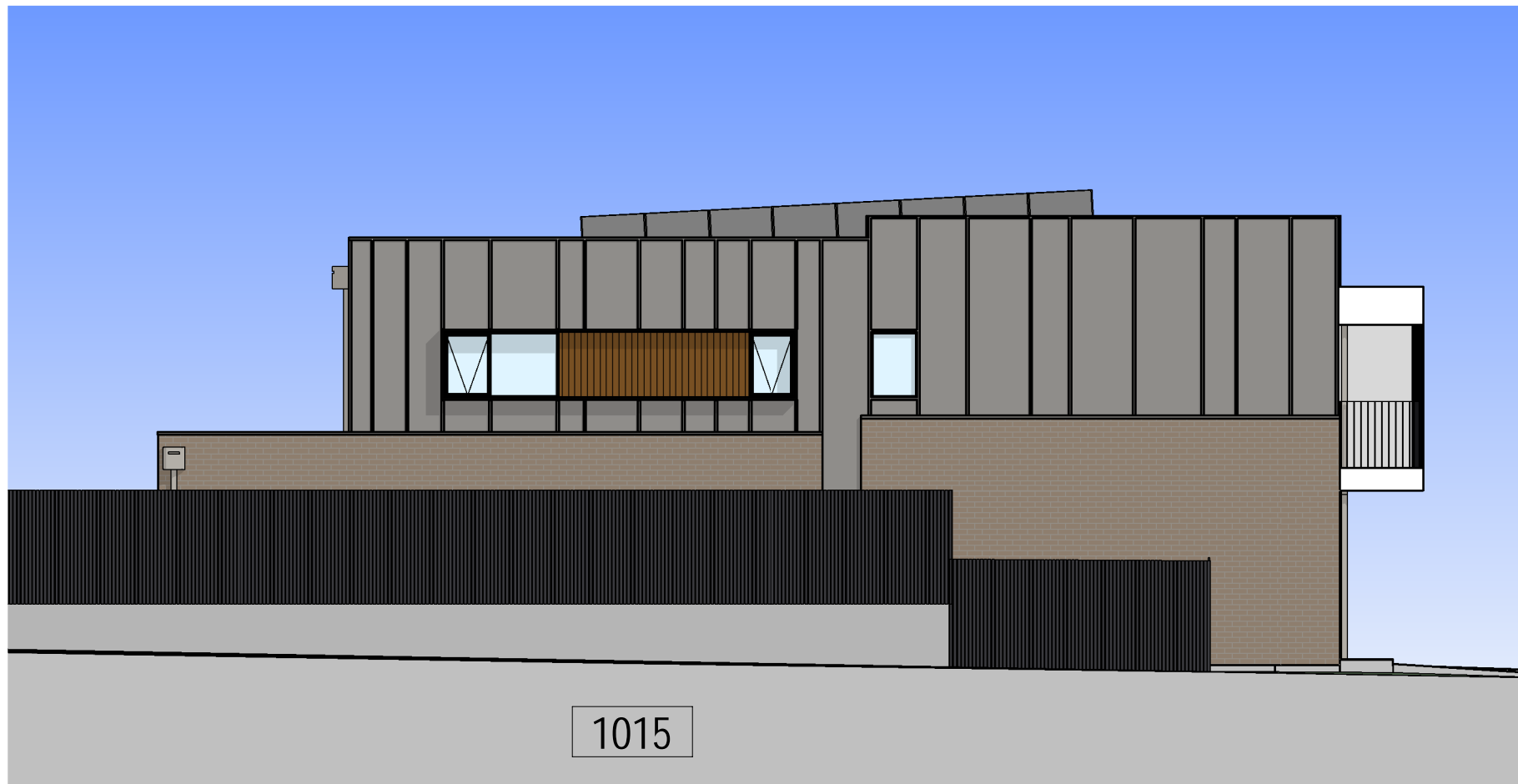
1 FRONT ELEVATION (LOTS 1009-1012)
1 : 100



2 FRONT ELEVATION (LOTS 1013-1016)
1 : 100



3 SIDE ELEVATION (LOT 1014)
1 : 100



4 SIDE ELERVATION (LOT 1015)
1 : 100



5 SIDE ELEVATION (LOT 1016)
1 : 100



06/09/24	C	RE-ISSUE FOR CONSULTANTS
25/06/24	B	ISSUE FOR CONSULTANTS
10/04/24	A	ISSUE FOR REVIEW
686	REV	amendment

MIRVAC DESIGN
Level 28 200 George St
Sydney NSW 2000
Tel: 002 9550 8000
Mirvac Design Pty Ltd
ABN 70 007 997 933
Mirvac Design Nominates / Responsible Architects
Asha Verma Michael Wilson David Hirst Paramvir Srinivas Andrew Li
https://www.mirvacdesign.com/nominations-and-lics



project:
WSU - MILPERRA
2 Bullecourt Avenue, Milperra NSW 2214
Stage: 1 Site: 01 Lot: 1001-1016

title:
**COLOURED STREETSCAPES -
FRONT & SIDE**

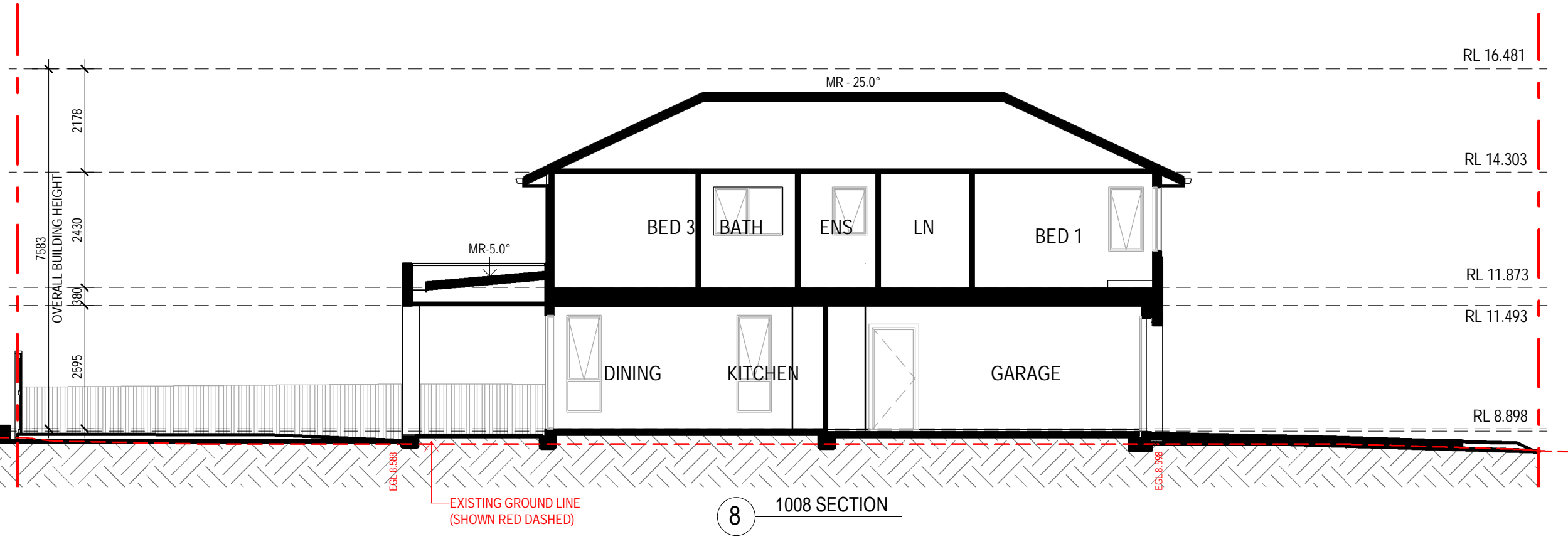
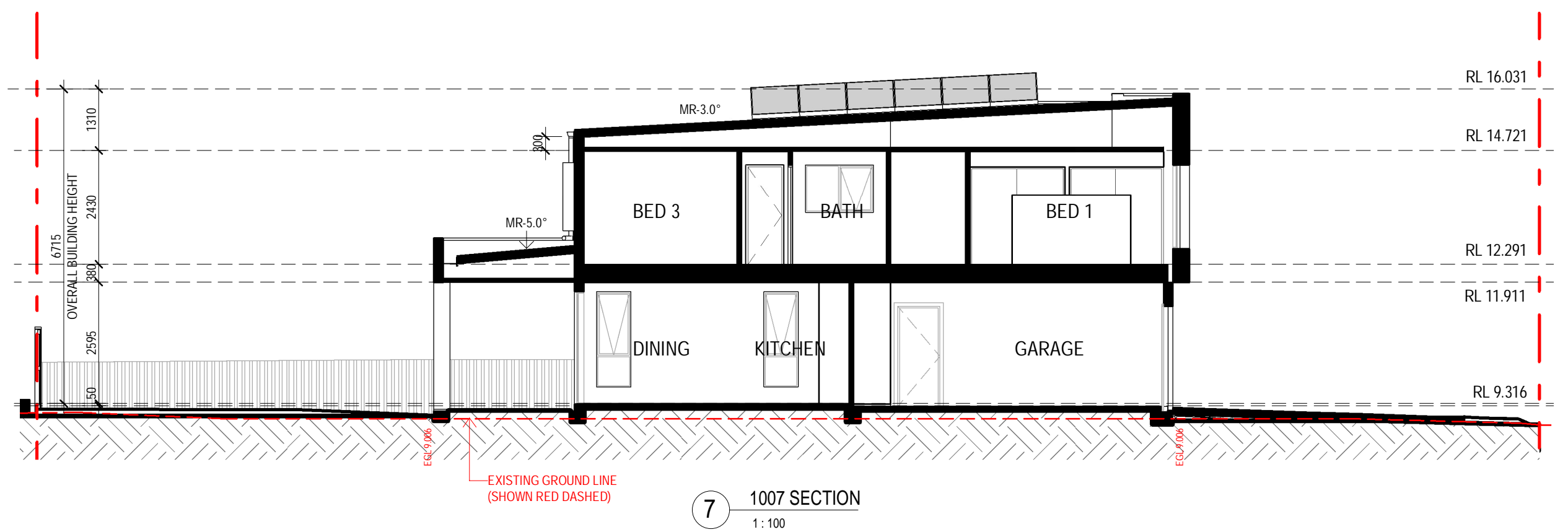
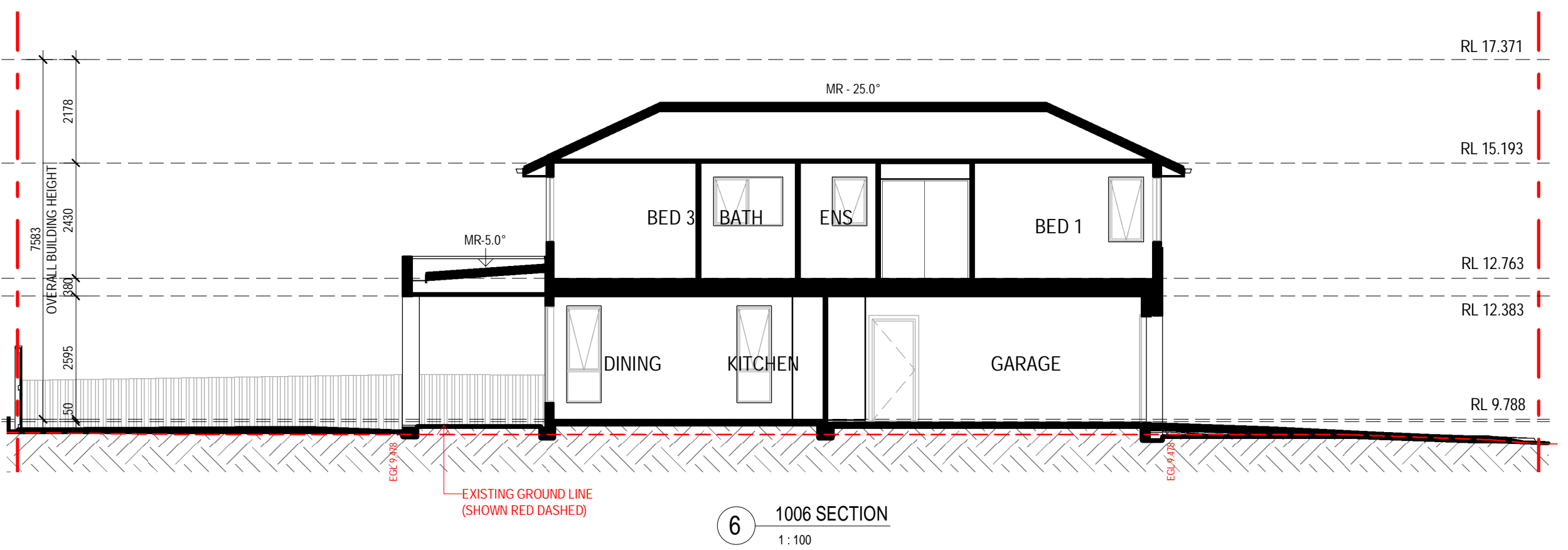
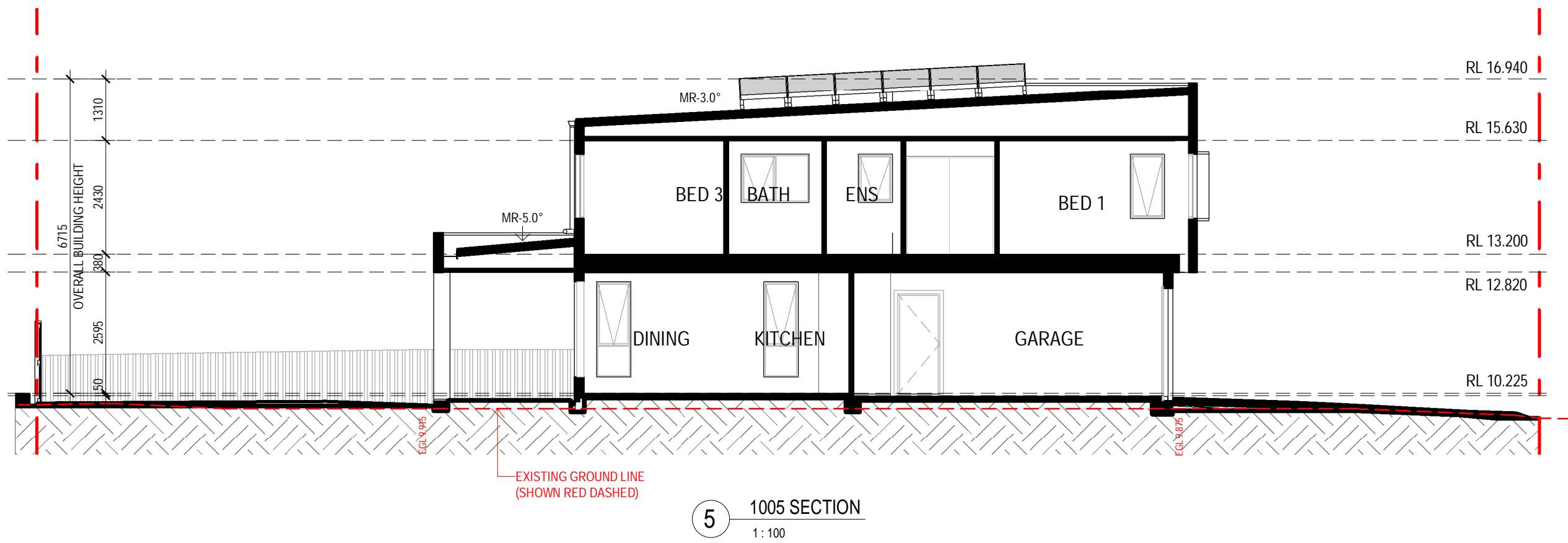
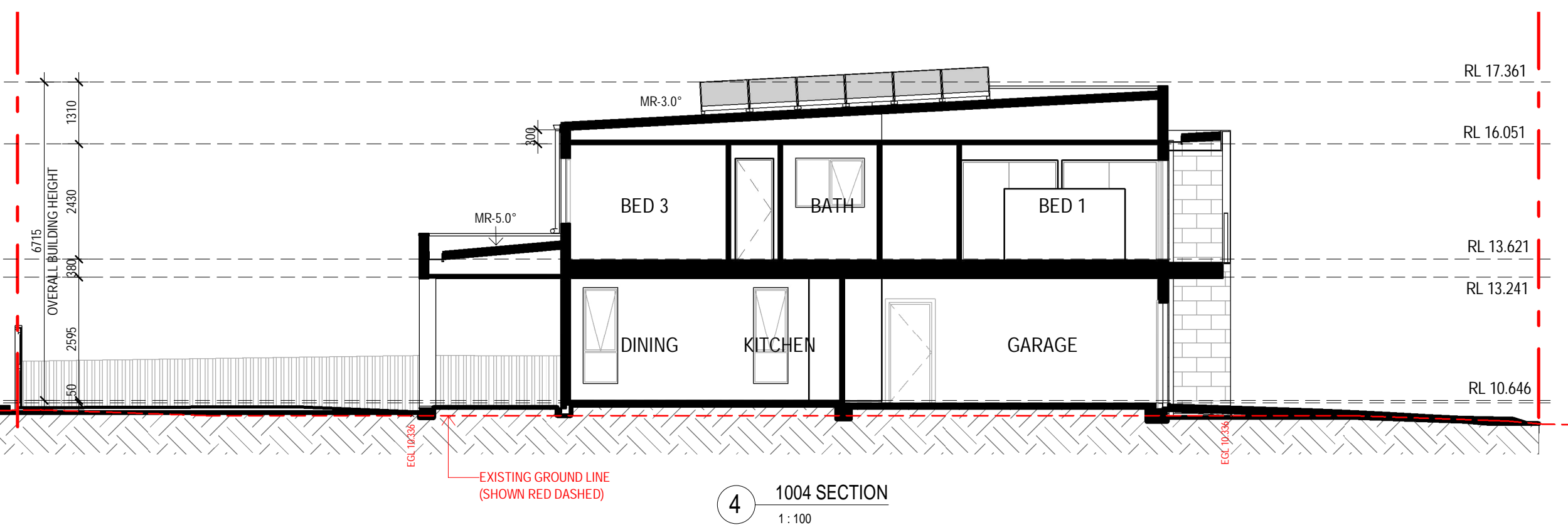
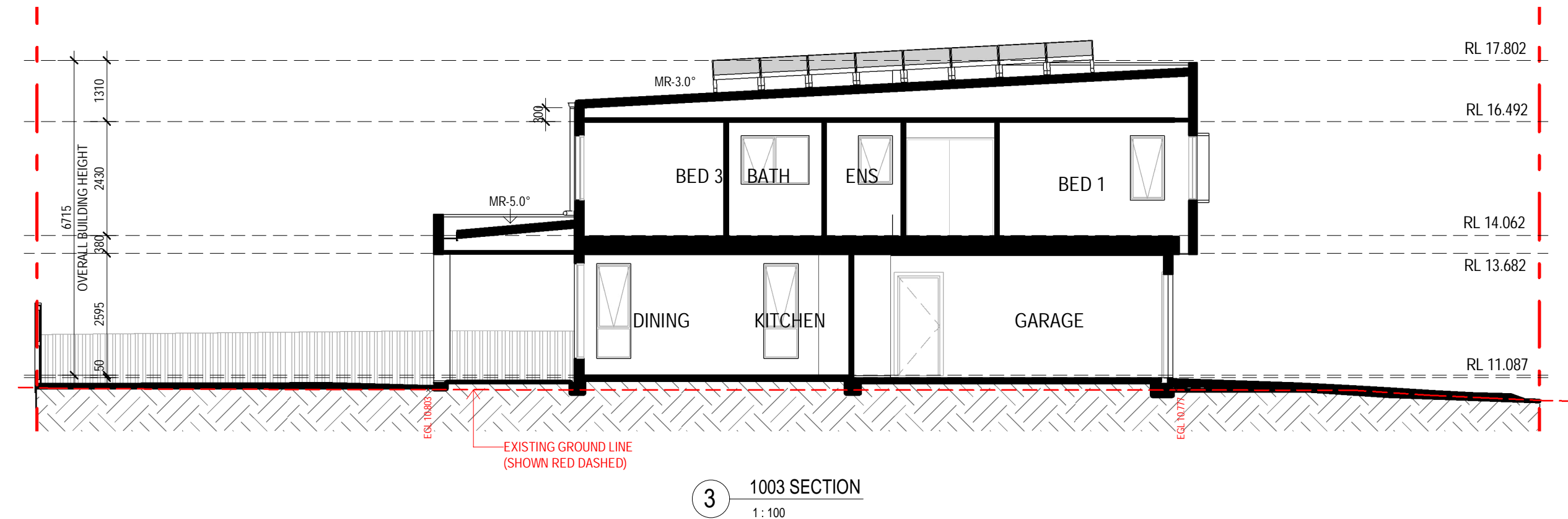
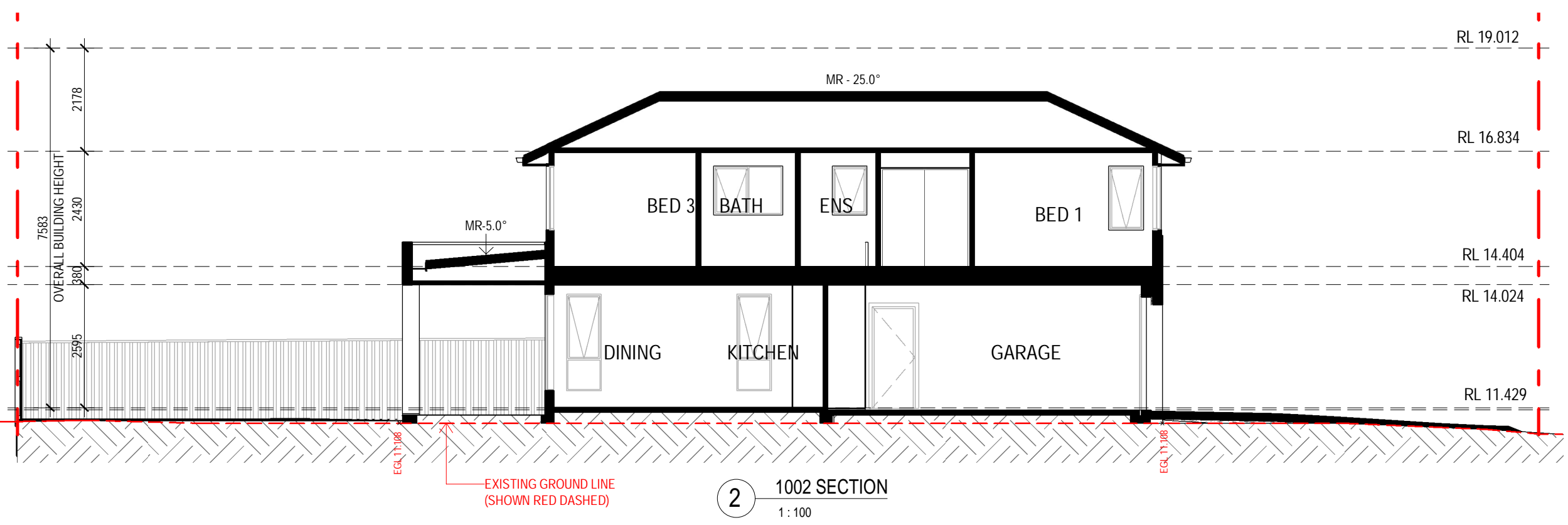
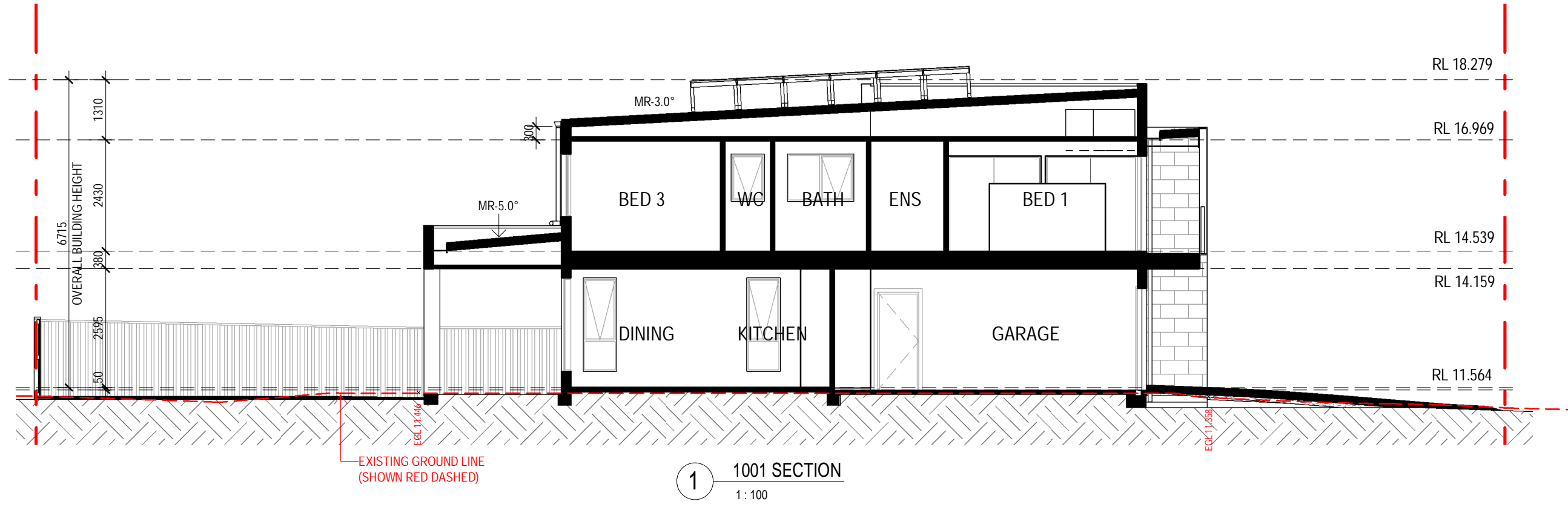
job no: MB-10197
drawing no: S1-01-DA321
scale @ A1 : 1 : 100
date: 06.09.24 rev: C

0mm 100mm 200mm 300mm

100mm

200mm

300mm



ELEVATION / SECTION	
AC	AIRCON CONDENSER
ACD	AIRCON DUCT
ACE	AIRCON VAPORBATOR
APG	ALUMINIUM PERGOLA TO DETAIL
BAL	BALUSTRADE
BAT	BATTERY STORAGE UNIT
BH	BULKHEAD OVER
BOW	BOTTOM OF WALL LEVEL
C	CUPBOARD
CL	CLOTHES LINE
D	DOOR
DP	DOWNSPIPE
DPS	DOWNSPIPE & SPREADER
EGL	EXISTING GROUND LEVEL
EXH	EXHAUST TO CEILING OR SOFFIT
EXH	EXHAUST TO ROOF
EXHW	EXHAUST TO WALL
FCL	FINISHED CEILING LEVEL
FRL	FINISHED RELATIVE LEVEL
GD	GARAGE DOOR OPENING AS SPECIFIED
GM	GAS METER
H	HOSE COCK
HCR	HOSE COCK RECYCLE
HDC	HARDWARE DISTRIBUTION CABINET
HH	HEAD OF OPENING - HEIGHT AS NOTED
HR	HANDRAIL - 1000mm HIGH MIN
HWD	HOT WATER UNIT
HWD	INSTANTANEOUS HOT WATER UNIT
INV	INVERTER
L	LINEA
LB	LETTER BOX
LHW	LOW HEIGHT WALL - HEIGHT AS NOTED
MR	METAL ROOF - PITCH AS NOTED
NBN	NATIONAL BROADBAND NETWORK
NCP	NON COMBUSTIBLE DOWNPIPE (NSW ONLY)
OP	OVERSLOW
PB	PLASTERBOARD
PCD	PREMISES CONNECTION DEVICE
PWM	POTABLE RECYCLED WATER METER
RL	REDUCED LEVEL
RWH	RAINWATER HEAD
RWT	RAINWATER TANK
S	STORAGE
SD	STEPPED
SCR	SCREEN
SL	SKYLIGHT OVER
SP	STRUCTURAL POST TO ENGINEERS DETAIL
SRL	STRUCTURAL RELATIVE LEVEL
ST	STORAGE
TOW	TOP OF WALL LEVEL
TP	TIMBER POST - SIZE AS NOTED
TPG	TIMBER PERGOLA TO DETAIL
TR	TILED ROOF - PITCH AS NOTED
VJ	VERTICAL JOINT
W	WINDOW
WM	WATER METER
WT	WALL TYPE
WTC	RAINWATER TANK CONTROL



06.09.24
25.06.24
10.04.24
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RE-ISSUE FOR CONSULTANTS
ISSUE FOR CONSULTANTS
ISSUE FOR REVIEW
amendment

MIRVAC DESIGN
Level 28 200 George St
Sydney NSW 2000
Tel: 02 9550 8000
Fax: 02 9550 9333
Email: info@mirvacdesign.com.au
Website: www.mirvacdesign.com.au

Mirvac Design Pty Ltd
ABN 70 007 997 933

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ABN 70 007 997 933



project:
WSU - MILPERRA
2 Bullecourt Avenue, Milperra NSW 2214
Stage: 1 Site: 01 Lot: 1001-1016

title:
SECTIONS

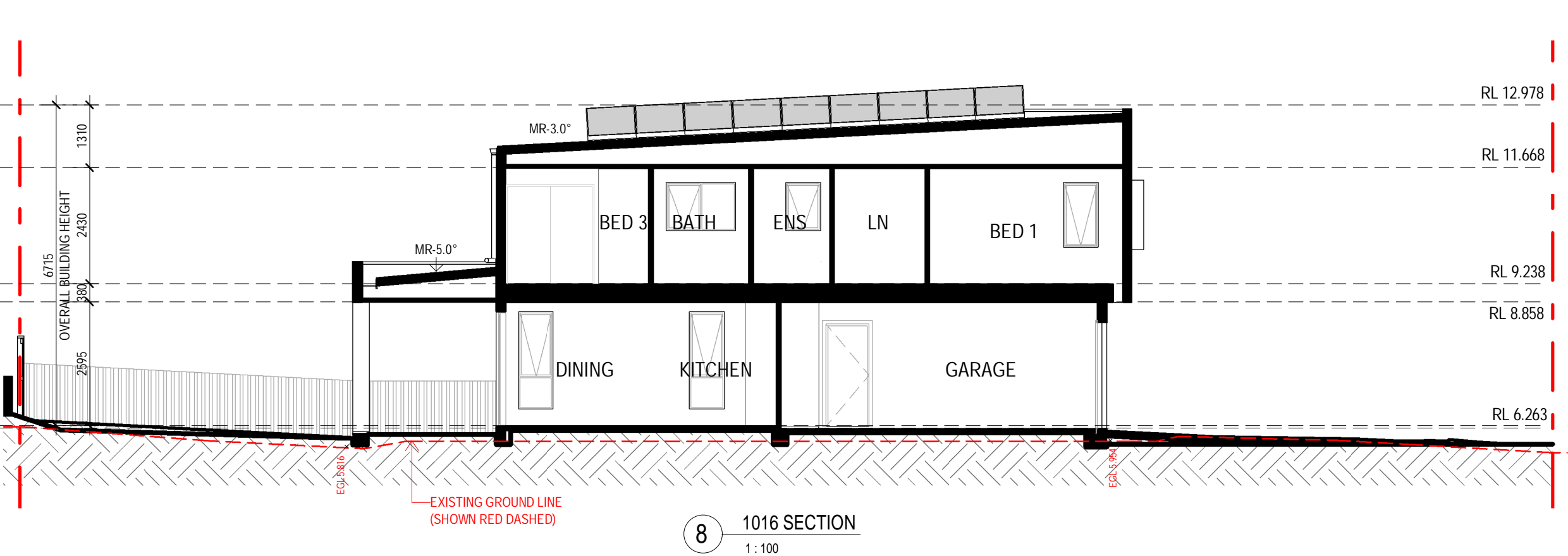
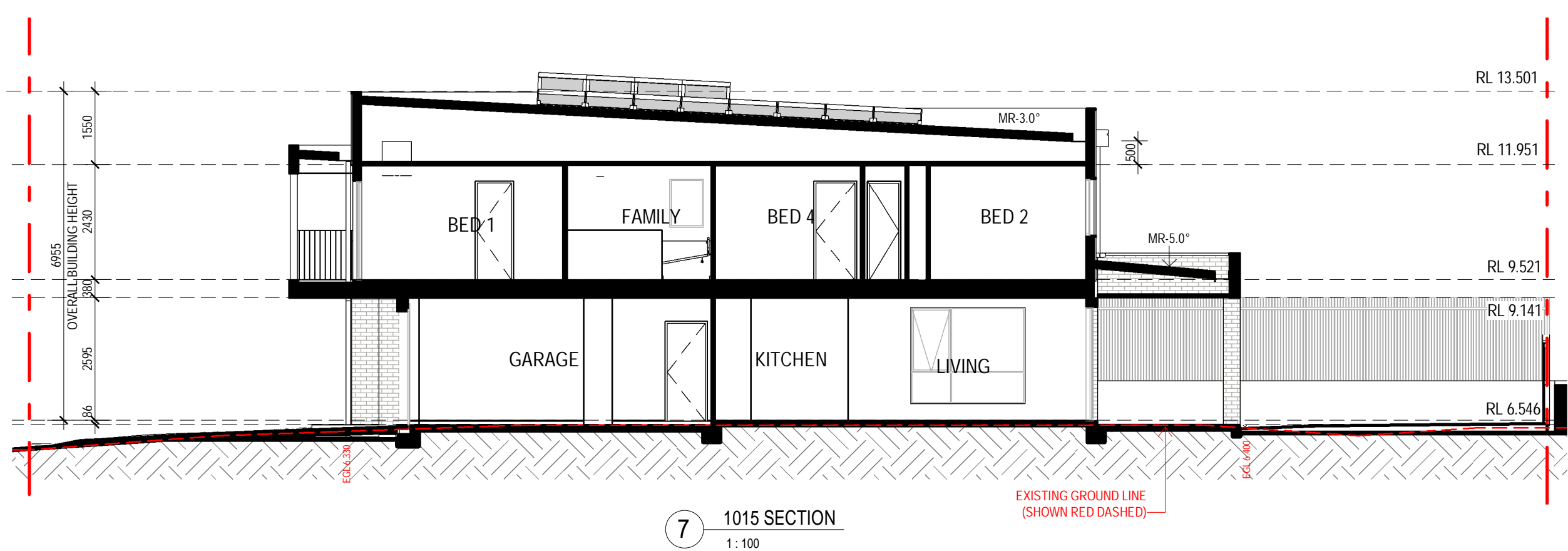
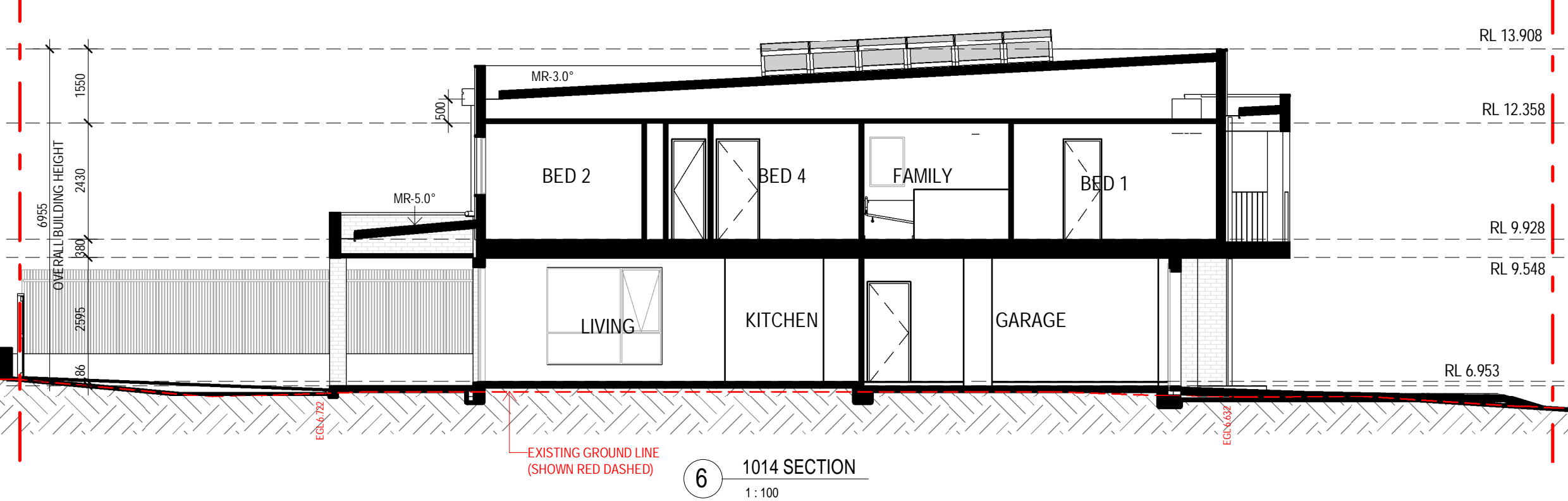
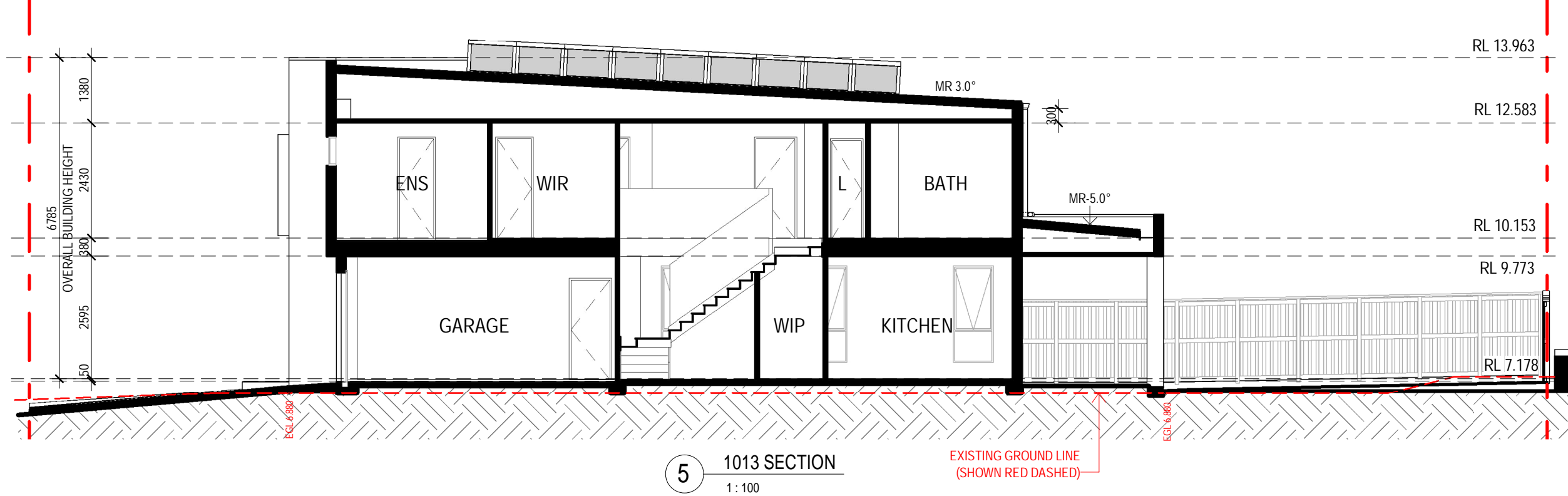
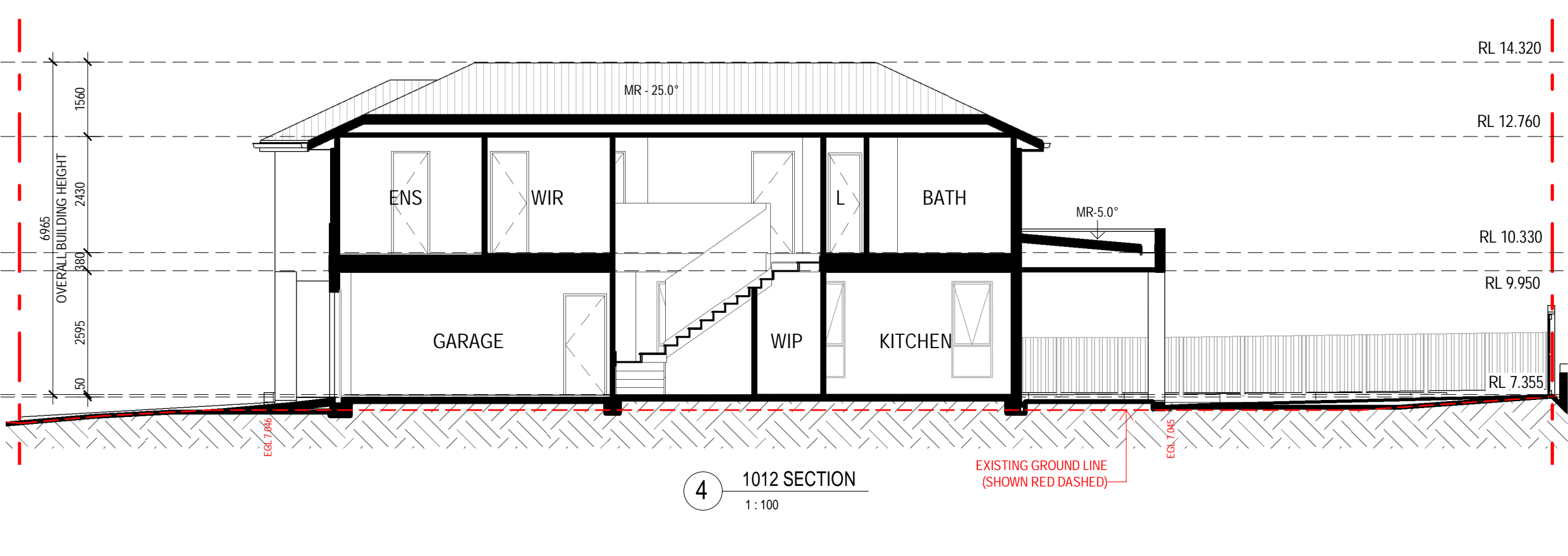
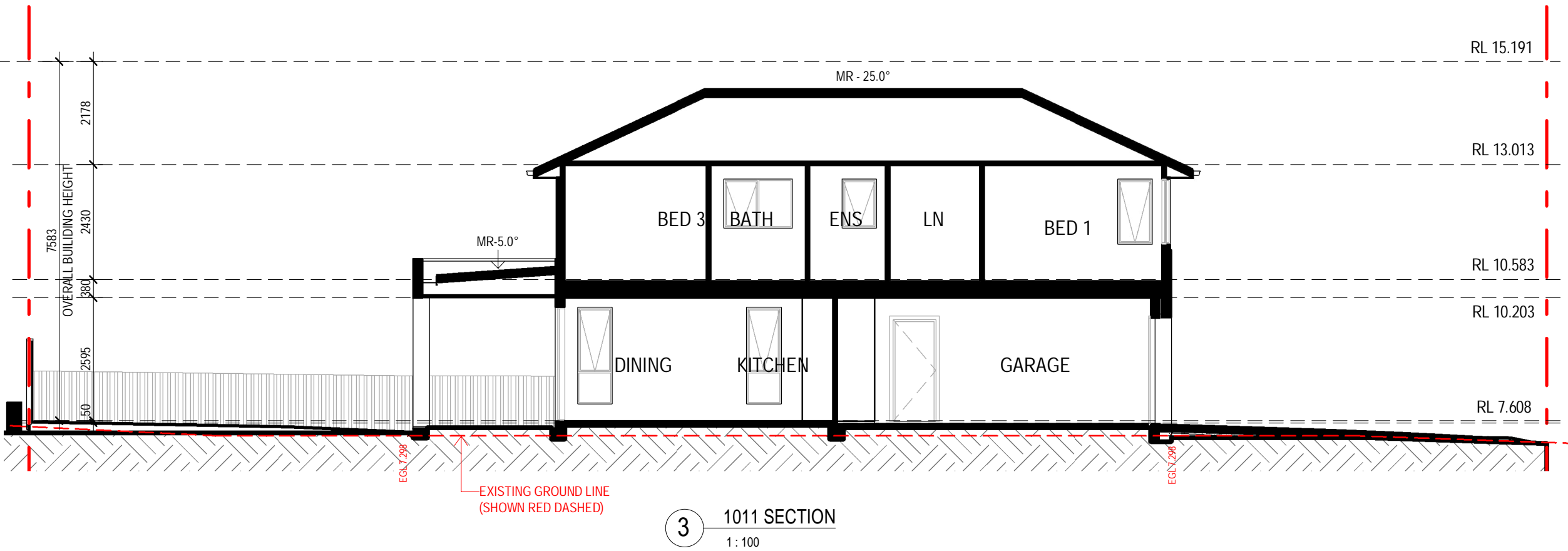
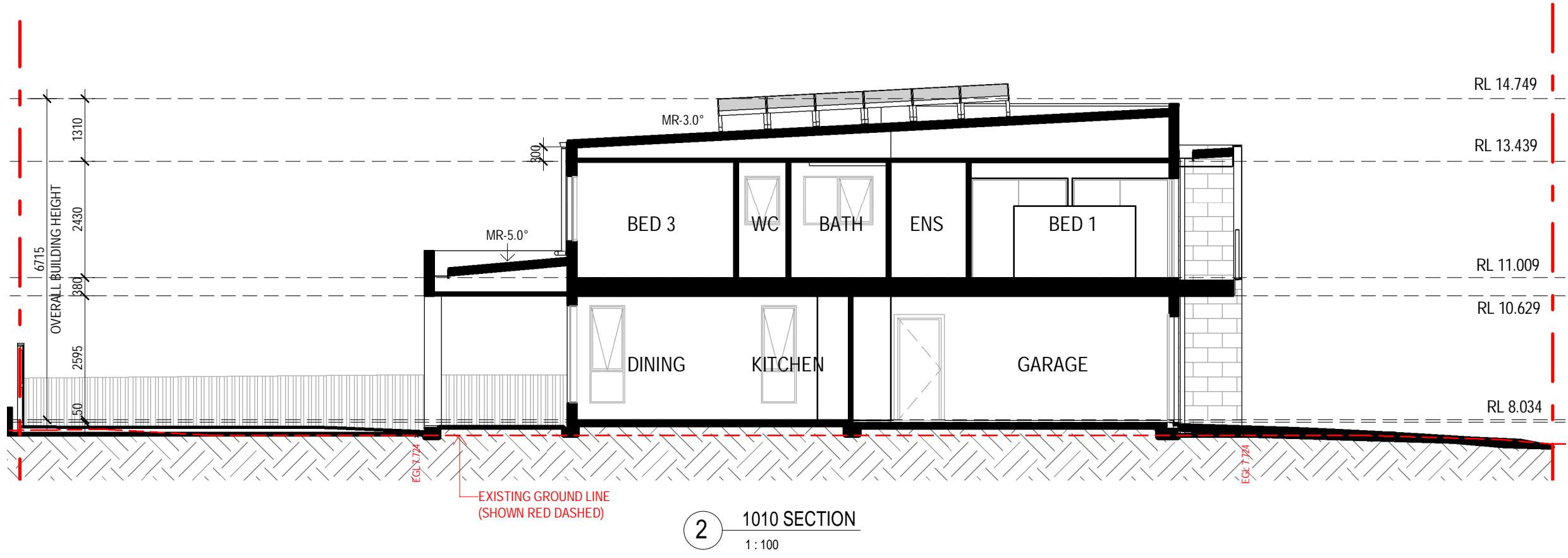
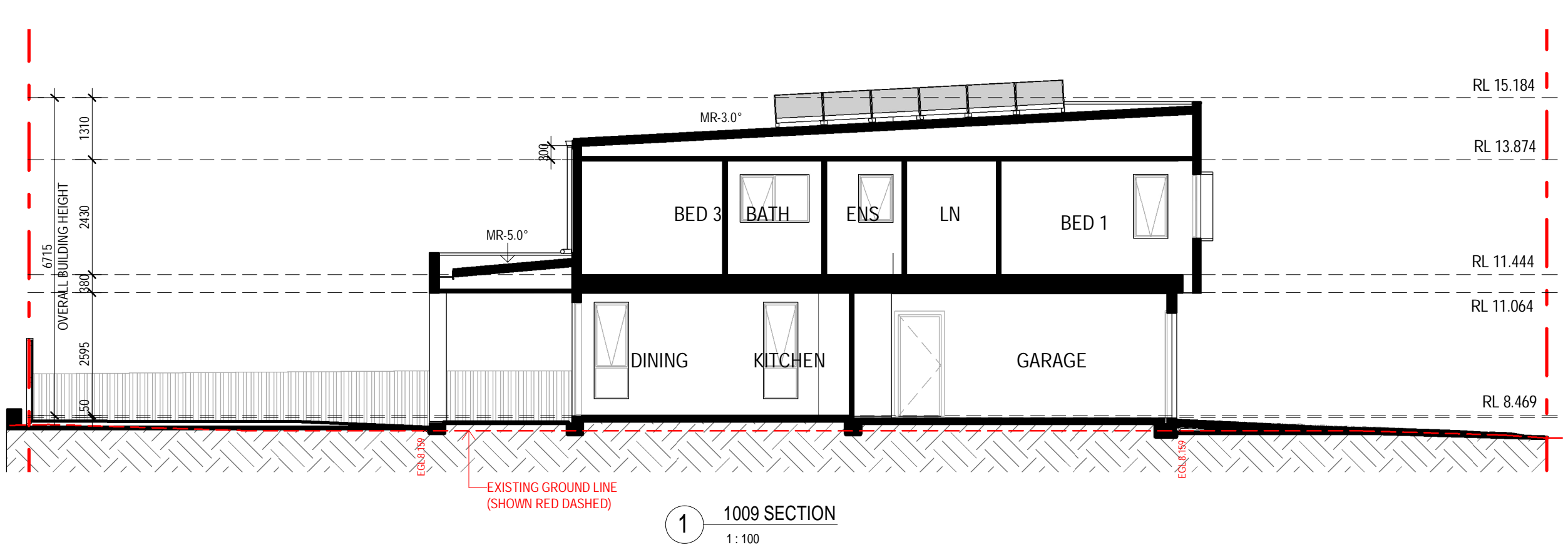
job no: MB-10197
drawing no: S1-01-DA330
scale @ A1 : 1 : 100
date: 06.09.24 rev: C

0mm 100mm 200mm 300mm

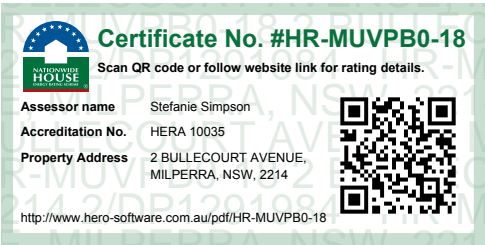
100mm

200mm

300mm



ELEVATION / SECTION	
AC	AIRCON CONDENSER
ACD	AIRCON DUCT
ACE	AIRCON VAPORATOR
APG	ALUMINUM PERGOLA TO DETAIL
BAL	BALUSTRADE
BAT	BATTERY STORAGE UNIT
BH	BULKHEAD OVER
BOW	BOTTOM OF WALL LEVEL
C	CURBROAD
CL	CLOTHES LINE
D	DOOR
DP	DOWNPipe
UPS	DOWNPipe & SPREADER
EGL	EXISTING GROUND LEVEL
EXH	EXHAUST TO LAWS OR SOFFIT
EXH	EXHAUST TO ROOF
EXHW	EXHAUST TO WALL
FCL	FINISHED CEILING LEVEL
FRL	FINISHED RELATIVE LEVEL
GD	GARAGE DOOR OPENING AS SPECIFIED
GM	GAS METER
HCC	HOSE COCK
HCR	HOSE COCK RECYCLE
HDC	HARDWARE DISTRIBUTION CABINET
HH	HEAD OF OPENING - HEIGHT AS NOTED
HL	HANDRAIL - 1000mm HIGH MIN.
HWU	HOT WATER UNIT
HWU	INSTANTANEOUS HOT WATER UNIT
INV	INVERTER
L	LINE
LB	LETTER BOX
LHW	LOW HEIGHT WALL - HEIGHT AS NOTED
MR	METAL ROOF - PITCH AS NOTED
NBN	NATIONAL BROADBAND NETWORK
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OP	OVERSLOW
PB	PLASTERBOARD
PCD	PREMISES CONNECTION DEVICE
PWM	POTABLE RECYCLED WATER METER
RL	REDUCED LEVEL
RWH	RAINWATER HEAD
RWT	RAINWATER TANK
S	SCREEN
SD	STEPPDOWN
SL	SKYLIGHT OVER
SP	STRUCTURAL POST TO ENGINEERS DETAIL
SRL	STRUCTURAL RELATIVE LEVEL
ST	STORAGE
TOW	TOP OF WALL LEVEL
TP	TIMBER POST - SIZE AS NOTED
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TR	TILED ROOF - PITCH AS NOTED
VJ	VERTICAL JOINT
W	WINDOW
WM	WATER METER
WT	WALL TYPE
WTC	RAINWATER TANK CONTROL



06.09.24
25.06.24
10.04.24
686

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amendment

MIRVAC DESIGN
Level 28 288 George St
Sydney NSW 2000
Tel: 002 955 9333
Fax: 002 955 9333

Mirvac Design Nominatee / Responsible Architects
Amit Verma, Michael Wilson, David Hinch, Paramany Srikanth, Andrew La
https://www.mirvacdesign.com/nominees-and-boards

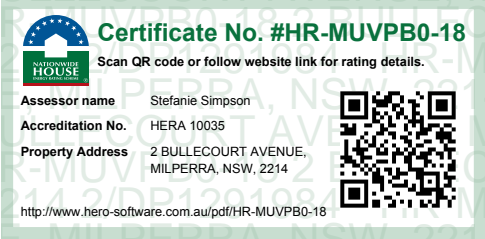


project:
WSU - MILPERRA
2 Bullecourt Avenue, Milperra NSW 2214
Stage: 1 Site: 01 Lot: 1001-1016

title:
SECTIONS

job no: MB-10197
drawing no: S1-01-DA331
scale @ A1 : 1:100
date: 06.09.24 rev: C

		SOLAR COVERAGE IN POS									*NOTE : CALCULATIONS OF SOLAR COVERAGE IN ACCORD WITH THE DCP MIN 3 HRS OF 50% OF THE POS FROM 8:00AM - 4:00PM
0_Lot No	0_House Type	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	Solar Compliance*
1001	WS-29b_221O-F5	131.8 m²	134.8 m²	127.5 m²	118.8 m²	108.3 m²	93.52 m²	75.3 m²	51.2 m²	40.2 m²	Yes
1002	WS-28b_220AR-F3	124.3 m²	126.5 m²	119.6 m²	106.0 m²	89.0 m²	69.34 m²	39.7 m²	0.0 m²	0.0 m²	Yes
1003	WS-28b_220AR-F7	121.9 m²	127.1 m²	119.0 m²	104.0 m²	89.5 m²	69.60 m²	38.4 m²	0.0 m²	0.0 m²	Yes
1004	WS-29b-221O-F1	120.6 m²	124.5 m²	119.5 m²	106.5 m²	90.2 m²	70.64 m²	38.4 m²	0.0 m²	0.0 m²	Yes
1005	WS-28b-220AR-F8	120.5 m²	124.6 m²	119.5 m²	106.0 m²	90.2 m²	70.92 m²	38.7 m²	0.0 m²	0.0 m²	Yes
1006	WS-28b-220AR-F2	116.6 m²	121.1 m²	117.2 m²	103.6 m²	87.3 m²	68.16 m²	37.5 m²	0.0 m²	0.0 m²	Yes
1007	WS-29b_221O-F4	119.7 m²	122.5 m²	117.3 m²	105.5 m²	88.8 m²	68.88 m²	37.4 m²	0.0 m²	0.0 m²	Yes
1008	WS-28b-220AR-F3	116.9 m²	121.4 m²	117.4 m²	103.5 m²	87.4 m²	68.08 m²	37.5 m²	0.0 m²	0.0 m²	Yes
1009	WS-28b-220AR-F8	119.9 m²	124.1 m²	117.9 m²	105.3 m²	89.0 m²	69.18 m²	38.1 m²	0.0 m²	0.0 m²	Yes
1010	WS-29b_221O-F5	120.5 m²	125.1 m²	120.6 m²	107.0 m²	90.6 m²	70.79 m²	38.5 m²	0.0 m²	0.0 m²	Yes
1011	WS-28b_220AR-F2	116.7 m²	121.6 m²	118.1 m²	104.0 m²	87.9 m²	68.18 m²	38.3 m²	0.0 m²	0.0 m²	Yes
1012	WS-24_217G-F1	91.9 m²	102.4 m²	97.5 m²	87.7 m²	72.9 m²	57.36 m²	32.6 m²	0.0 m²	0.0 m²	Yes
1013	WS-24_217G-F11	104.9 m²	104.6 m²	99.1 m²	89.0 m²	73.4 m²	58.15 m²	32.7 m²	0.0 m²	0.0 m²	Yes
1014	WS-30_219H-F6	106.0 m²	108.2 m²	105.2 m²	96.2 m²	74.4 m²	59.56 m²	30.5 m²	0.0 m²	0.0 m²	Yes
1015	WS-30_219H-F5	107.5 m²	108.1 m²	104.4 m²	97.6 m²	88.9 m²	75.30 m²	57.7 m²	18.8 m²	29.8 m²	Yes
1016	WS-28b-220AR-F8	109.1 m²	115.6 m²	103.3 m²	91.1 m²	72.5 m²	51.97 m²	14.2 m²	0.0 m²	0.0 m²	Yes



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MIRVAC DESIGN

Level 28 200 George St
Sydney NSW 2000
(02) 9686 8000

architects
urban design
interior design
landscape design

Mirvac Design Pty Ltd
ABN 70 007 997 931

Mirvac Design Nominees / Responsible Architects
Asha Verma Michael Wilmer David Hirst Paramany Srikanth Andrew Li
<https://www.mirvacdesign.com/nominees-architects>



client:

project:
WSU - MILPERRA
2 Bullecourt Avenue, Milperra NSW 2214
Stage: 1 Site: 01 Lot: 1001-1016

title:
SHADOW ANALYSIS

job no: MB-10197
drawing no: S1-01-DA400
scale @ A1 :
date: 06.09.24 rev: C

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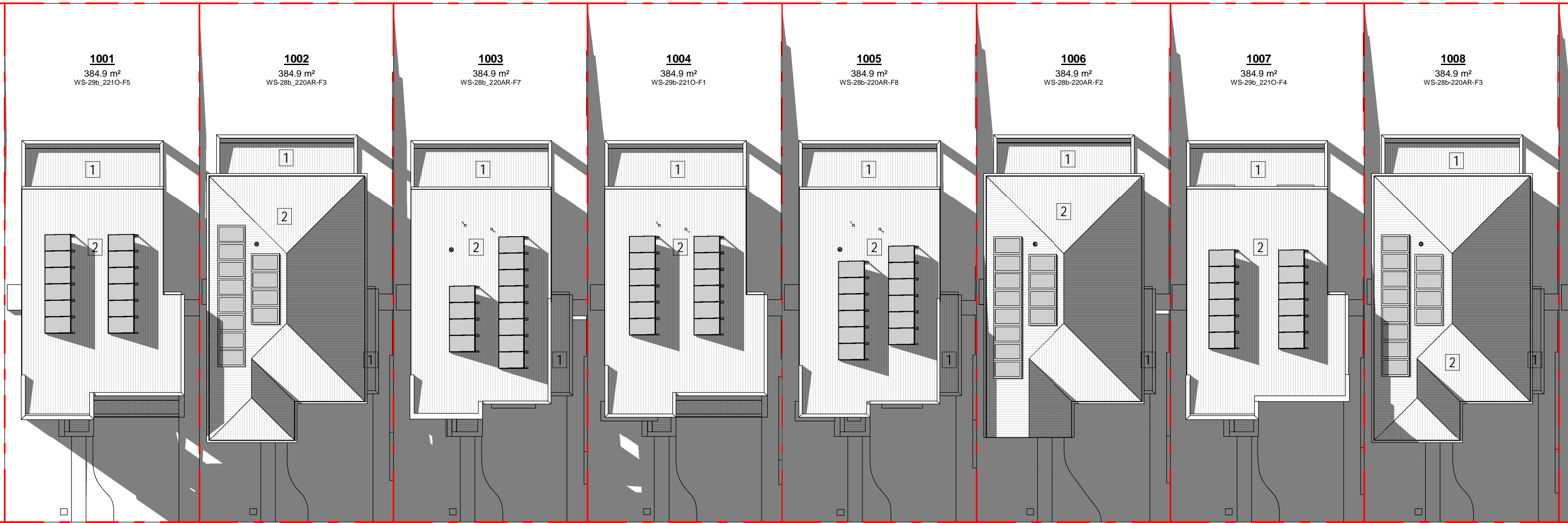
100mm

200mm

300mm

SHADOWS	
1	ONE STOREY BUILDING
2	TWO STOREY BUILDING
3	THREE STOREY BUILDING
PV	PHOTOVOLTAIC SOLAR PANEL
	SHADOW

AREA BENEFITED
BY EASEMENT TO
DRAIN WATER



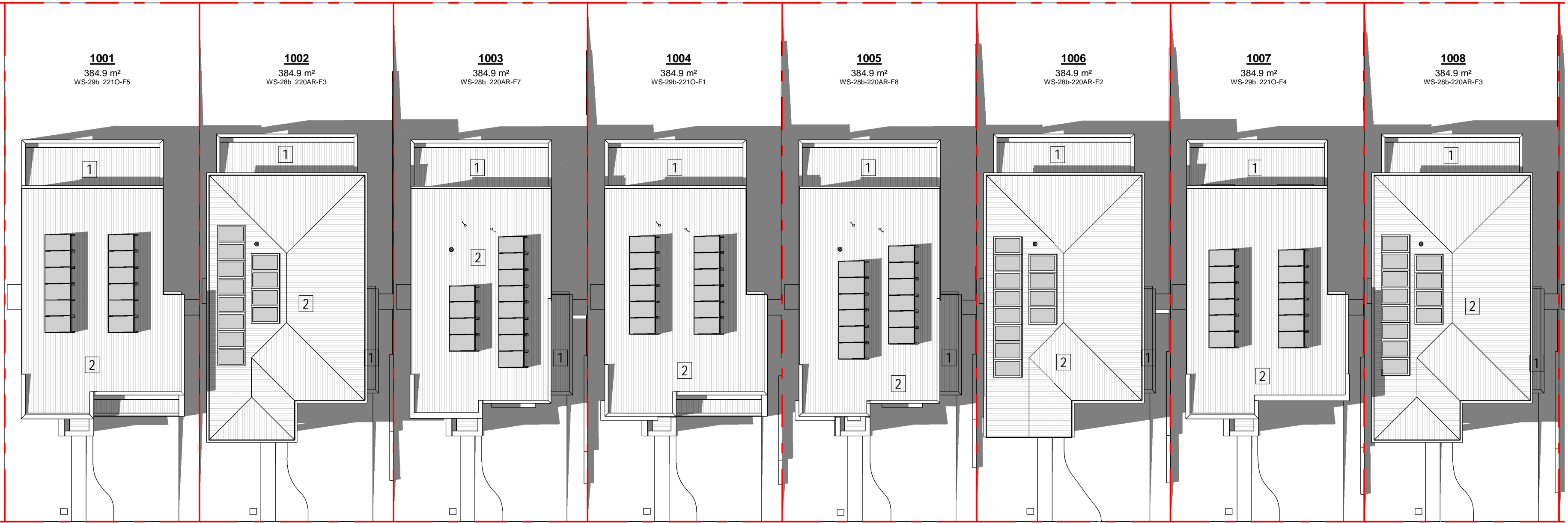
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1 DA/TP SHADOW PLAN 21 JUNE - 9AM (LOTS 1001-1008)
1 : 200

ASHFORD AVENUE

200mm

AREA BENEFITED
BY EASEMENT TO
DRAIN WATER

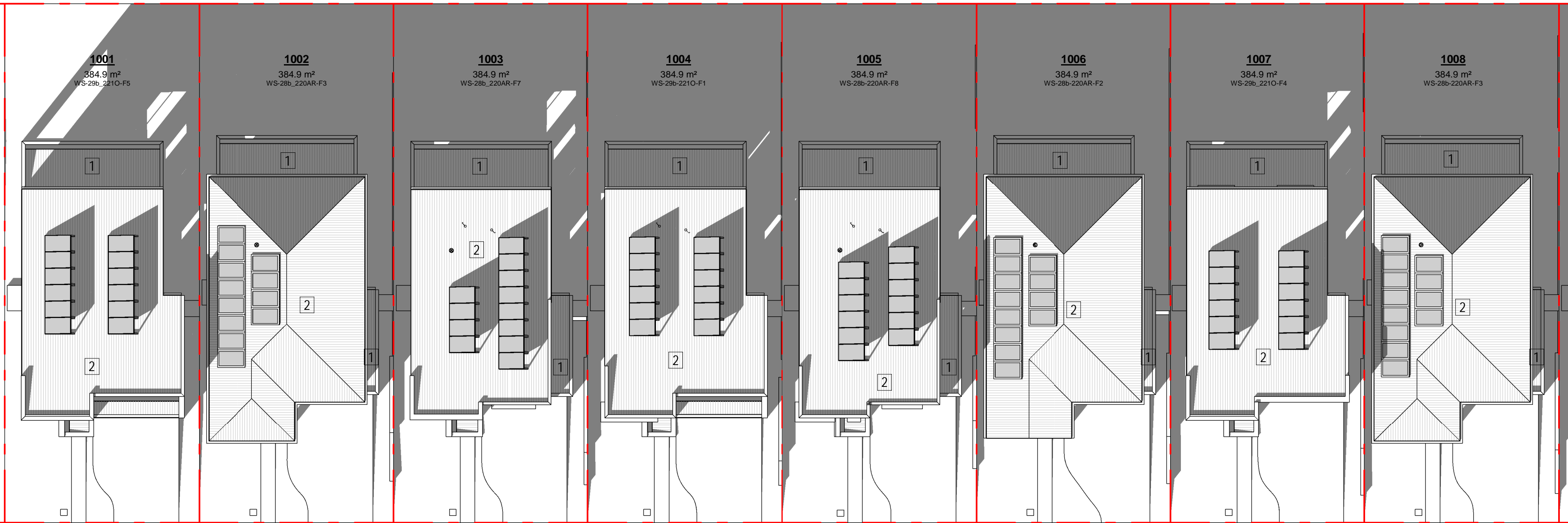


SITE CONTINUES - REFER TO SHEET DA402

2 DA/TP SHADOW PLAN 21 JUNE - 12PM (LOTS 1001-1008)
1 : 200

ASHFORD AVENUE

AREA BENEFITED
BY EASEMENT TO
DRAIN WATER



SITE CONTINUES - REFER TO SHEET DA402

3 DA/TP SHADOW PLAN 21 JUNE - 3PM (LOTS 1001-1008)
1 : 200

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10/04/24	A	ISSUE FOR REVIEW
dbb	rev	amendment

MIRVAC DESIGN
Level 28 288 George St
Sydney NSW 2000
Tel: 002 955 8056
Mirvac Design Pty Ltd
ABN 70 007 997 931
Mirvac Design Nomination / Responsible Architects
A/td Verma, Michael Wilmer, David Hirst, Farmington, Sebastian Andrew La
https://www.mirvacdesign.com/consultants-and-bids



project:
WSU - MILPERRA
2 Bullecourt Avenue, Milperra NSW 2214
Stage: 1 Site: 01 Lot: 1001-1016

title:
**SHADOW DIAGRAM - 21 JUNE -
9AM/12PM/3PM - LOTS 1001-1008**

job no: MB-10197
drawing no: S1-01-DA401
scale @ A1 : 1 : 200
date: 06.09.24 rev: C



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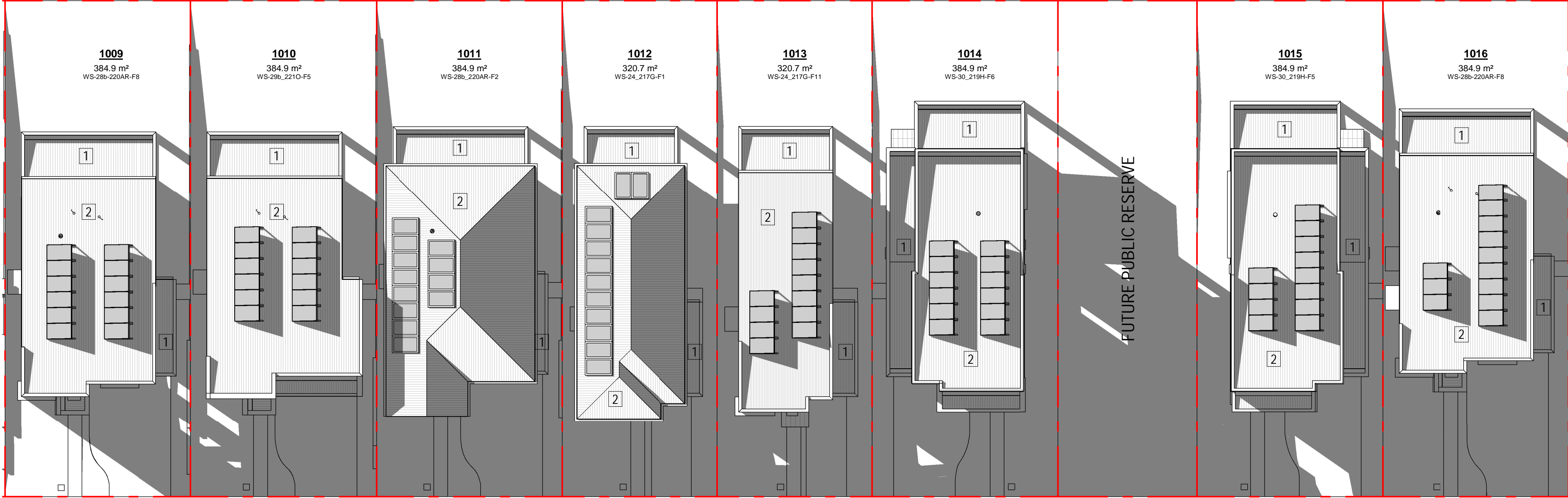
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200mm

300mm

SHADOWS	
1	ONE STOREY BUILDING
2	TWO STOREY BUILDING
3	THREE STOREY BUILDING
PV	PHOTOVOLTAIC SOLAR PANEL
	SHADOW

SITE CONTINUES - REFER TO SHEET DA401



1 DA/TP SHADOW PLAN 21 JUNE - 9AM (LOTS 1009-1016)

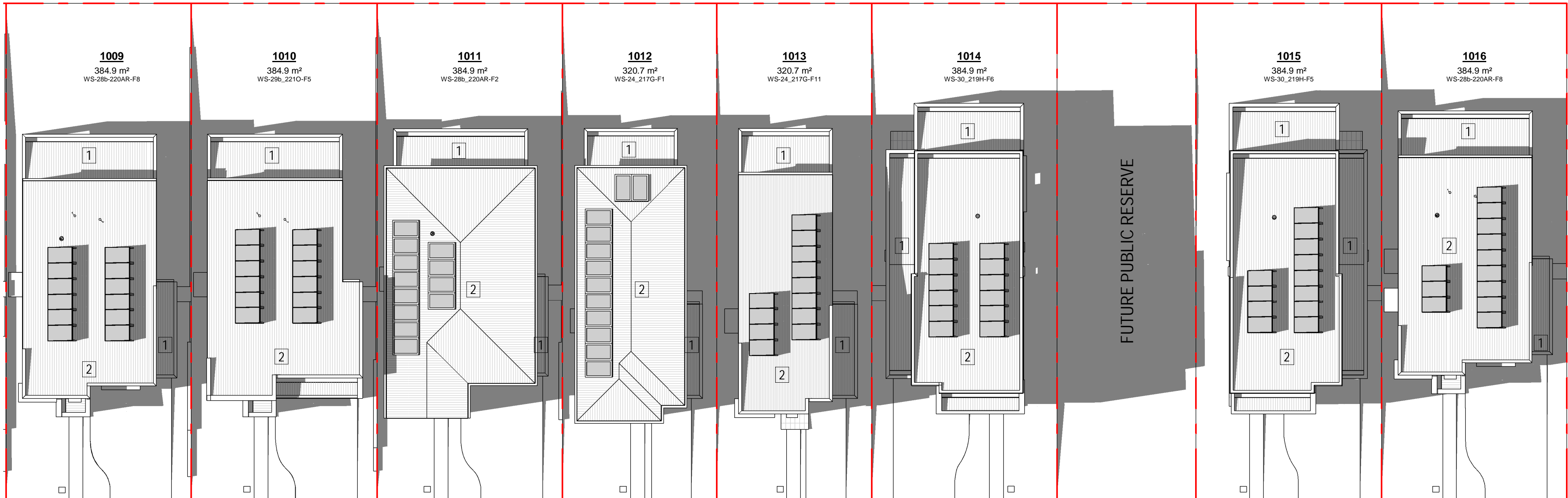
ASHFORD AVENUE

100mm

200mm

300mm

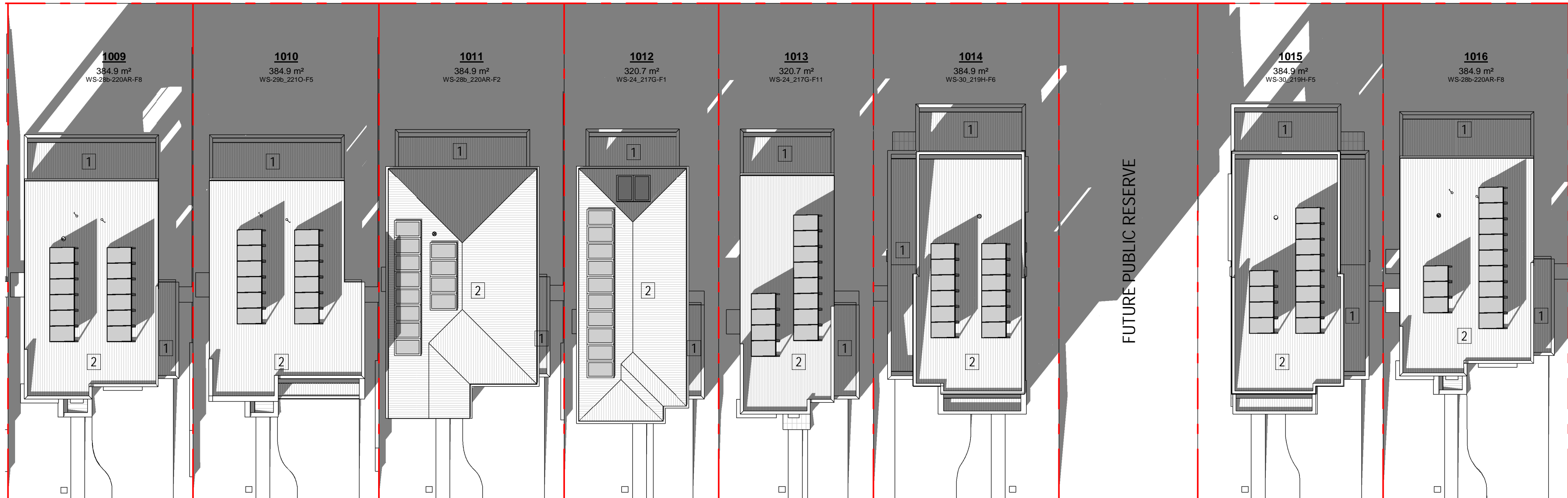
SITE CONTINUES - REFER TO SHEET DA401



2 DA/TP SHADOW PLAN 21 JUNE - 12PM (LOTS 1009-1016)

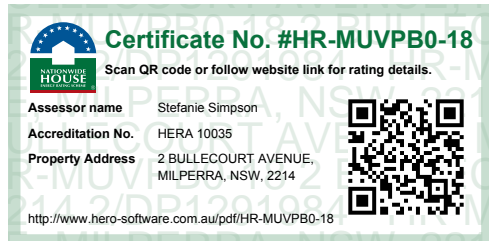
ASHFORD AVENUE

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3 DA/TP SHADOW PLAN 21 JUNE - 3PM (LOTS 1009-1016)

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MIRVAC DESIGN
Level 28 288 George St
Sydney NSW 2000
Tel: 02 9550 8000
Email: info@mirvacdesign.com.au
Mirvac Design Pty Ltd
ABN 70 007 939 731
Mirvac Design Nomination / Responsible Architects
Alicia Verma Michael Wilmer David Hinch Farmington Ordanville Andrew La
https://www.mirvacdesign.com/nomination-architects

client
mirvac

project:
WSU - MILPERRA
2 Bullecourt Avenue, Milperra NSW 2214
Stage: 1 Site: 01 Lot: 1001-1016

title:
**SHADOW DIAGRAM 21 JUNE -
9AM/12PM/3PM - LOTS 1009-1016**

job no: MB-10197
drawing no: S1-01-DA402
scale @ A1 : 1 : 200
date: 06.09.24 rev: C



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100mm

200mm

300mm

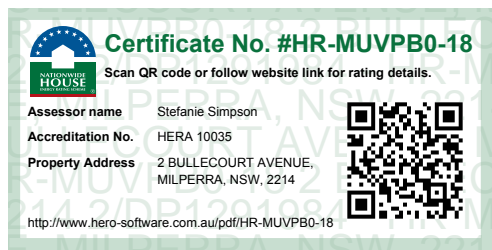
100mm

200mm

300mm

1 SUN EYE VIEW - 21 JUNE - 08_00 AM

2 SUN EYE VIEW - 21 JUNE - 09_00 AM



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08/0	REV	amendment

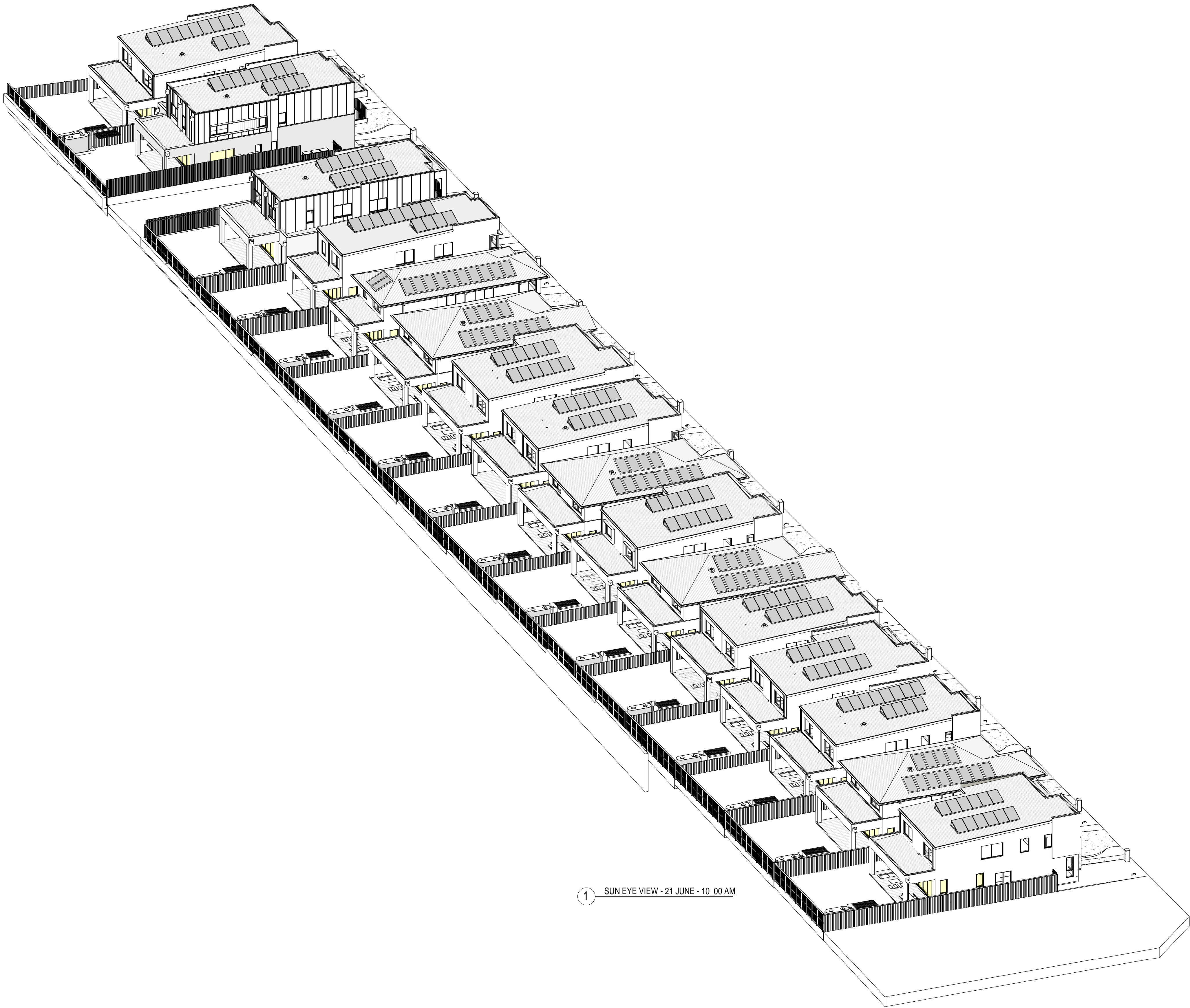
MIRVAC DESIGN
Lived 28 289 George St
Sydney NSW 2000
Tel: 02 955 8000
Mirvac Design Pty Ltd
ABN 70 057 957 933
Mirvac Design Nominated / Responsible Architects
Alicia Verma Michael Wilmer David Hinch Farmington Strelanah Andrew Li
https://www.mirvacdesign.com/nominated-architects



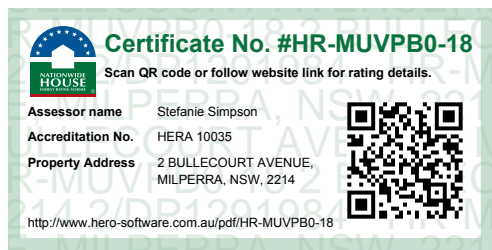
project:
WSU - MILPERRA
2 Bullecourt Avenue, Milperra NSW 2214
Stage: 1 Site: 01 Lot: 1001-1016

title:
SUN EYE VIEWS - 21 JUNE 8AM/9AM

job no: MB-10197
drawing no: S1-01-DA410
scale @ A1 :
date: 06.09.24 rev: C



1 SUN EYE VIEW - 21 JUNE - 10_00 AM



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MIRVAC DESIGN
Level 28 200 George St
Sydney NSW 2000
Tel: +61 2 9250 8000
Mirvac Design Pty Ltd
ABN 70 007 937 937
Mirvac Design Nominations / Responsible Architects
Alicia Verma Michael Wilmer David Hinch Farmington Standaert Andrew Li
https://www.mirvacdesign.com/nominations-and-bids



project:
WSU - MILPERRA
2 Bullecourt Avenue, Milperra NSW 2214
Stage: 1 Site: 01 Lot: 1001-1016

title:
SUN EYE VIEWS - 21 JUNE 10AM

job no: MB-10197
drawing no: S1-01-DA411
scale @ A1 :
date: 06.09.24 rev: C

0mm

100mm

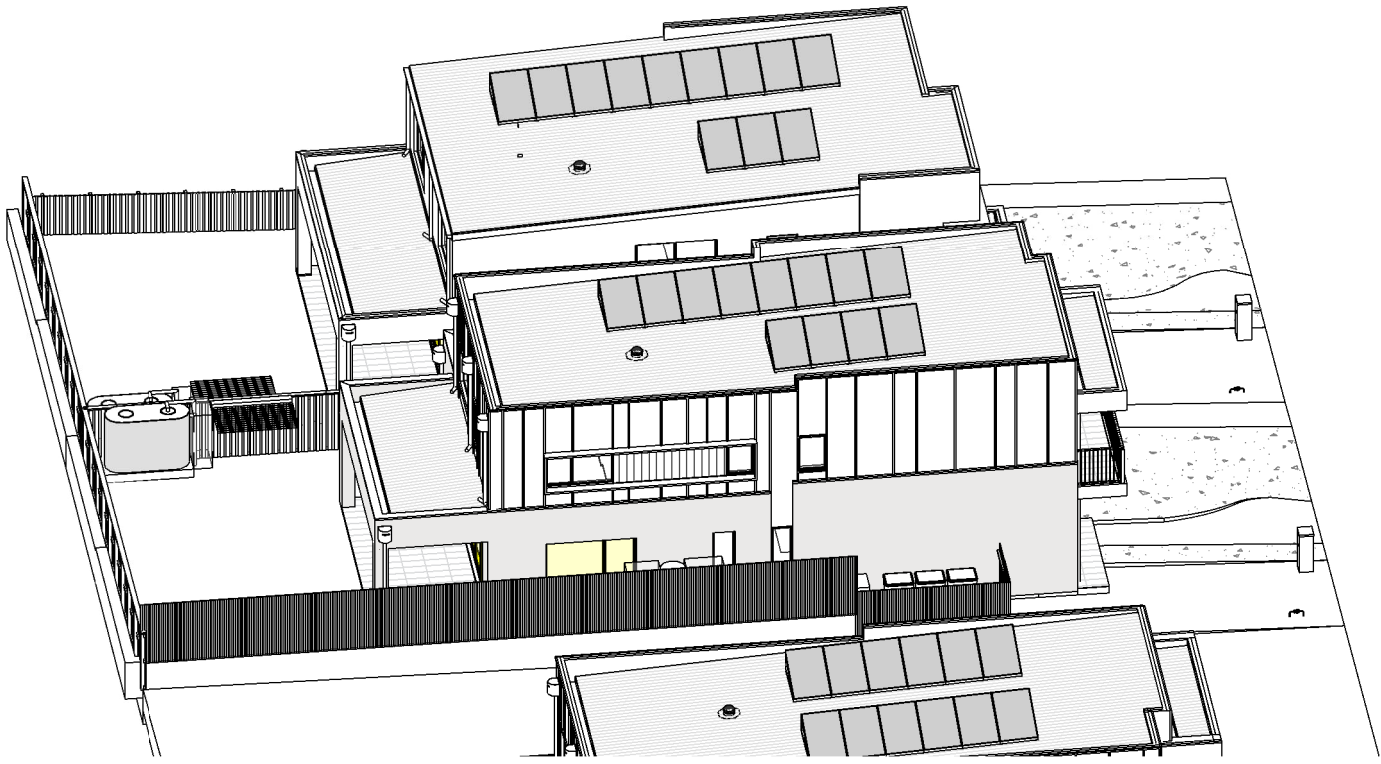
200mm

300mm

100mm

200mm

300mm



2 SUN EYE VIEW - 21 JUNE - 11_00 AM (LOTS 1015-1016)



1 SUN EYE VIEW - 21 JUNE - 11_00 AM (LOTS 1001-1014)

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10.04.24	A	ISSUE FOR REVIEW
dbb	rev	amendment

MIRVAC
DESIGN

Loved 28 389 George St
Sydney NSW 2006
Tel: 02 9550 8000
Mirvac Design Pty Ltd
ABN 70 007 937 937
Mirvac Design Nominates / Responsible Architects
Aulis Verris Michael Wilmer David Hinch Farmington Stenhouse Andrew La
https://www.mirvacdesign.com/nominations-and-bids



project:
WSU - MILPERRA
2 Bullecourt Avenue, Milperra NSW 2214
Stage: 1 Site: 01 Lot: 1001-1016

title:
SUN EYE VIEWS - 21 JUNE 11AM

job no: MB-10197
drawing no: S1-01-DA412

scale @ A1 :
date: 06.09.24 rev: C

0mm

100mm

200mm

300mm

100mm

200mm

300mm

AREA BENEFITED
BY EASEMENT TO
DRAIN WATER

1 DA/TP - PRIVATE OPEN SPACE (LOTS 1001-1008)
1 : 200

ASHFORD AVENUE

SITE CONTINUES - REFER TO VIEW 2 BELOW

LANDSCAPED AREA SCHEDULE				
Lot Number	Lot_Area	Soft Landscape Area	Landscaped Area Provided (%)	Complies
1001	384.90 m²	184.66 m²	47.98%	Yes
1002	384.90 m²	183.09 m²	47.57%	Yes
1003	384.90 m²	185.10 m²	48.09%	Yes
1004	384.90 m²	185.22 m²	48.12%	Yes
1005	384.90 m²	185.00 m²	48.06%	Yes
1006	384.90 m²	184.83 m²	48.02%	Yes
1007	384.90 m²	185.19 m²	48.11%	Yes
1008	384.90 m²	183.18 m²	47.59%	Yes
1009	384.90 m²	185.08 m²	48.09%	Yes
1010	384.90 m²	184.71 m²	47.99%	Yes
1011	384.90 m²	183.30 m²	47.62%	Yes
1012	320.70 m²	175.67 m²	54.78%	Yes
1013	320.70 m²	175.08 m²	54.59%	Yes
1014	384.90 m²	180.98 m²	47.02%	Yes
1015	384.90 m²	180.94 m²	47.01%	Yes
1016	384.90 m²	175.80 m²	45.67%	Yes

FRONT LANDSCAPED AREA SCHEDULE				
Lot Number	Frontyard Area	Landscaped Frontyard Area	Landscaped Frontyard (min 40%)	Complies (min 40%)
1001	82.45 m²	38.95 m²	47.24%	Yes
1002	87.77 m²	42.41 m²	48.32%	Yes
1003	83.99 m²	40.60 m²	48.34%	Yes
1004	82.47 m²	39.21 m²	47.55%	Yes
1005	84.01 m²	40.49 m²	48.20%	Yes
1006	87.87 m²	44.31 m²	50.42%	Yes
1007	84.21 m²	40.80 m²	48.46%	Yes
1008	87.78 m²	42.51 m²	48.42%	Yes
1009	84.01 m²	40.59 m²	48.31%	Yes
1010	82.46 m²	39.00 m²	47.30%	Yes
1011	87.87 m²	42.33 m²	48.17%	Yes
1012	59.18 m²	37.37 m²	63.15%	Yes
1013	57.30 m²	36.70 m²	64.05%	Yes
1014	84.95 m²	43.61 m²	51.33%	Yes
1015	84.95 m²	43.66 m²	51.39%	Yes
1016	102.02 m²	49.31 m²	48.33%	Yes

POS AREA SCHEDULE	
Lot No	POS
1001	137.7 m²
1002	133.5 m²
1003	137.7 m²
1004	137.7 m²
1005	137.7 m²
1006	133.5 m²
1007	137.7 m²
1008	133.5 m²
1009	137.7 m²
1010	137.7 m²
1011	133.5 m²
1012	111.0 m²
1013	111.0 m²
1014	113.9 m²
1015	113.9 m²
1016	119.7 m²

SITE CONTINUES - REFER TO VIEW 1 ABOVE

2 DA/TP - PRIVATE OPEN SPACE (LOTS 1009-1016)
1 : 200

ASHFORD AVENUE

FUTURE PUBLIC RESERVE



06/09/24
25/06/24
10/04/24
686

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REV

RE: ISSUE FOR CONSULTANTS
ISSUE FOR CONSULTANTS
ISSUE FOR REVIEW
amendment

MIRVAC DESIGN
Level 28 288 George St
Sydney NSW 2000
Tel: 002 955 9331
Fax: 002 955 9331

Mirvac Design Nominees / Responsible Architects
Amit Verma, Michael Wilson, David Hinch, Paramanying Sridharan, Andrew La
https://www.mirvacdesign.com/nominees-and-boards



project:
WSU - MILPERRA
2 Bullecourt Avenue, Milperra NSW 2214
Stage: 1 Site: 01 Lot: 1001-1016

title:
AREA PLAN - PRIVATE OPEN SPACE
AND PERMEABLE AREA

job no: MB-10197
drawing no: S1-01-DA420
scale @ A1 : 1 : 200
date: 06.09.24 rev: C



0mm

100mm

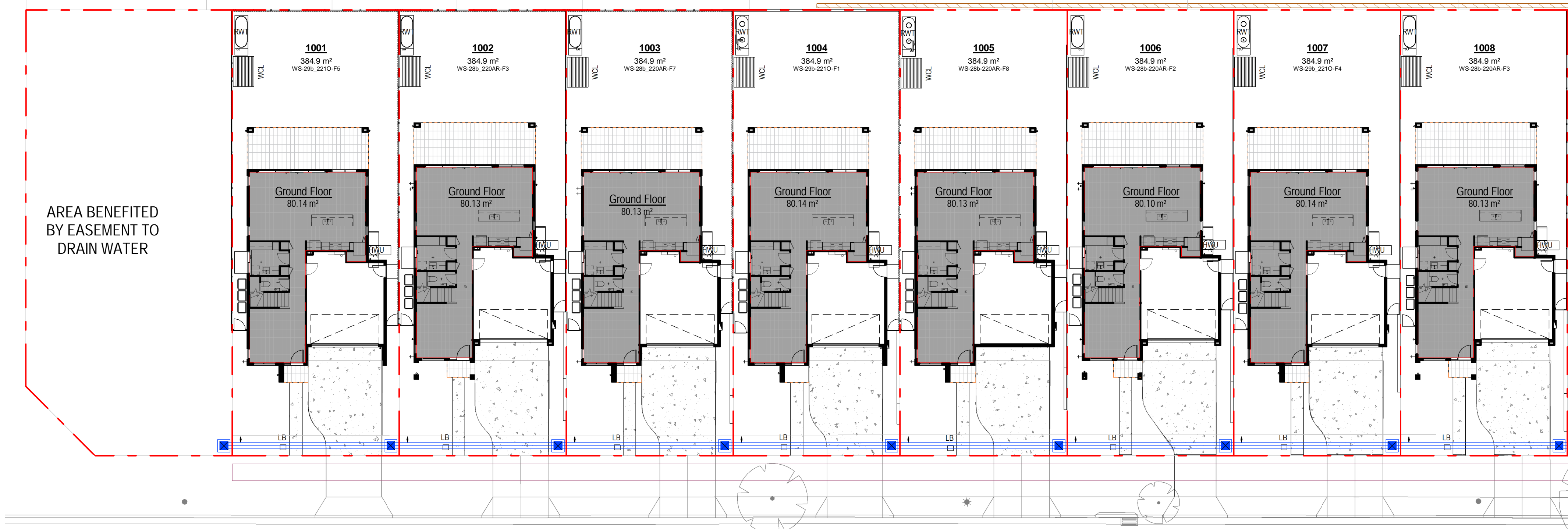
200mm

300mm

100mm

200mm

300mm



1 GFA AREAS - GROUND FLOOR (LOTS 1001-1008)
1 : 200

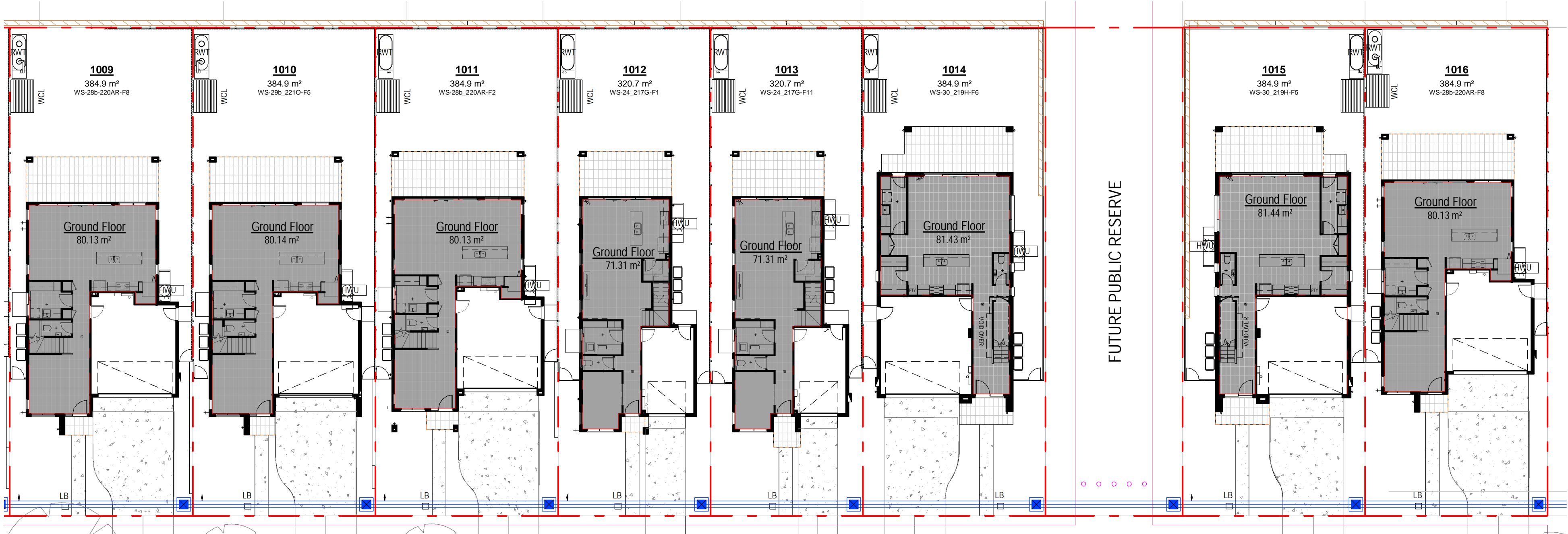
ASHFORD AVENUE

SITE CONTINUES - REFER TO VIEW 2 BELOW

SITE FSR			
Lot No	Gross floor area	Lot_Area	FSR
1001	189.7 m²	384.9 m²	49.28%
1002	183.0 m²	384.9 m²	47.54%
1003	184.4 m²	384.9 m²	47.91%
1004	189.4 m²	384.9 m²	49.22%
1005	184.3 m²	384.9 m²	47.88%
1006	182.9 m²	384.9 m²	47.53%
1007	190.6 m²	384.9 m²	49.51%
1008	183.0 m²	384.9 m²	47.54%
1009	184.3 m²	384.9 m²	47.88%
1010	189.4 m²	384.9 m²	49.22%
1011	183.0 m²	384.9 m²	47.54%
1012	148.5 m²	320.7 m²	46.31%
1013	148.5 m²	320.7 m²	46.31%
1014	177.0 m²	384.9 m²	45.98%
1015	177.0 m²	384.9 m²	45.98%
1016	184.3 m²	384.9 m²	47.88%

Site - GFA schedule for FSR calc.		
Lot No.	Name	Area*
1001	Ground Floor	80.1 m²
1001	First Floor	109.5 m²
		189.7 m²
1002	Ground Floor	80.1 m²
1002	First Floor	102.9 m²
		183.0 m²
1003	Ground Floor	80.1 m²
1003	First Floor	104.3 m²
		184.4 m²
1004	Ground Floor	80.1 m²
1004	First Floor	109.3 m²
		189.4 m²
1005	Ground Floor	80.1 m²
1005	First Floor	104.2 m²
		184.3 m²
1006	Ground Floor	80.1 m²
1006	First Floor	102.8 m²
		182.9 m²
1007	Ground Floor	80.1 m²
1007	First Floor	110.4 m²
		190.6 m²
1008	Ground Floor	80.1 m²
1008	First Floor	102.8 m²
		183.0 m²
1009	Ground Floor	80.1 m²
1009	First Floor	104.1 m²
		184.3 m²
1010	Ground Floor	80.1 m²
1010	First Floor	109.3 m²
		189.4 m²
1011	Ground Floor	80.1 m²
1011	First Floor	102.8 m²
		183.0 m²
1012	Ground Floor	71.3 m²
1012	First Floor	77.2 m²
		148.5 m²
1013	Ground Floor	71.3 m²
1013	First Floor	77.2 m²
		148.5 m²
1014	Ground Floor	81.4 m²
1014	First Floor	95.6 m²
		177.0 m²
1015	Ground Floor	81.4 m²
1015	First Floor	95.6 m²
		177.0 m²
1016	Ground Floor	80.1 m²
1016	First Floor	104.2 m²
		184.3 m²
Grand total		2879.3 m²

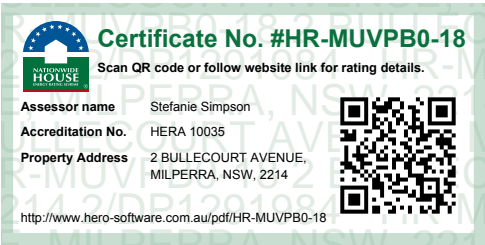
SITE CONTINUES - REFER TO VIEW 1 ABOVE



2 GFA AREAS - GROUND FLOOR (LOTS 1009-1016)
1 : 200

ASHFORD AVENUE

FUTURE PUBLIC RESERVE



06/09/24
25/09/24
10/04/24
686

C
B
A
rev

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MIRVAC DESIGN
Level 28 280 George St
Sydney NSW 2000
Tel: 02 9250 8000
Fax: 02 9250 8000
MIRVAC DESIGN Pty Ltd
ABN 70 007 997 733
MIRVAC DESIGN Nominates / Responsible Architects
Alicia Verma, Michael Miller, David Hirst, Paramany, Sebastian, Andrew La
https://www.mirvacdesign.com/australia/australia/australia



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GFA AREA PLANS - GROUND FLOOR

job no: MB-10197
drawing no: S1-01-DA421
scale @ A1 : 1 : 200
date: 06.09.24 rev: C



0mm

100mm

200mm

300mm

100mm

200mm

300mm

AREA BENEFITED
BY EASEMENT TO
DRAIN WATER

1001
384.9 m²
WS-28b_2210-F5

1002
384.9 m²
WS-28b_220AR-F3

1003
384.9 m²
WS-28b_220AR-F7

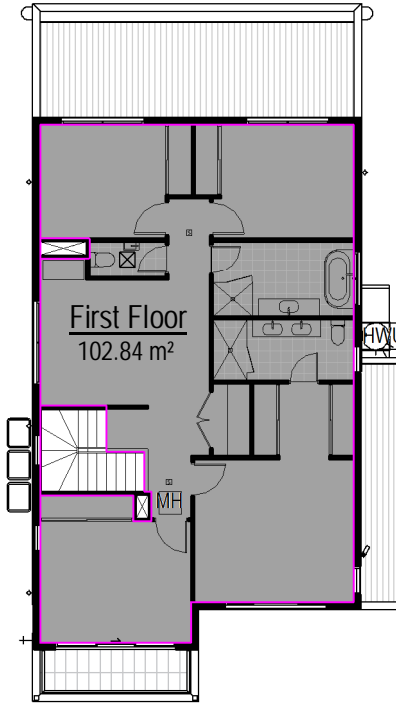
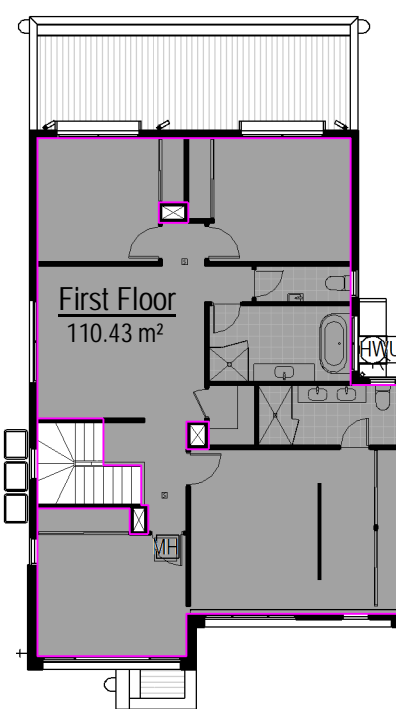
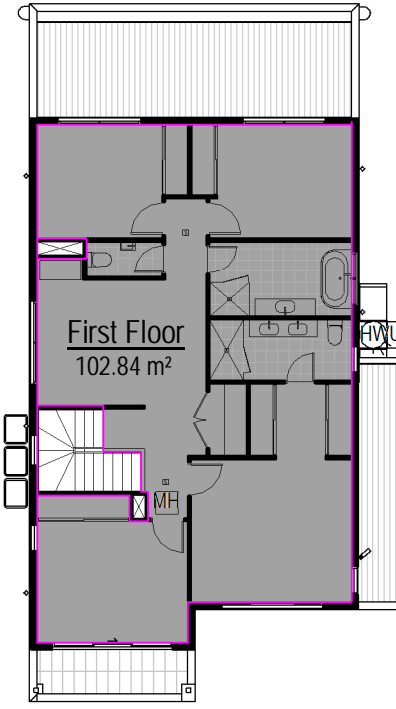
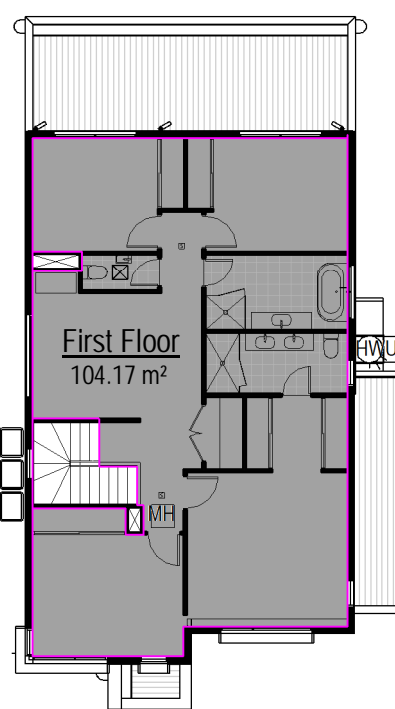
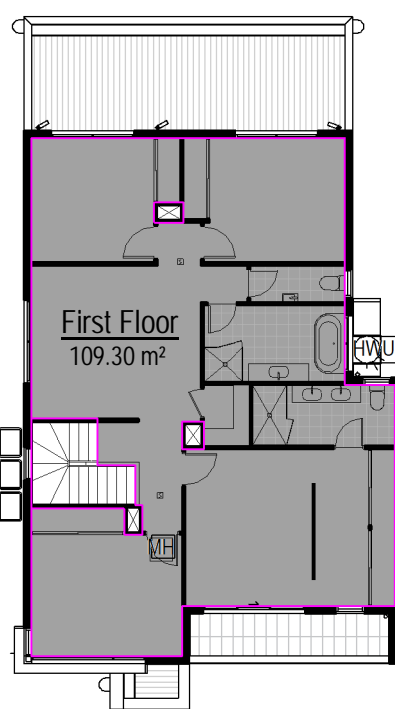
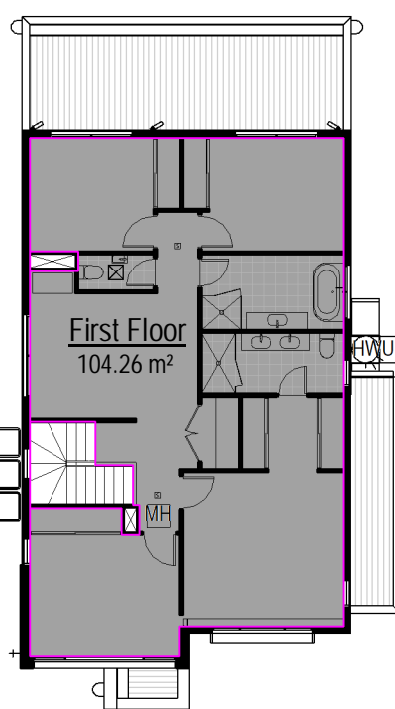
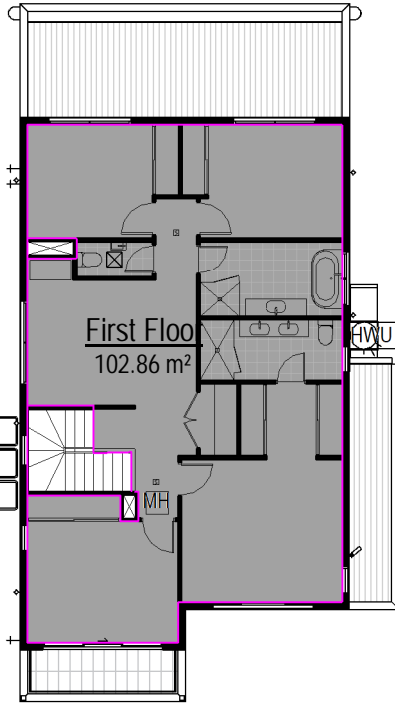
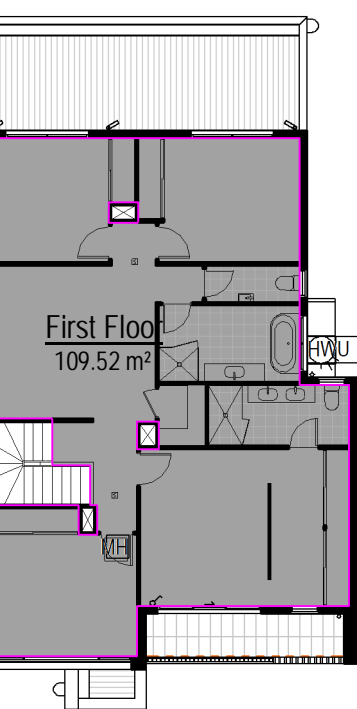
1004
384.9 m²
WS-28b_2210-F1

1005
384.9 m²
WS-28b_220AR-F8

1006
384.9 m²
WS-28b_220AR-F2

1007
384.9 m²
WS-28b_2210-F4

1008
384.9 m²
WS-28b_220AR-F3



LB

LB

LB

LB

LB

LB

LB

LB

① GFA AREAS - FIRST FLOOR (LOTS 1001-1008)

SITE CONTINUES - REFER TO VIEW 2 BELOW

LB

② GFA AREAS - FIRST FLOOR (LOTS 1009-1016)

SITE CONTINUES - REFER TO VIEW 1 ABOVE

1009
384.9 m²
WS-28b_220AR-F8

1010
384.9 m²
WS-28b_2210-F5

1011
384.9 m²
WS-28b_220AR-F2

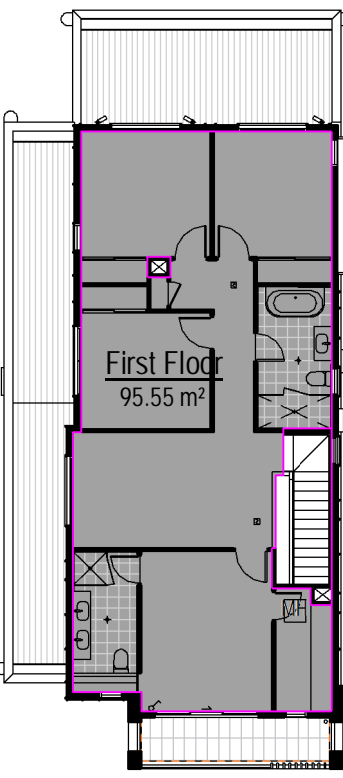
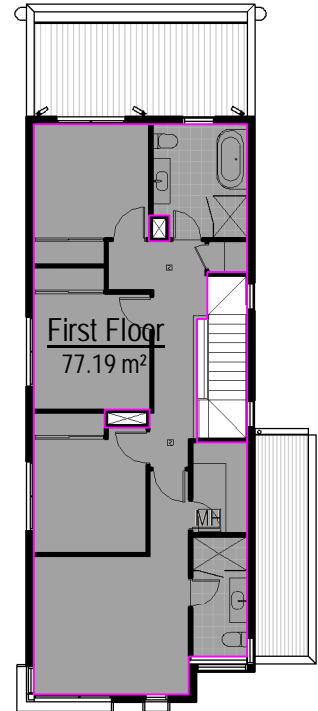
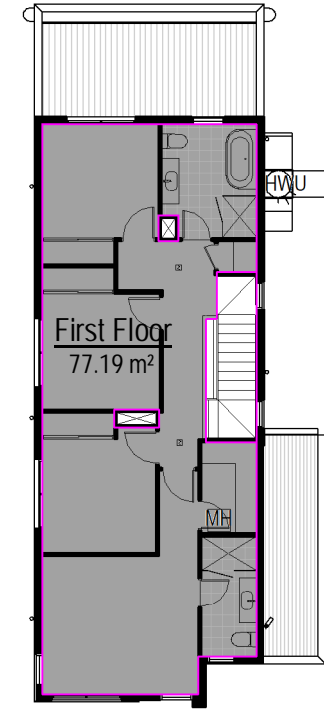
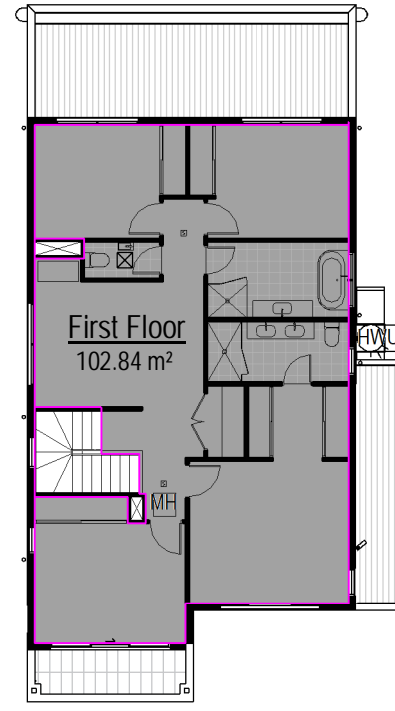
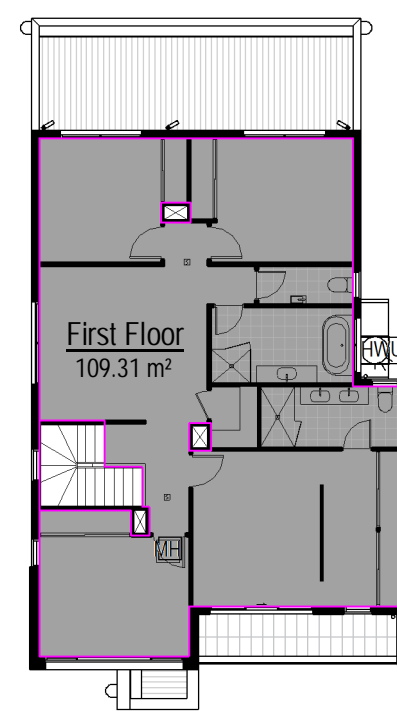
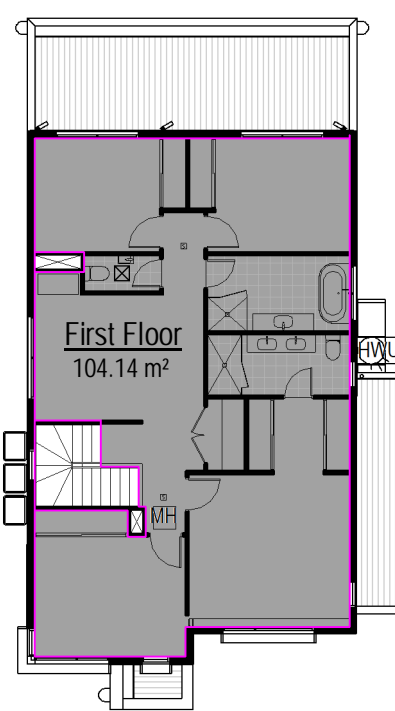
1012
320.7 m²
WS-24_21TG-F1

1013
320.7 m²
WS-24_21TG-F11

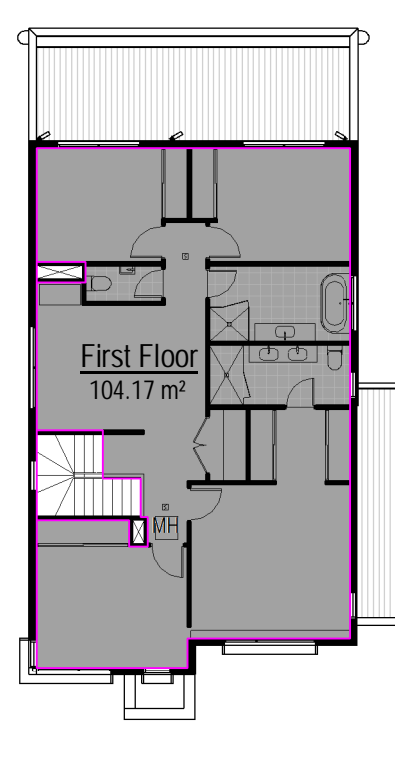
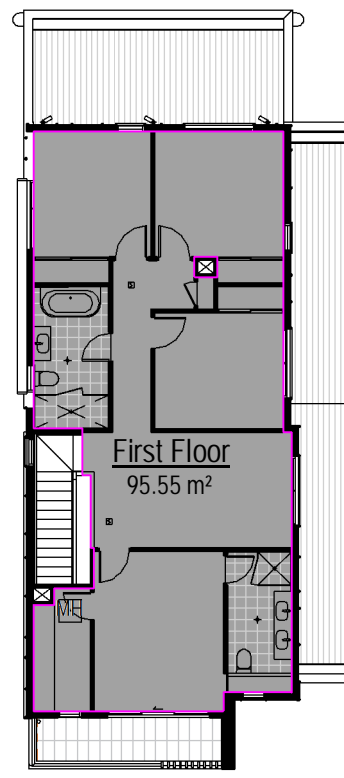
1014
384.9 m²
WS-30_218H-F6

1015
384.9 m²
WS-30_218H-F5

1016
384.9 m²
WS-28b_220AR-F8

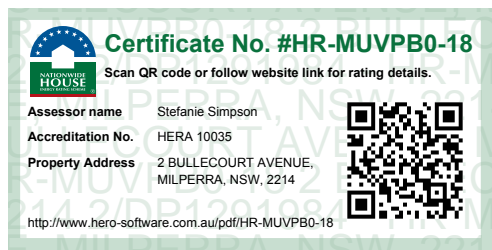


FUTURE PUBLIC RESERVE



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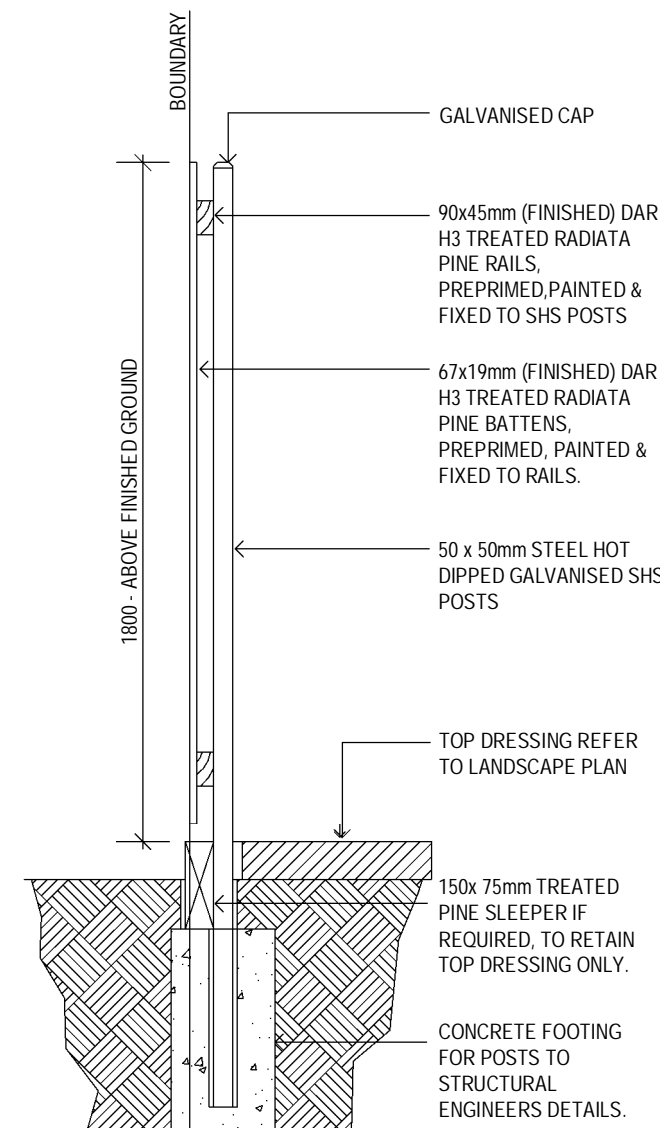


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GFA AREA PLANS - FIRST FLOOR

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drawing no: S1-01-DA422
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date: 06.09.24 rev: C





4 VERTICAL TIMBER BATTEN FENCE DETAILS
SECTION
SCALE 1:20